

Farm King

OPERATOR AND PARTS MANUAL

Backsaver Auger

Model 14122



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Manufacturer's Statement: For technical reasons, Buhler Industries Inc. reserves the right to modify machinery design and specifications provided herein without any preliminary notice. Information provided herein is of descriptive nature. Performance quality may depend on soil fertility, applied agricultural techniques, weather conditions and other factors.

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WARRANTY REGISTRATION FORM

This form must be filled out by the dealer and signed by both the dealer and the customer at the time of delivery.

Customer Name:

Dealer Name:

Customer Address:

Dealer Address:

City:

Prov / State:

City:

Prov / State:

Postal / Zip Code:

Phone:

Postal / Zip Code:

Phone:

Backsaver Auger Model:

Serial Number:

Delivery Date:

I have thoroughly instructed the buyer on the above described equipment which review included the Operator And Parts Manual content, equipment care, adjustments, safe operation and applicable warranty policy.

Dealer Inspection Report

☐	Bearings Turn Freely
☐	Winch Cable Tension Checked
☐	Check Oil Level In Auger Drive Gear Box
☐	Pulleys Aligned
☐	Fasteners Tight
☐	Lubricate Machine
☐	Check Tire Pressure
☐	Hopper Raises And Lowers Freely

Safety

☐	Safety Chain On Hitch (if equipped)
☐	All Decals Installed
☐	Guards And Shields Installed And Secure
☐	Review Operating And Safety Instructions
☐	Check For Hydraulic Leaks

Date:

Dealer Rep. Signature:

The above equipment and Operator And Parts Manual have been received by me and I have been thoroughly instructed as to care, adjustments, safe operation and applicable warranty policy.

Date:

Customer / Owner's Signature:

Remove this Warranty Registration Form from the Operator And Parts Manual. Make two copies of the form. Send original Warranty Registration Form to Farm King. Give one copy to the customer and the dealer will keep one copy.

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INTRODUCTION

This Operator And Parts Manual was written to give the owner / operator instructions on the safe operation, maintenance and part identification of the Farm King equipment. READ AND UNDERSTAND THIS OPERATOR AND PARTS MANUAL BEFORE OPERATING YOUR FARM KING EQUIPMENT. If you have any questions, see your Farm King dealer. This manual may illustrate options and accessories not installed on your Farm King equipment.

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OWNER'S INFORMATION

Thank you for your decision to purchase a Farm King 14122 Backsaver Auger. To ensure maximum performance of your equipment, it is mandatory that you thoroughly study the Operator And Parts Manual and follow the recommendations. Proper operation and maintenance are essential to maximize equipment life and prevent personal injury.

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

Make sure that all personnel have read this Operator And Parts Manual and thoroughly understand safe and correct operating, installation and maintenance procedures.

Farm King is continually working to improve its products. Farm King reserves the right to make any improvements or changes as deemed practical and possible without incurring any responsibility or obligation to make any changes or additions to equipment sold previously.

Although great care has been taken to ensure the accuracy of this publication, Farm King, makes no warranty or guarantee of any kind, written or expressed, implied or otherwise with regard to the information contained within this manual. Farm King assumes no responsibility for any errors that may appear in this manual and shall not be liable under any circumstances for incidental, consequential or punitive damages in connection with, or arising from the use of this manual.

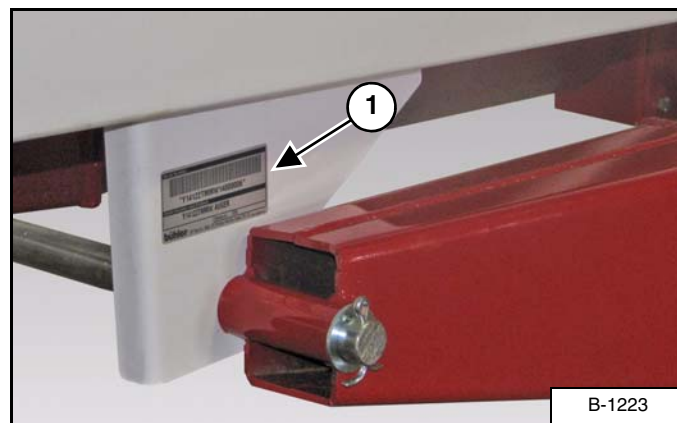
Keep this manual available for frequent reference. All new operators or owners must review the manual before using the equipment and annually thereafter. Contact your Farm King Dealer if you need assistance, information, or additional copies of the manual. Visit our website at www.farm-king.com for a complete list of dealers in your area.

The directions left, right, front and rear, as mentioned throughout this manual, are as viewed from the rear of the equipment.

Serial Number Location

Please enter the model and serial number in the space provided for easy reference.

Figure 1



Model Number: _____

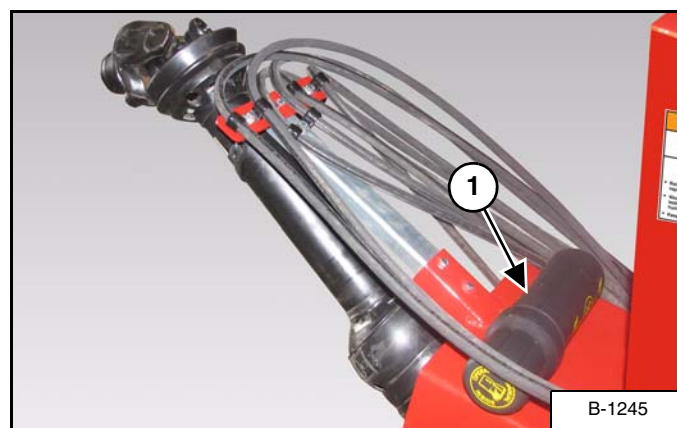
Serial Number: _____

The serial number plate (Item 1) **[Figure 1]** is located on the second upright support on the lower cradle.

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

Manual Storage

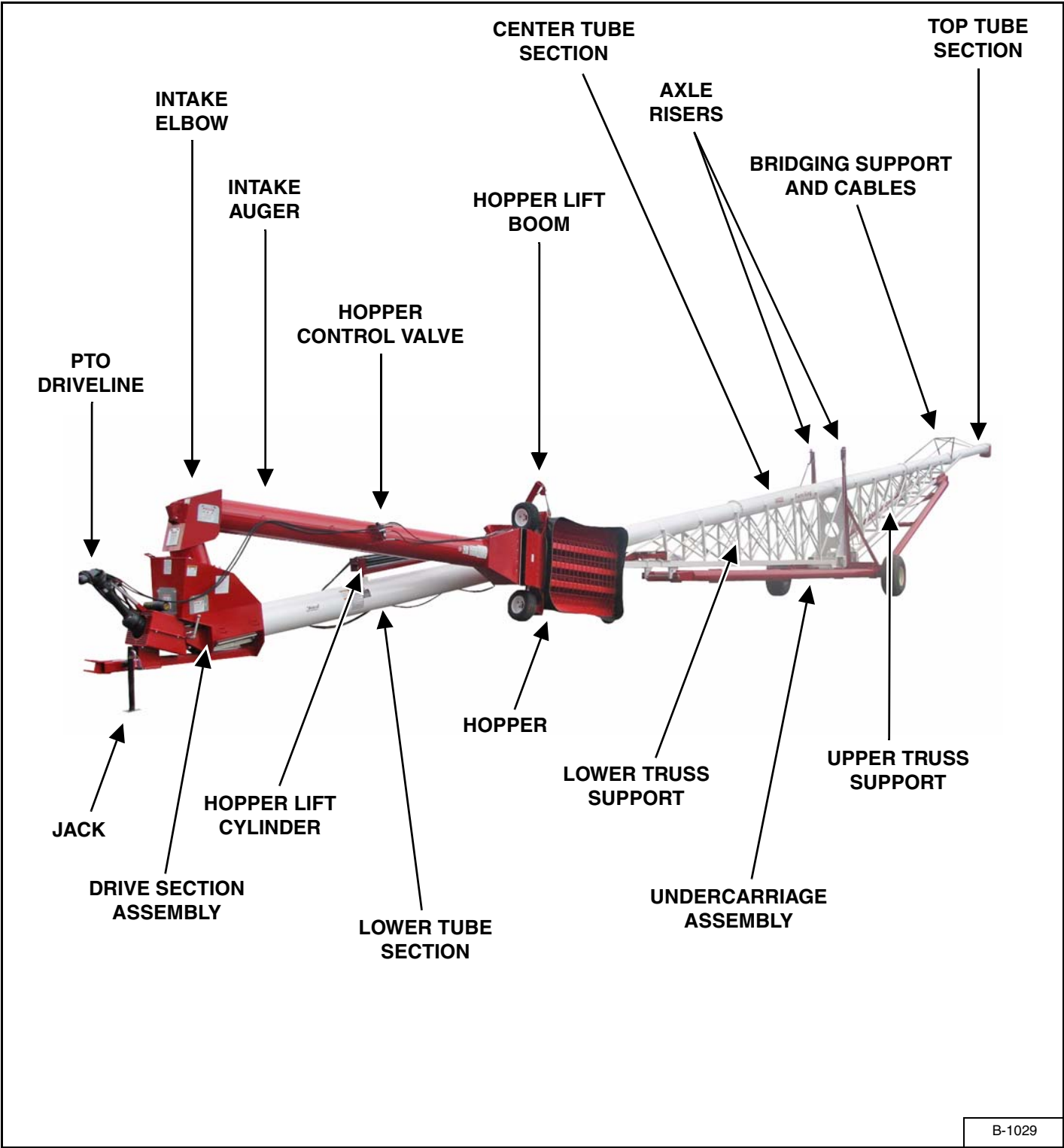
Figure 2



The Operator And Parts manual and other documents can be stored in the canister (Item 1) **[Figure 2]** located just above the auger hitch.

EQUIPMENT IDENTIFICATION

Component Location



SAFETY

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SAFETY INSTRUCTIONS

Safe Operation Is The Operator's Responsibility

	Safety Alert Symbol
This symbol with a warning statement means: "Warning, be alert! Your safety is involved!" Carefully read the message that follows.	



The signal word **CAUTION** on the machine and in the manuals indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



The signal word **DANGER** on the machine and in the manuals indicates a hazardous situation which, if not avoided, will result in death or serious injury.



The signal word **WARNING** on the machine and in the manuals indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



This notice identifies procedures which must be followed to avoid damage to the machine.

Safe Operation Needs A Qualified Operator



Operators must have instructions before operating the machine. Untrained operators can cause injury or death.

For an operator to be qualified, he or she must not use drugs or alcoholic drinks which impair alertness or coordination while working. An operator who is taking prescription drugs must get medical advice to determine if he or she can safely operate a machine and the equipment.

A Qualified Operator Must Do The Following:

Understand the Written Instructions, Rules and Regulations

- The written instructions from Farm King include the Warranty Registration, Dealer Inspection Report, Operator And Parts Manual and machine signs (decals).
- Check the rules and regulations at your location. The rules may include an employer's work safety requirements. Regulations may apply to local driving requirements or use of a Slow Moving Vehicle (SMV) emblem. Regulations may identify a hazard such as a utility line.

Have Training with Actual Operation

- Operator training must consist of a demonstration and verbal instruction. This training is given by the machine owner prior to operation.
- The new operator must start in an area without bystanders and use all the controls until he or she can operate the machine safely under all conditions of the work area. Always fasten seat belt before operating.

Know the Work Conditions

- Clear working area of all bystanders, especially small children and all obstacles that might be hooked or snagged, causing injury or damage.
- Know the location of any overhead or underground power lines. Call local utilities and have all underground power lines marked prior to operation.
- Wear tight fitting clothing. Always wear safety glasses when doing maintenance or service.

SAFETY INSTRUCTIONS (CONT'D)**Use Safety Rules**

- Read and follow instructions in this manual and the tractor's Operators Manual before operating.
- Under no circumstances should young children be allowed to work with this equipment.
- This equipment is dangerous to children and persons unfamiliar with its operation.
- If the elderly are assisting with work, their physical limitations need to be recognized and accommodated.
- Stay clear of overhead power lines when unloading auger is extended. Electrocuting can occur without direct contact.
- Check for overhead and / or underground lines before operating equipment (if applicable).
- In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.
- Check that the equipment is securely fastened to the tractor / towing vehicle.
- Make sure all the machine controls are in the NEUTRAL position before starting the machine.
- Operate the equipment only from the operator's position.
- Operate the equipment according to the Operator And Parts Manual.
- When learning to operate the equipment, do it at a slow rate in an area clear of bystanders, especially small children.
- DO NOT permit personnel to be in the work area when operating the equipment.
- The equipment must be used ONLY on approved tractors / transport vehicles.
- DO NOT modify the equipment in any way. Unauthorized modification may impair the function and / or safety and could affect the life of the equipment.
- DO NOT make any adjustments or repairs on the equipment while the machine is running.
- Keep shields and guards in place. Replace if damaged.

Transport Safety

- Do not exceed 20 mph (32 kph). Reduce speed on rough roads and surfaces.
- Comply with state and local laws governing highway safety and movement of machinery on public roads.
- The use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements.
- Always install transport locks, pins or brackets before transporting.
- Always yield to oncoming traffic in all situations and move to the side of the road so any following traffic may pass.
- Always enter curves or drive up or down hills at a low speed and at a gradual steering angle.
- Never allow riders on either tractor or equipment.
- Keep tractor / towing vehicle in a lower gear at all times when traveling down steep grades.
- Maintain proper brake settings at all times (if equipped).
- Stay away from overhead power lines when unloading auger is extended. Electrocuting can occur without direct contact.

Safety Rules For Power Take-Off (PTO) Driven Equipment

- Keep PTO shields and all guards in place. Replace damaged or missing shields and guards before operating.
- Follow warnings and instructions on machine signs (decals). Replace damaged or missing decals.
- Do not wear loose or bulky clothing around the PTO or other moving parts.
- Keep bystanders away from PTO driven equipment, and never allow children near machines.
- Read and understand the manuals for the PTO driven equipment and be aware of safe operating procedures and hazards that may not be readily apparent.
- Always walk around equipment to avoid coming near a turning PTO driveline. Stepping over, leaning across or crawling under a turning PTO driveline can cause entanglement.
- Position the machine and equipment hitch correctly to prevent driveline stress and separation.
- Use caution when turning. Turning too sharp can cause driveline damage.
- Use caution when raising PTO driven attachment. Excessive driveline angle can cause driveline damage. Use stops if needed.
- Use increased caution on slopes and near banks and ditches to prevent overturn.
- Make certain that the Slow Moving Vehicle (SMV) emblem is installed so that it is visible and legible. When transporting the equipment, use the flashing warning lights (if equipped) and follow all local regulations.
- Operate this equipment with a machine equipped with an approved Roll-Over Protective Structure (ROPS). Always wear seat belt when the ROPS is up. Serious injury or death could result from falling off the machine.
- Before leaving the operator's position:
 1. Always park on a flat level surface.
 2. Place all controls in neutral.
 3. Engage the parking brake.
 4. Stop engine.
 5. Wait for all moving parts to stop.
- Carry passengers only in designated seating areas. Never allow riders on the machine or equipment. Falling off can result in serious injury or death.
- Start the equipment only when properly seated in the operator's seat. Starting a machine in gear can result in serious injury or death.
- Operate the machine and equipment from the operator's position only.
- The parking brake must be engaged before leaving the operator's seat. Rollaway can occur because the transmission may not prevent machine movement.

Machine Requirements And Capabilities

- Fasten seat belt securely. If equipped with a foldable Roll-Over Protective Structure (ROPS), only fasten seat belt when ROPS is up and locked. DO NOT wear seat belt if ROPS is down.
- Machine's three-point hitch must be equipped with sway bars or chains.
- Stop the machine and engage the parking brake. Install blocks in front of and behind the rear tires of the machine. Install blocks underneath and support the equipment securely before working under raised equipment.
- Keep bystanders clear of moving parts and the work area. Keep children away.

FIRE PREVENTION



Maintenance

The machine and some equipment have components that are at high temperatures under normal operating conditions. The primary source of high temperatures is the engine and exhaust system. The electrical system, if damaged or incorrectly maintained, can be a source of arcs or sparks.

Flammable debris (leaves, straw, etc.) must be removed regularly. If flammable debris is allowed to accumulate, it can cause a fire hazard. Clean often to avoid this accumulation. Flammable debris in the engine compartment is a potential fire hazard.

The operator's area, engine compartment and engine cooling system must be inspected every day and cleaned if necessary to prevent fire hazards and overheating.

All fuels, most lubricants and some coolant mixtures are flammable. Flammable fluids that are leaking or spilled onto hot surfaces or onto electrical components can cause a fire.

Operation

The Farm King machine must be in good operating condition before use.

Check all of the items listed on the service schedule under the 8 hour column. (See "SERVICE SCHEDULE" on page 108.)

Do not use the machine where exhaust, arcs, sparks or hot components can contact flammable material, explosive dust or gases.

Starting

Do not use ether or starting fluids on any engine that has glow plugs. These starting aids can cause explosion and injure you or bystanders.

Use the procedure in the tractor's operator's manual for connecting the battery and for jump starting.

Electrical



Check all electrical wiring and connections for damage. Keep the battery terminals clean and tight. Repair or replace any damaged part or wires that are loose or frayed.

Battery gas can explode and cause serious injury. Do not jump start or charge a frozen or damaged battery. Keep any open flames or sparks away from batteries. Do not smoke in battery charging area.

Hydraulic System

Check hydraulic tubes, hoses and fittings for damage and leakage. Never use open flame or bare skin to check for leaks. Hydraulic tubes and hoses must be properly routed and have adequate support and secure clamps. Tighten or replace any parts that show leakage.

Always clean fluid spills. Do not use gasoline or diesel fuel for cleaning parts. Use commercial nonflammable solvents.

Fueling



Stop the engine and let it cool before adding fuel. No smoking! Do not refuel a machine near open flames or sparks. Fill the fuel tank outdoors.

Spark Arrester Exhaust System

The spark arrester exhaust system is designed to control the emission of hot particles from the engine and exhaust system, but the muffler and the exhaust gases are still hot.

Check the spark arrester exhaust system regularly to make sure it is maintained and working properly. Use the procedure in the machine's Operator's Manual for cleaning the spark arrester muffler (if equipped).

FIRE PREVENTION (CONT'D)**Welding And Grinding**

Always clean the machine and equipment, disconnect the battery, and disconnect the wiring from the machine controls before welding. Cover rubber hoses, battery and all other flammable parts. Keep a fire extinguisher near the machine when welding.

Have good ventilation when grinding or welding painted parts. Wear dust mask when grinding painted parts. Toxic dust or gas can be produced.

Dust generated from repairing nonmetallic parts such as hoods, fenders or covers can be flammable or explosive. Repair such components in a well ventilated area away from open flames or sparks.

Fire Extinguishers

Know where fire extinguishers and first aid kits are located and how to use them. Inspect the fire extinguisher and service the fire extinguisher regularly. Obey the recommendations on the instructions plate.

OPERATING SAFETY ZONE

Safety Zone Identification

⚠ WARNING

AVOID INJURY OR DEATH

- Do not allow small children, bystanders or unauthorized persons in the work area during operation.
- Never stand or work under the auger and undercarriage when in the raised position or during operation.
- Always keep PTO shields and all guards in place during operation.
- Keep away from moving parts.
- Keep everyone clear when operating the hopper mover.

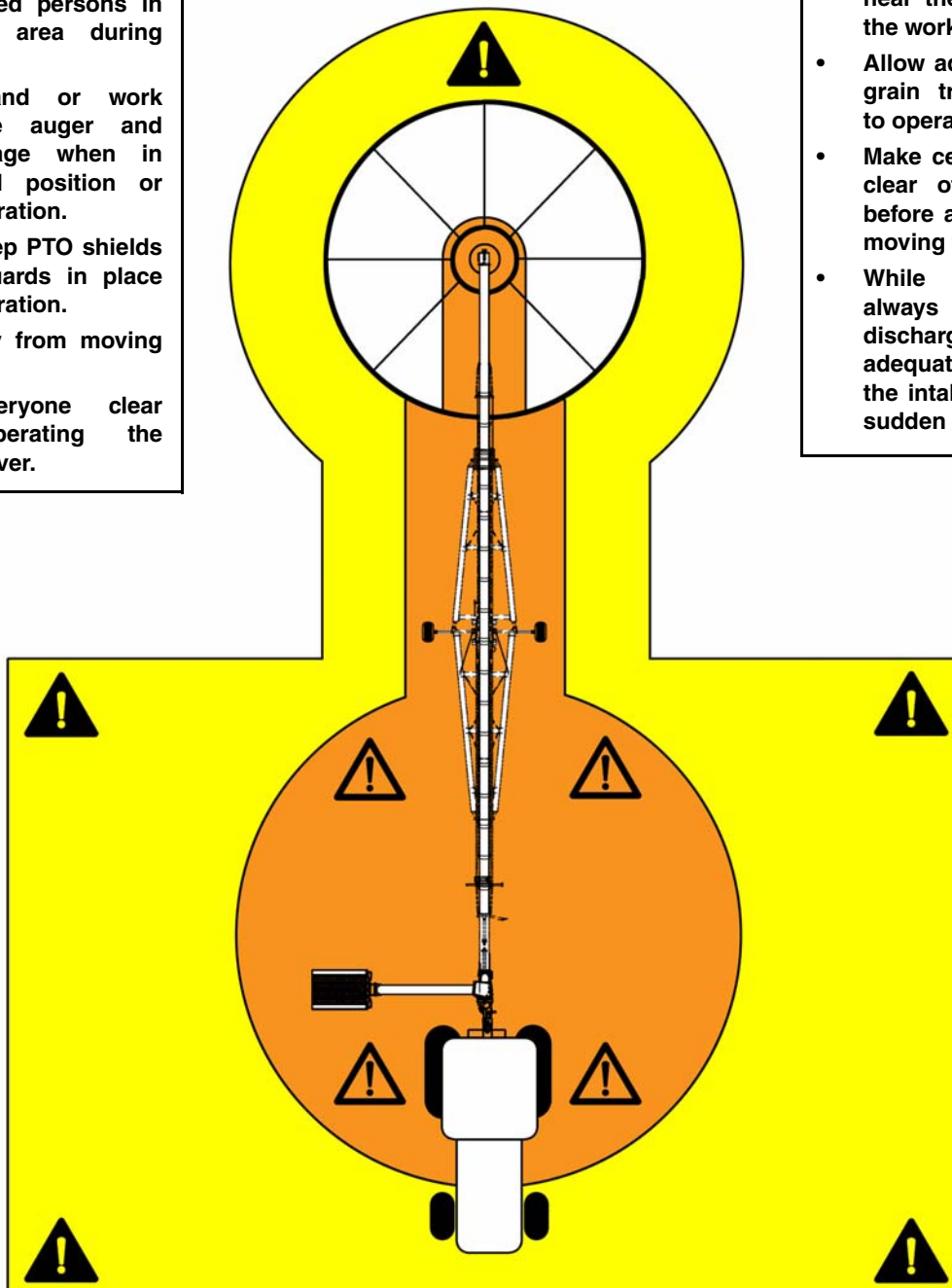
⚠ DANGER

ELECTROCUTION HAZARD

Keep away from power lines, electrocution can occur without direct contact.

⚠ CAUTION

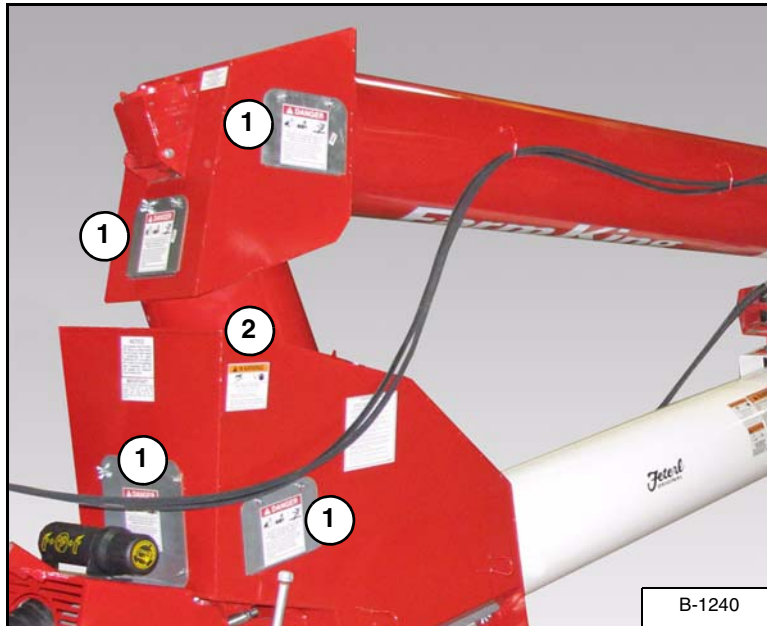
- Owners and operators should allow only authorized personnel and grain transport vehicles near the auger or inside the work area.
- Allow adequate space for grain transport vehicles to operate safely.
- Make certain everyone is clear of the equipment before applying power or moving the machine.
- While in operation, always support the discharge end or provide adequate anchorage of the intake end to prevent sudden tipping.



SAFETY SIGNS (DECALS)

Follow the instructions on all the Signs (Decals) that are on the equipment. Replace any damaged signs (decals) and be sure they are in the correct locations. Equipment signs are available from your Farm King equipment dealer.

Intake Elbow / Drive Section



p/n SZ06136



p/n SZ06049

Intake Elbow / Drive Section (Left Side)





CAUTION

- **MOVING PARTS HAZARD.** Do not adjust, service, lubricate, clean, unclog or move the mechanism until all power is shut off. Make certain that all personnel are clear of the auger before applying power. Keep children, visitors and untrained personnel away from the auger while in operation.
- **UPENDING HAZARD.** The auger may collapse, tip or upend. Always anchor the intake end or support the discharge end of the auger during transport, erection or operation. Keep all children and unnecessary personnel from under the auger. Keep all personnel off the auger during transport, erection, or operation.
- **COLLAPSE OR FALLING OBJECT HAZARD.** Contact with overhead obstructions can cause the auger to collapse, tip or upend, or cause the obstruction to fall, causing possible serious injury or death.
- **UPENDING HAZARD.** Stopping the grain flow quickly may cause the intake end of the auger to suddenly raise, causing possible serious injury or death. Always keep the auger attached to the tractor while in operation.
- **COLLAPSE HAZARD.** Excessive weight attached to the discharge end of the auger, or using the auger as a crane or hoist may cause sudden collapse of the auger, causing possible injury or death.
- **UPENDING OR COLLAPSE HAZARD.** The auger may accidentally tip, upend or collapse when transporting or erecting. Tow the auger empty, in transport position and at slow speed. Verify that there is downward weight before releasing from the towing vehicle. Raise and lower the auger slowly. Maneuver the auger into position slowly, with a vehicle. NEVER attempt to move the auger manually, lift the intake end higher than the vehicle tow bar or push on the auger undercarriage.

SZ06135

18

SAFETY SIGNS (DECALS) (CONT'D)

Intake Auger

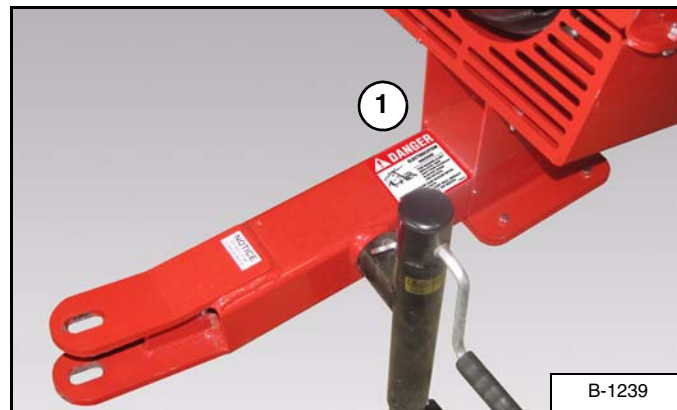


1



p/n SZ06023

Auger Hitch



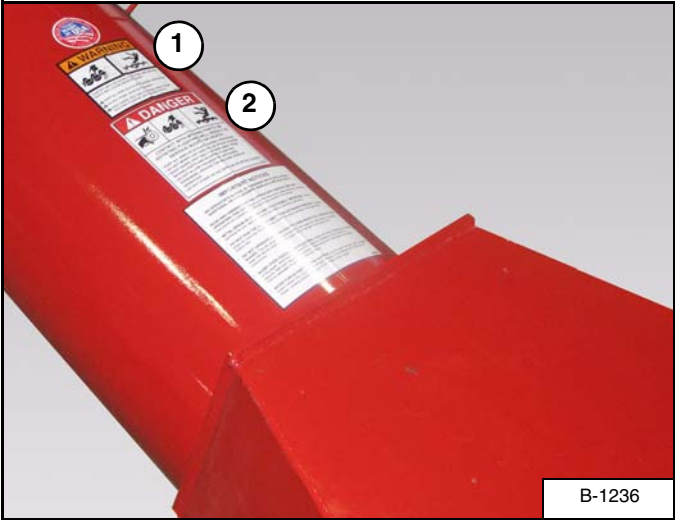
1



p/n SZ06527

SAFETY SIGNS (DECALS) (CONT'D)

Intake Auger



1



p/n SZ06011

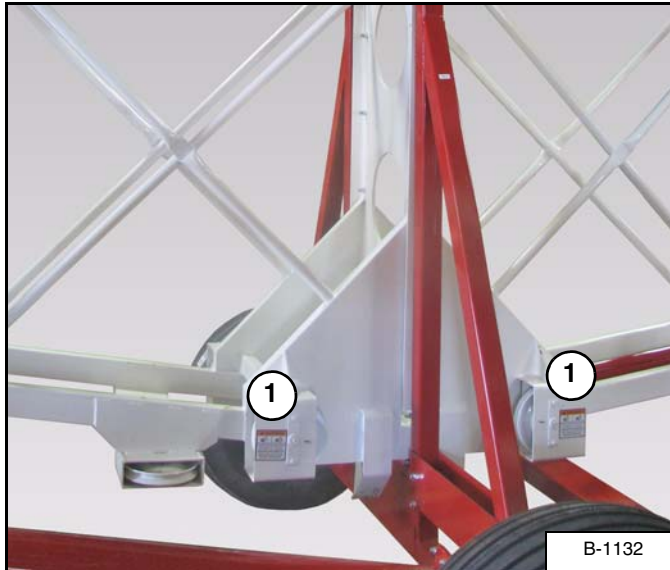
2



p/n SZ06136

SAFETY SIGNS (DECALS) (CONT'D)

Upper / Lower Trusses

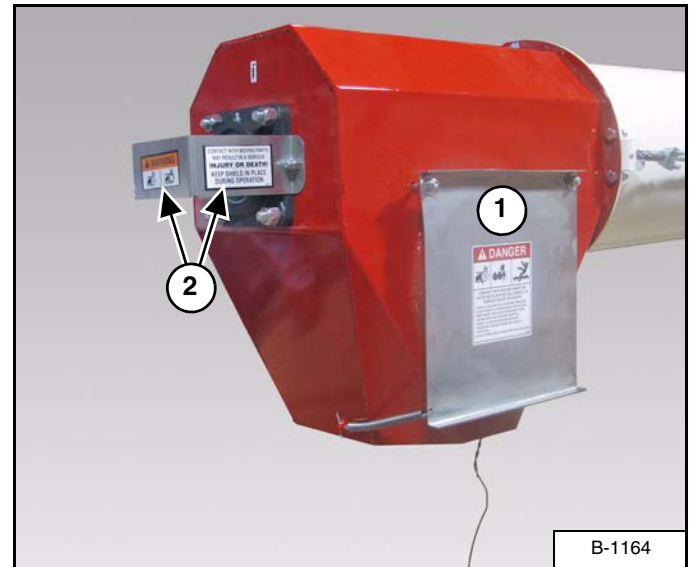


1



p/n SZ06023

Drop Spout



B-1164

1



p/n SZ06136

2



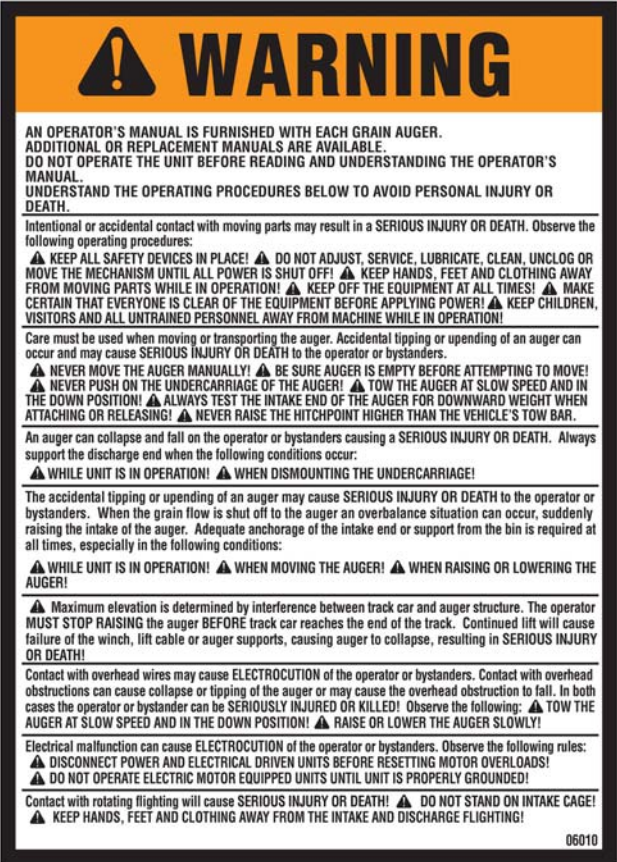
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SAFETY SIGNS (DECALS) (CONT'D)

Upper Undercarriage Arms

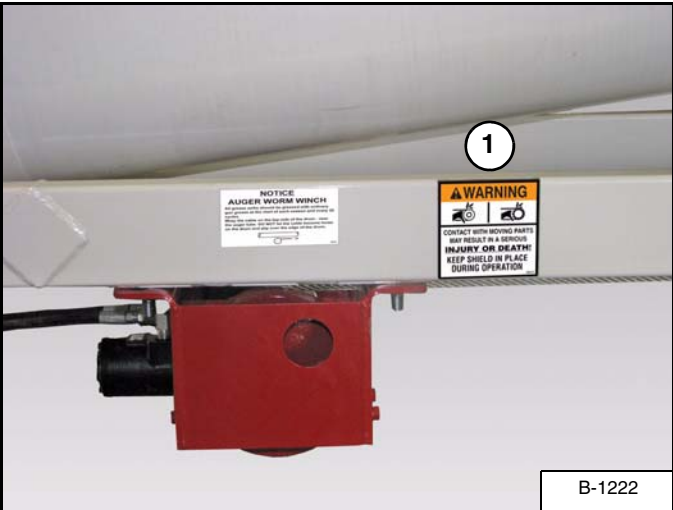


1



p/n SZ06010

Lower Truss / Winch



1



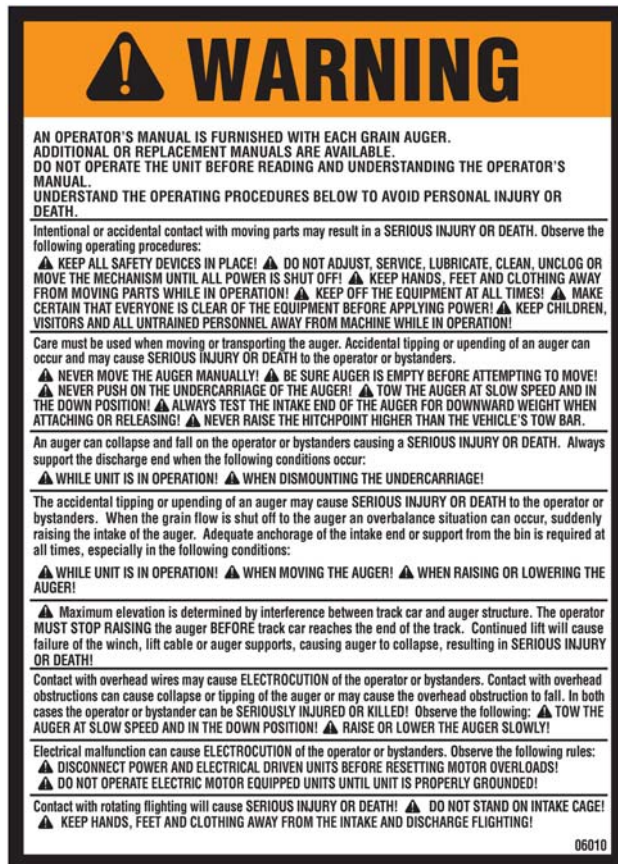
p/n SZ06023

SAFETY SIGNS (DECALS) (CONT'D)

Lower Tube



1



p/n SZ06010

3



p/n SZ06049



p/n SZ06021

EQUIPMENT DECALS AND SIGNS

NOTE: All safety related decals are shown in the Safety Signs Section. (See “SAFETY SIGNS (DECALS)” on page 17.)

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

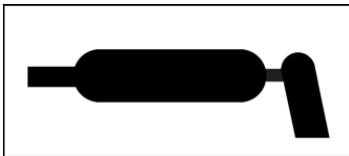
Part Number SZ000112 (White Augers)
Part Number SZ000115 (Red Augers)

14122

Part Number SZ000110 (White Augers)
Part Number SZ000113 (Red Augers)

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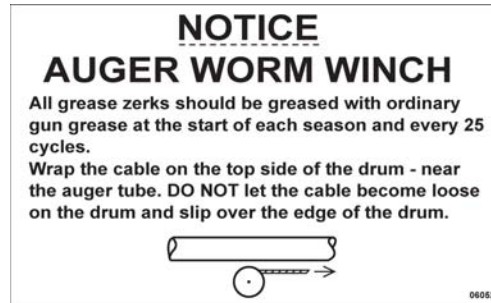
Part Number SZ06057



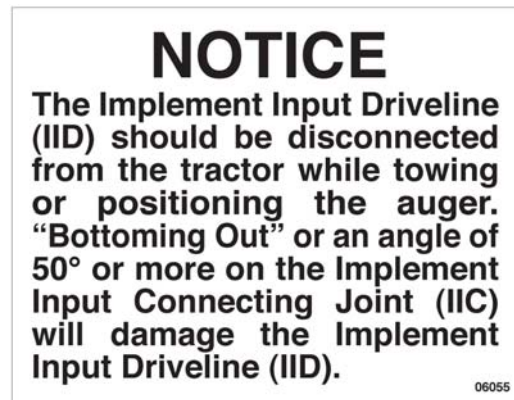
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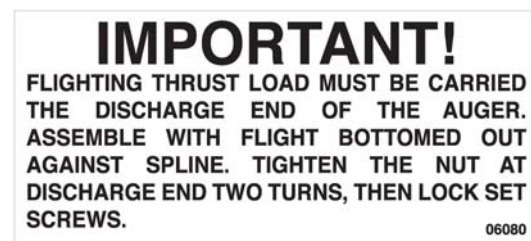
Part Number SZ06052



Part Number SZ06055



Part Number SZ06080

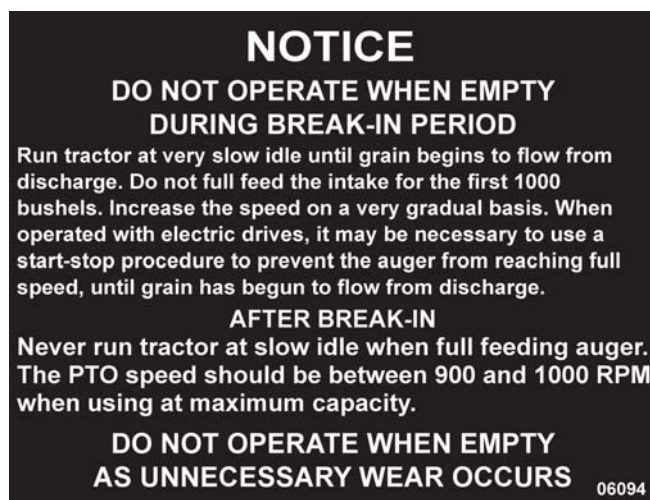


Part Number SZ06137



EQUIPMENT DECALS AND SIGNS (CONT'D)

Part Number SZ06094



Part Number SZ06101



Part Number SZ06001



Part Number 108143 Black Feterl



SAFETY SIGN-OFF FORM



Instructions are necessary before operating or servicing equipment. Read and understand the Operator And Parts Manual and safety signs (decals) on equipment. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

Farm King follows the general Safety Standards specified by the American Society of Agricultural and Biological Engineers (ASABE) and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and / or maintaining the Backsaver Auger must read and clearly understand ALL Safety, Operating and Maintenance information presented in this manual.

Annually review this information before the season start-up and make these periodic reviews of SAFETY and OPERATION a standard practice for all of your equipment. An untrained operator is unqualified to operate this machine.

The following sign-off sheet is provided for your record and to show that all personnel who will be working with the equipment have read and understand the information in this Operator and Parts Manual and have been instructed in the operation of the equipment.

SIGN-OFF SHEET		
Date	Employee's Signature	Employer's Signature

ASSEMBLY

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GENERAL ASSEMBLY INFORMATION

Component Unloading And Identification



ELECTROCUTION HAZARD

To prevent serious injury or death from electrocution:

- Be aware of overhead power lines.
- Keep away from power lines when unloading and assembling the auger.
- Electrocution can occur without direct contact.



- DO NOT permit bystanders to be in the work area when unloading and assembling the auger components.
- DO NOT work under suspended parts.
- Keep away from moving parts.
- Always use lifting devices / vehicles, chains or straps of adequate size and strength when unloading and assembling the auger components.

Unload the crate(s) and components on a flat level area of adequate size to assemble the 14122 Backsaver Auger.



Unload crate(s) and auger components carefully to prevent damage to any of the components.

NOTE: If any components are damaged, missing or replacement parts are required, contact your Farm King Dealer.

Assemble the 14122 Backsaver Auger in the following order:

1. Undercarriage (See “Undercarriage Assembly” on page 30.)

Using the packing list, locate and place all undercarriage components and hardware in one area. Count the individual components and verify that you have received the correct number of components to fully assemble the undercarriage.

2. Tube (See “Tube Assembly” on page 38.)

Using the packing list, locate and place all tube components and hardware in one area. Count the individual components and verify that you have received the correct number of components to fully assemble the tube.

3. Hopper (See “Hopper Assembly And Installation” on page 62.)

Using the packing list, locate and place all intake auger components and hardware in one area. Count the individual components and verify that you have received the correct number of components to fully assemble the intake auger.

4. Hydraulic (See “HYDRAULIC ASSEMBLY” on page 65.)

Using the packing list, locate and place all hydraulic components in one area. Count the individual components and verify that you have received the correct number of components to fully assemble the hydraulics.

Figure 3



Larger components are marked for identification [Figure 3].

BASE GROUP

Undercarriage Assembly

Assemble the undercarriage on a flat level surface.



WARNING



- **DO NOT** permit bystanders to be in the work area when unloading and assembling the auger components.
- **DO NOT** work under suspended parts.
- Keep away from moving parts.
- Always use lifting devices / vehicles, chains or straps of adequate size and strength when unloading and assembling the auger components.



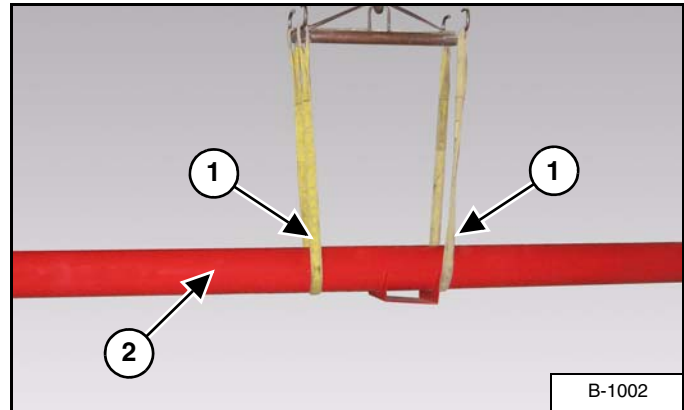
WARNING



AVOID INJURY OR DEATH

Keep fingers and hands out of pinch points when assembling the equipment.

Figure 4

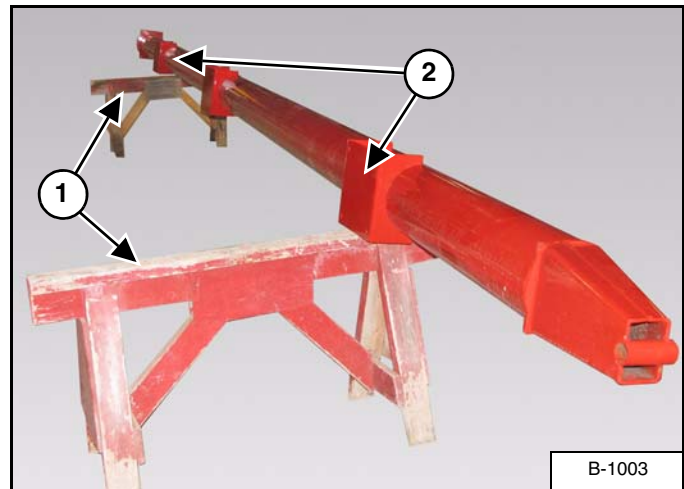


Install a strap (Item 1) around the RH lower undercarriage arm (Item 2) [Figure 4].

Connect the strap to an approved lifting device.

Raise and move the RH lower undercarriage arm to the assembly area.

Figure 5



Position two support stands (Item 1) [Figure 5] (one at each end) under the two cross member mounts (Item 2) [Figure 5].

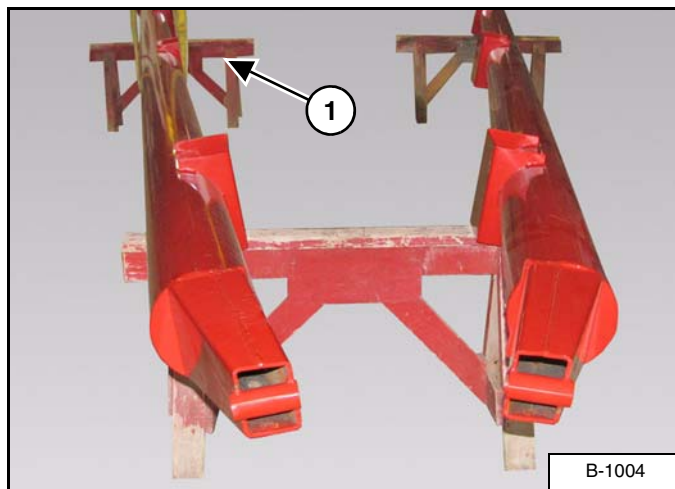
Lower the RH lower undercarriage arm onto the support stands and remove strap [Figure 5].

Install a strap around the LH lower undercarriage arm.

Connect the strap to an approved lifting device.

Raise and move the LH lower undercarriage arm to the assembly area.

Figure 6

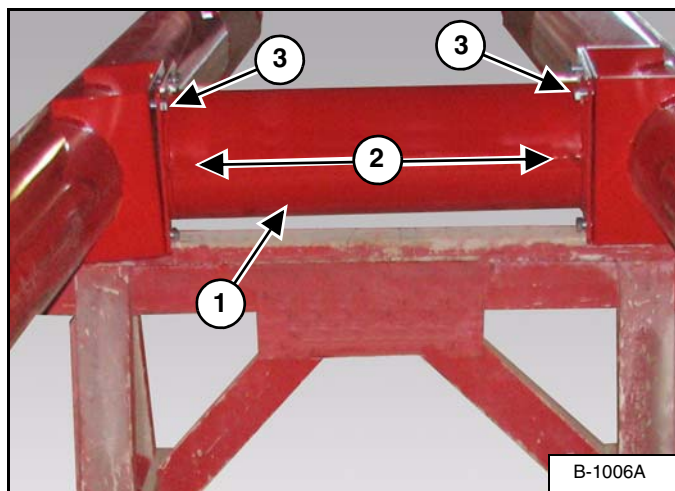


Position one support stand (Item 1) [Figure 6] under the cross member mount at the rear of the LH lower undercarriage arm.

Lower the LH lower undercarriage arm onto the support stands and remove strap [Figure 6].

NOTE: Leave adequate space between the two undercarriage arms to install the cross members.

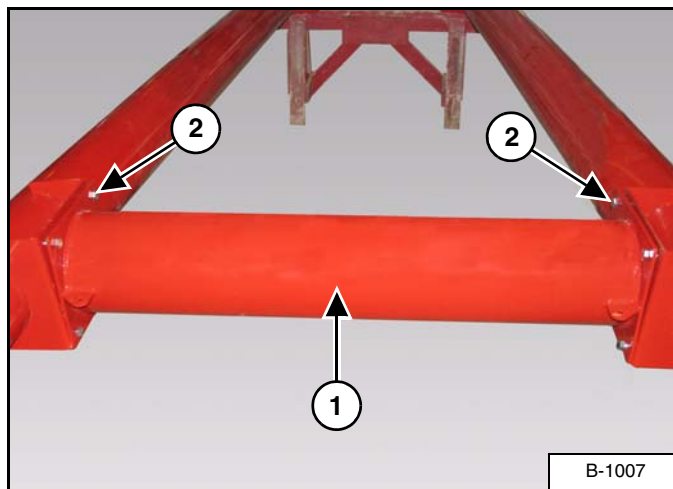
Figure 7



Locate the three round cross members (short, medium and long).

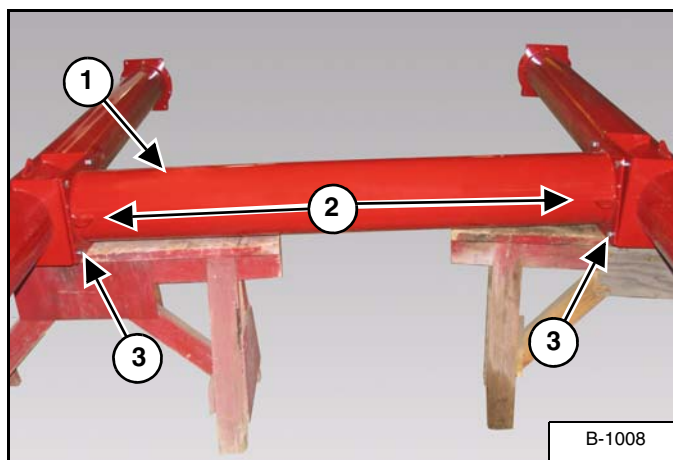
Place the short round cross member (Item 1) between the two undercarriage arms with the two mounting tabs (Item 2) facing to the center. Install eight 1/2" x 1-1/2" bolts (Item 3) [Figure 7] through the cross member and undercarriage mount. Install one 1/2" nut on each bolt. Do not tighten at this time.

Figure 8



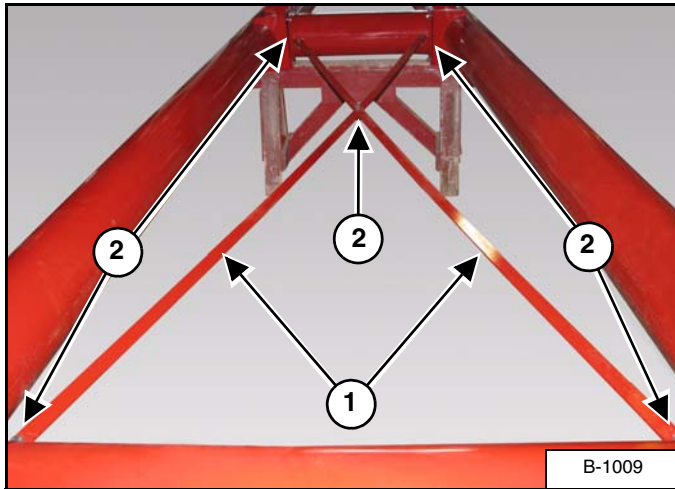
Place the medium round cross member (Item 1) between the two undercarriage arms. Install eight 1/2" x 1-1/2" bolts (Item 2) [Figure 8] through the cross member and undercarriage mount. Install one 1/2" nut on each bolt. Do not tighten at this time.

Figure 9



Place the long round cross member (Item 1) between the two undercarriage arms with the two mounting tabs (Item 2) facing the center round cross member. Install eight 1/2" x 1-1/2" bolts (Item 3) [Figure 9] through the cross member and undercarriage mount. Install one 1/2" lock nut on each bolt. Do not tighten at this time.

Figure 10

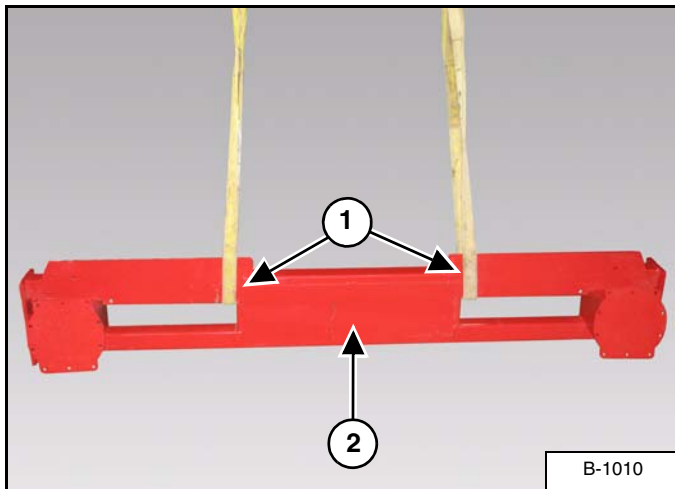


Install the two flat cross braces (Item 1) [Figure 10] onto the short and medium cross members.

Install the five 1/2" x 1-1/2" bolts (Item 2) [Figure 10]. Install one 1/2" lock nut on each bolt. Do not tighten bolts at this time.

Repeat procedure for installing the remaining two flat braces onto the medium and long cross members.

Figure 11

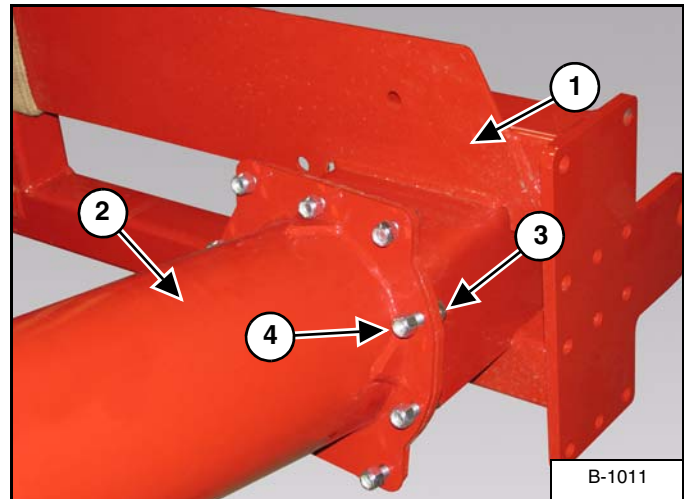


Install a strap (Item 1) around the axle (Item 2) [Figure 11].

Connect the strap to an approved lifting device.

Raise and move the axle to the assembly area.

Figure 12



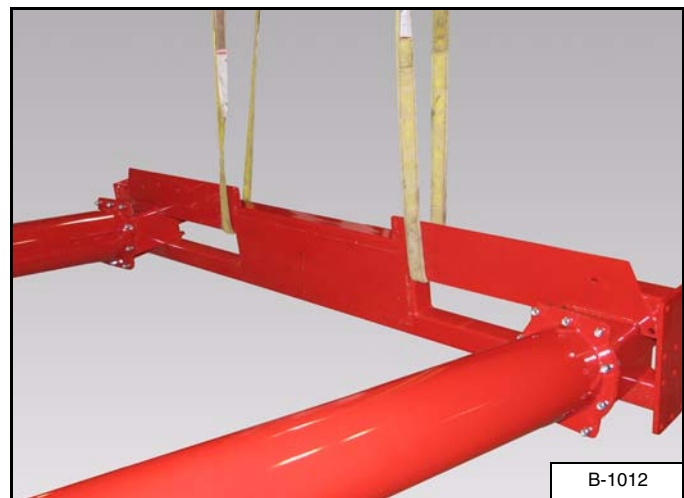
Align the axle (Item 1) with right undercarriage arm (Item 2) [Figure 12].

Install 1/2" x 1-1/2" bolts (Item 3) through the axle mounting flange and left undercarriage mounting flange. Install one 1/2" lock nut (Item 4) [Figure 12] on each bolt.

Repeat procedure for installing the left undercarriage arm onto the axle.

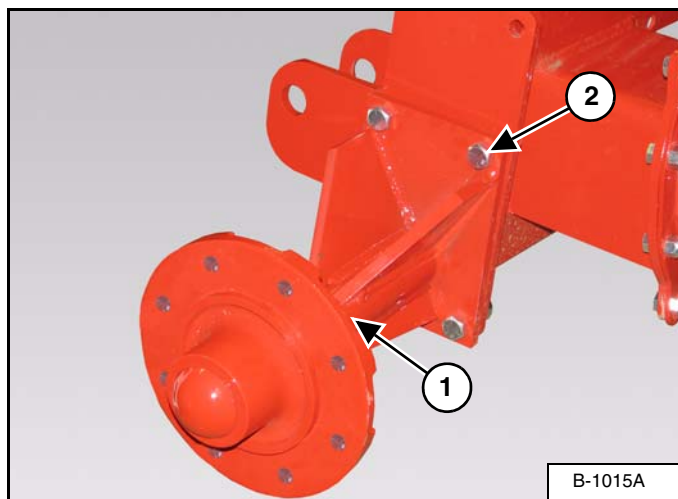
Tighten the bolts and nuts to securely fasten the undercarriage arms to the axle.

Figure 13



Raise the axle / undercarriage assembly and remove the support stands [Figure 13].

Figure 14

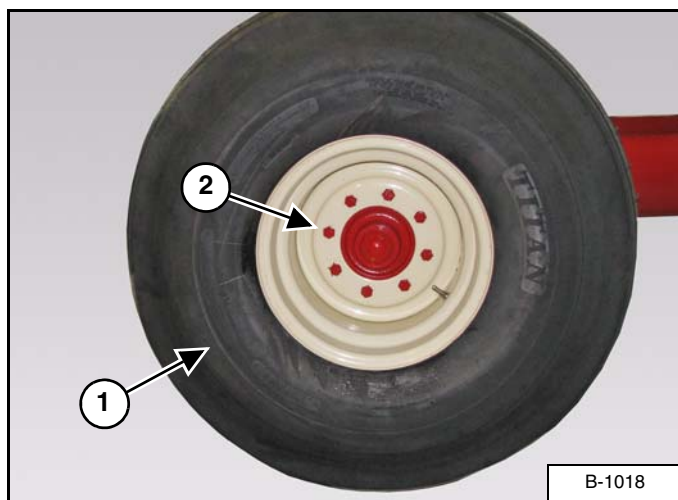


Align and install the eight bolt spindle assembly (Item 1) **[Figure 14]** onto the axle.

Install five 5/8" x 2" bolts (Item 2) **[Figure 14]** through the eight bolt spindle assembly and axle mounting plate. Install one 5/8" lock nut on each bolt. Tighten the bolts and nuts.

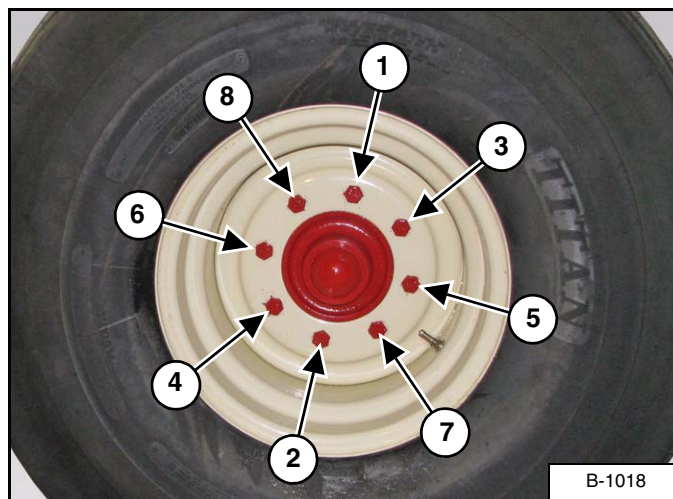
Repeat for opposite eight bolt spindle assembly.

Figure 15



Install the tire / wheel (Item 1) with the valve stem facing out (both sides). Install the eight wheel bolts (Item 2) (both sides) **[Figure 15]**.

Figure 16



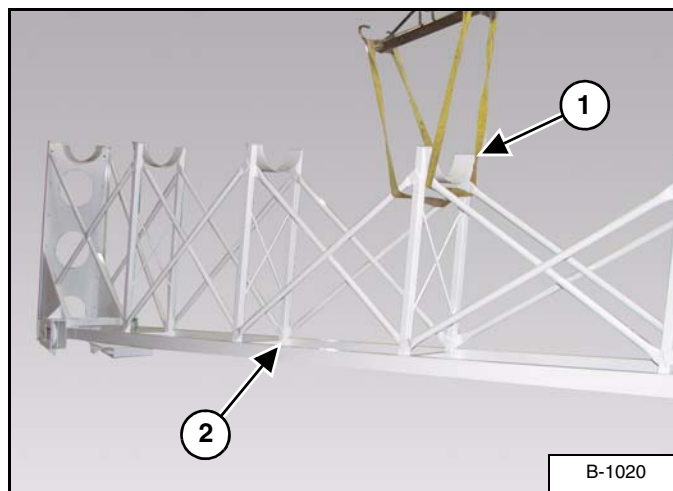
Tighten wheel nuts in a criss-cross pattern **[Figure 16]**. Tighten wheel nuts to 110 - 125 lb ft (149 - 169 N•m) of torque.

Lower the axle and tires to the ground. Remove the straps and lifting device.

Check tire pressure.

NOTE: Recommended tire pressure is 45 - 50 PSI (310 - 345 kpa). Maximum tire pressure of 60 PSI (415 kpa).

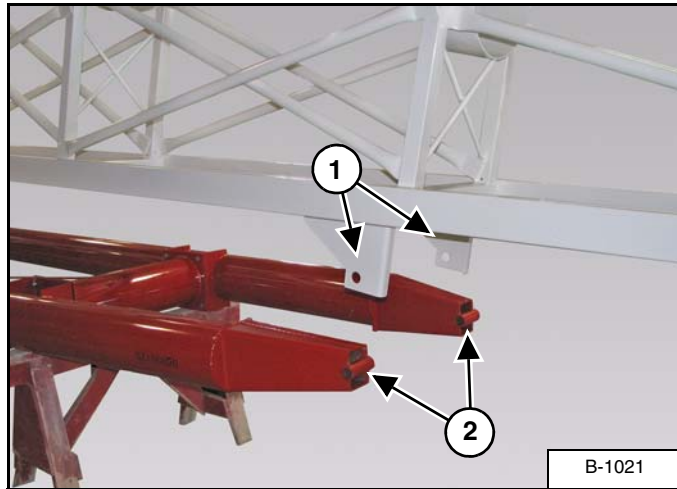
Figure 17



Install a strap (Item 1) through the bracing of the lower truss (Item 2) **[Figure 17]**. Connect the strap to an approved lifting device.

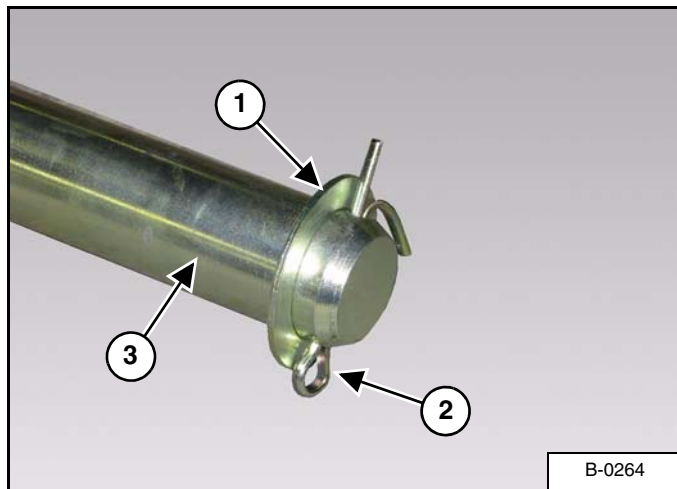
Raise and move the lower truss to the assembly area.

Figure 18



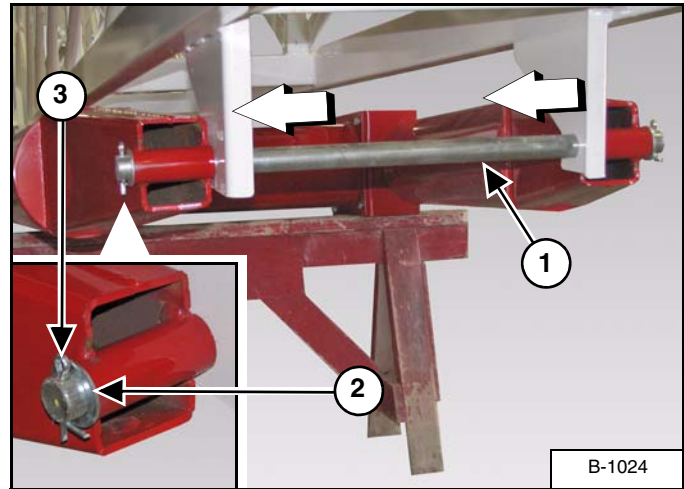
Align the lower truss hinge pin mounts (Item 1) with the hinge pin mounts (Item 2) [Figure 18] on the undercarriage arms.

Figure 19



Install one 1-1/4" - 10 ga. machine bushing (Item 1) and one 1/4" x 2" cotter pin (Item 2) onto the 1-1/4" x 29-5/8" hinge pin (Item 3) [Figure 19].

Figure 20

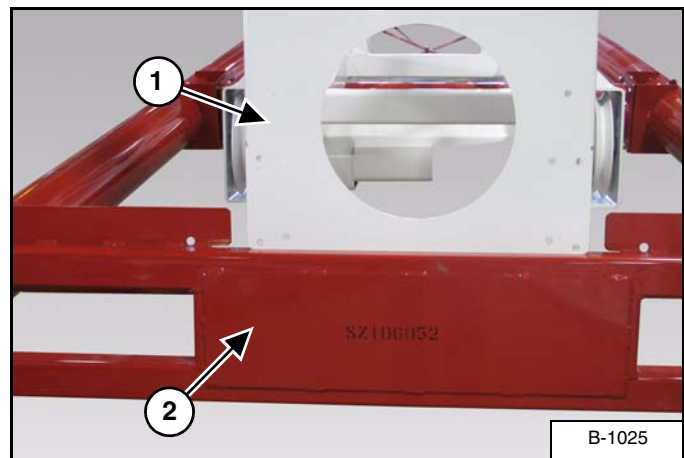


Place the lower truss hinge pin mounts inside the undercarriage arms [Figure 20].

Install the 1-1/4" x 29-5/8" hinge pin (Item 1) [Figure 20] through the right undercarriage arm, lower truss hinge pin mounts and right undercarriage arm.

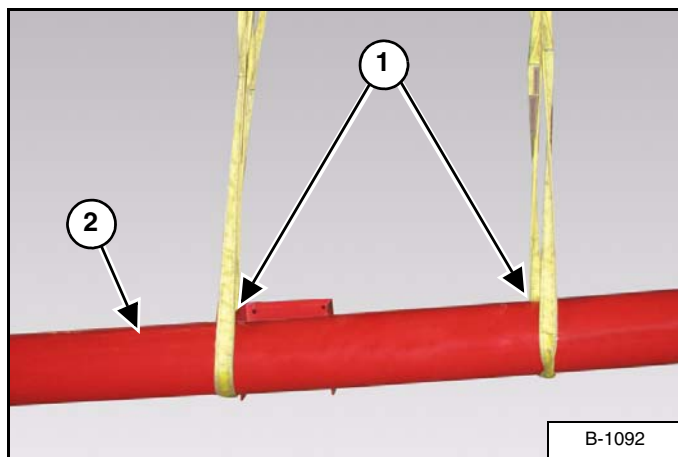
Install one 1-1/4" - 10 ga. machine bushing (Item 2) and one 1/4" x 2" cotter pin (Item 3) [Figure 20] to secure the lower truss and undercarriage arms together.

Figure 21



Lower and center the lower truss (Item 1) on the axle (Item 2) [Figure 21]. Remove the strap.

Figure 22

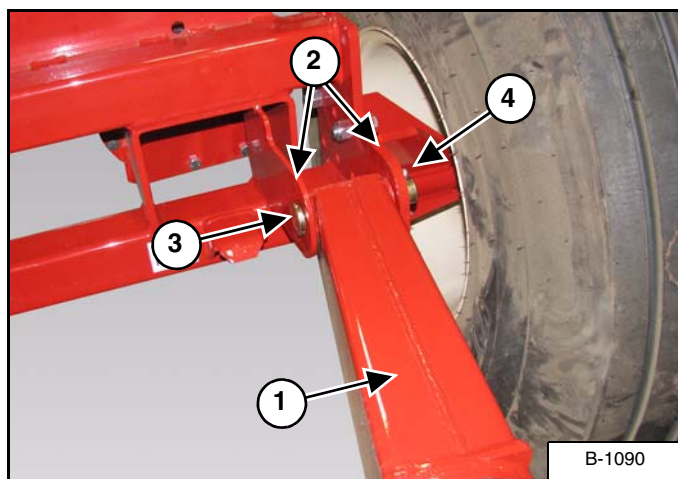


Install a strap (Item 1) around the LH upper undercarriage arm (Item 2) [Figure 22].

Connect the strap to an approved lifting device.

Raise and move the LH upper undercarriage arm to the assembly area.

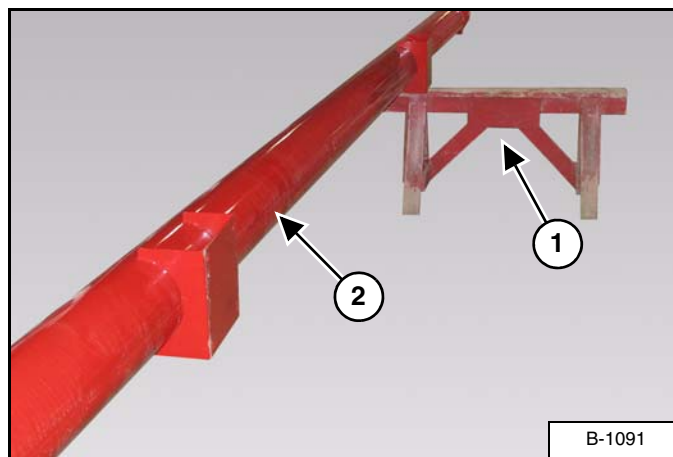
Figure 23



Align the LH upper undercarriage arm (Item 1) with the axle mounting brackets (Item 2) [Figure 23].

Install one 1-1/4" x 5-7/8" pin (Item 3) through the LH upper undercarriage arm and axle mounting brackets. Install one flat washer and cotter pin (Item 4) [Figure 23] onto the pin to secure the LH upper undercarriage arm to the axle.

Figure 24

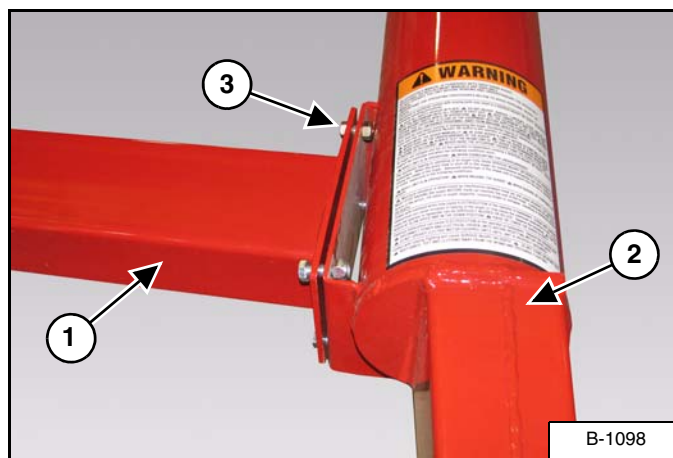


Position one support stand (Item 1) under the LH upper undercarriage arm (Item 2) [Figure 24]. Lower the LH upper undercarriage arm onto the support stand.

Remove straps.

Repeat procedure for installing the RH upper undercarriage arm.

Figure 25

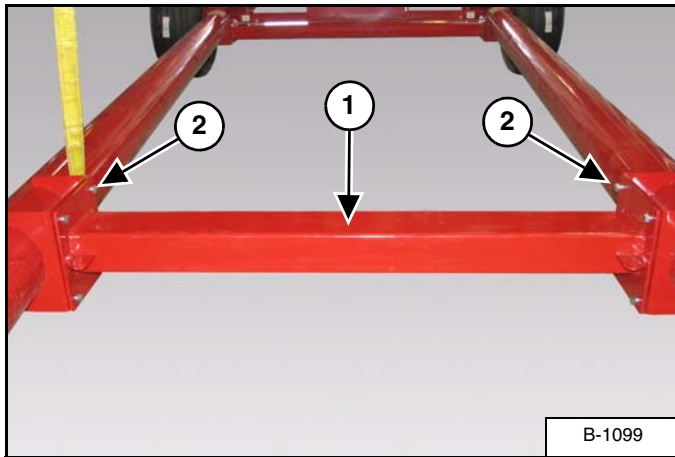


Align and install the long square cross member (Item 1) onto the RH upper undercarriage arm (Item 2) [Figure 25] with the tabs facing away from the axle.

Install two 1/2" x 1" bolts (Item 3) [Figure 25] (top and bottom) and two 1/2" x 1-1/2" bolts through the long square cross member and RH upper undercarriage arm. Install one 1/2" lock nut on the four bolts. Do not tighten bolts at this time.

Align and install the long square cross member (Item 1) onto the LH upper undercarriage arm.

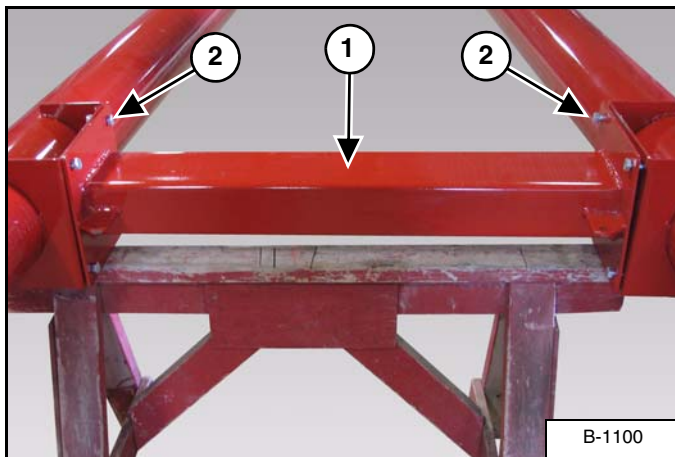
Figure 26



Align and install the medium square cross member (Item 1) **[Figure 26]** onto the RH & LH upper undercarriage arm.

Install eight 1/2" x 1-1/2" bolts (Item 2) **[Figure 26]** (four per side) through the center / medium square cross member and RH & LH upper undercarriage arms. Install one 1/2" lock nut on the eight bolts. Do not tighten bolts at this time.

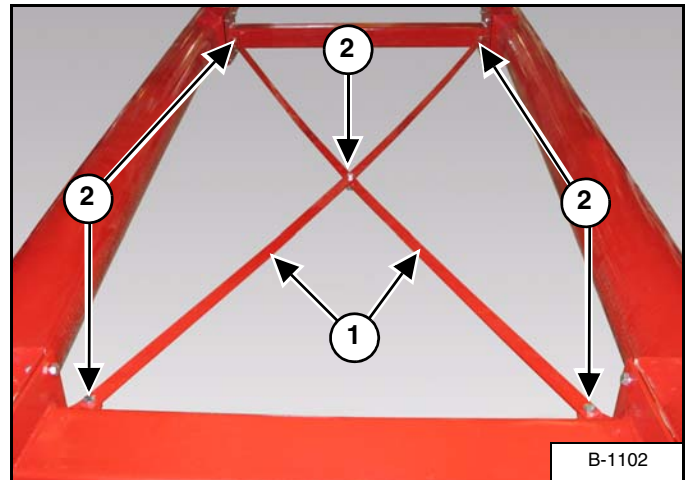
Figure 27



Align and install the short square cross member (Item 1) **[Figure 27]** onto the RH & LH upper undercarriage arm with the tabs facing the axle.

Install eight 1/2" x 1-1/2" bolts (Item 2) **[Figure 27]** (four per side) through the short square cross member and RH & LH upper undercarriage arms. Install one 1/2" lock nut on each bolt. Do not tighten bolts at this time.

Figure 28

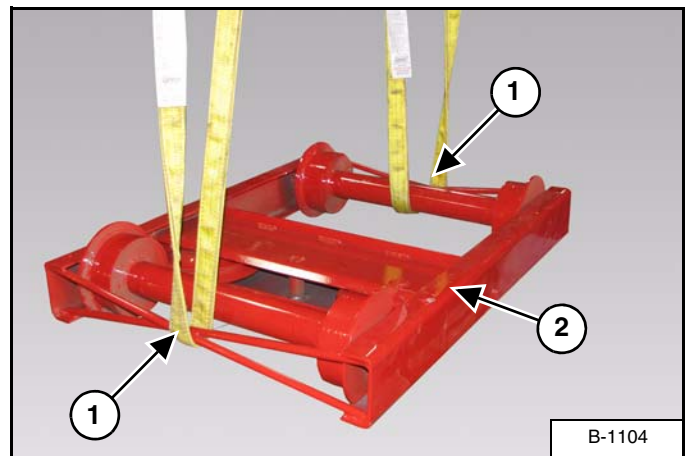


Install the two flat cross braces (Item 1) **[Figure 28]** onto the short / back, and medium / center cross members.

Install the five 1/2" x 1-1/2" bolts (Item 2) **[Figure 28]**. Install one 1/2" lock nut on each bolt. Do not tighten bolts at this time.

Repeat procedure for installing the remaining two flat braces onto the medium / center and short cross members.

Figure 29

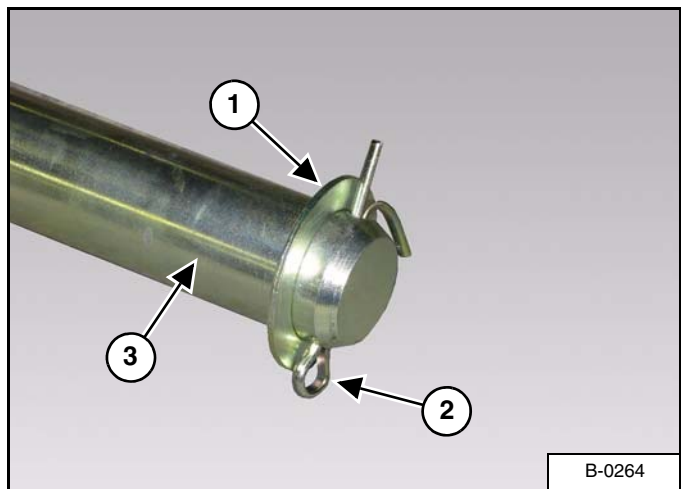


Install straps (Item 1) around the track car (Item 2) **[Figure 29]**.

Connect the strap to an approved lifting device.

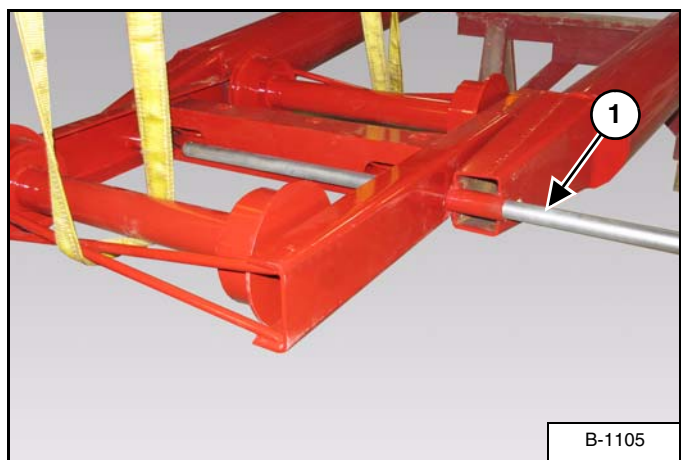
Raise and move the track car to the assembly area.

Figure 30



Install one 1-1/4" - 10 ga. machine bushing (Item 1) and one 1/4" x 2" cotter pin (Item 2) onto the 1-1/4" x 40-1/4" pin (Item 3) **[Figure 30]**.

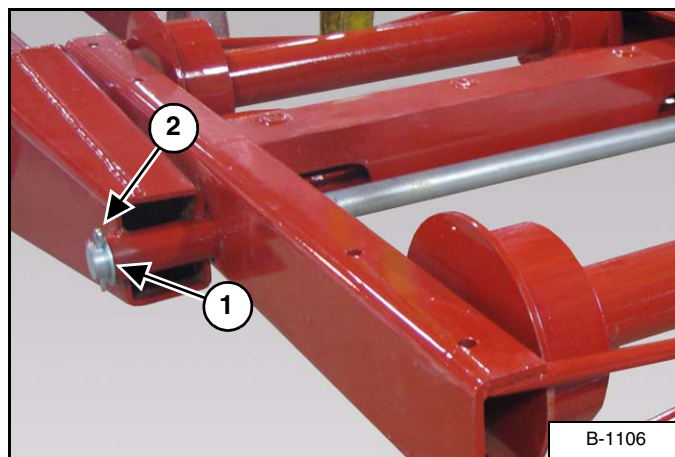
Figure 31



Align the track car with the back end (away from the axle) of the RH & LH upper undercarriage arms as shown **[Figure 31]**.

Install the 1-1/4" x 40-1/4" pin (Item 1) **[Figure 31]** through the LH upper undercarriage arm, track car and RH upper undercarriage arm.

Figure 32



Install one 1-1/4" - 10 ga. machine bushing (Item 1) and one 1/4" x 2" cotter pin (Item 2) **[Figure 32]** onto the 1-1/4" x 40-1/4" pin.

BASE GROUP (CONT'D)

Tube Assembly

Assemble the tube on a flat level surface.

⚠ WARNING



- **DO NOT** permit bystanders to be in the work area when unloading and assembling the auger components.
- **DO NOT** work under suspended parts.
- **Keep away from moving parts.**
- **Always use lifting devices / vehicles, chains or straps of adequate size and strength when unloading and assembling the auger components.**

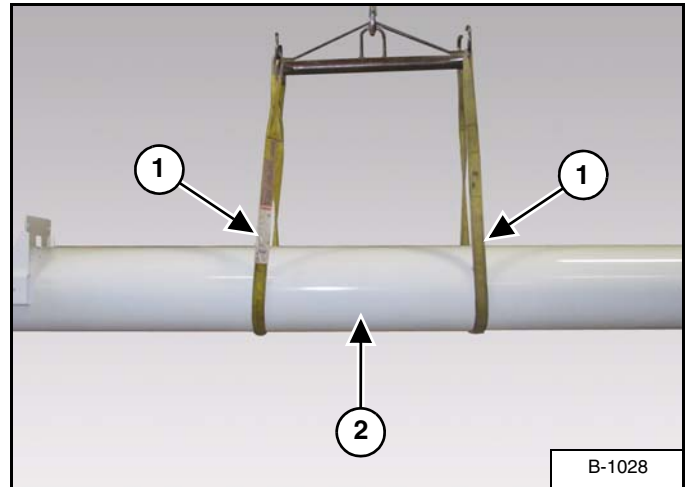
⚠ WARNING



AVOID INJURY OR DEATH

Keep fingers and hands out of pinch points when assembling the equipment.

Figure 33

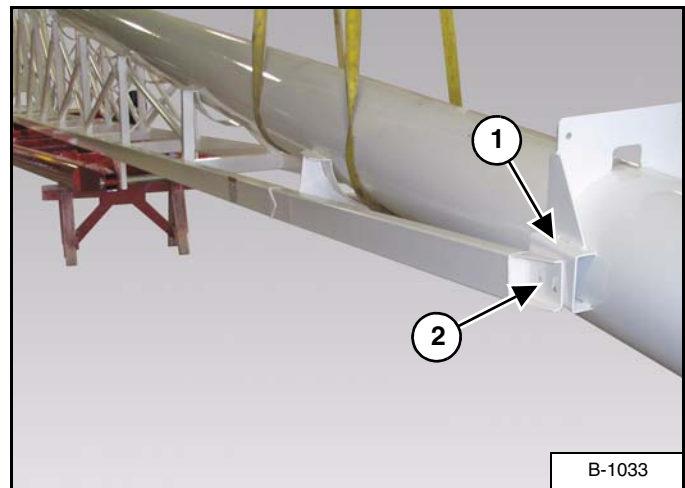


Install straps (Item 1) around lower tube (Item 2) [Figure 33].

Connect the strap to an approved lifting device.

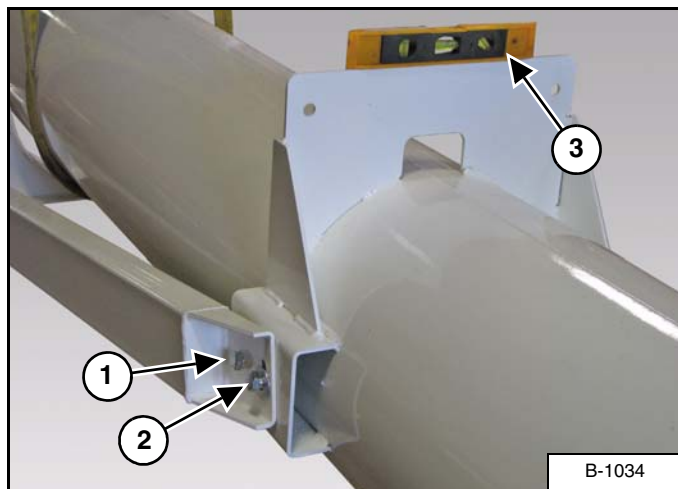
Raise and move the lower tube to the assembly area.

Figure 34



Align the mounting bracket (Item 1) on the lower tube with the mounting holes (Item 2) [Figure 34] on the lower truss.

Figure 35



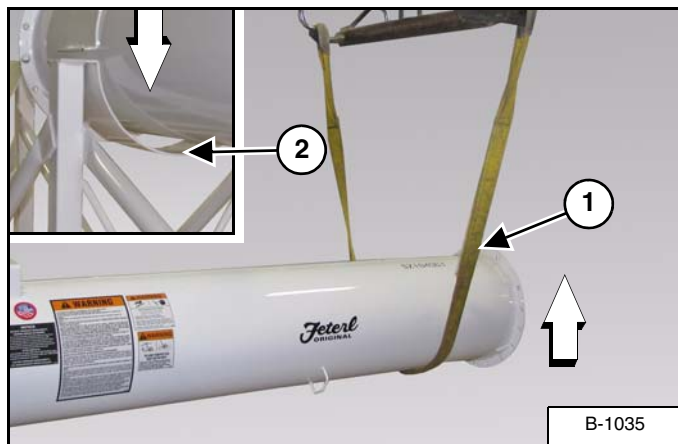
Install one 1/2" x 1-1/4" bolt (Item 1) [Figure 35] through the lower truss and lower tube mounting bracket (both sides). Install one 1/2" lock nut onto the bolt (both sides).

Install one 1/2" flat washer onto one 1/2" x 1-1/4" bolt (Item 1) [Figure 35] then install the bolt through the lower truss and lower tube mounting bracket (both sides). Install one 1/2" lock nut onto the bolt (both sides).

Place a level (Item 3) [Figure 35] onto the lower tube mounting bracket.

Remove strap.

Figure 36

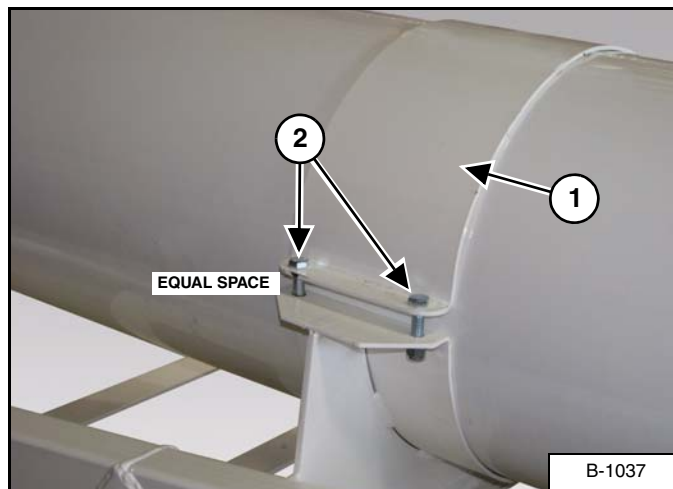


Install a strap (Item 1) [Figure 36] towards the end of the lower tube.

Connect the strap to an approved lifting device.

Raise the lower tube until the bottom side of the tube contacts the cradle(s) (Item 2) [Figure 36] of the lower truss.

Figure 37



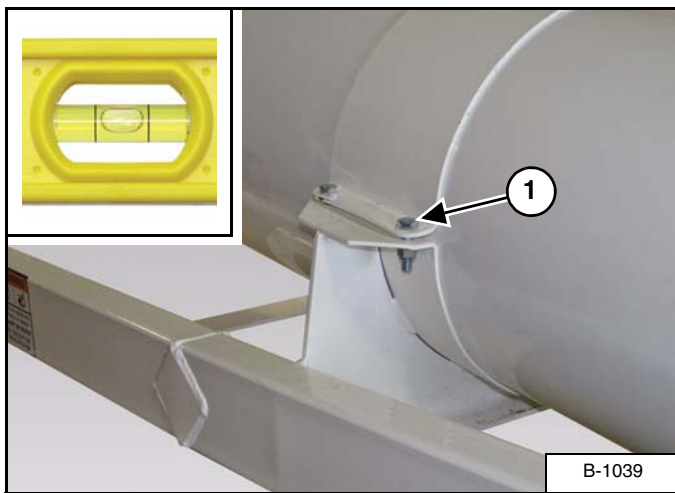
Align and install one 2-bolt half clamp (Item 1) [Figure 37] over the lower tube (all locations on lower tube). Align the bolt holes and maintain equal space between the two mounts.

Install two 3/8" x 1-1/2" bolts (Item 2) [Figure 37] down through the 2-bolt half clamp and lower truss cradle (both sides). Install one 3/8" lock nut onto each bolt (both sides). Repeat procedure for each 2-bolt half clamp on the lower tube.

! IMPORTANT

When tightening the 2-bolt half clamp bolts and nuts, verify the lower tube remains level as each 2-bolt half clamp is tightened, and verify the lower tube remains level until the last 2-bolt half clamp on the lower tube has been tightened.

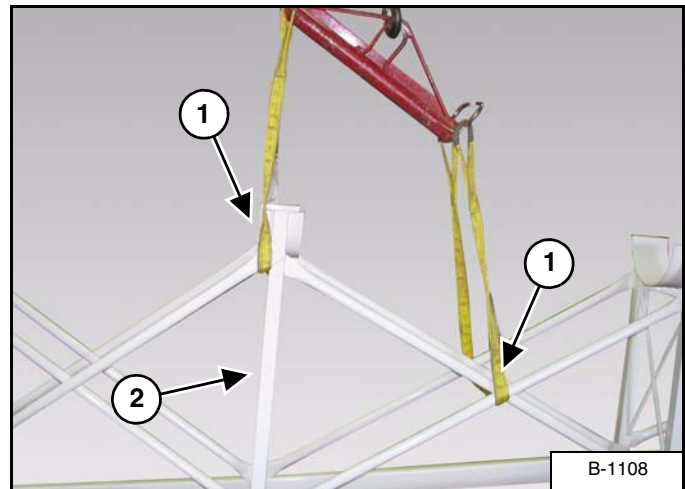
Figure 38



Starting at the 2-bolt half clamp closest to the level, begin slowly tightening the 3/8" x 1-1/2" bolts (Item 1) [Figure 38] and 3/8" lock nuts evenly on each side of the 2-bolt half clamp. Visually inspect that the lower tube remains level as the bolts and nuts are being tightened. Tighten remaining 2-bolt half clamp bolts and nuts.

NOTE: Verify that the lower tube remains level as the bolts and nuts are being tightened.

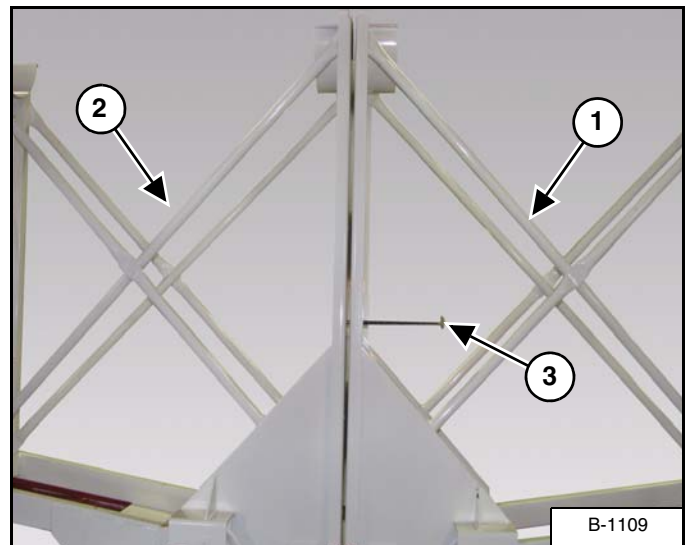
Figure 39



Install a strap (Item 1) through the bracing of the upper truss (Item 2) [Figure 39]. Connect the strap to an approved lifting device.

Raise and move the upper truss to the assembly area.

Figure 40

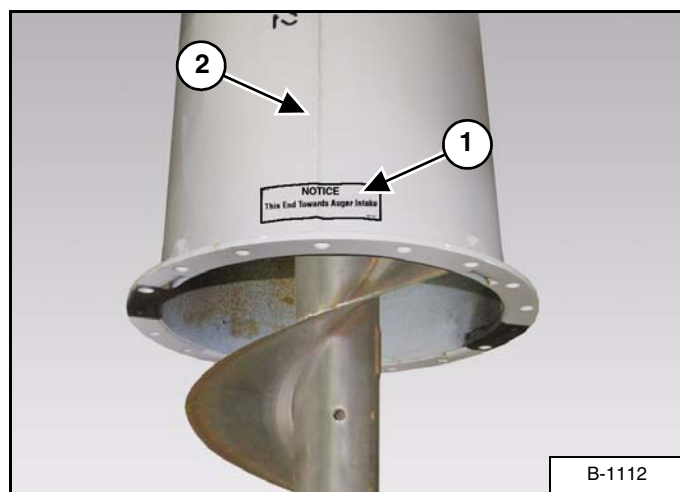


Position the upper truss (Item 1) against the lower truss (Item 2) [Figure 40].

Using a punch (Item 3) [Figure 40], align the holes in the lower and upper trusses. Install 1/2" x 1-1/2" bolts through the two trusses. Install one 1/2" lock nut on each bolt around the truss connecting plates.

Align the trusses and tighten the bolts and lock nuts.

Figure 41

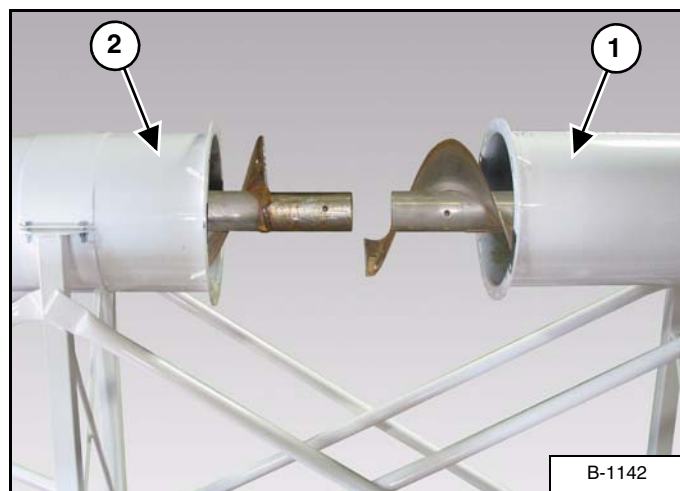


Install a strap around the center tube. Connect the strap to an approved lifting device.

Raise and move the lower truss to the assembly area.

Verify that the NOTICE decal (Item 1) end of the center tube is towards the intake end of the auger and the tube seam (Item 2) [Figure 41] is facing up.

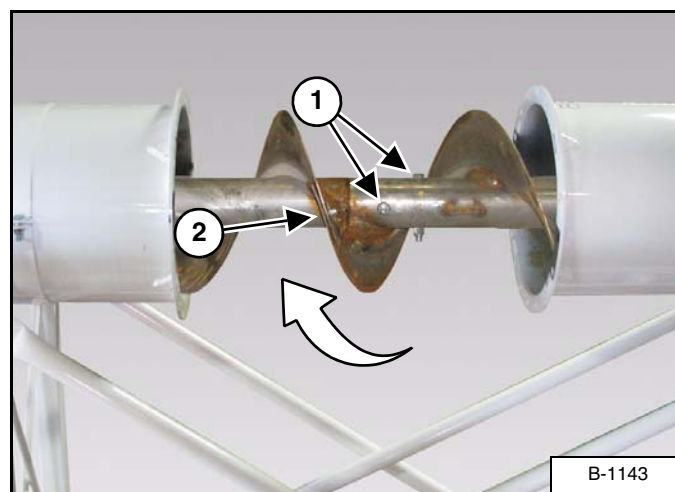
Figure 42



Place the center tube (Item 1) on the lower & upper trusses towards the lower tube (Item 2) [Figure 42].

Slide flighting out of the lower & center tube sections to allow adequate space for connecting the two sections of flighting together [Figure 42].

Figure 43



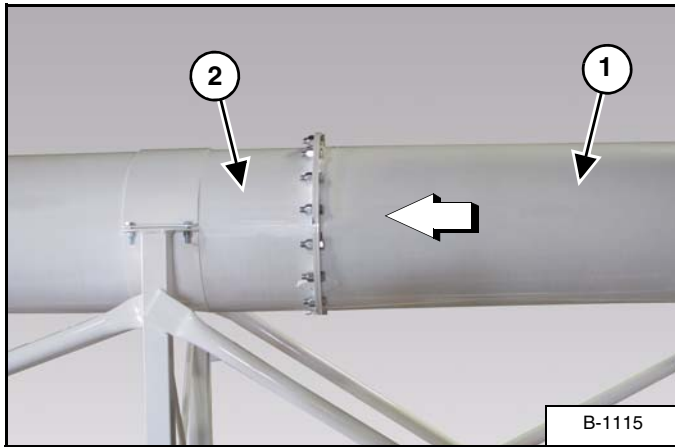
Align the flighting shaft connecting holes (Item 1) [Figure 43] and slide the flighting sections together.

Rotate the flighting sections to align the mounting holes in the flighting (Item 2) [Figure 43] is clear of the mounting flange.

Install two 1/2"-20 UNF x 4-1/2" bolts through the flighting shaft connecting holes (Item 1) [Figure 43]. Install 1/2" lock nuts on the bolts and tighten.

Then install one 3/8" x 7/8" bolt through the flighting (Item 2) [Figure 43]. Install a 3/8" lock nut on the bolt and tighten.

Figure 44

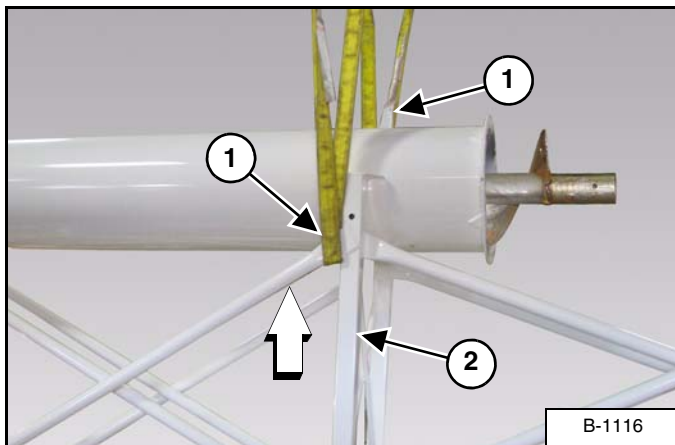


Slide the center tube (Item 1) against the lower tube (Item 2) [Figure 44]. Align the holes in the two flanges and install eighteen 1/2" x 1-1/2" bolts and lock nuts.

NOTE: Do not fully tighten bolts the first time. Fully tightening the bolts on one side will pull the auger tubes out of alignment.

Starting at the top, work around flange ring tightening each bolt a minimum of two times to gradually pull the two tube flanges together. Tighten the bolts until the two flanges have made full contact.

Figure 45



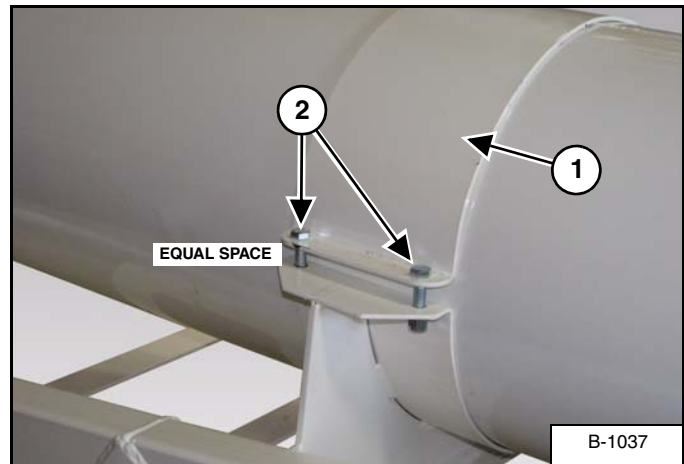
Install straps (Item 1) around the upper truss (Item 2) [Figure 45].

Connect the strap to an approved lifting device.

Raise the upper truss until the bottom of the center tube makes contact with the upper truss tube cradles.

NOTE: Do not attempt to pull the center tube down into the upper truss tube cradles.

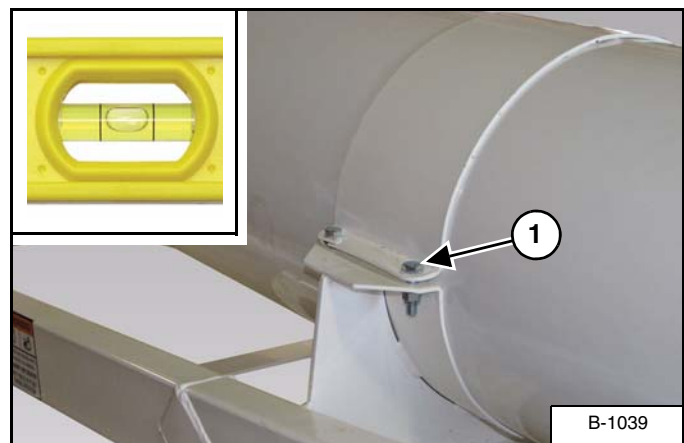
Figure 46



Align and install one 2-bolt half clamp (Item 1) [Figure 46] over the center tube (all locations on center tube). Align the bolt holes and maintain equal space between the two mounts.

Install two 3/8" x 1-1/2" bolts (Item 2) [Figure 46] down through the 2-bolt half clamp and lower truss cradle (both sides). Install one 3/8" lock nut onto each bolt (both sides). Repeat procedure for each 2-bolt half clamp on the center tube.

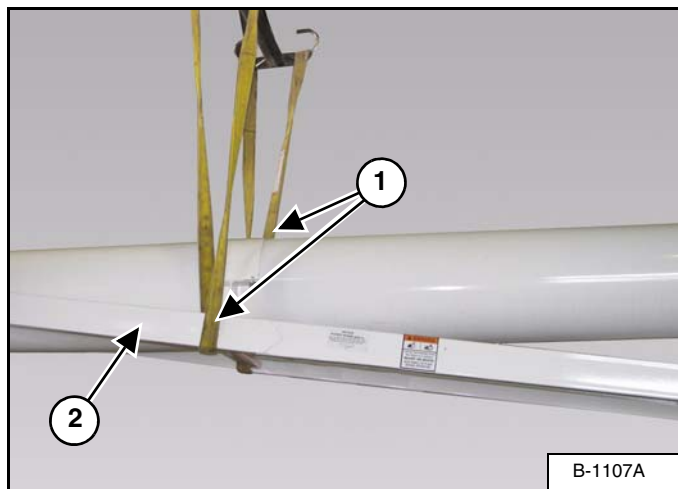
Figure 47



Starting at the 2-bolt half clamp at the lower and center tube connection, begin slowly tightening the 3/8" x 1-1/2" bolts (Item 1) [Figure 47] and 3/8" lock nuts evenly on each side of the 2-bolt half clamp. Visually inspect that the lower tube remains level as the bolts and nuts are being tightened. Tighten remaining 2-bolt half clamp bolts and nuts.

NOTE: Verify that the lower tube remains level as the bolts and nuts are being tightened.

Figure 48

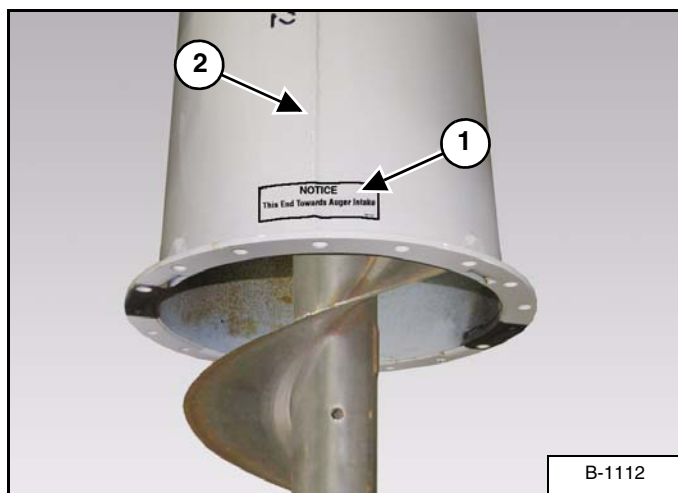


Install straps (Item 1) to the lower truss (Item 2) [Figure 48] towards back / intake end of the lower tube.

Connect the straps to an approved lifting device.

Raise the lower truss and lower tube to lower the front of the upper truss to the desired assembly height.

Figure 49

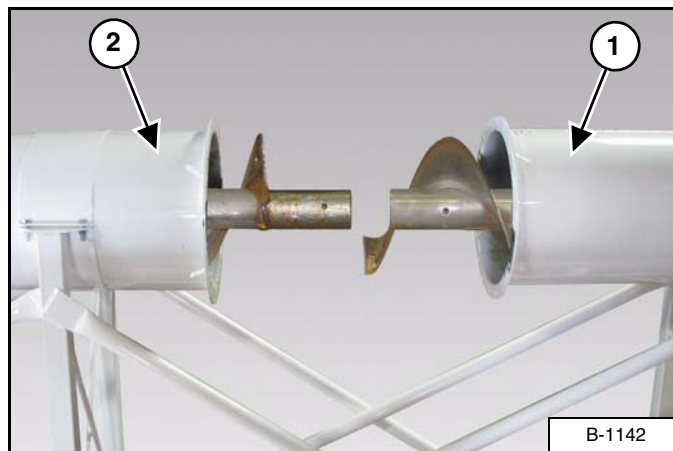


Install a strap around the top tube. Connect the strap to an approved lifting device.

Raise and move the top tube to the assembly area.

Verify that the NOTICE decal (Item 1) end of the top tube is towards the intake end of the auger and the tube seam (Item 2) [Figure 49] is facing up.

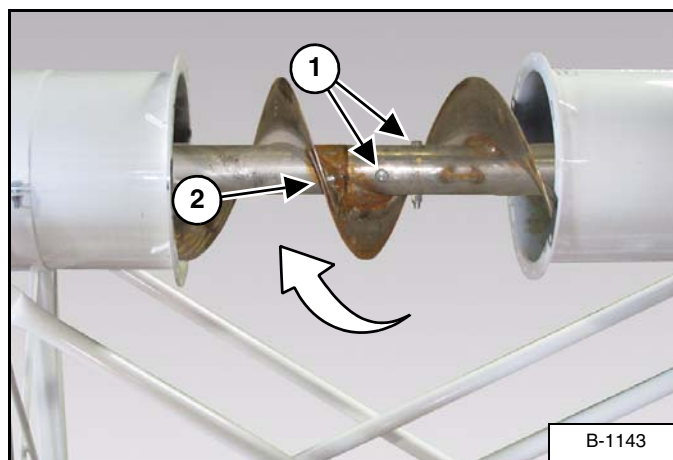
Figure 50



Place the top tube (Item 1) on the upper truss towards the center tube (Item 2) [Figure 50].

Slide flighting out of the center & top tube sections to allow adequate space for connecting the two sections of flighting together [Figure 50].

Figure 51



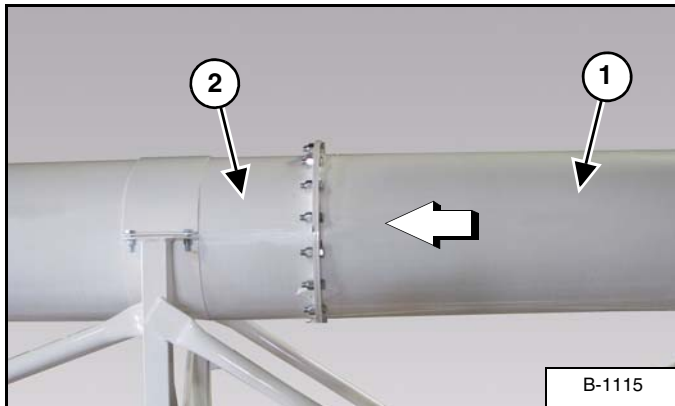
Align the flighting shaft connecting holes (Item 1) [Figure 51] and slide the flighting sections together.

Rotate the flighting sections to align the mounting holes in the flighting (Item 2) [Figure 51].

Install two 1/2"-20 UNF x 4-1/2" bolts through the flighting shaft connecting holes (Item 1) [Figure 51]. Install 1/2" lock nuts on the bolts and tighten.

Install one 3/8" x 7/8" bolt through the flighting (Item 2) [Figure 51]. Install a 3/8" lock on the bolt and tighten.

Figure 52

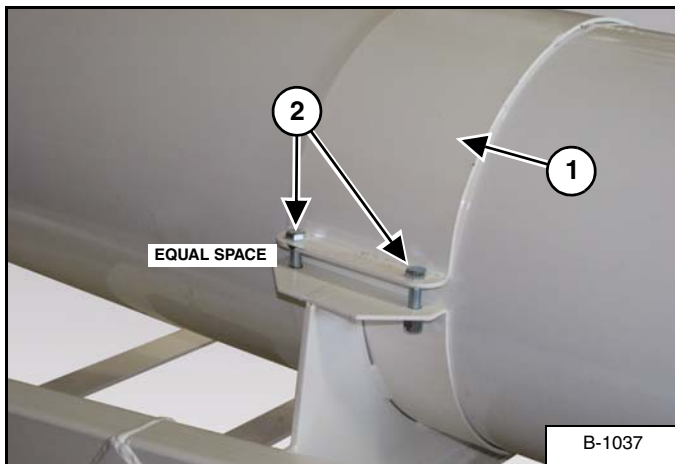


Slide the top tube (Item 1) against the center tube (Item 2) **[Figure 52]**. Align the holes in the two flanges and install eighteen 1/2" x 1-1/2" bolts and lock nuts.

NOTE: Do not fully tighten bolts the first time. Fully tightening the bolts on one side will pull the auger tubes out of alignment.

Starting at the top, work around flange ring tightening each bolt a minimum of two times to gradually pull the two tube flanges together. Tighten the bolts until the two flanges have made full contact with each other.

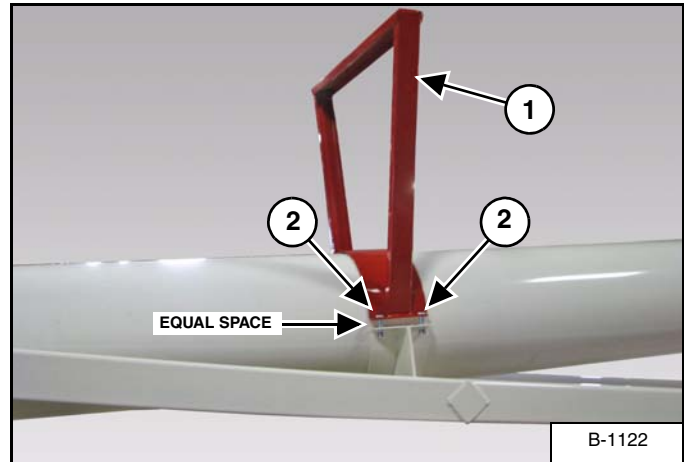
Figure 53



Align and install one 2-bolt half clamp (Item 1) **[Figure 53]** over the top tube (four locations on top tube). Align the bolt holes and maintain equal space between the two mounts.

Install two 3/8" x 1-1/2" bolt (Item 2) **[Figure 53]** down through the 2-bolt half clamp and lower truss cradle (both sides). Install one 3/8" lock nut onto each bolt (both sides). Repeat procedure for each 2-bolt half clamp on the center tube.

Figure 54

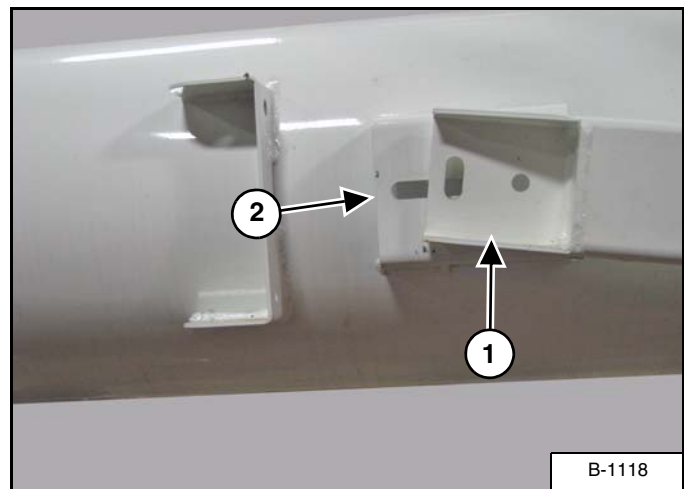


Align and install the bridging yoke (Item 1) **[Figure 54]** over the top tube (upper tube cradle on top tube). Align the bolt holes and maintain equal space between the two mounts.

Install two 3/8" x 1-1/2" bolts (Item 2) **[Figure 54]** down through the bridging yoke and upper truss tube cradle (both sides). Install one 3/8" lock nut onto each bolt (both sides).

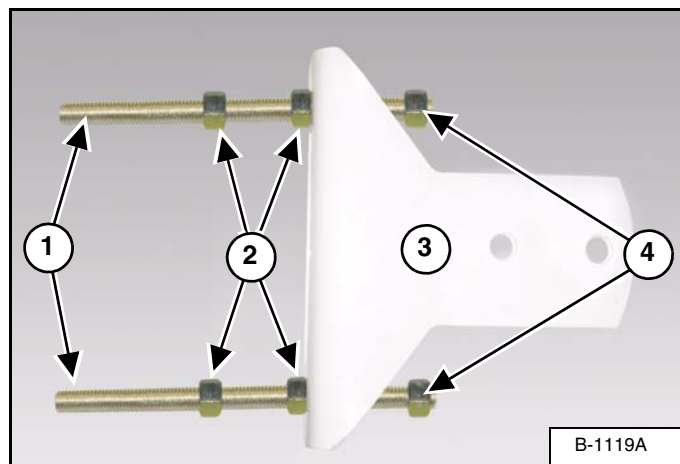
Tighten all bolts evenly.

Figure 55



Align the upper truss mounts (Item 1) with the upper tube truss mount (Item 2) **[Figure 55]** (both sides).

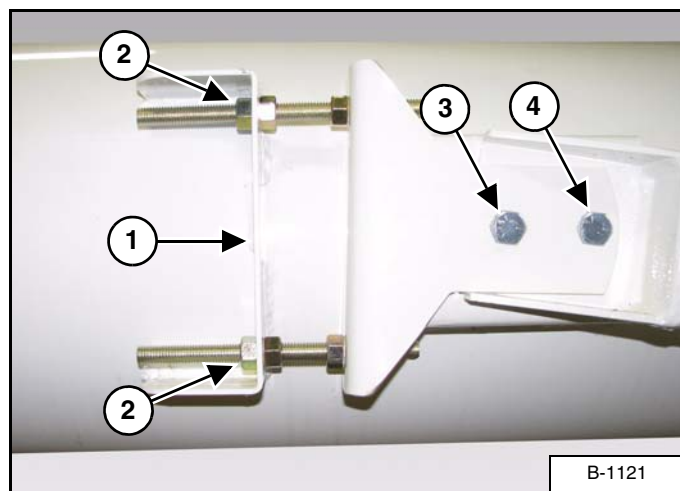
Figure 56



Locate four 1/2" x 6-1/2" threaded rods (Item 1). Thread two 1/2" nuts (Item 2) [Figure 56] approximately half way onto each threaded rod.

Install the threaded rods through the two tube adjustment brackets (Item 3). Install one 1/2" nut (Item 4) [Figure 56] onto each threaded rod.

Figure 57

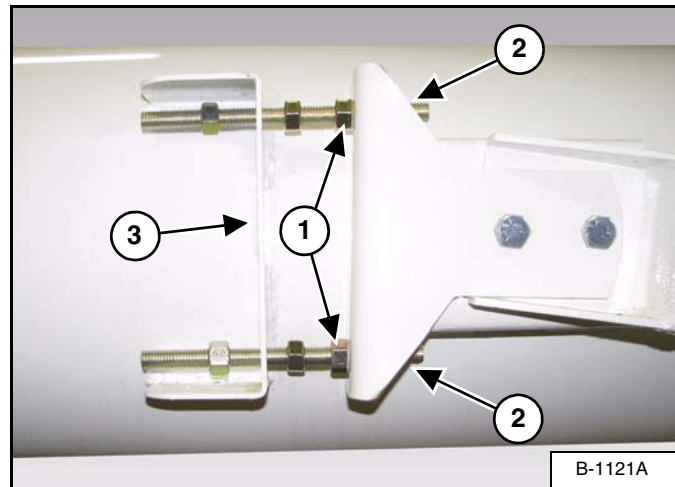


Install the threaded rods through the mounting bracket (Item 1). Install one 1/2" nut (Item 2) [Figure 57] onto each threaded rod (both sides).

Install one 1/2" x 1-1/2" bolt (Item 3) [Figure 57] through the tube adjustment bracket, slotted hole of the upper truss and upper tube truss mount. Install one 1/2" flat washer and 1/2" lock nut onto the bolt (both sides).

Install one 1/2" x 1-1/2" bolt (Item 4) [Figure 57] through the tube adjustment bracket, hole of the upper truss and upper tube truss mount. Install one 1/2" flat washer and 1/2" lock nut onto the bolt (both sides).

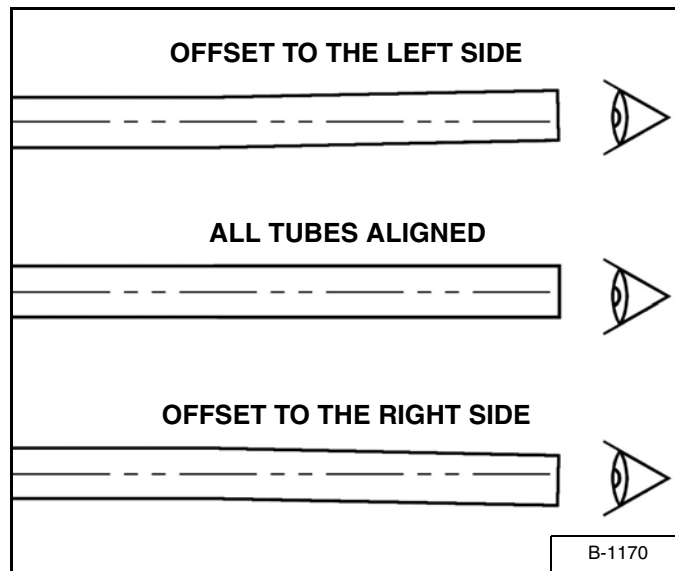
Figure 58



Tighten the two nuts (Items 1 & 2) [Figure 58] securely against the tube adjustment bracket (both sides).

NOTE: Do not tighten the remaining four nuts against the mounting bracket (Item 3) [Figure 58]. This will allow the upper tube to be adjusted left or right (if required).

Figure 59

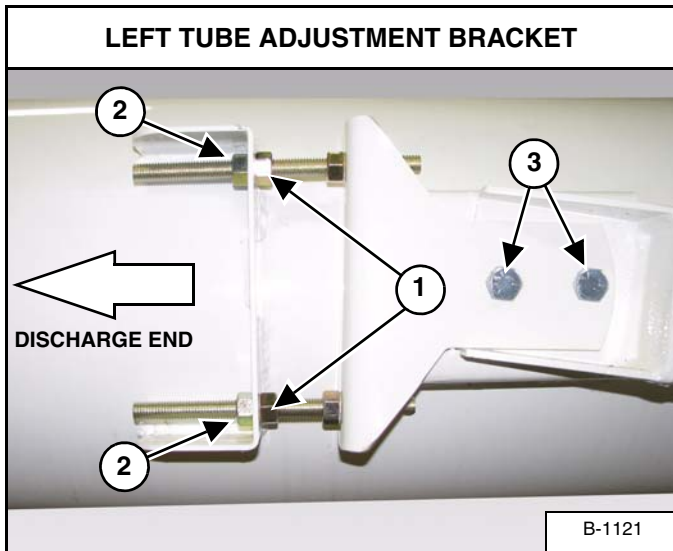


Sight down the top of the tube (from the front / discharge end) to verify that the upper tube is in line with the center and bottom tubes.

Adjust upper tube left or right (if required) until aligned with the center and lower tubes. (See "Adjusting Upper Tube To The Left" on page 46.) or (See "Adjusting Upper Tube To The Right" on page 46.)

Adjusting Upper Tube To The Left

Figure 60



If the upper tube is offset to the right, verify that the front nuts on the right side are loosened far enough away from the mounting bracket to allow the upper tube to be adjusted to the left.

Loosen the two nuts (Item 1) **[Figure 60]**.

Tighten the two nuts (Item 2) **[Figure 60]** evenly, in small adjustments moving the upper tube to the left.

NOTE: Visually inspect the tubes for alignment after each small adjustment.

Continue to tighten the two nuts (Item 2) **[Figure 60]** until the upper tube is in line with the center and lower tubes.

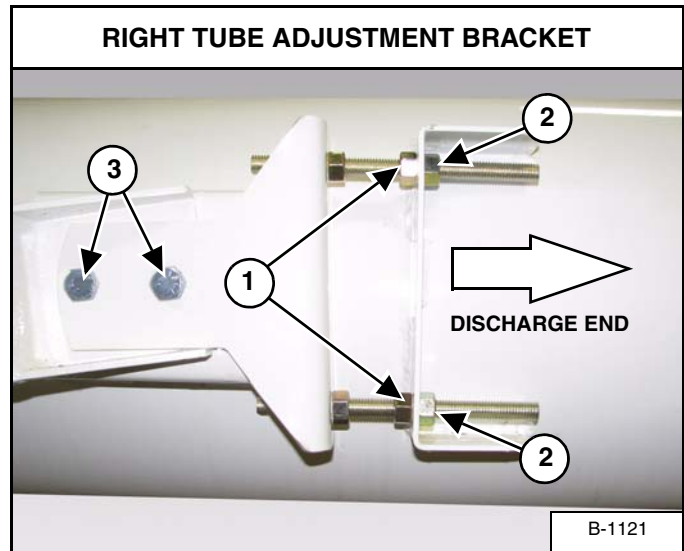
Tighten the two nuts (Item 1) **[Figure 60]** against the mounting bracket to maintain upper tube alignment.

Tighten four nuts on the right side against the mounting bracket to maintain upper tube alignment.

Tighten the two 1/2" bolts (Item 3) **[Figure 60]** and lock nuts to secure the tube adjustment bracket, upper truss and upper tube truss mount to maintain upper tube alignment (both sides).

Adjusting Upper Tube To The Right

Figure 61



If the upper tube is offset to the left, verify that the front nuts on the left side are loosened far enough away from the mounting bracket to allow the upper tube to be adjusted to the right.

Loosen the two nuts (Item 1) **[Figure 61]**.

Tighten the two nuts (Item 2) **[Figure 61]** evenly, in small adjustments moving the upper tube to the right.

NOTE: Visually inspect the tubes for alignment after each small adjustment.

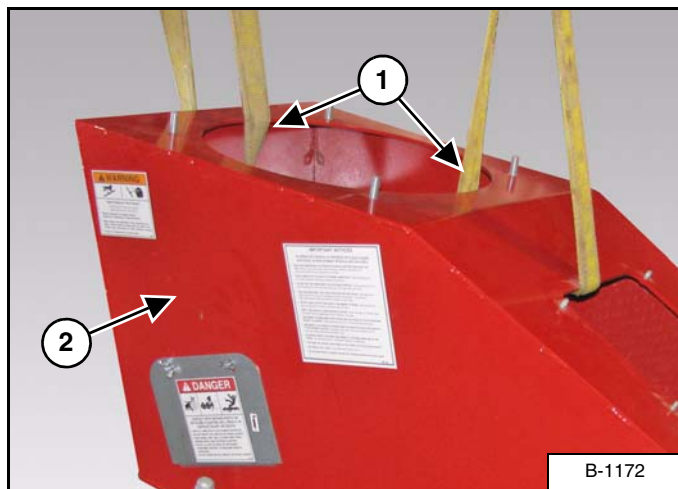
Continue to tighten the two nuts (Item 2) **[Figure 61]** until the upper tube is in line with the center and lower tubes.

Tighten the two nuts (Item 1) **[Figure 61]** against the mounting bracket to maintain upper tube alignment.

Tighten four nuts on the left side against the mounting bracket to maintain upper tube alignment.

Tighten the two 1/2" bolts (Item 3) **[Figure 61]** and lock nuts to secure the tube adjustment bracket, upper truss and upper tube truss mount to maintain upper tube alignment (both sides).

Figure 62

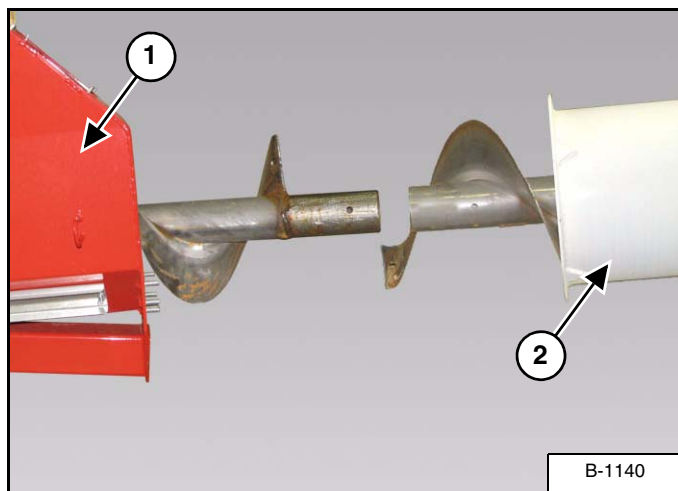


Install straps (Item 1) through the drive section (Item 2) [Figure 62] as shown.

Connect the straps to an approved lifting device.

Raise and move the drive section to the assembly area.

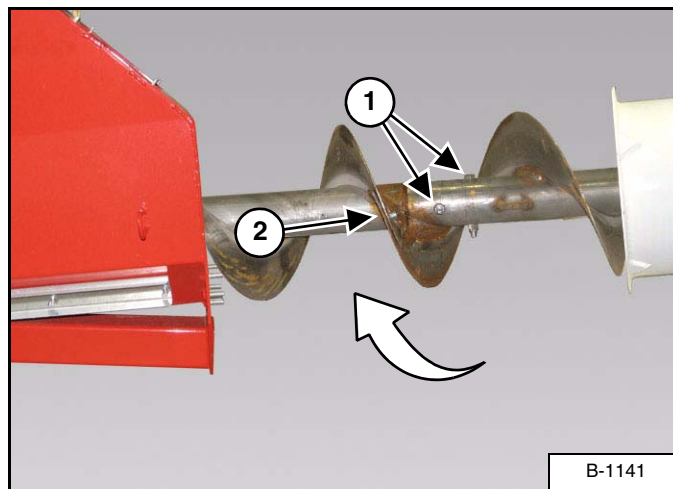
Figure 63



Align the drive section (Item 1) with the lower tube (Item 2) [Figure 63].

Slide the flighting out of the drive section & tube sections to allow adequate space for connecting the drive section & tube sections of flighting together [Figure 63].

Figure 64



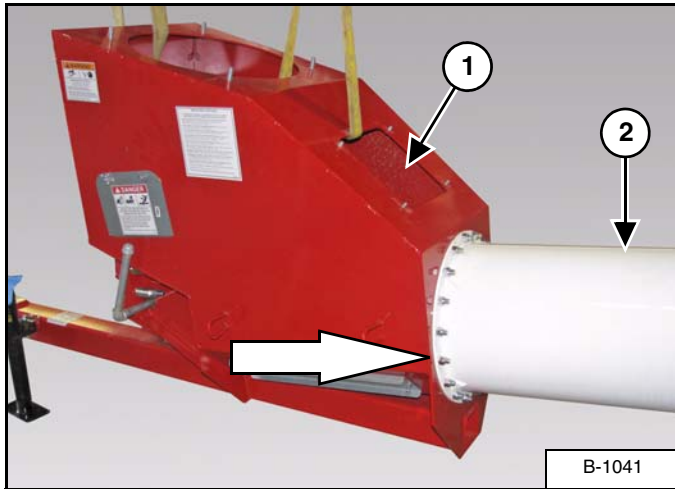
Align the flighting shaft connecting holes (Item 1) [Figure 64] and slide the flighting sections together.

Rotate the flighting sections to align the mounting holes in the flighting (Item 2) [Figure 64] is clear of the mounting flange.

Install two 1/2"-20 UNF x 4-1/2" bolts through the flighting shaft connecting holes (Item 1) [Figure 64]. Install 1/2" lock nuts on the bolts and tighten.

Install one 3/8" x 7/8" bolt through the flighting (Item 2) [Figure 64]. Install a 3/8" lock on the bolt and tighten.

Figure 65



Move the drive section (Item 1) towards the lower tube (Item 2) [Figure 65].

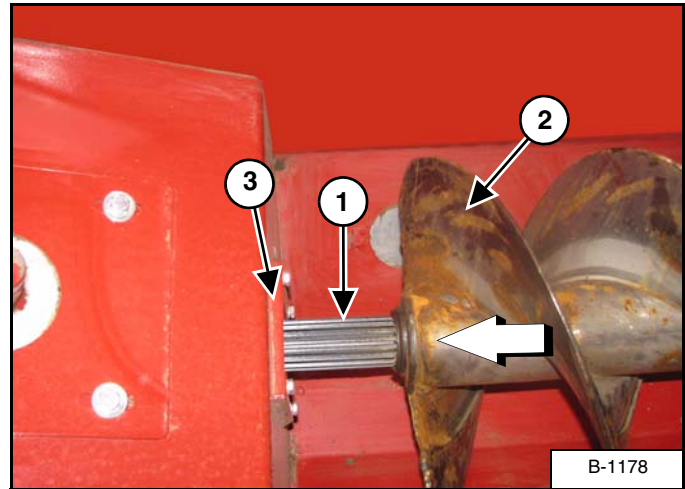
Align the 1/2" studs with the lower tube flange mounting holes.

Align and install 1/2" - 1-1/2" bolts through the drive section and lower tube flange (from the inside of the drive section) open holes.

Install 1/2" lock nuts onto the 1/2" studs and 1/2" x 1-1/2" bolts.

Starting at the top, work around flange ring tightening each bolt a minimum of two times to gradually pull the drive section and lower tube flanges together. Tighten the bolts until the two flanges have made full contact with each other.

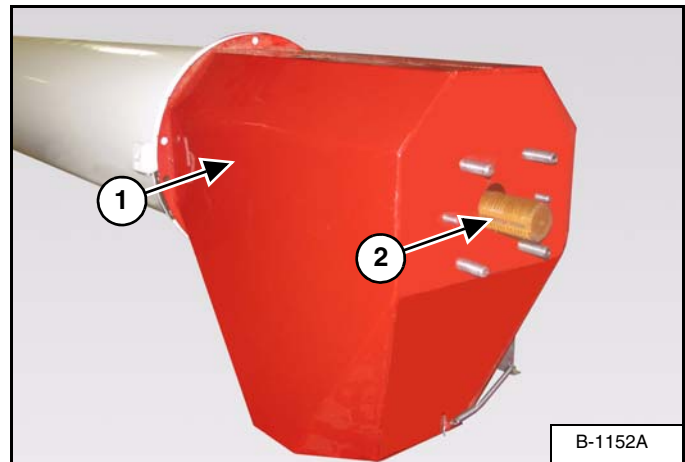
Figure 66



Apply an anti-seize lubricant to the lower drive shaft (Item 1) [Figure 66].

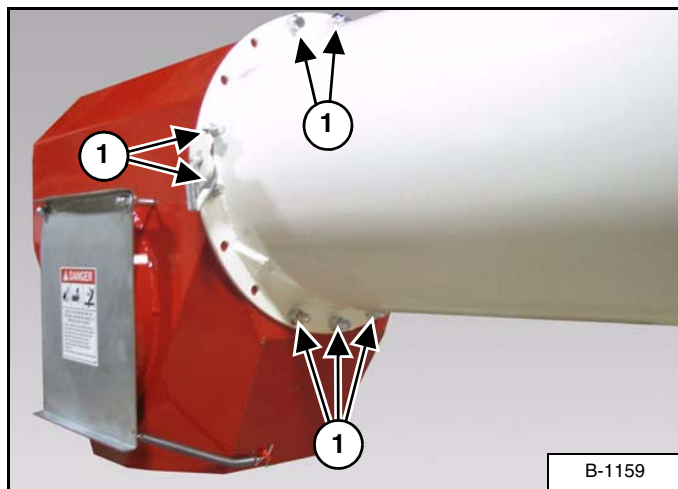
Push the flighting (Item 2) (from discharge end) onto the lower drive shaft until there is approximately 1/4" - 3/8" gap between the flighting and bearing mount (Item 3) [Figure 66].

Figure 67



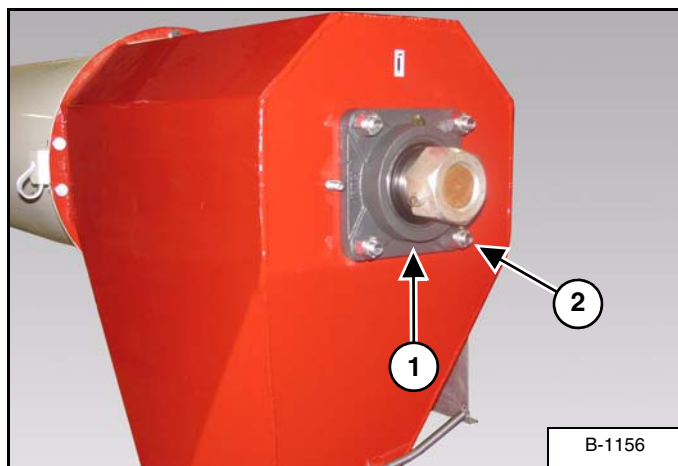
Install the drop spout (Item 1) over the flighting shaft (Item 2) [Figure 67].

Figure 68



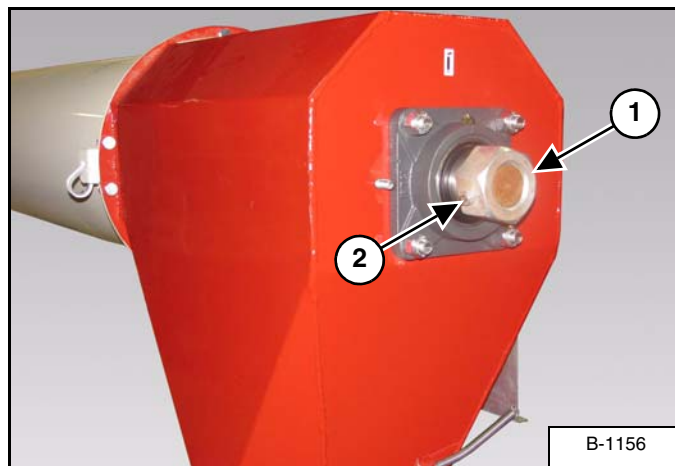
Install nine eight 1/2" x 1-1/2" bolts (Item 1) [Figure 68] through the drop spout and upper tube flange. Install 1/2" lock nuts on the bolts and tighten.

Figure 69



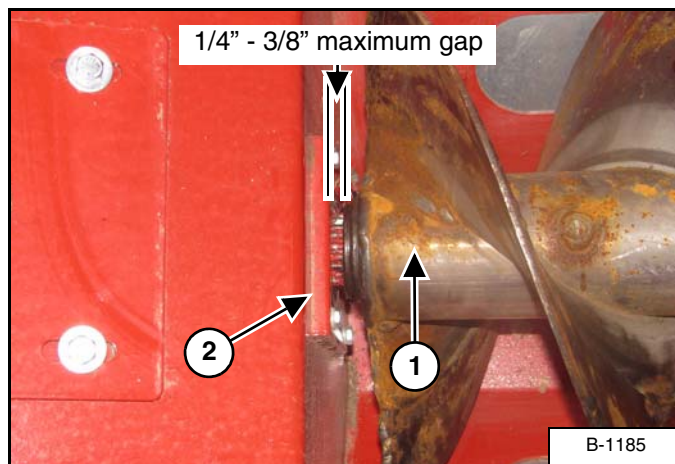
Install the bearing / bearing flange (Item 1) onto the four 5/8" studs. Install four 5/8" lock nuts (Item 2) [Figure 69] on the studs and tighten.

Figure 70



Thread the 2" nut (Item 1) onto the fighting shaft until it contacts the bearing collar. Turn 2" nut until the set screw (Item 2) [Figure 70] lines up with the keyway in the fighting shaft. Tighten the 2" nut one additional turn until it lines up with the keyway in the fighting shaft.

Figure 71



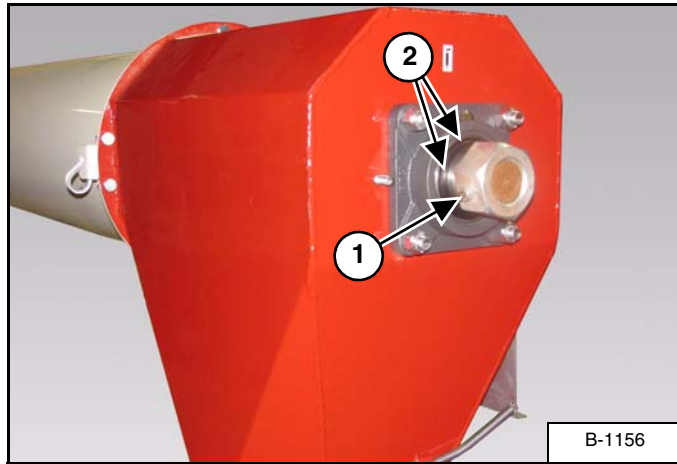
Check the gap between the fighting and bearing mount.

NOTE: The gap must be between 1/4" - 3/8" maximum.

! IMPORTANT

Do not allow the fighting to bottom out on the spline shaft at the intake end after adjustment. The thrust load must be carried at the discharge end of the auger.

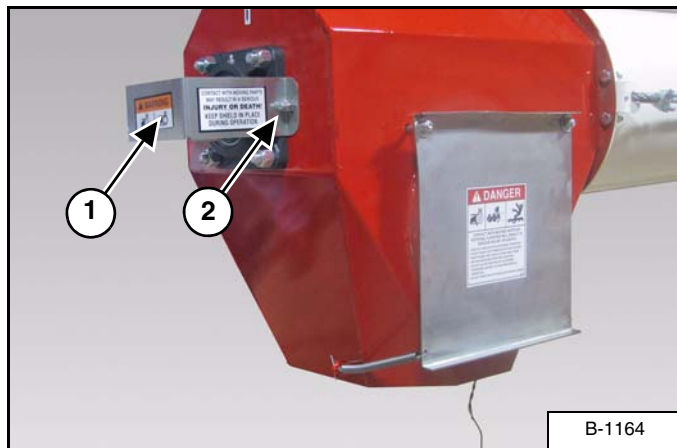
Figure 72



When the correct gap between the flighting and bearing mount is achieved, tighten the set screw (Item 1) **[Figure 72]** into the keyway in the flighting shaft.

Tighten the two set screws (Item 2) **[Figure 72]** on the bearing collar.

Figure 73



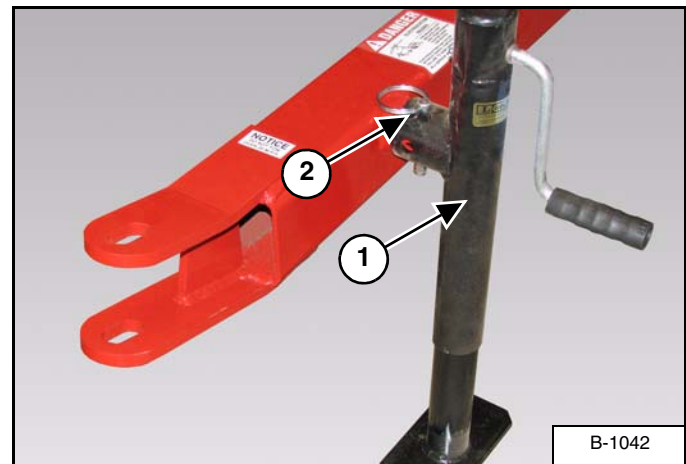
Install the bearing shield (Item 1), then install one 3/8 inch lock nut (Item 2) **[Figure 73]** onto the 3/8 inch studs and tighten.

Apply grease to the bearing until grease shows.

! IMPORTANT

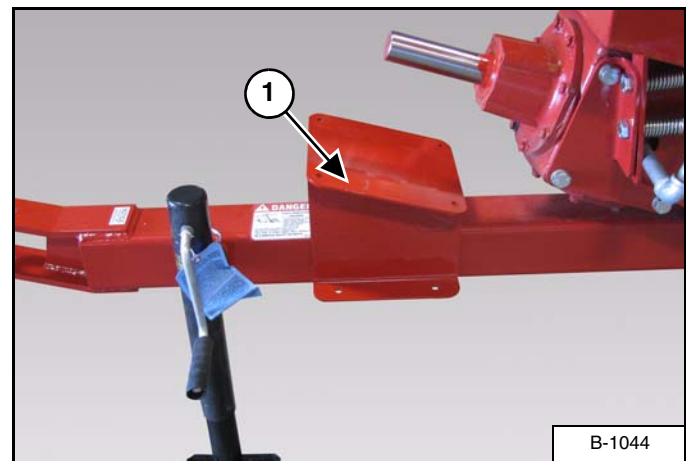
Make sure gearbox case is approximately filled 1" from top with 75-90 synthetic oil

Figure 74



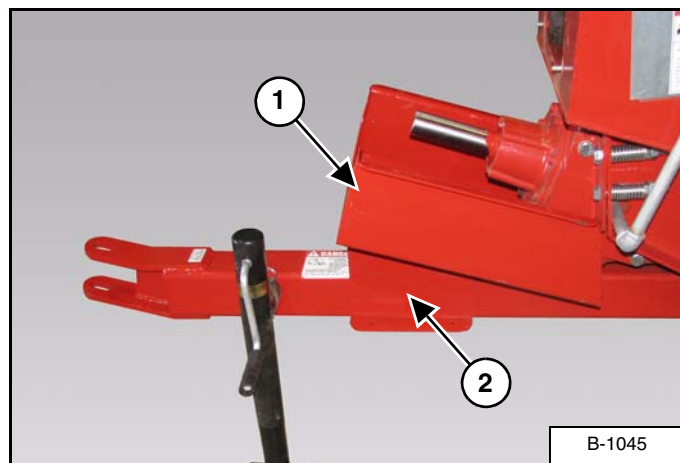
Align and install the jack (Item 1) onto the hitch. Install the retaining pin (Item 2) **[Figure 74]** through the jack and hitch mounting bracket.

Figure 75



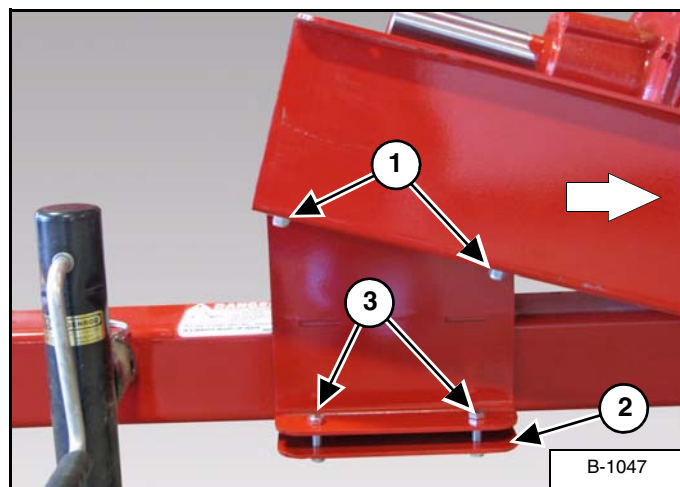
Place the fan shield mounting weldment (Item 1) **[Figure 75]** onto the hitch.

Figure 76



Align the bottom fan shield (Item 1) **[Figure 76]** with fan shield mounting weldment.

Figure 77



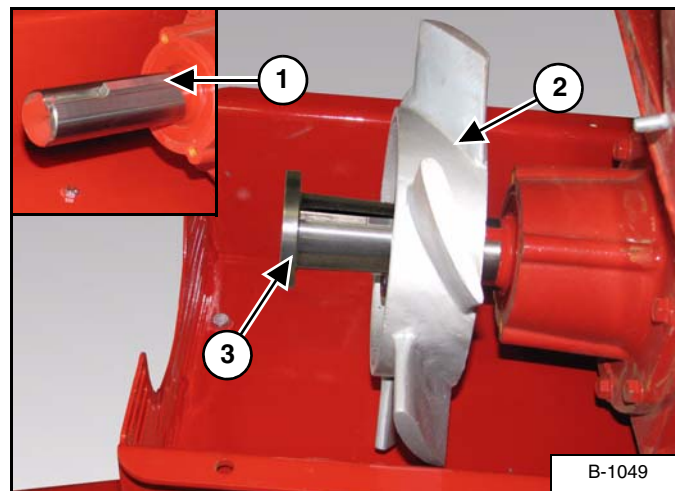
Install four 3/8" x 1" bolts (Item 1) **[Figure 77]** through the bottom fan shield and fan shield mounting weldment. Install one 3/8" lock nut on each bolt.

Move the bottom fan shield and fan shield mounting weldment against the drive section frame.

Install the mounting plate (Item 2) under the fan shield mounting weldment. Install four 3/8" x 1-1/2" bolts (Item 3) **[Figure 77]** through the fan shield mounting weldment and mounting plate. Install one 3/8" lock nut on each bolt.

Tighten the bolts and lock nuts.

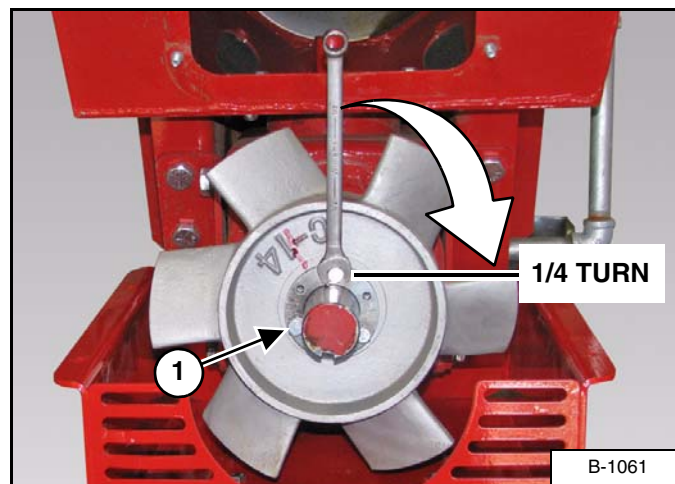
Figure 78



Install one 3/8" x 2" key (Item 1) **[Figure 78]** in the keyway of the drive shaft.

Align and install the fan (Item 2) and locking collar (Item 3) **[Figure 78]** onto the drive shaft.

Figure 79



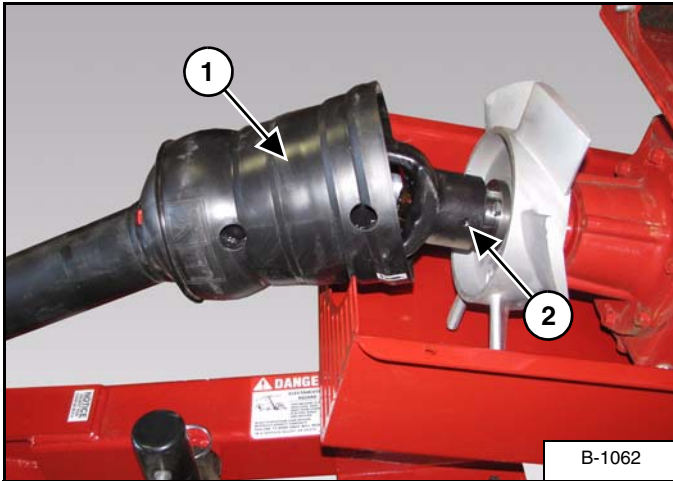
Install three bolts (Item 1) **[Figure 79]** through the locking collar and fan. Tighten the bolts until the locking collar contacts the fan, then tighten an additional 1/4 turn.



IMPORTANT

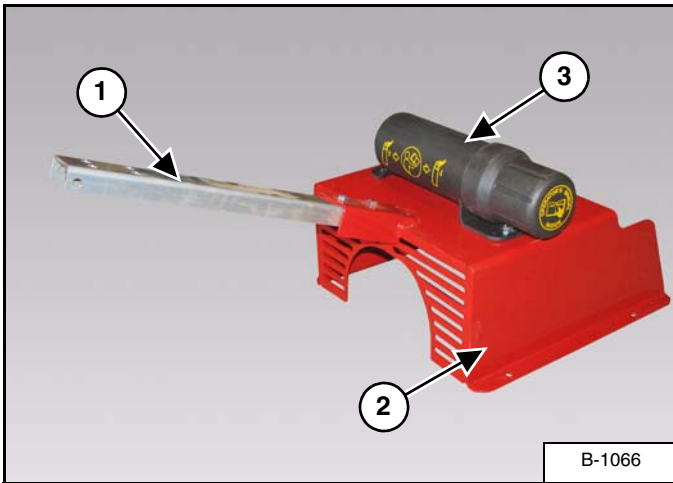
Overtightening the locking collar bolts against the fan may damage the fan.

Figure 80



Install the PTO driveline (Item 1) onto the drive shaft. Tighten set screw (Item 2) **[Figure 80]**.

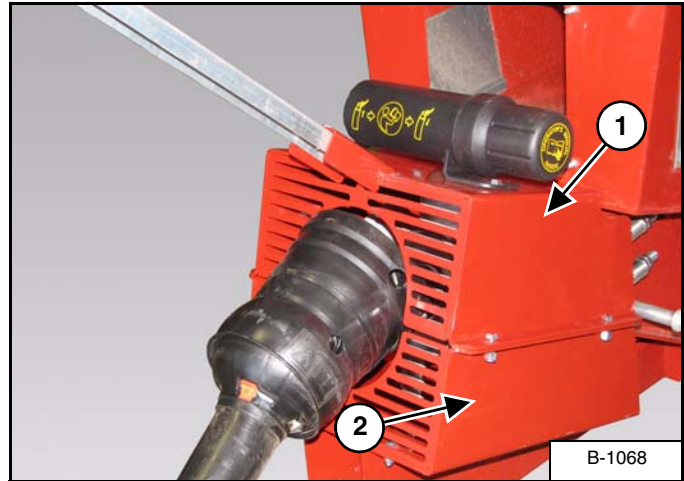
Figure 81



Install the PTO hanger (Item 1) onto the top fan shield (Item 2) **[Figure 81]** using two 3/8" x 1" bolts and 3/8" lock nuts. Tighten bolts and lock nuts.

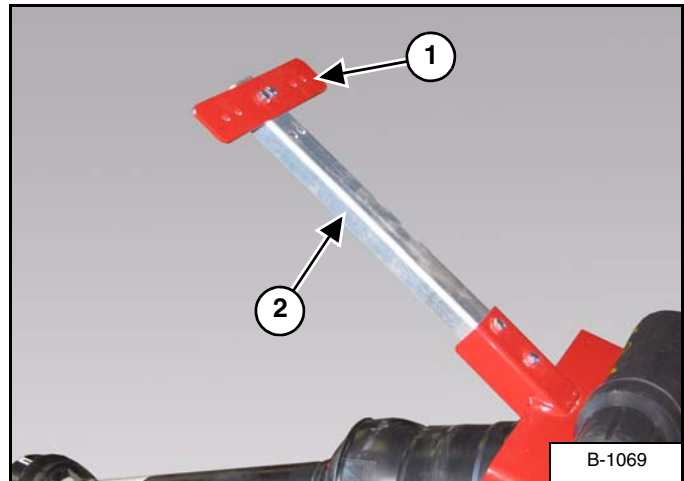
Install the operator and parts manual container (Item 3) onto the top fan shield (Item 2) **[Figure 81]** using two 5/16" x 1" bolts and 5/16" lock nuts. Tighten bolts and lock nuts.

Figure 82



Install the top fan shield assembly (Item 1) onto the bottom fan shield (Item 2) **[Figure 82]** using four 3/8" x 1" bolts and 3/8 lock nuts. Tighten the bolts and lock nuts.

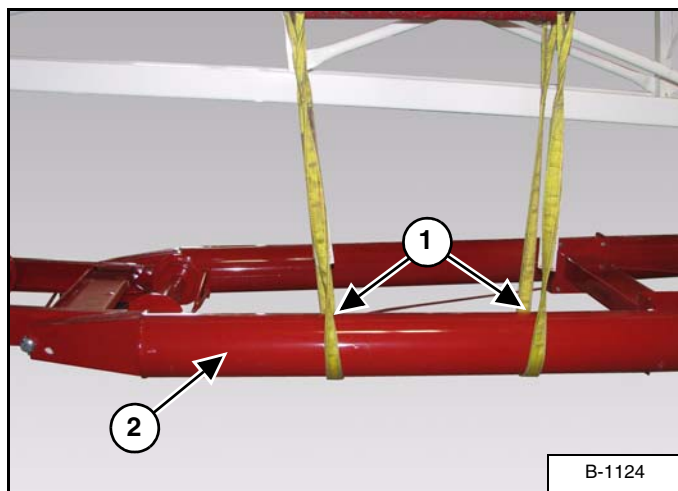
Figure 83



Install the hose support bracket (Item 1) onto the PTO hanger (Item 2) **[Figure 83]** using two 3/8" x 1" bolts and 3/8" lock nuts. Tighten bolts and lock nuts.

Installing The Track Car

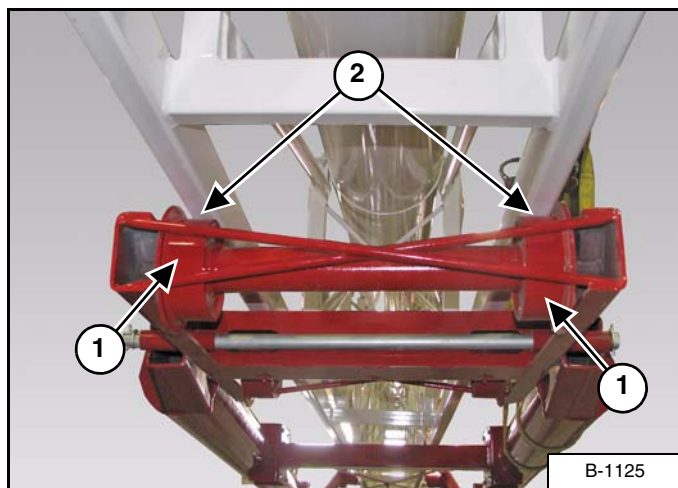
Figure 84



Install straps (Item 1) around one of the upper undercarriage arms (Item 2) [Figure 84].

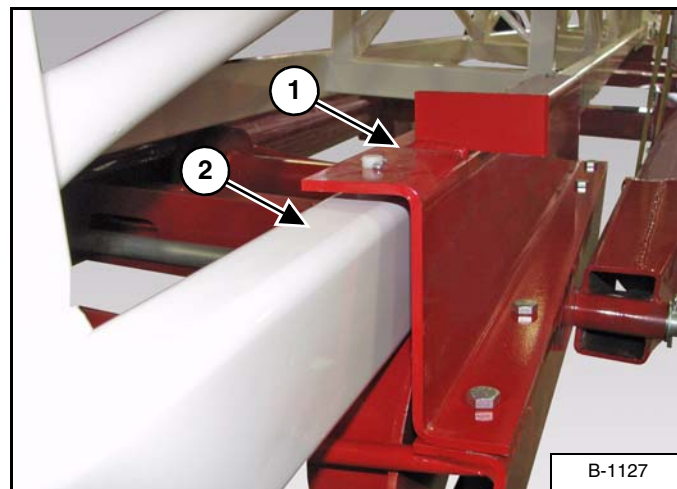
Connect the straps to an approved lifting device.

Figure 85



Raise the upper undercarriage assembly until the track car guide wheels (Item 1) contact the bottom frame (Item 2) [Figure 85] of the upper truss.

Figure 86



Place one track car guide (Item 1) onto the top of upper truss frame (Item 2) [Figure 86].

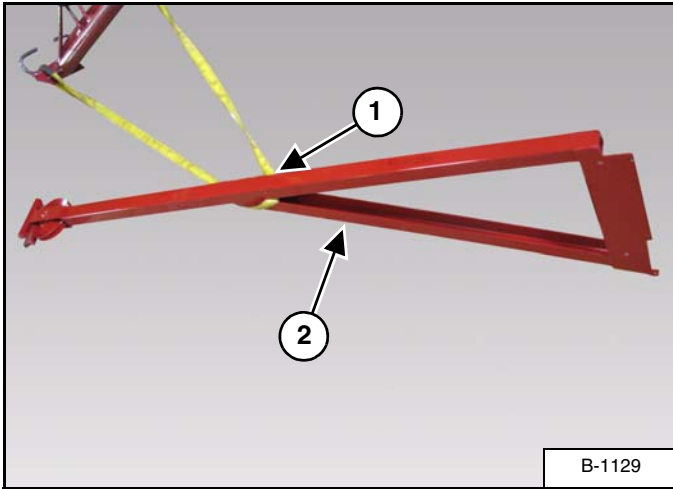
Align and install four 1/2" x 1-1/2" bolts down through the track car guide and track car frame. Install one 1/2" lock nut on each bolt and tighten.

Repeat procedure for remaining track car guide.

Remove straps.

Installing The Axle Risers

Figure 87

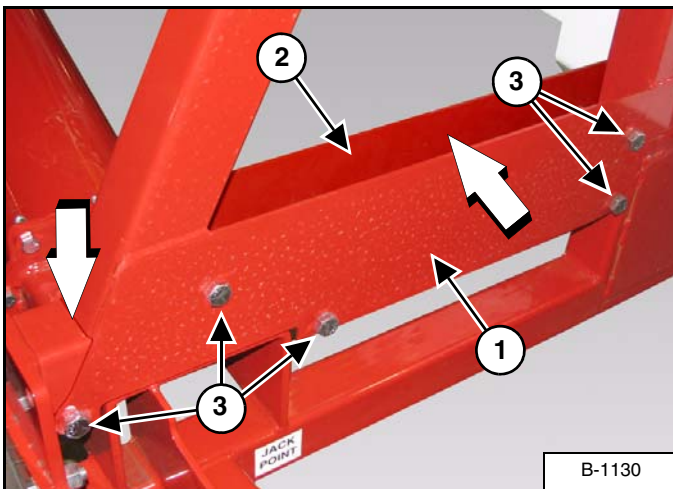


Install a strap (Item 1) [Figure 87] through the axle riser as shown.

Connect the strap to an approved lifting device.

Raise and move the axle riser to the assembly area.

Figure 88



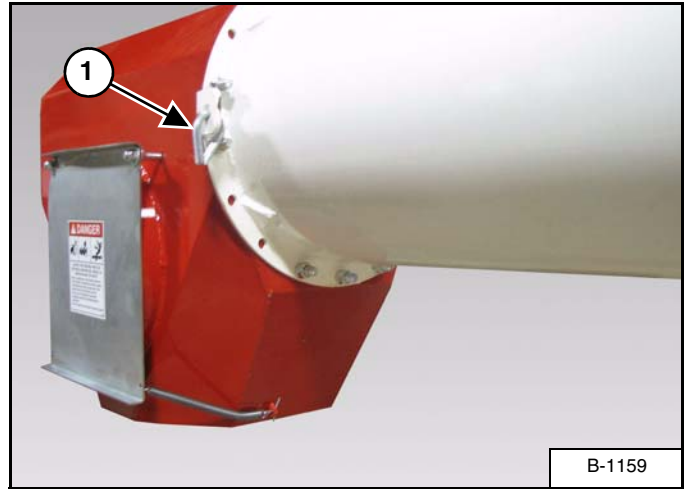
Position the axle riser (Item 1) at the back of the axle. Move the axle riser back (towards the intake end) against the mounting plate (Item 2) [Figure 88] on the axle. Then lower the axle riser down onto the axle.

Install five 5/8"-11UNC x 4-1/2" bolts (Item 3) [Figure 88] through the axle riser and mounting plate on the axle. Install 5/8" lock nuts on the bolts and tighten.

Repeat the procedure for the remaining axle riser.

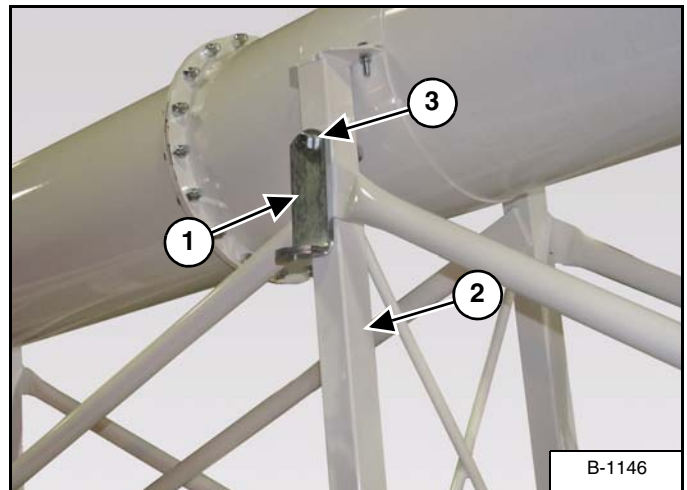
Installing The Top Tube Support Cables

Figure 89



Install one thimble (Item 1) [Figure 89] on each side of the drop spout.

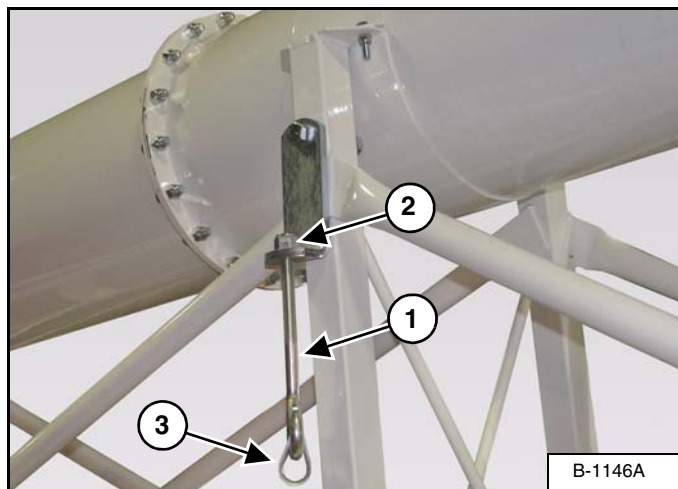
Figure 90



Install one eyebolt anchor bar (Item 1) on the first vertical support on the top tube (Item 2) [Figure 90] (both sides).

Install one 5/8"-11 UNC x 3-1/2" bolt (Item 3) [Figure 90] through the eyebolt anchor bar and vertical support. Install one 5/8" lock nut onto the bolt. Do not tighten at this time.

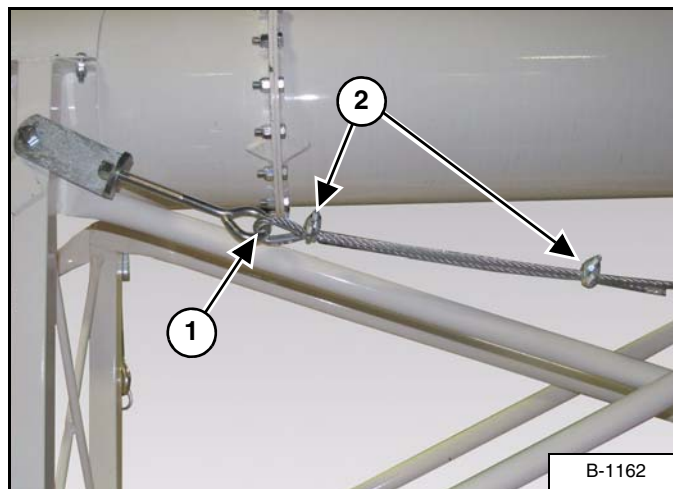
Figure 91



Install one 5/8"-11 UNC x 6-1/2" eyebolt (Item 1) into the eyebolt anchor bar. Install one 5/8" lock nut (Item 2) [Figure 91] onto the eyebolt.

Install one 3/8" cable thimble (Item 3) [Figure 91] onto the eyebolt.

Figure 92



Feed the 3/8" cable through the eyebolt (Item 1) and around the thimble (both sides).

Install two 3/8" cable clamps (Item 2) [Figure 92] on the cable (both sides). Tighten the cable clamp closest to the thimble first, then the tighten the second clamp.

CAUTION

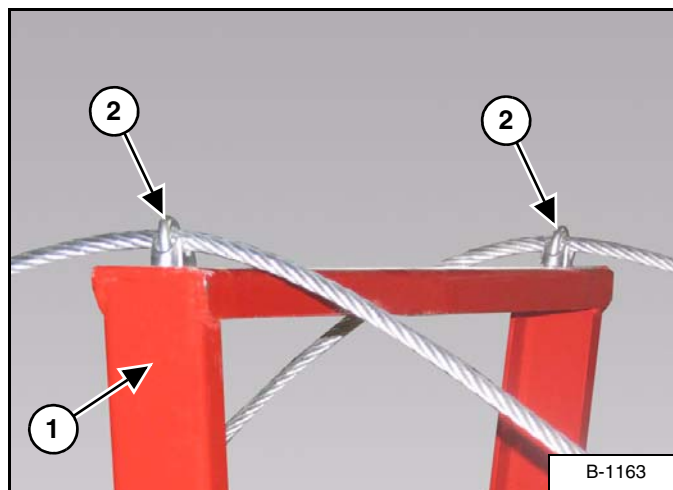


CUT HAZARD

To prevent injury to fingers and hands:

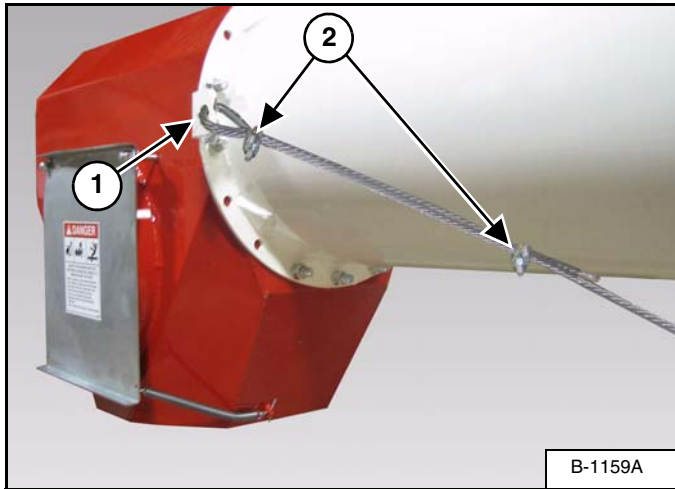
- Always wear heavy leather gloves when handling a wire rope.
- Never let wire rope slip through your hands.

Figure 93



Route the cable(s) over the bridging yoke (Item 1) and install a cable clamp (Item 2) [Figure 93] on the cable(s) and fasten the cable clamps to the bridging yoke. Do not fully tighten clamps at this time.

Figure 94



Feed the 3/8" cable through the bracket (Item 1), around the thimble (both sides).

Pull the cable as tight as possible by hand.

Install two cable clamps (Item 2) **[Figure 94]** on the cable (both sides). Tighten the cable clamp closest to the thimble first, then the tighten the second clamp.

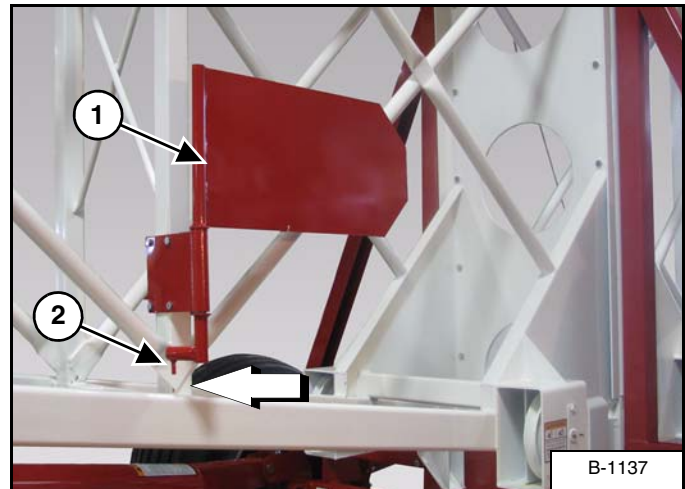
Figure 95



Tighten the nut (Item 1) **[Figure 95]** until there is approximately 2-1/2" of thread showing on the eyebolt (both sides).

Installing The STOP LIFT Sign

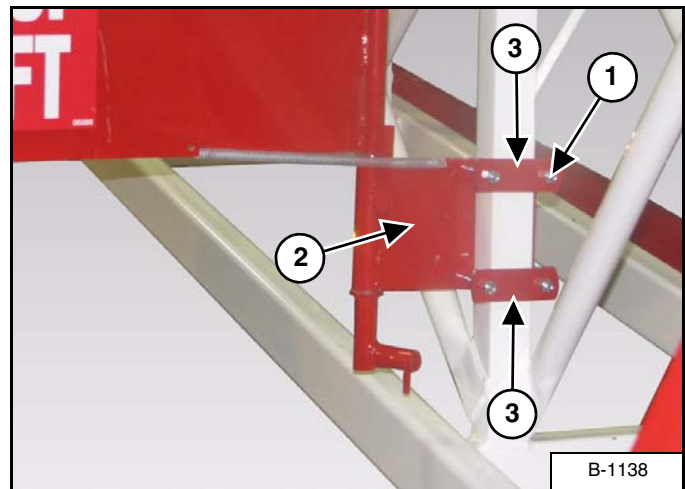
Figure 96



Position the STOP LIFT sign (Item 1) **[Figure 96]** and mounting bracket on the first vertical support on the left side of the upper truss.

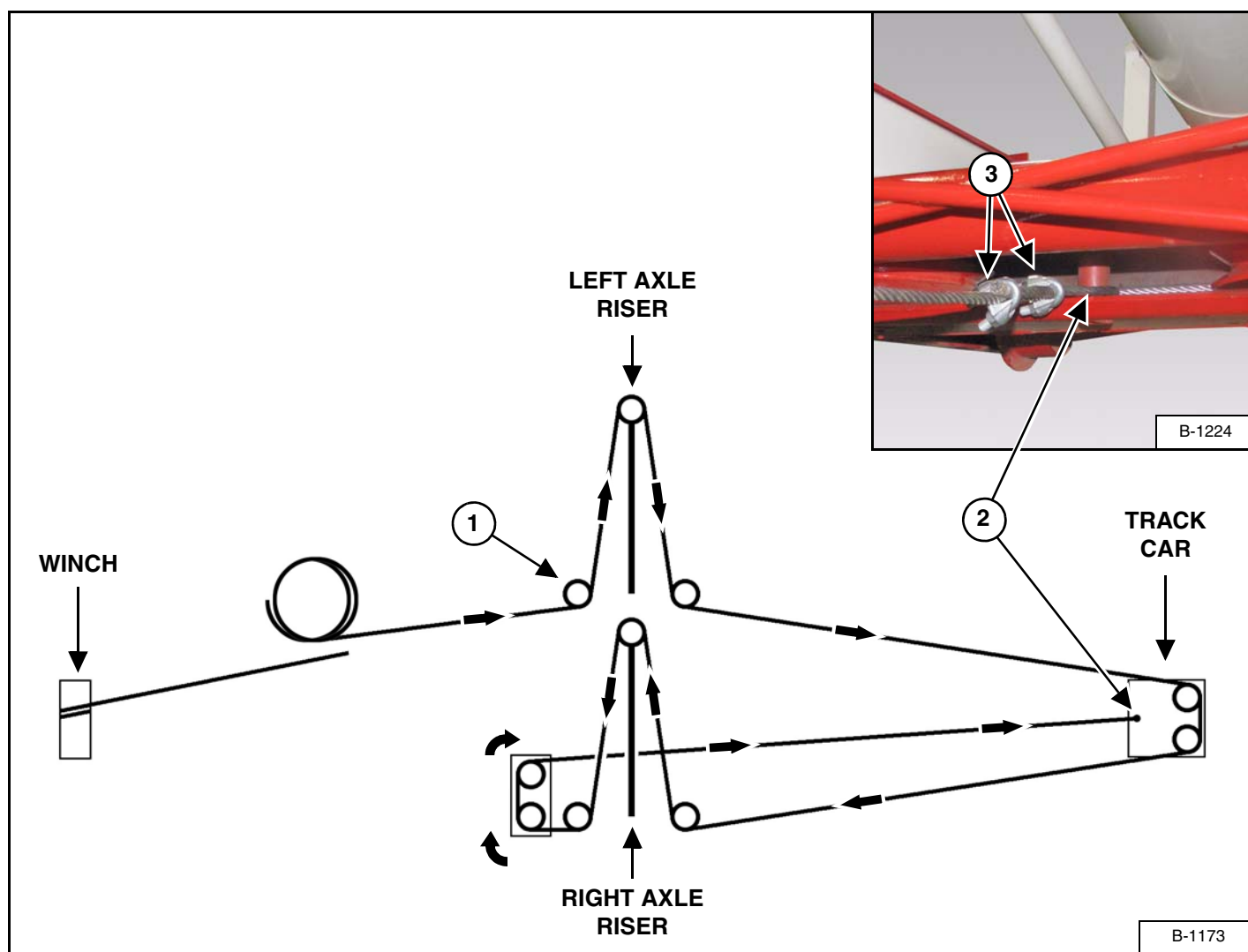
When installing the STOP LIFT sign, verify that the trip lever (Item 2) **[Figure 96]** is approximately 1-1/2" above the bottom truss tube.

Figure 97



With the trip lever approximately 1-1/2" above the bottom truss tube, install four 3/8" x 3" bolts (Item 1) through the mounting bracket (Item 2) and the two flat straps (Item 3) **[Figure 97]**. Install four 3/8" lock nuts on the bolts and tighten.

NOTE: Maintain approximately 1-1/2" between trip lever and bottom truss tube.

Track Car / Winch Cable Routing
Figure 98


Thread the cable under the sheave (Item 1) **[Figure 98]** on the left side of the lower truss, up over the top sheave on the left axle riser, then to the bottom of the sheave on the upper truss and route towards the track car.

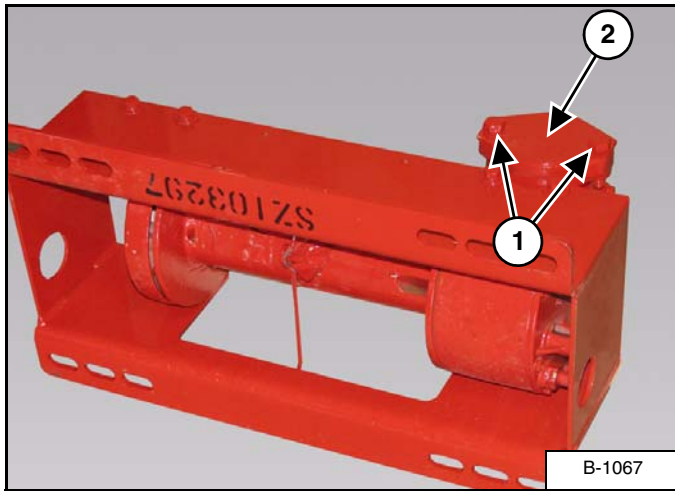
With the cable routed around the track car sheaves, route the cable along the right side to the bottom of the sheave on the upper truss, up over the top sheave on the right axle riser, then to the bottom of the sheave on the lower truss.

Next, thread the cable around the two horizontal sheaves just ahead of the axle and right axle riser, then back to the vertical pin (Item 2) **[Figure 98]** on the rear of the track car.

Anchor the cable around the vertical pin (Item 2) on the track car with two 3/8" cable clamps (Item 3) **[Figure 98]** and one 3/8" thimble.

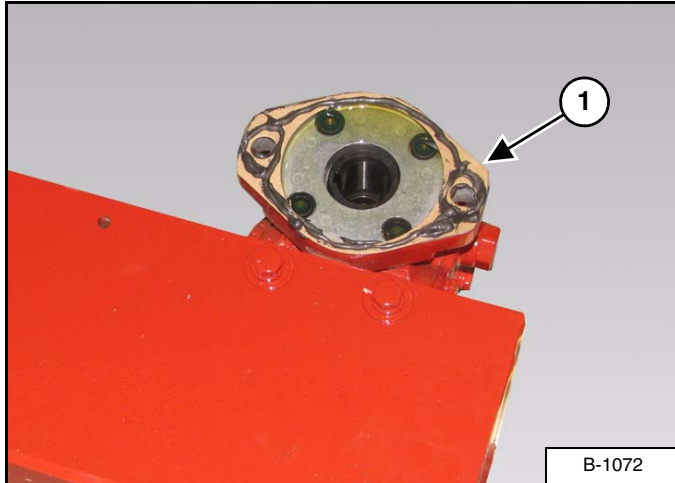
Winch Assembly And Installation

Figure 99



Remove the two 1/2" x 2" bolts (Item 1) and cover (Item 2) [Figure 99] from the winch assembly. Retain bolts for securing the hydraulic motor.

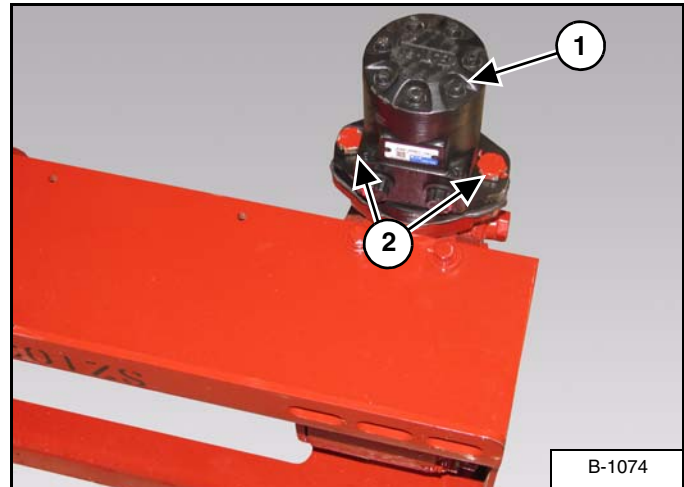
Figure 100



Install gasket (Item 1) [Figure 100] onto the hydraulic motor mounting flange.

Apply a high performance silicone gasket sealant (such as Loctite® 598) to the gasket.

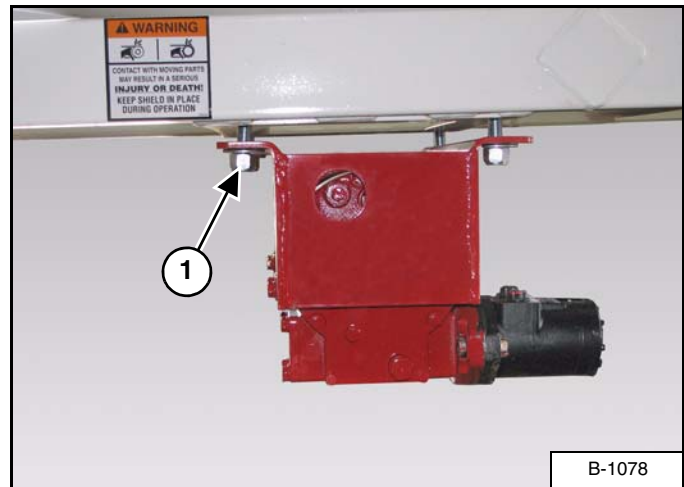
Figure 101



Align the hydraulic motor (Item 1) as shown and install onto the gasket.

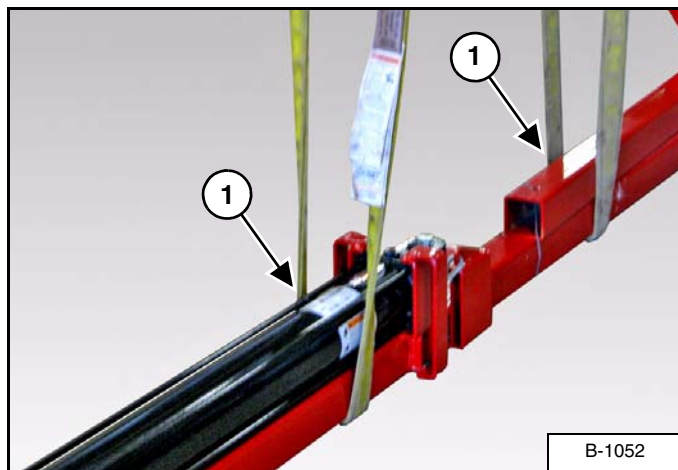
Install the two 1/2" x 2" bolts (Item 2) [Figure 101] (removed from the winch assembly) through the hydraulic motor and into the winch assembly. Tighten the bolts to securely fasten the hydraulic motor to the winch assembly.

Figure 102



Install four 5/8" x 2" bolts down through the lower truss mounting plate and winch assembly. Install four 5/8" lock nuts (Item 1) [Figure 102] onto the bolts and tighten.

Figure 103

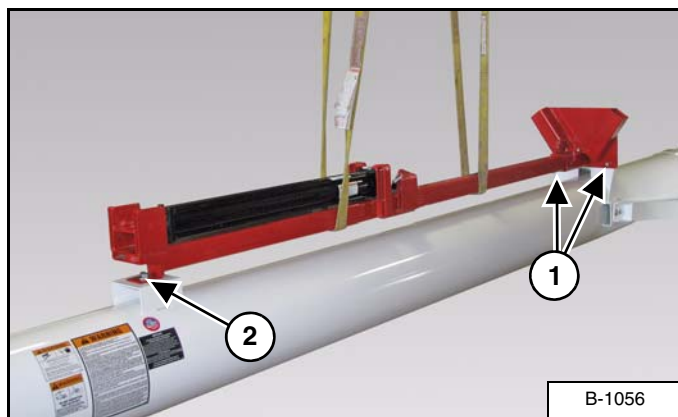


Install straps around the hopper lift assembly (Item 1) **[Figure 103]**.

Connect the strap to an approved lifting device.

Raise and move the hopper lift assembly to the assembly area.

Figure 104



Lower and align the hopper lift assembly with the lower tube mounting brackets.

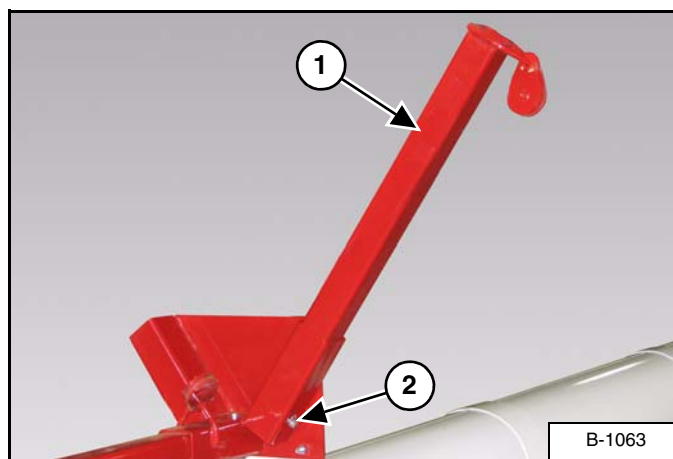
Install two 1/2" x 1-1/2" bolts (Item 1) **[Figure 104]** through the lower tube mounting bracket and front mounting plate on the hopper lift assembly. Install 1/2" lock nuts onto the bolts. Do not tighten at this time.

Install one 3/4" x 2" bolt (Item 2) **[Figure 104]** down through the rear mounting plate on the hopper lift assembly and lower tube mounting bracket.

Install one 3/4" lock nut onto the bolt.

Tighten the bolts and lock nuts to securely fasten the hopper lift assembly to the lower tube.

Figure 105



Install the hopper lift riser arm (Item 1) into the hopper lift assembly anchor. Secure using a 5/8" x 4" clevis pin (Item 2) **[Figure 105]** and 1/8" hairpin on the clevis pin.

CAUTION

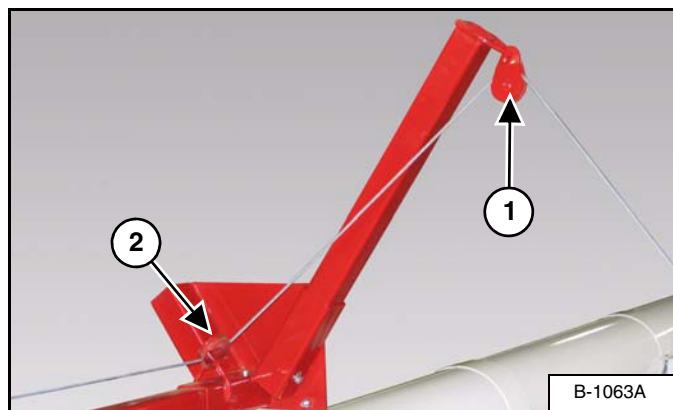


CUT HAZARD

To prevent injury to fingers and hands:

- Always wear heavy leather gloves when handling a wire rope.
- Never let wire rope slip through your hands.

Figure 106



Thread the 1/4" cable through the upper pulley (Item 1) and around the lower pulley (Item 2) **[Figure 106]**.

Figure 107



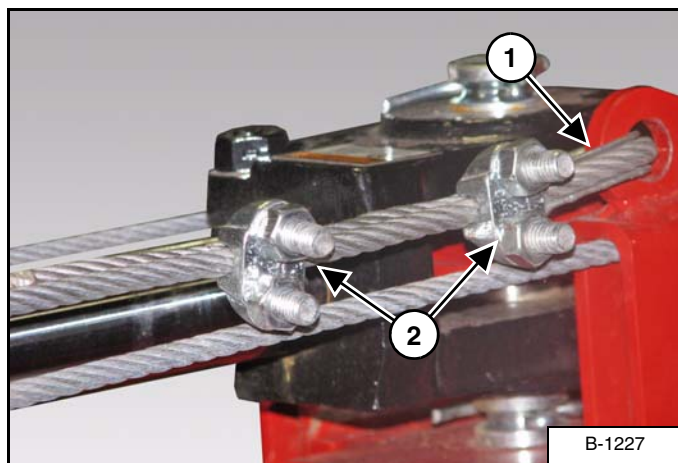
Thread the 1/4" cable through the upper left bracket (Item 1), around the pulley (Item 2), around the pulley (Item 3), then around the lower horizontal pulley (Item 4) **[Figure 107]** to the right side.

Figure 108



Route the 1/4" cable down the right side of the hopper lift cylinder. Thread the cable around the pulley (Item 5), around the pulley (Item 6), then through the hole (Item 7) **[Figure 108]** of the hopper lift assembly.

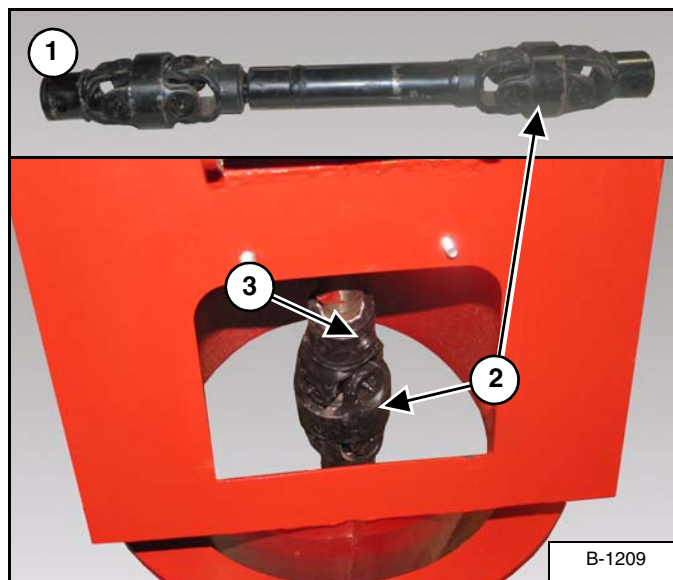
Figure 109



Install one 1/4" thimble (Item 1) through the hole at the front of the hopper lift assembly. Route the 1/4" cable around the thimble and install two 1/4" cable clamps (Item 2) **[Figure 109]** onto the cable. Tighten the cable clamp closest to the thimble first, then tighten the second clamp.

Installing The Hopper Telescoping Power Driveline

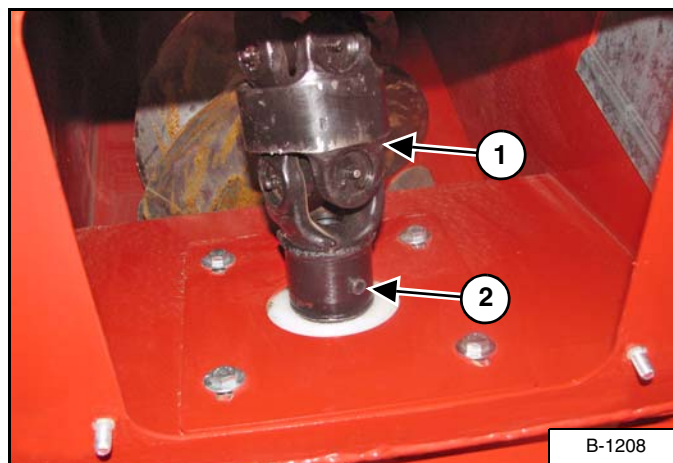
Figure 110



Locate the hopper telescoping power shaft (Item 1) **[Figure 110]**.

Install the upper half (Item 2) (female half) of the hopper telescoping power shaft onto the gear box shaft in the intake auger elbow. Align mounting holes and install one 7/16" x 2-1/2" spiral pin (Item 3) **[Figure 110]** through the hopper telescoping power shaft and gear box shaft.

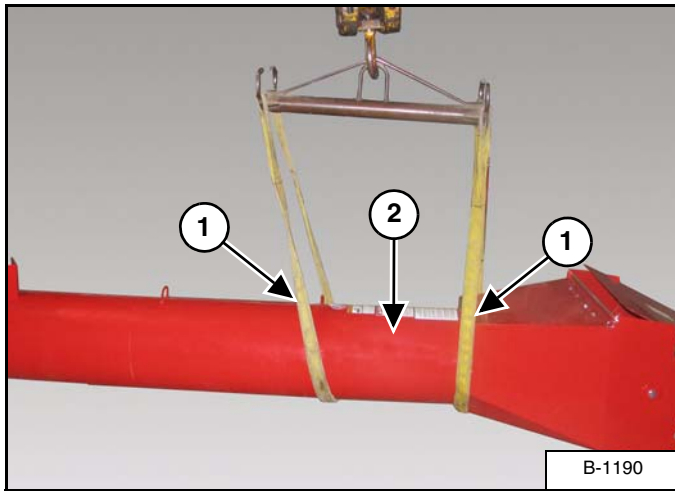
Figure 111



Slide the lower half (Item 1) (male end) of the hopper telescoping power driveline onto the lower gear box shaft in the drive section. Align mounting holes and install one 7/16" x 2-1/2" spiral pin (Item 2) **[Figure 111]** through the hopper telescoping power shaft and lower gear box shaft.

Hopper Assembly And Installation

Figure 112

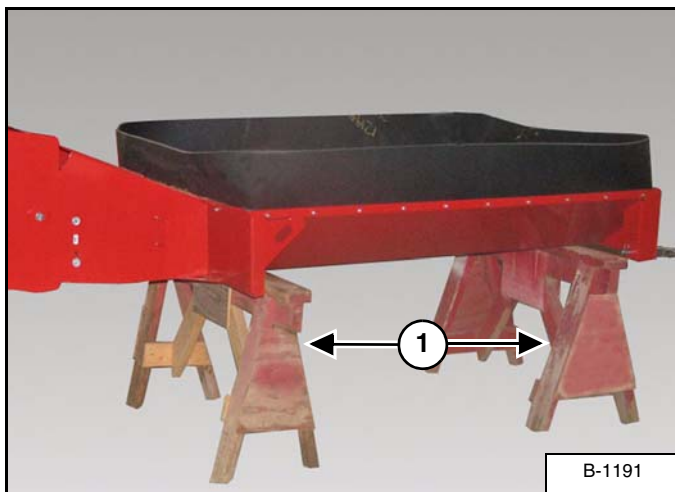


Install a strap (Item 1) around the intake tube (Item 2) [Figure 112] of the hopper.

Connect the strap to an approved lifting device.

Raise the hopper and move to the assembly area.

Figure 113



Place support stands (Item 1) [Figure 113] under the hopper.

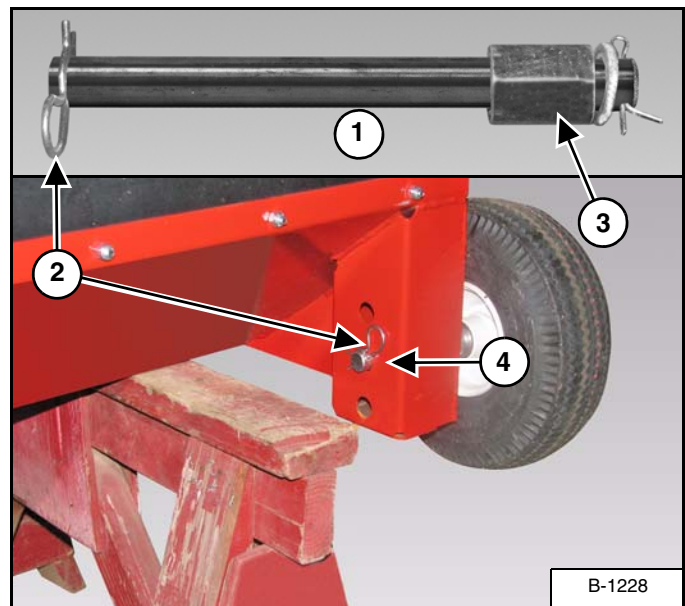
Figure 114



Place a support stand (Item 1) [Figure 114] under the intake tube.

Lower the hopper / intake tube onto the support stands.

Figure 115



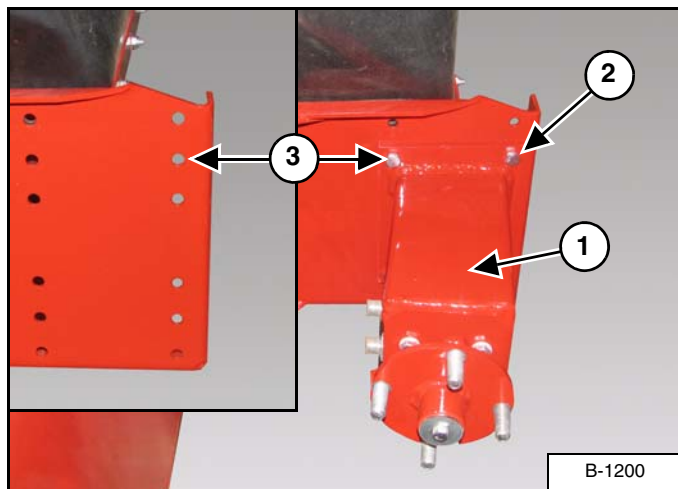
Locate two axle pins (Item 1) [Figure 115].

Remove the retaining clip (Item 2) and slide the bushing (Item 3) [Figure 115] off the pin(s).

Install the axle pin through wheel, slide the bushing back onto the axle pin.

Install the axle pin through the center (Item 4) [Figure 115] (or desired) hole in the hopper frame. Install retaining clip (both rear tires).

Figure 116

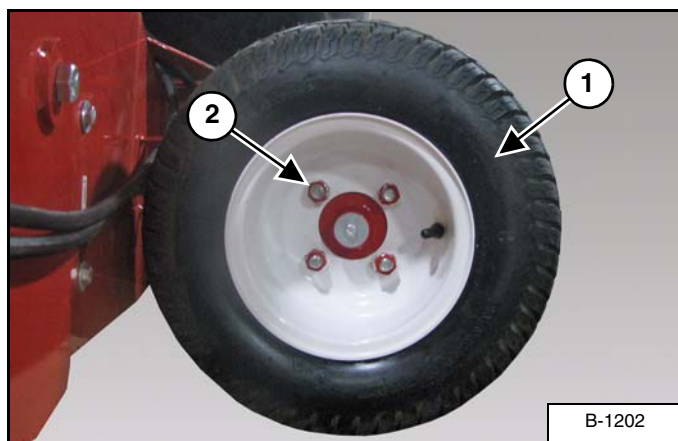


Align and install one hydraulic wheel motor (Item 1) onto the hopper frame. Install four 3/8" x 1" bolts (Item 2) [Figure 116] through the hydraulic wheel motor and hopper frame. Install one 3/8" lock nut on each bolt and tighten.

NOTE: Use the same holes (Item 3) [Figure 116] used to mount the rear wheels.

Repeat procedure for opposite side.

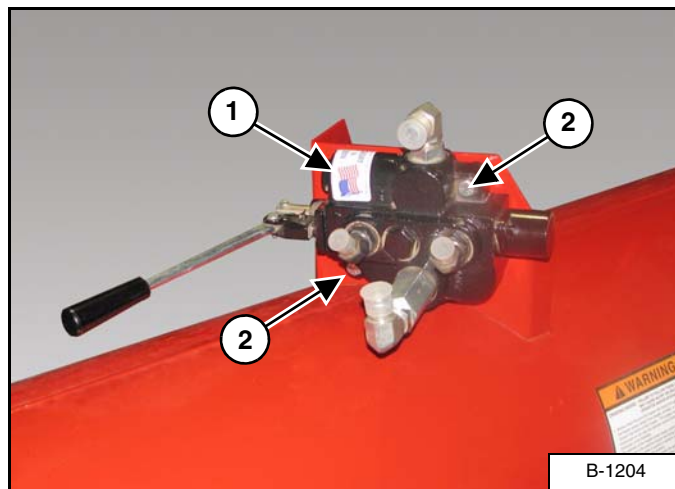
Figure 117



Install the wheel (Item 1) onto the hydraulic wheel motor, then install the four wheel nuts (Item 2) [Figure 117] and tighten.

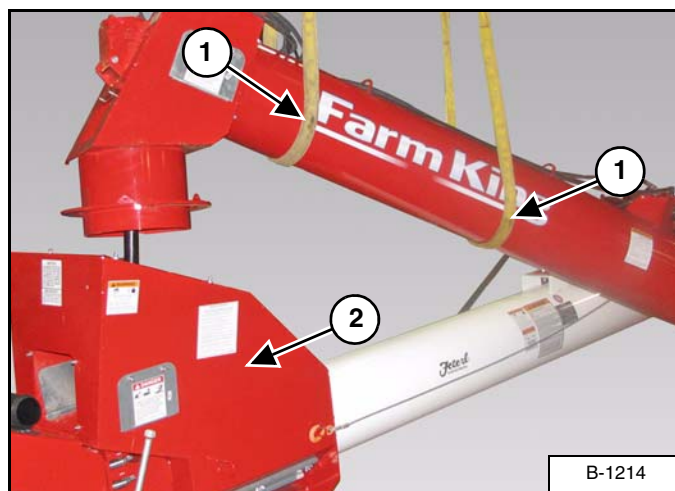
Repeat procedure for opposite side.

Figure 118



Install the control valve (Item 1) onto the intake tube. Install two 5/16" x 2-1/2" bolts (Item 2) [Figure 118] through the control valve and intake tube mounting bracket. Install one 5/16" lock nut on each bolt and tighten.

Figure 119

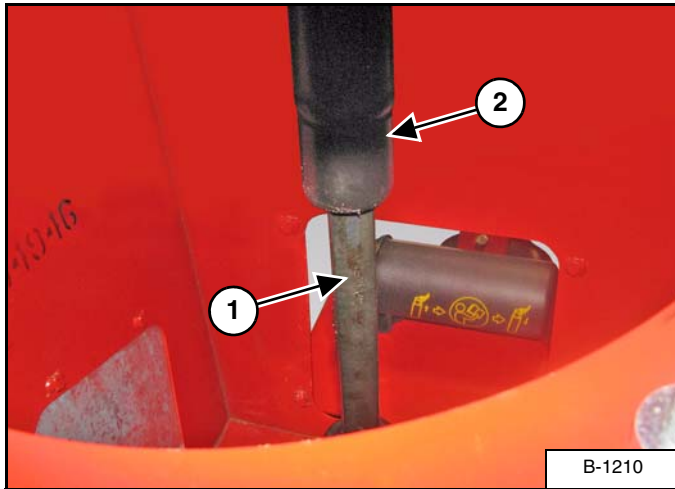


Install straps (Item 1) [Figure 119] around the intake tube as shown.

Connect the straps to an approved lifting device.

Raise the hopper assembly and move into position over the drive section (Item 2) [Figure 119].

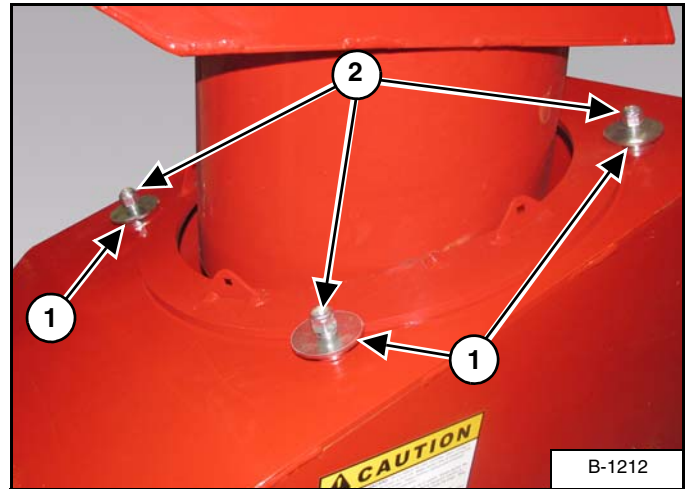
Figure 120



Lubricate the male end (Item 1) [Figure 120] of the hopper telescoping power shaft.

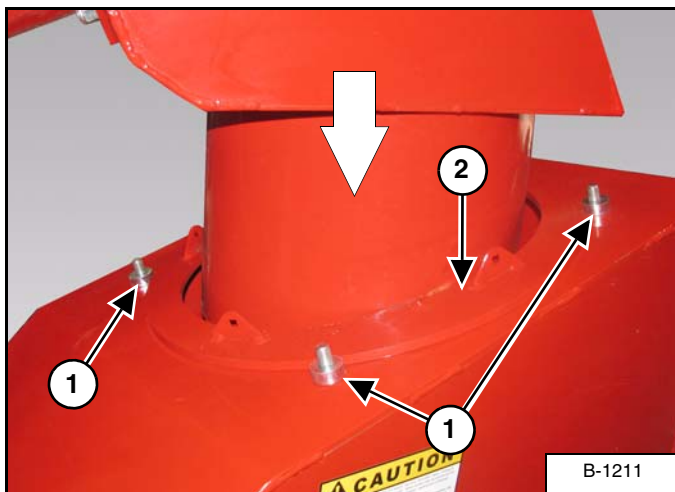
Lower the intake elbow into the drive section compartment. Align the male end (Item 1) of the hopper telescoping power shaft with the female end (Item 2) [Figure 120].

Figure 122



Install four retaining washers (Item 1) onto the four studs and over the intake elbow flange. Install four 1/2" lock nuts (Item 2) [Figure 122]. Tighten the lock nuts until they contact the retaining washers.

Figure 121



Install bushings (Item 1) [Figure 121] on the four studs on the top of the drive section.

Lower the intake elbow until the flange (Item 2) [Figure 121] is inside the bushings and resting on top of the drive section.

HYDRAULIC ASSEMBLY

Winch Fitting And Hose Installation

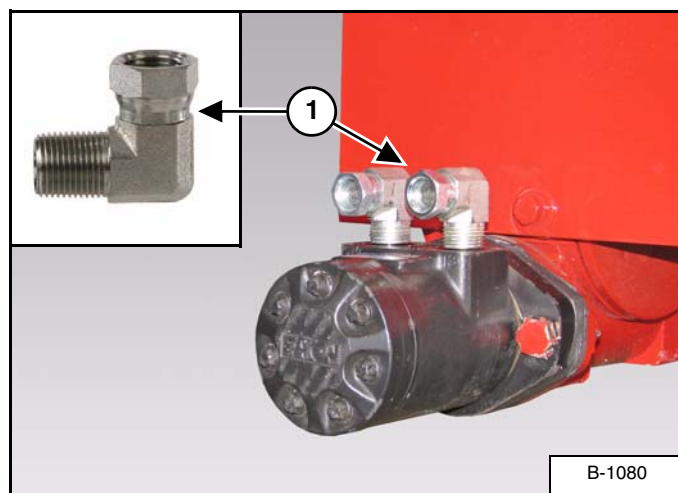
! IMPORTANT

When installing and servicing hydraulic systems, clean the work area before assembly or disassembly and keep all parts clean. Always use caps and plugs on hoses, hydraulic tubes and ports to keep dirt out. Dirt can quickly damage the system.

! IMPORTANT

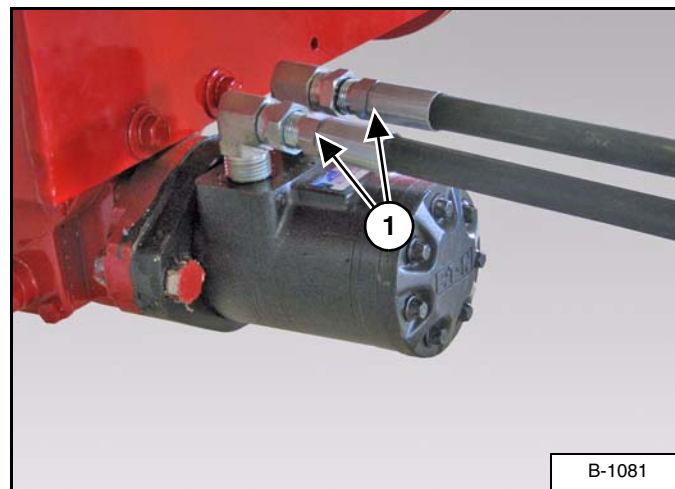
Contain and dispose of any oil leakage in an environmentally safe manner. Some regulations require that certain spills and leaks on the ground must be cleaned in a specific manner. See local, state and federal regulations for the correct disposal.

Figure 123



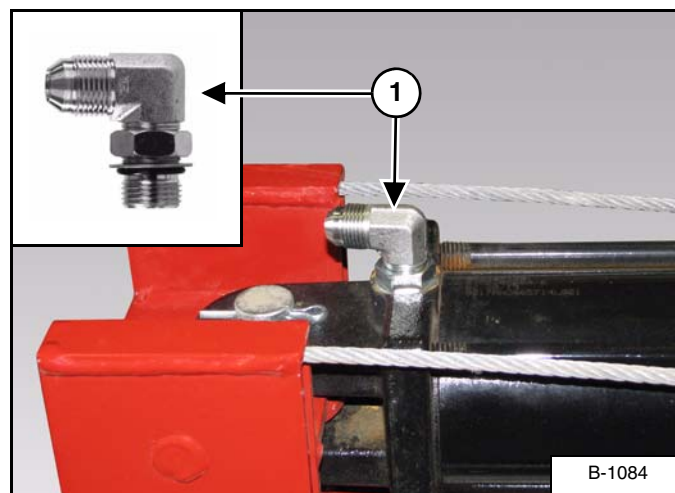
Locate two MNPT x FJIC 90° elbow fittings (Item 1) [Figure 123] and install into the hydraulic motor on the winch assembly with the fittings facing the intake end of the auger.

Figure 124



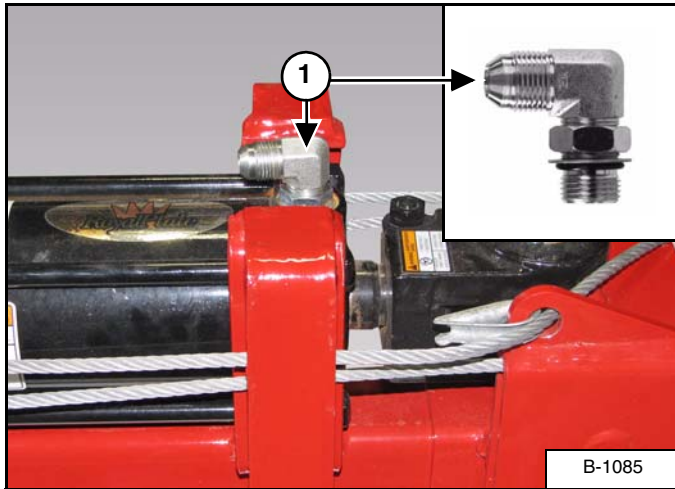
Locate and install the two hydraulic hoses (Item 1) [Figure 124] into the two fittings on the hydraulic motor.

Figure 125



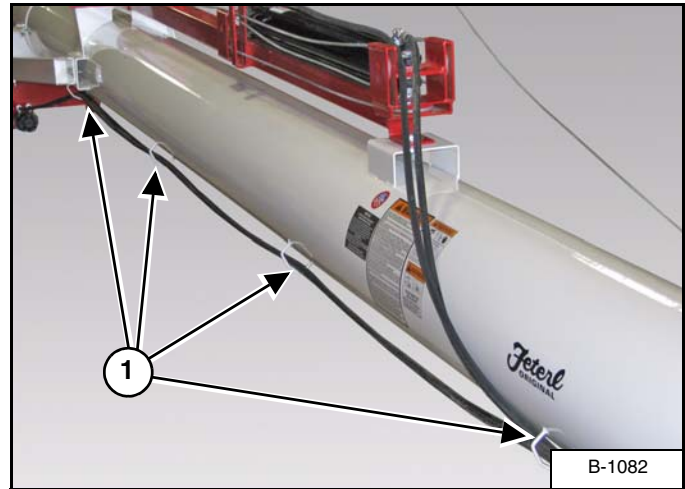
Locate one MORB x MJIC 90° elbow fitting (Item 1) [Figure 125] and install into the base end of the hopper lift cylinder with the fitting facing the intake end of the auger.

Figure 126



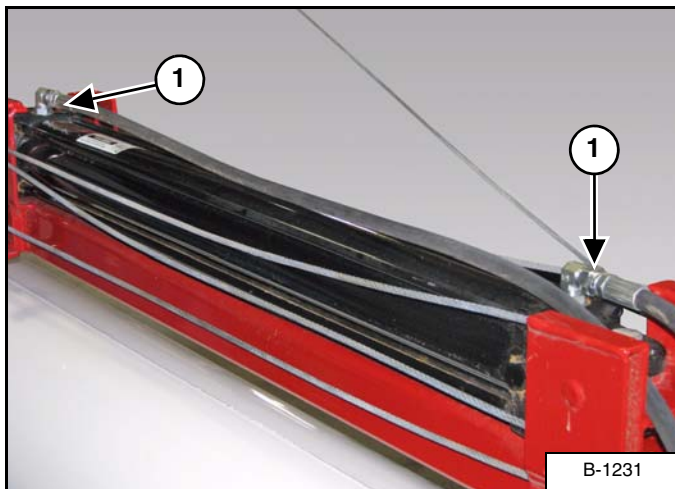
Locate one MORB x MJIC 90° elbow fitting (Item 1) [Figure 126] and install into the rod end of the hopper lift cylinder with the fitting facing the intake end of the auger.

Figure 128



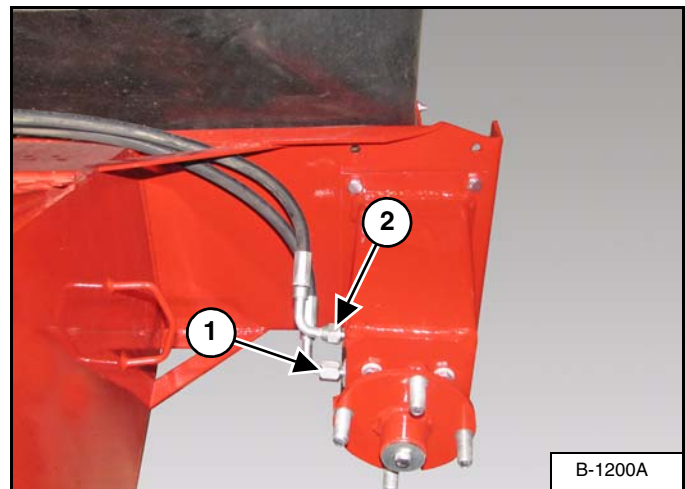
Route the winch and hopper lift cylinder hydraulic hose through the loops (Item 1) [Figure 128] on the bottom tube towards the intake end of the auger.

Figure 127



Locate and install the two hydraulic hoses (Item 1) [Figure 127] onto the two fittings on the hopper lift cylinder.

Figure 129

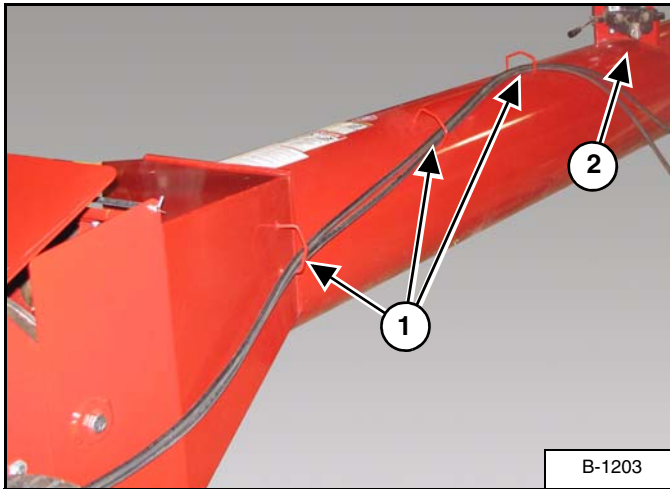


NOTE: Wheel removed for picture clarity.

Locate and install the one long hydraulic hose (Item 1) and one short (jumper hose) (Item 2) [Figure 129] onto the two fittings on the hopper hydraulic wheel motor (both sides).

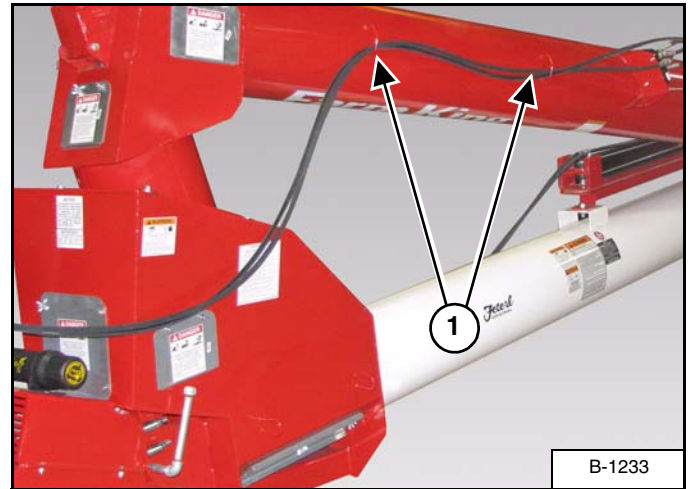
NOTE: Install the hydraulic hose (jumper hose) to the top fitting on the opposite hydraulic motor and the long hose to the bottom fitting.

Figure 130



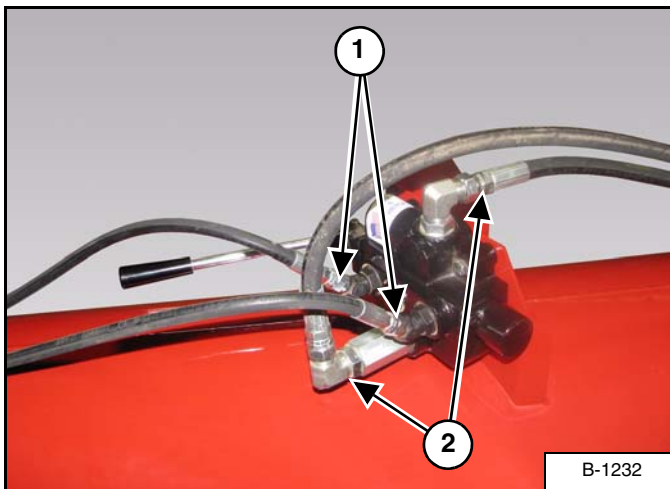
Route the long hopper wheel motor hydraulic hoses through the loops on the intake tube (Item 1) towards the control valve (Item 2) **[Figure 130]**.

Figure 132



Route the two long control valve hydraulic hoses through the loops (Item 1) **[Figure 132]** on the intake tube and around the back side of the drive section.

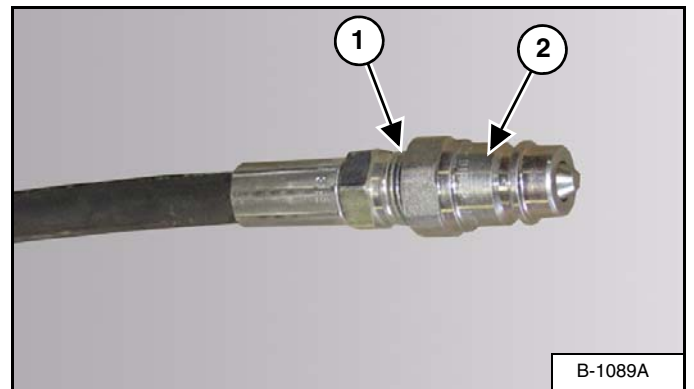
Figure 131



Install the long hopper wheel motor hydraulic hoses (Item 1) **[Figure 131]** onto the control valve.

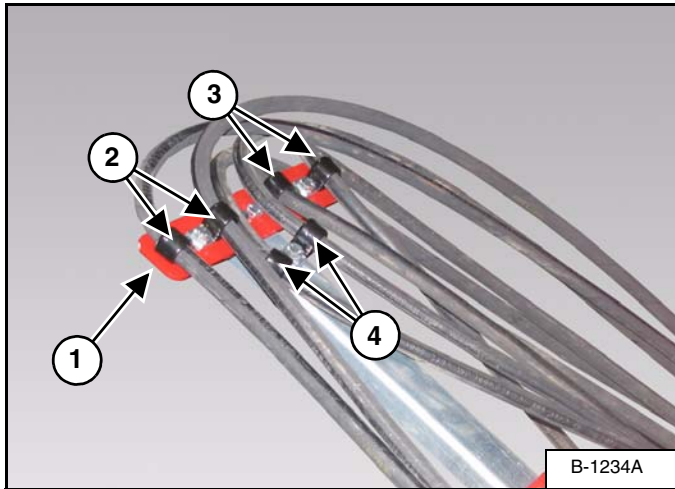
Locate and install the two hydraulic hoses (Item 2) **[Figure 131]** onto the control valve.

Figure 133



Apply thread sealant to the threads (Item 1) of the hydraulic hose fitting, then install and tighten the male quick coupler fitting (Item 2) **[Figure 133]** on each set of hydraulic hoses (winch, hopper lift cylinder and hopper hydraulic wheel motors).

Figure 134



Hopper Hydraulic Wheel Motor

Route the two hopper hydraulic wheel motor hydraulic hoses to the right side of the hose support bracket (Item 1) [Figure 134] on the PTO hanger.

Fasten the two hoses to the hose support bracket using two hose clamps (Item 2) [Figure 134], two 5/16" x 1" bolts and two 5/16" lock nuts.

Winch

Route the two winch hydraulic hoses to the left side of the hose support bracket on the PTO hanger.

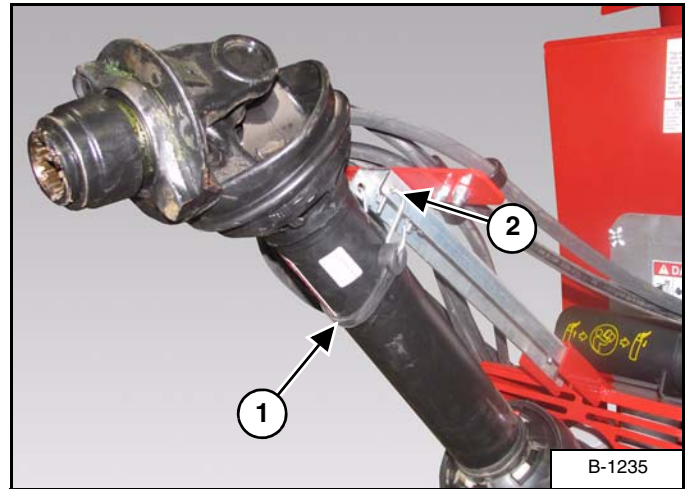
Fasten the two hoses to the hose support bracket using two hose clamps (Item 3) [Figure 134], two 5/16" x 1" bolts and two 5/16" lock nuts.

Hydraulic Lift Cylinder

Route the two hydraulic lift cylinder hydraulic hoses to the center of the PTO hanger.

Fasten the two hoses to the PTO hanger using two hose clamps (Item 4) [Figure 134], two 5/16" x 1" bolts and two 5/16" lock nuts.

Figure 135

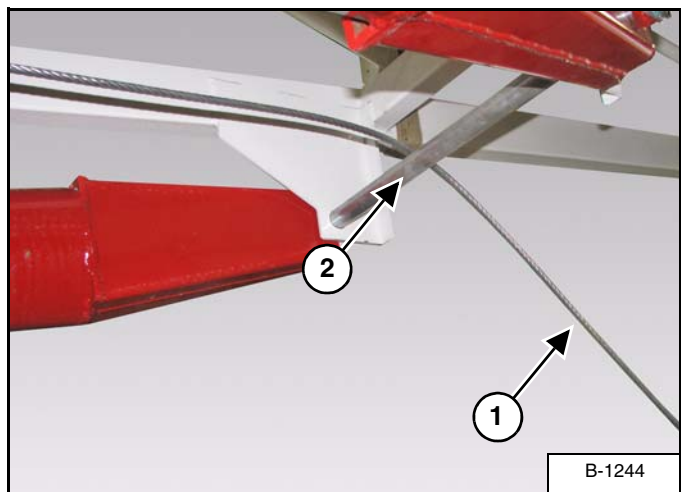


Lift the PTO driveline up, install the rubber strap (Item 1) around the PTO driveline and secure to the PTO hanger (Item 2) [Figure 135].

WINCH CABLE INSTALLATION

Cable Routing and Installation

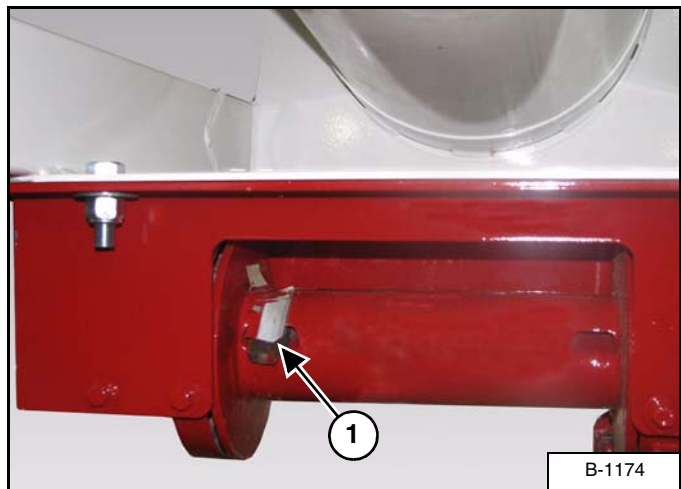
Figure 136



NOTE: Route the cable over the Red components and under the White components.

Route the cable (Item 1) over the lower truss hinge pin (Item 2) [Figure 136], then to the winch.

Figure 137



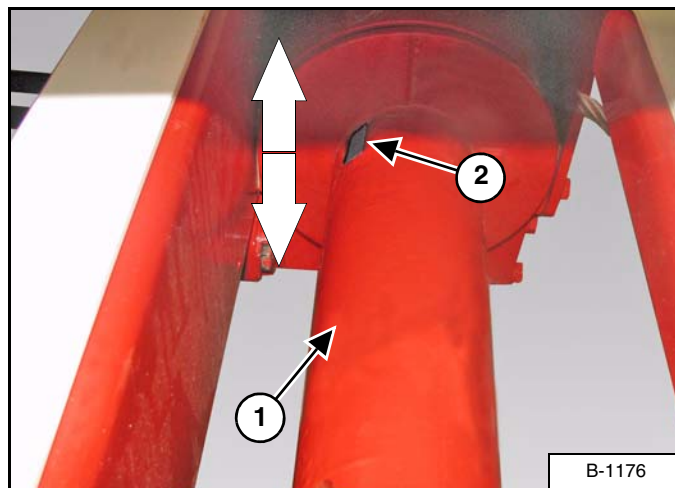
Remove the wedge (Item 1) [Figure 136].

Connect the winch hydraulic hoses to the tractor. (See “Connecting Hydraulic Hoses” on page 84.)

Enter the tractor and start the engine. (See “Entering And Leaving The Operator’s Position” on page 78.)

Engage the hydraulic circuit for the winch. Run the tractor engine at low idle.

Figure 138

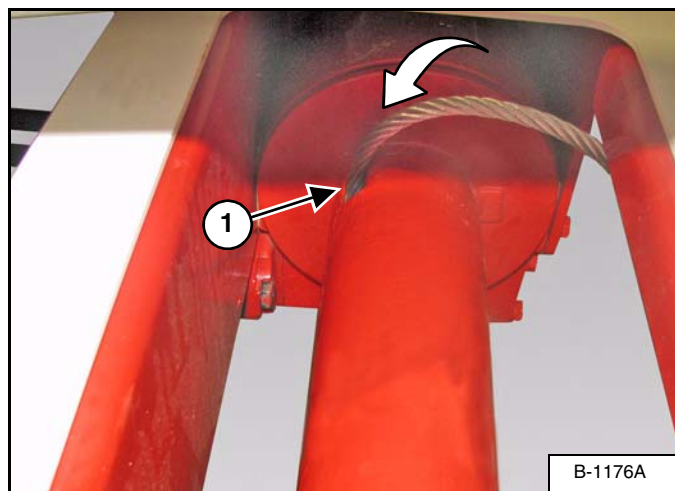


Using the tractor’s auxiliary control, rotate the winch drum (Item 1) until the cable slot (Item 2) [Figure 138] is vertical and facing the intake end of the auger.

Disengage the tractor hydraulics.

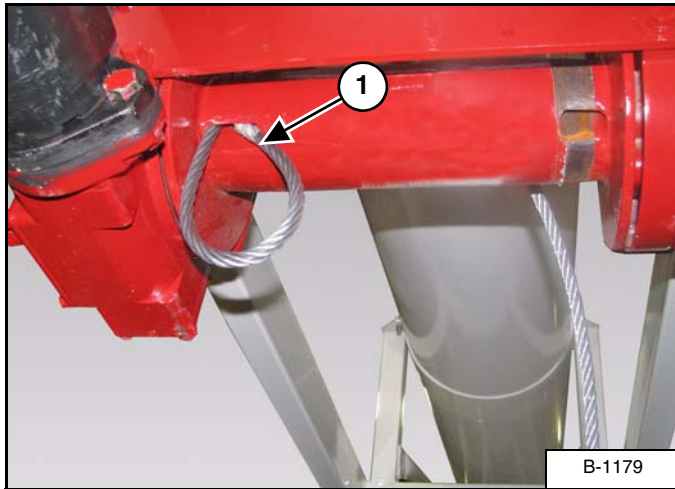
Leave the operator’s position. (See “Entering And Leaving The Operator’s Position” on page 78.)

Figure 139



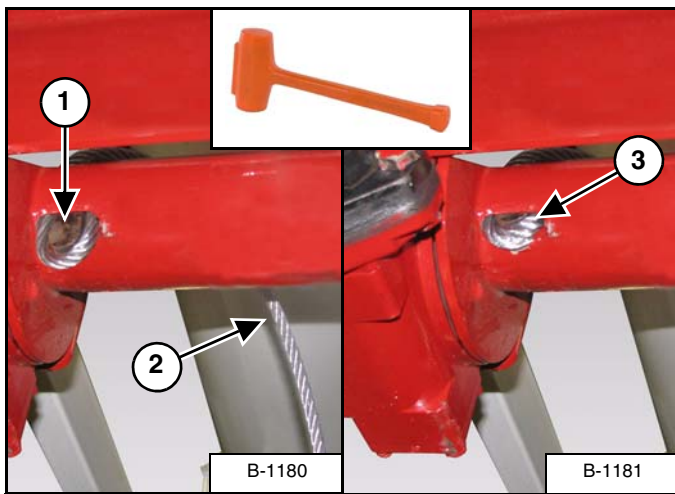
Feed the cable over the top of the winch drum and down through the cable slots (Item 1) [Figure 139].

Figure 140



Loop the tail end (Item 1) [Figure 140] of the cable and feed back into the slot on the winch drum.

Figure 141



Install the wedge (Item 1) [Figure 141] inside the loop.

Pull back on the cable (Item 2) until the loop and wedge are inside the lower slot (Item 3) [Figure 141] on the winch drum.

NOTE: A rubber mallet / dead blow hammer may be used to help seat the wedge into the slot.

! IMPORTANT

Spooling the cable onto the winch drum will require three people.

- One person to operate the tractor controls.
- One person to guide the cable.
- One person to direct the tractor operator.

! WARNING



ENTANGLEMENT HAZARD

To prevent injury to fingers and hands:

- Keep hands clear of winch during operation.

! CAUTION



CUT HAZARD

To prevent injury to fingers and hands:

- Always wear heavy leather gloves when handling a wire rope and operating the winch.
- Never let wire rope slip through your hands.

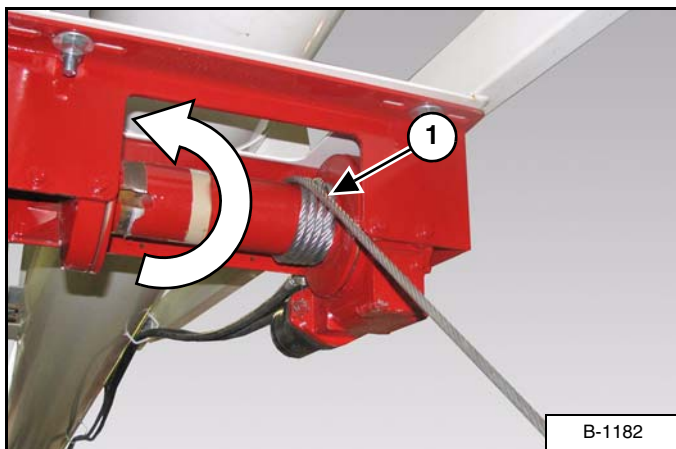
Enter the tractor and start the engine. (See "Entering And Leaving The Operator's Position" on page 78.)

Engage the hydraulic circuit for the winch. Run the tractor engine at low idle.

! IMPORTANT

Keep hands a minimum of 3 feet from the winch while spooling cable.

Figure 142



Wearing heavy leather gloves, pull back on the cable (Item 1) [Figure 142], keeping tension on the cable. Using a hand over hand method, guide the cable onto the winch drum.

Using the tractor's auxiliary control, rotate the winch drum counterclockwise (towards the intake end of the auger) wrapping the cable around the winch drum [Figure 142].

! IMPORTANT

The person directing the tractor operator must remain in clear sight of the tractor operator and cable handler at all times during cable spooling. The person directing must be able to signal the tractor operator to shut the tractor down in case of an emergency.

Continue to wrap the cable onto the winch drum until the slack has been removed from the cable.

Disengage the tractor hydraulics.

Leave the operator's position. (See "Entering And Leaving The Operator's Position" on page 78.)

Farm King



OPERATION

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Farm King



GENERAL OPERATION INFORMATION

Pre - Operation Checklist

Before operating the Backsaver Auger for the first time and each time thereafter, check the following items:



AVOID INJURY OR DEATH

- Disengage the PTO, engage the machine's parking brake, stop the engine and make sure all rotating components are completely stopped before connecting, disconnecting, adjusting or cleaning any PTO driven equipment.
- Always keep PTO shields and all guards in place when using PTO driven equipment.
- Disengage PTO for road travel.
- Keep hands, feet and clothing away.



AVOID INJURY OR DEATH

Wear safety glasses to prevent eye injury when any of the following conditions exist:

- When fluids are under pressure.
- Flying debris or loose material is present.
- Engine is running.
- Tools are being used.

1. Lubricate the equipment per the schedule outline in the Maintenance Section. (See "SERVICE SCHEDULE" on page 108.)

2. Check the auger hitch for damaged, loose or missing parts. Repair as needed before operation.
3. Check tire pressure. Inflate per manufacturer's specification.
4. Check wheel bolts for tightness. Torque as required. (See "AXLE" on page 114.)
5. Check the augers. Remove any material build-up or debris that has become entangled.
6. Check that all bearings turn freely. Replace as required.
7. Make sure that all guards and shields are in place, secured and functioning as designed.



Leaking fluids under pressure can enter the skin and cause serious injury or death. Immediate medical attention is required. Wear goggles. Use cardboard to check for leaks.

8. Check condition of all hydraulic components for leaks. Repair as required.

NOTE: Do not operate with hydraulic leaks.

9. Check gearbox oil level. Fill as required. (See "LUBRICATION" on page 109.)
10. Verify that the tractor's drawbar is adjusted correctly for use with the auger. (See "Drawbar Adjustment" on page 77.)
11. Check that the PTO drivelines telescope easily and turn freely.
12. Make sure the PTO ends are securely attached to the auger and the tractor.

Break - In Checklist

NOTE: The Backsaver Auger must have a break-in period with different operating conditions than for normal use.

The tube and flighting must get a polished surface through use. Once the new auger has polished it will run smooth at recommended speed.

NOTE: Never operate an empty auger for over one minute, as the flighting and housing will experience excessive wear.

During the break-in-period:

1. Run the tractor at slow idle until grain begins to flow from the discharge. For the first 500 bushels, operate at the slow speed and restrict the flow of grain at the intake.
2. Gradually increase the speed until operating at full PTO speed.

NOTE: Do not run empty during break-in period.

Check the following mechanical items after 1 hour of operation and again after 10 hours of operation:

1. Check the auger hitch for damaged, loose or missing parts. Repair as needed before operation.
2. Check for loose fasteners and hardware. Tighten as required.
3. Make sure that all guards and shields are in place, secured and functioning as designed
4. Check that the PTO driveline telescopes easily and turns freely.
5. Check condition of all hydraulic components for leaks. Tighten fittings to correct leaks or replace components. Do not operate with hydraulic leaks.
6. Check tire pressure. Inflate per manufacturer's specification.
7. Check gearbox oil level. Fill as required. (See "LUBRICATION" on page 109.)
8. Check the augers. Remove any debris.

WARNING



AVOID INJURY OR DEATH

- Disengage the PTO, engage the machine's parking brake, stop the engine and make sure all rotating components are completely stopped before connecting, disconnecting, adjusting or cleaning any PTO driven equipment.
- Always keep PTO shields and all guards in place when using PTO driven equipment.
- Disengage PTO for road travel.
- Keep hands, feet and clothing away.

Tractor Requirements



- Do NOT exceed 1000 RPM PTO.
- Keep PTO shields and all guards in place.
- Keep away from moving parts.
- Keep bystanders away.

The 14122 Backsaver Auger has a total weight of approximately 10,000 lb (4540 kg). The tractor / tow vehicle must be rated for this amount of weight to transport the auger.

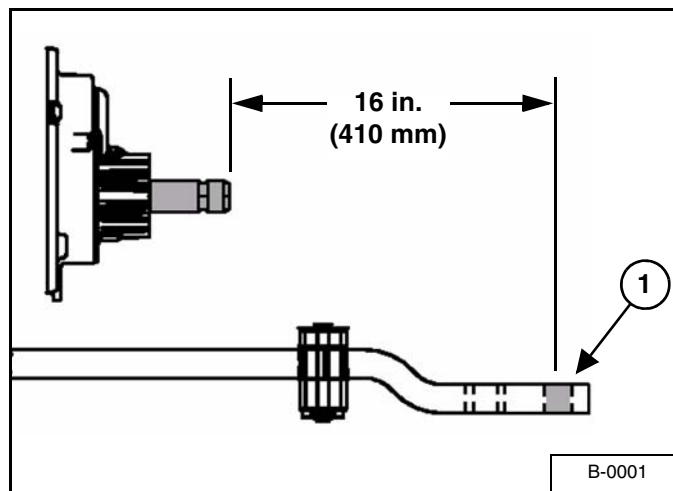
The 14122 Backsaver Auger will require a tractor (minimum 153 hp), three auxiliary hydraulic functions, 12 GPM (minimum hydraulic flow), 1500 PSI (minimum hydraulic pressure) and a Category IV rated drawbar.

NOTE: The powered hopper wheels (if equipped) require a tractor with a closed center hydraulic system. If a tractor with an open center hydraulic system is to be used, the conversion kit #384937 must be installed to minimize the hydraulic oil temperature. If you have any questions about what type hydraulic system the tractor has, contact your tractor dealer.

The tractor must be equipped with a 20 - spline, 1-3/4 inch (44.5 mm) PTO shaft when used with the 14122 Backsaver Auger.

Drawbar Adjustment

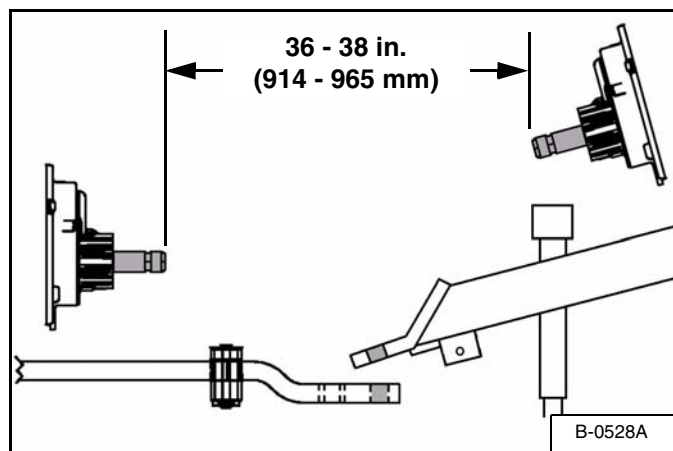
Figure 143



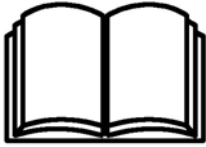
Adjust the tractor's drawbar in / out, until the center of the hitch pin hole (Item 1) [Figure 143] is 16 inches (410 mm) from the end of the tractor's PTO shaft. See your tractor's owner's manual for correct adjustment procedures.

NOTE: A tractor hitch of less than 16" minimum will result in PTO bottoming out, when operating auger at maximum height.

Figure 144



The distance between the tractor and the auger PTO shaft should be between 36 - 38 in. (914 - 965 mm) with the tractor and auger on level ground and the auger in full down position. This distance is obtained by either adjusting the tractor hitch, the auger hitch or both [Figure 144].

Entering And Leaving The Operator's Position

Follow the instructions in your tractor's operation manual for the correct procedure.

Entering The Operator's Position

Move to the operator's position, start the engine and release the parking brake.

Leaving The Operator's Position**AVOID INJURY OR DEATH**

Before you leave the operator's position:

- **Always park on a flat level surface.**
 - **Place all controls in NEUTRAL.**
 - **Engage the park brake.**
 - **Stop the engine and remove the key.**
 - **Wait for all moving parts to stop.**
-

Park the tractor / equipment on a flat level surface.

Place all controls in neutral, engage the park brake, stop the engine and wait for all moving parts to stop. Leave the operator's position.

INITIAL SET-UP

Connecting The Backsaver Auger To The Tractor

Always inspect the tractor's drawbar and 14122 Backsaver Auger hitch before connecting. See the tractor's owner's manual.

Verify that the tractor's drawbar is adjusted correctly for use with the Backsaver Auger. (See "Drawbar Adjustment" on page 77.)

Enter the operator's position. (See "Entering The Operator's Position" on page 78.)

Move the tractor into position in front of the Backsaver Auger.



WARNING



AVOID INJURY OR DEATH

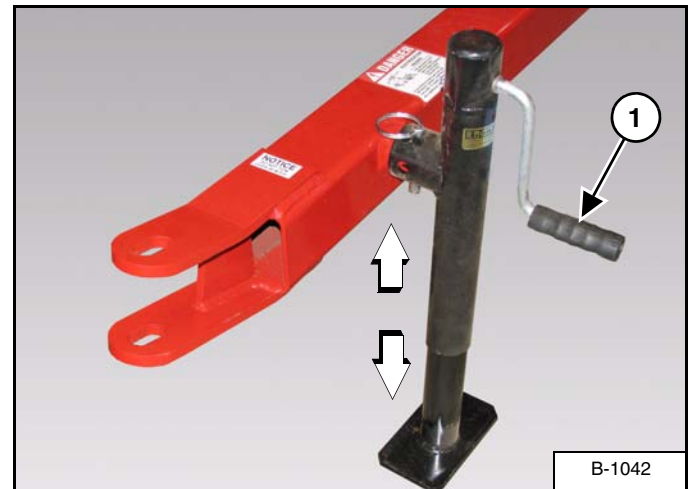
Before moving the tractor, look in all directions and make sure no bystanders, especially small children are in the work area. Do not allow anyone between the tractor and the equipment when backing up to the equipment for connecting.

Move the tractor backwards, aligning the drawbar with the Backsaver Auger hitch.

NOTE: The jack may need to be lowered or raised for proper alignment of the drawbar and hitch.

Leave the operator's position. (See "Leaving The Operator's Position" on page 78.)

Figure 145



Turn the handle (Item 1) [Figure 145] clockwise to raise the hitch or counterclockwise to lower the hitch.

Lower or raise the auger hitch until aligned with the tractor's drawbar.

Move to the operator's seat, start the engine and release the parking brake.

Move the tractor backwards, aligning the drawbar hitch pin hole with the Backsaver Auger hitch pin hole(s).

Stop the tractor and leave operator's position.



WARNING

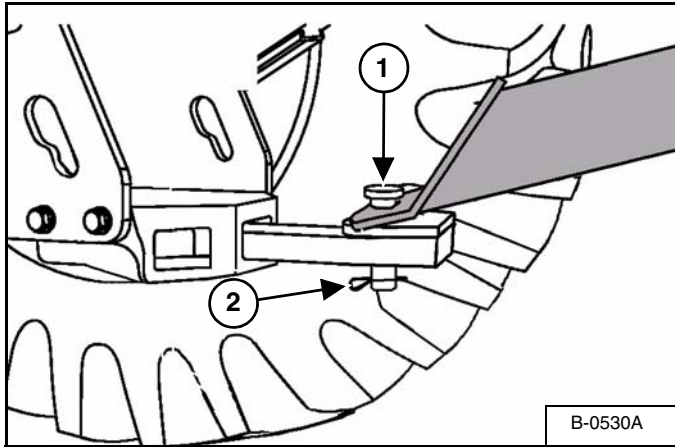


AVOID INJURY OR DEATH

Keep fingers and hands out of pinch points when connecting and disconnecting equipment.

NOTE: Always use a hitch pin of adequate size and strength and a retaining pin with a locking device.

Figure 146



Install the hitch pin (Item 1) and retaining pin (Item 2) [Figure 146] to securely fasten the auger hitch to the tractor drawbar.

Connecting The PTO Driveline

WARNING

AVOID INJURY OR DEATH

Warnings on the machine and in the manuals are for your safety. Failure to obey warnings can cause serious injury or death.

NOTE: Clean and grease tractor's PTO shaft and PTO driveline coupling each time driveline is connected.

Stop the engine and leave the operator's position. (See "Leaving The Operator's Position" on page 78.)

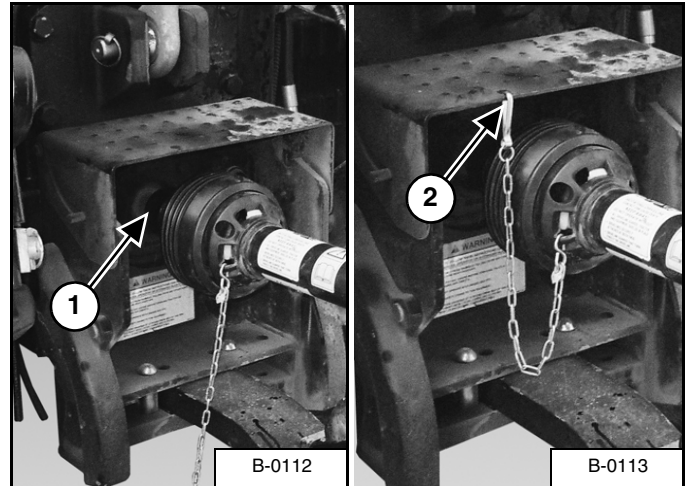
IMPORTANT

Improper hitch installation can cause PTO driveline damage.

- Do not modify the hitch or use an unapproved hitch.
- Make sure the PTO driveline is of adequate length and that u-joints are in the correct phase.

Remove the PTO driveline from the storage position (if applicable).

Figure 147



Retract the collar and slide the PTO driveline (Item 1) onto the tractor PTO shaft until it locks onto the shaft. Push and pull on the PTO driveline to verify it is securely attached to the PTO shaft. Install PTO driveline safety chain (Item 2) [Figure 147].

NOTE: The PTO driveline must have a means to retain it to the PTO shaft on the tractor.

WARNING



- Do NOT exceed 1000 RPM PTO.
- Keep PTO shields and all guards in place.
- Keep away from moving parts.
- Keep bystanders away.

PTO Driveline

PTO Driveline Length Check

NOTE: Due to variations in distances between tractor PTO shafts and implement input shafts, drivelines may need to be shortened or a longer shaft may be required. When fitting the implement to the tractor, the PTO driveline, with telescoping sections, must be inspected. When the sections are at the most compressed operating position, the sections must not “bottom out”. At its shortest length, there must be at least 2 in. (50,8 mm) of clearance between each section end and opposite section end at the most compressed operating position. When the sections are at the most extended position, there must be sufficient engagement between the sections. At its farthest operating extension, a minimum section engagement of 33% of shaft length must be maintained.



WARNING

AVOID INJURY OR DEATH

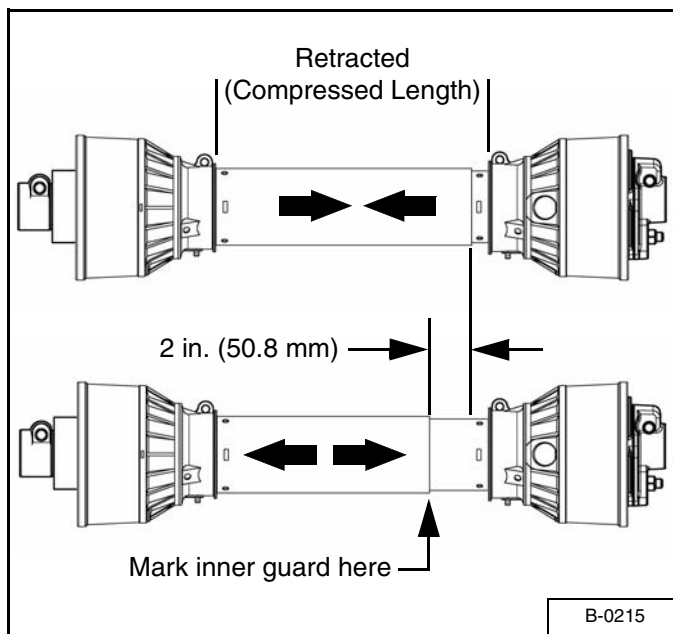
- Do NOT exceed the rated implement PTO speed.
- Stay clear of rotating driveline.
- Keep bystanders away.
- Keep hands, feet, clothing and long hair away.
- Keep PTO shields and all guards in place.
- Disengage PTO, move the tractor controls to the Neutral position, stop the engine and make sure all rotating components are stopped before leaving the operator's position.
- Do NOT service the tractor or implement with the PTO engaged.
- Do NOT service the implement in a raised position unless properly blocked and with all rotating components stopped.
- Disengage PTO for road travel.

PTO Driveline Bottoming Out Check

Stop the engine and leave the operator's position. (See “Leaving The Operator's Position” on page 78.)

Make sure the PTO driveline and all rotating components have come to a complete stop before leaving the operator's position (if applicable).

Figure 148



1. Disconnect the PTO driveline from the tractor and slide the PTO driveline together until fully retracted (compressed).
2. Measure the retracted (compressed) length of PTO driveline [Figure 148].
3. Extend the PTO driveline 2 in. (50,8 mm) from the retracted length and place a mark on the inner guard at the end of the outer guard [Figure 148].
4. Reattach the PTO driveline to the tractor PTO shaft.
5. Enter the operator's position. (See “Entering The Operator's Position” on page 78.) Start the engine.
6. With the rear PTO DISENGAGED, raise and lower the implement and watch the PTO driveline extend and retract.
7. If the outer PTO driveline guard slides in (retracts) over the mark at any point of travel, the PTO driveline needs to be shortened.

Reducing The PTO Driveline Length

Stop the engine and leave the operator's position. (See "Leaving The Operator's Position" on page 78.)

Make sure the PTO driveline and all rotating components have come to a complete stop before leaving the operator's position.



AVOID INJURY OR DEATH

- **Do NOT** exceed the rated implement PTO speed.
- **Stay clear** of rotating driveline.
- **Keep bystanders away.**
- **Keep hands, feet, clothing and long hair away.**
- **Keep PTO shields and all guards in place.**
- **Disengage PTO, move the tractor controls to the Neutral position, stop the engine and make sure all rotating components are stopped before leaving the operator's position.**
- **Do NOT** service the tractor or implement with the PTO engaged.
- **Do NOT** service the implement in a raised position unless properly blocked and with all rotating components stopped.
- **Disengage PTO for road travel.**

Remove the PTO driveline from the tractor and place in storage position (if equipped).

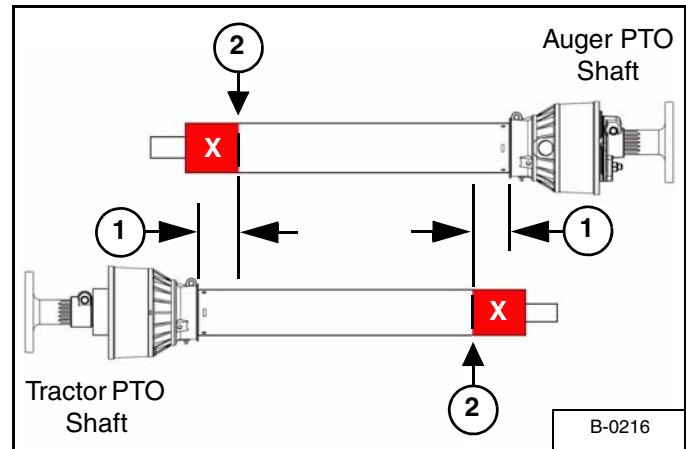
Enter the operator's position. (See "Entering The Operator's Position" on page 78.) Start the engine.

Raise or lower the auger to get the shortest distance between the tractor PTO shaft and auger gearbox PTO shaft.

Stop the engine and leave the operator's position. (See "Leaving The Operator's Position" on page 78.)

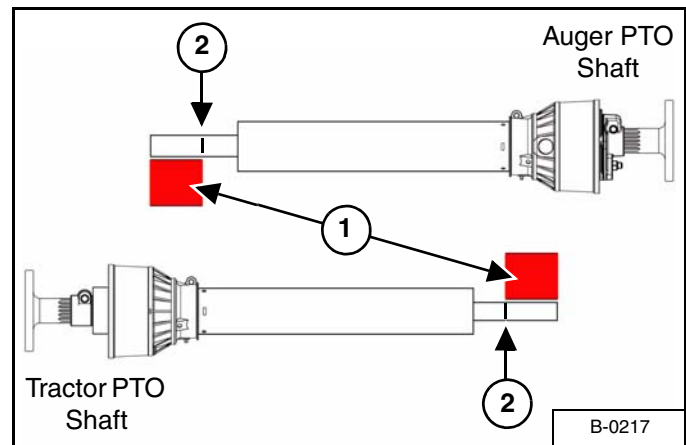
Pull the PTO driveline apart and reinstall each individual section; one half to the tractor PTO shaft and one half to the implement gearbox PTO shaft.

Figure 149



1. Hold PTO driveline sections parallel to one another and measure back 2 in. (50,8 mm) (Item 1) from the yoke of each section and place mark on opposite section. Cut the plastic shield at this length (Item 2) [Figure 149].

Figure 150



2. Using the plastic guard lengths that were cut off in [Figure 149], align the cut off lengths (Item 1) with the end of the inner & outer shafts. Place a mark (Item 2) [Figure 150] on the inner & outer shafts and cut the inner & outer shafts off at this length.
3. Round off all sharp edges and debur.
4. Thoroughly grease and install the PTO driveline halves together.
5. Recheck for proper operation.

PTO Driveline Engagement Check

Stop the engine and leave the operator's position. (See "Leaving The Operator's Position" on page 78.)

Make sure the PTO driveline and all rotating components have come to a complete stop before exiting the tractor.

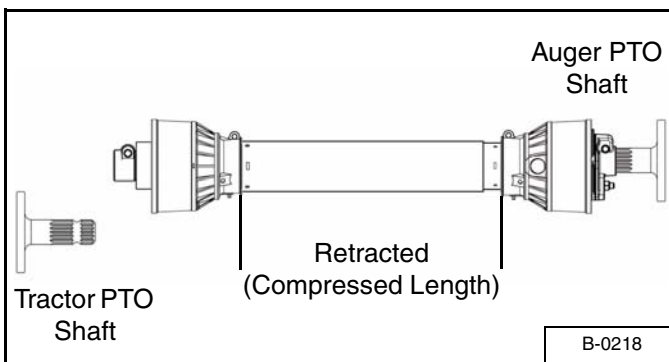


AVOID INJURY OR DEATH

- Do NOT exceed the rated implement PTO speed.
- Stay clear of rotating driveline.
- Keep bystanders away.
- Keep hands, feet, clothing and long hair away.
- Keep PTO shields and all guards in place.
- Disengage PTO, move the tractor controls to the Neutral position, stop the engine and make sure all rotating components are stopped before leaving the operator's position.
- Do NOT service the tractor or implement with the PTO engaged.
- Do NOT service the implement in a raised position unless properly blocked and with all rotating components stopped.
- Disengage PTO for road travel.

1. Disconnect the PTO driveline from the tractor and fully slide the driveline sections together (retracted).

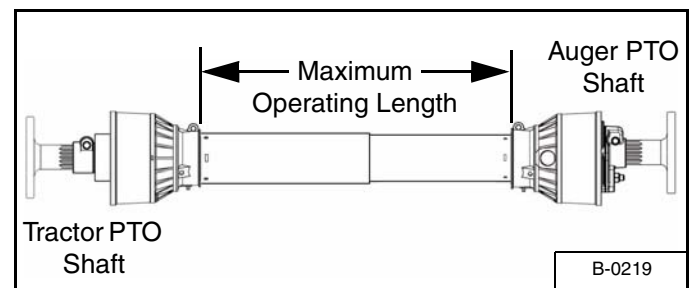
Figure 151



2. Measure the retracted (compressed) length of the PTO driveline between the bases of the plastic guards [Figure 151].

3. Multiply the retracted driveline length by 1.667 to determine the PTO driveline Maximum Operating Length. (i.e.: 25.5 in. (647,7 mm) x 1.667= 42.5 in. (1079,7 mm) Maximum Operating Length).
4. Attach the PTO driveline to the tractor PTO output shaft.
5. Enter the operator's position. (See "Entering The Operator's Position" on page 78.)
6. With the PTO driveline attached, position the auger to where the telescoping PTO driveline is at its maximum operating extension.
7. Stop the engine and leave the operator's position. (See "Leaving The Operator's Position" on page 78.) Make sure the PTO driveline and all rotating components have come to a complete stop before leaving the operator's position.

Figure 152



8. Measure the length of the PTO driveline between the bases of the plastic shields [Figure 152] to determine the maximum operating length.

A. If the measured maximum operating length is less than the Maximum Operating Length calculation (from Step 3), the PTO driveline has adequate engagement

B. If the measured maximum operating length is equal to or more than the Maximum Operating Length calculation (from Step 3), the PTO driveline does not have adequate engagement and should be replaced with a longer driveline. See your Farm King dealer for available PTO drivelines.

Connecting Hydraulic Hoses

WARNING



HIGH PRESSURE FLUID HAZARD

To prevent serious injury or death from high pressure fluid:

- Relieve pressure on system before repairing or adjusting.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Keep all components in good repair.

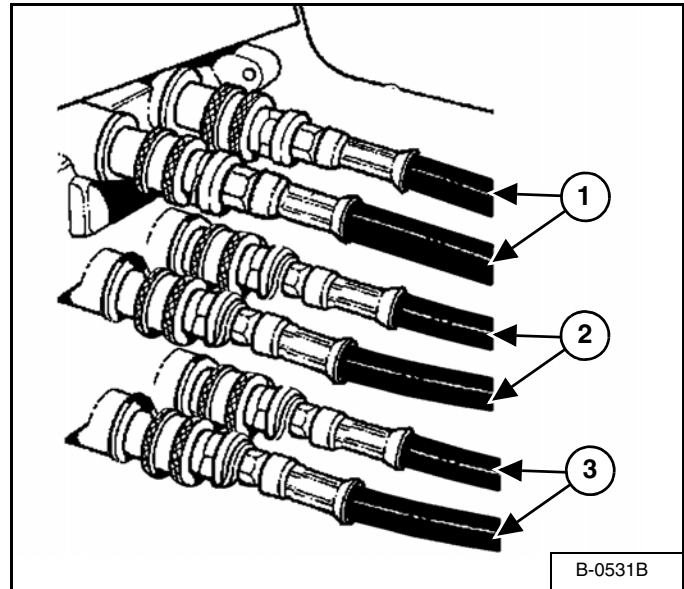
IMPORTANT

- Contain and dispose of any oil leakage in an environmentally safe manner.
- Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the system.

NOTE: Make sure the quick couplers are fully engaged. If the quick couplers do not fully engage, check to see that the couplers are the same size and type.

To Connect:

Figure 153



Pull back on the collar of the female coupler, push couplers together, release the collar when the couplers are fully engaged and locked [Figure 153].

Install the two winch quick coupler hoses (Item 1) [Figure 153].

Install the two hopper lift quick coupler hoses (Item 2) [Figure 153].

Install the two hydraulic mover valve block quick coupler hoses (Item 3) [Figure 153].

To Disconnect:

WARNING

AVOID BURNS

Hydraulic fluid, tubes, fittings and quick couplers can get hot when running equipment. Be careful when connecting and disconnecting quick couplers.

Pull back on the collar and pull the male coupler out to disconnect.

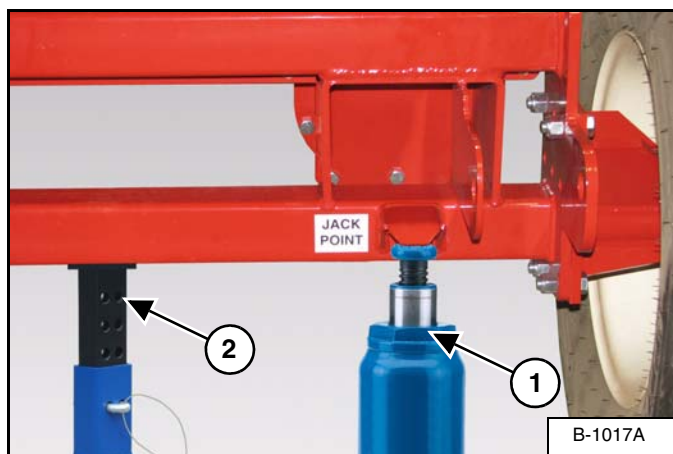
Axle Extension Installation



CRUSHING HAZARD

- Park the equipment on a solid level surface before raising any part of the equipment.
- Always support the load after raised.
- Do not work under a load supported by a jack or blocked parts.

Figure 154



Place a 5 Ton jack (Item 1) [Figure 154] under the axle.

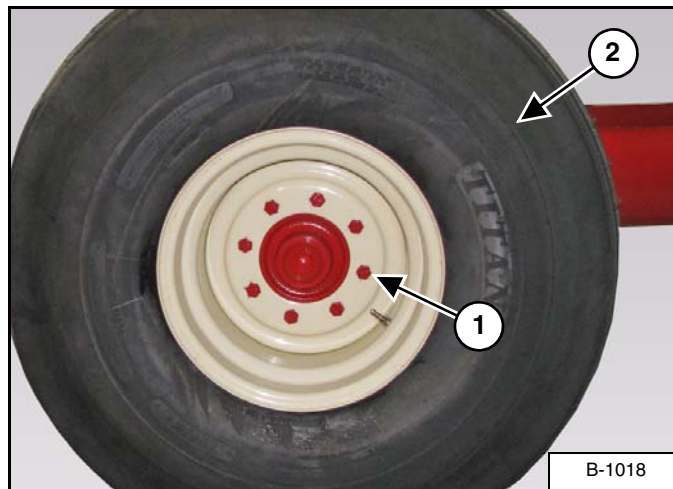


The base of the jack and jack stand should be fully supported and on solid level surface. When working on soft surfaces, put a sturdy metal plate under the base of the jack for stability.

Raise the jack / axle until the tire is off the ground.

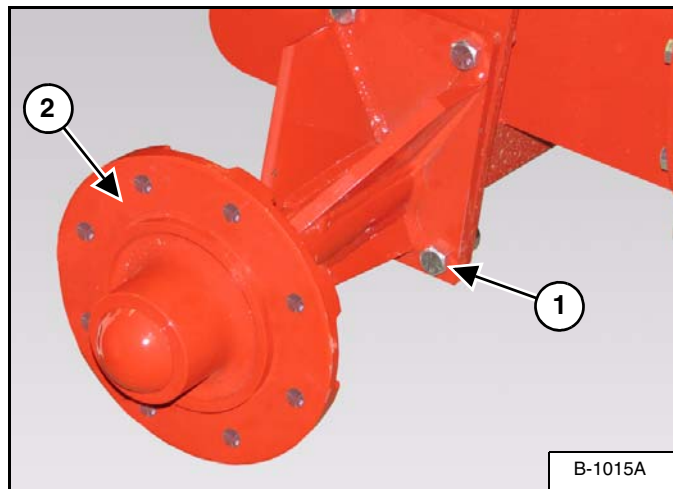
Place a jack stand (Item 2) [Figure 154] under the axle in the raised position (tire off the ground).

Figure 155



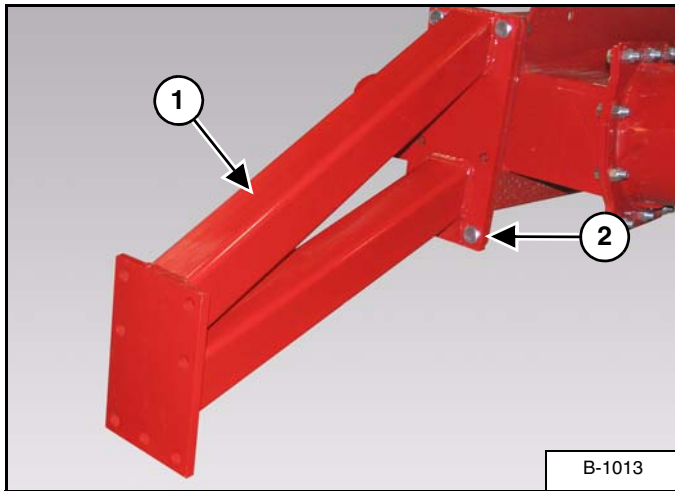
Remove the wheel bolts (Item 1) and remove the tire (Item 2) [Figure 155].

Figure 156



Remove the five 5/8" x 2" bolts (Item 1) and 5/8" lock nuts. Remove the hub assembly (Item 2) [Figure 156].

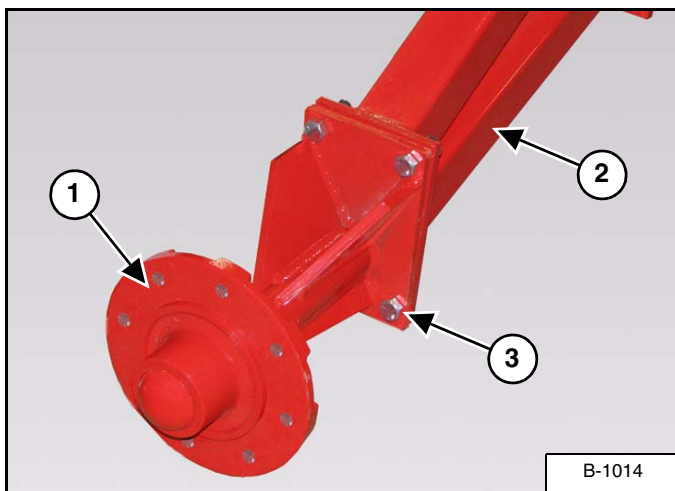
Figure 157



Align the axle extension (Item 1) with the axle mounting plate. Install five 5/8" x 2" bolts (Item 2) **[Figure 157]** (three bolts on the bottom / two on top) through the axle extension and axle mounting plate.

Install one 5/8" lock nut onto each 5/8" x 2" bolt. Tighten the bolts and nuts.

Figure 158

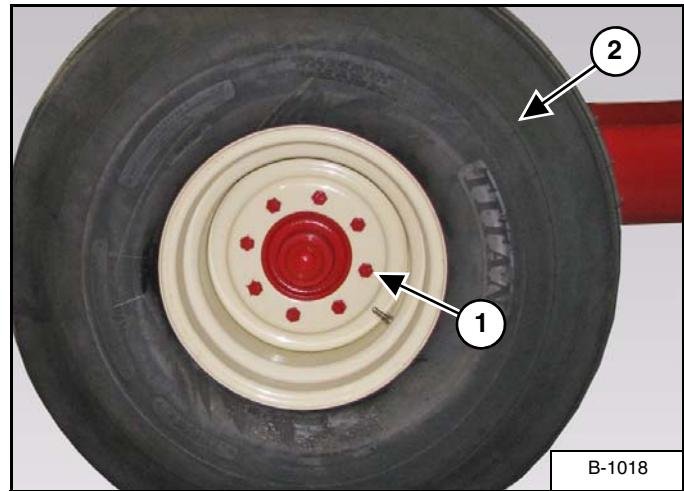


Align the hub assembly (Item 1) with the axle extension (Item 2) **[Figure 158]**.

Install five 5/8" x 2" bolts (Item 3) **[Figure 158]** (three bolts on the bottom / two on top) through the hub assembly.

Install one 5/8" lock nut onto each 5/8" x 2" bolt. Tighten the bolts and nuts.

Figure 159



Align and install the tire (Item 1). Install the eight wheel bolts (Item 2) **[Figure 159]**.

Tighten wheel bolts to 110 - 125 lb ft (149 - 169 N•m) of torque in a criss-cross pattern **[Figure 159]**.

NOTE: Recommended tire pressure is 45 - 50 PSI (310 - 345 kpa). Maximum tire pressure of 60 PSI (415 kpa).

Remove the jack and jack stand.

Repeat the procedure for the opposite axle extension.

AUGER OPERATION

Lowering And Raising The Hopper

WARNING



ENTANGLEMENT HAZARD

To prevent injury to fingers and hands:

- Keep hands clear of winch during operation.

CAUTION



CUT HAZARD

To prevent injury to fingers and hands:

- Always wear heavy leather gloves when handling a wire rope and operating the winch.
- Never guide the cable with your hands.
- Never let wire rope slip through your hands.

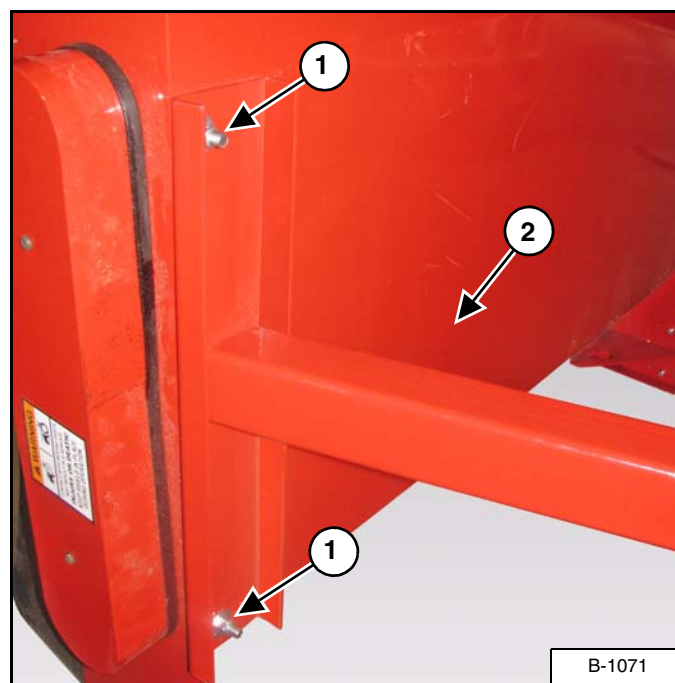
CAUTION

- Frayed, kinked or damaged wire rope must be replaced immediately.
- Always stand clear of wire rope and hopper during operation.
- Always stand clear and keep others away during operation.
- Never touch wire rope or hook while in tension or under load.
- Never touch wire rope or hook during winching operation.

IMPORTANT

Always maintain a minimum of three wraps of cable on the drum of the winch.

Figure 160



Remove two 1/2" x 2-1/2" bolts (Item 1), 1/2" flat washers and 1/2" lock nuts securing the hopper to the transport arm (Item 2) [Figure 160].

Enter the tractor and start the engine. (See “Entering And Leaving The Operator’s Position” on page 78.)

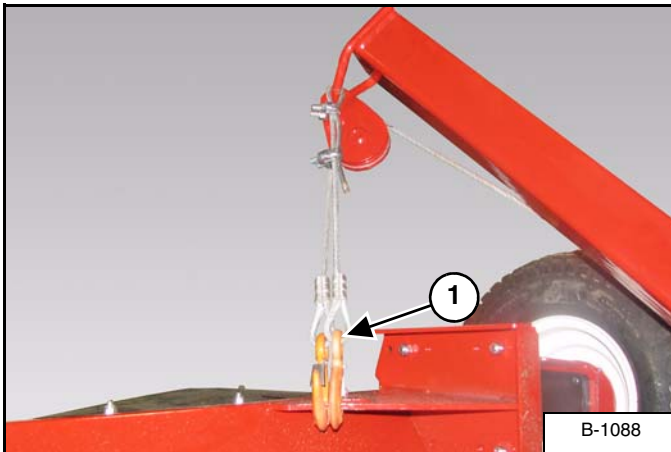
Engage the hydraulic circuit for the hopper lift. Run the tractor engine at low idle.

Using the tractor’s auxiliary control, slightly raise the hopper to release the safety chain tension.

Disengage the tractor hydraulics.

Leave the operator’s position. (See “Entering And Leaving The Operator’s Position” on page 78.)

Figure 161



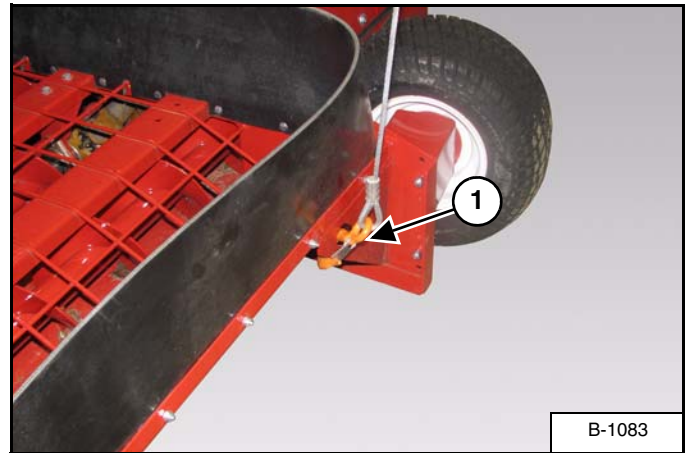
Remove the safety chain hook (Item 1) [Figure 161] from the hopper.

Enter the tractor and start the engine.

Engage the hydraulic circuit for the hopper lift. Run the tractor engine at low idle.

Using the tractor’s auxiliary control, slowly lower the hopper to the ground. Continue lowering the hopper until the cable has enough slack to be removed from the hopper.

Figure 162



Remove the hopper lift cable hook (Item 1) [Figure 162] from the hopper.

Hydraulic Hopper Mover Operation

CAUTION

Never operate the hydraulic hopper mover or hydraulic hopper lift when the PTO is engaged.

Lower the hopper. (See “Lowering And Raising The Hopper” on page 87.)

Enter the tractor and start the engine.

Engage the hydraulic circuit for the hopper mover control valve. Run the tractor engine at low idle.

Leave the operator’s position. (See “Entering And Leaving The Operator’s Position” on page 78.)

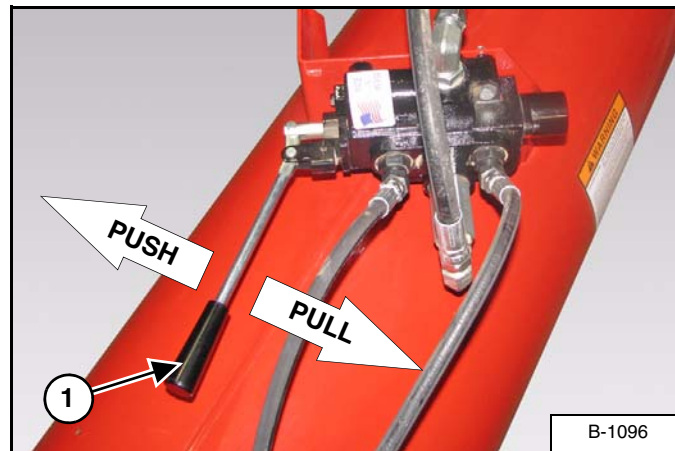
WARNING



AVOID INJURY OR DEATH

Before moving the hydraulic hopper, look in all directions and make sure no bystanders, especially small children are in the swing area of the hopper.

Figure 163



Pull / push the lever (Item 1) [Figure 163] to move the hopper to the desired location.

Move the hopper to the desired location. (See “Unloading Belly Dump Units” on page 95.) or (See “Unloading Rear And Side Dump Units” on page 97.) for additional information.

Raising The Auger



DANGER

ELECTROCUTION HAZARD

To prevent serious injury or death from electrocution:

- Be aware of overhead power lines.
- Keep away from power lines when transporting or raising auger.
- Electrocution can occur without direct contact.



CAUTION

- Do not operate the unit before reading and understanding the Operator's Manual.
- Keep all safety devices in place.
- Keep off the equipment at all times.
- Keep hands, feet and clothing away from moving parts while in operation.
- Make certain everyone is clear of the equipment before applying power or moving the machine.
- Do not adjust, service, lubricate, clean, unclog or move the mechanism until all power is shut off.
- While in operation, always support the discharge end or provide adequate anchorage of the intake end to prevent sudden tipping.
- Disconnect power of electrical driven units before resetting motor over loads.
- To avoid tipping, make sure auger is empty before attempting to move.
- Keep wheels of undercarriage level and on firm ground.
- Lower unit to the recommended transport position before transporting.



IMPORTANT

- Do not raise the main auger higher than 35° before lowering the intake auger or interference between the intake auger and the intake box will occur.
- Never attempt to raise or lower the auger during operation.
- Verify wheels are free to move.

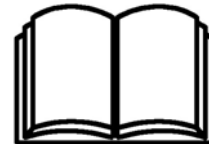


IMPORTANT

- Some types of fertilizer may cause accelerated wear and corrosion as well as added stress on lift components due to additional load.
- Use of fertilizer can affect warranty.



IMPORTANT



Follow the instructions in your tractor's operation manual for the correct operating instructions.

CAUTION

Disconnect The IID (PTO) from the tractor. Failure to follow this step EVERY time BEFORE maneuvering OR changing the auger elevation may cause damage to the tractor and / or auger IID.

Disconnect the PTO driveline from the tractor. (See "Connecting The PTO Driveline" on page 80.)

Enter the tractor, start the engine and release the parking brake.

Move the auger and tractor to the work area and park the auger and tractor on solid level surface.

Engage the tractor's parking brake, stop the engine and exit the tractor.

Install the axle extensions (if required). (See "Axle Extension Installation" on page 85.)

Enter the tractor, start the engine and release the parking brake.

With the axle extensions installed and main auger in the fully down position, move the auger towards the bin or barn. Position the auger as close as possible to the bin or barn with the tractor as close to in-line with the auger as possible.

CAUTION

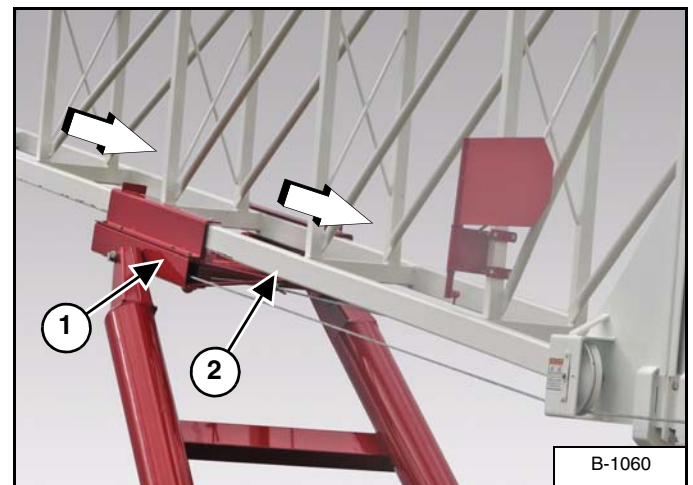
Keep wheels of undercarriage level and on firm ground. Raise the auger to the desired height and back the auger into position. Do not support the auger on the bin. As the auger becomes full, the weight may cause damage to the underside of the auger or to the bin.

CAUTION

Do not place blocks under the wheels to increase the elevation of auger.

Stop the tractor and engage the parking brake. Engage the tractor's hydraulics. Run the tractor engine at low idle.

Figure 164



Using the tractor controls, slowly raise the main auger. The track car (Item 1) will move down the upper truss support (Item 2) [Figure 164] raising the auger.

⚠ WARNING

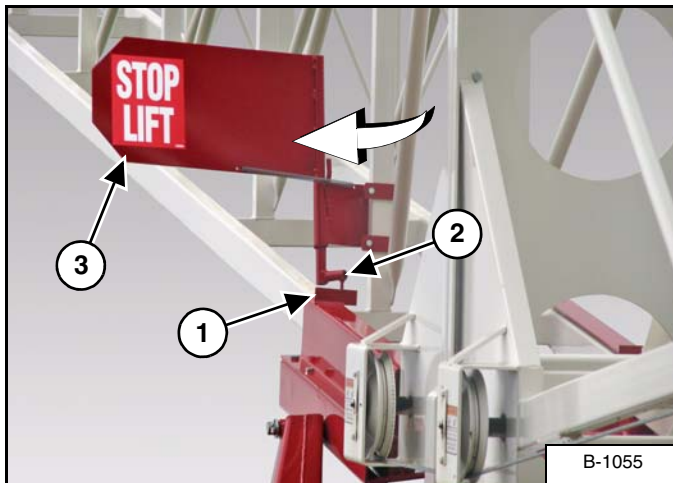


AVOID STRUCTURAL DAMAGE

Do not raise the auger beyond the point at which the STOP LIFT sign has been opened.

- Cable may break causing the auger to fall.
- Severe structural damage may occur.
- Operator must remain in the tractor's operating position while raising the auger.

Figure 165



When raising the auger to the desired height, if the tab (Item 1) on the top of the track car engages the trip lever (Item 2) and opens the STOP LIFT sign (Item 3) [Figure 165], STOP RAISING THE AUGER IMMEDIATELY.

Auger Placement

⚠ DANGER

ELECTROCUTION HAZARD

To prevent serious injury or death from electrocution:

- Be aware of overhead power lines.
- Keep away from power lines when transporting or raising auger.
- Electrocution can occur without direct contact.

⚠ CAUTION

- Do not operate the unit before reading and understanding the Operator's Manual.
- Keep all safety devices in place.
- Keep off the equipment at all times.
- Keep hands, feet and clothing away from moving parts while in operation.
- Make certain everyone is clear of the equipment before applying power or moving the machine.
- Do not adjust, service, lubricate, clean, unclog or move the mechanism until all power is shut off.
- While in operation, always support the discharge end or provide adequate anchorage of the intake end to prevent sudden tipping.
- Disconnect power of electrical driven units before resetting motor over loads.
- To avoid tipping, make sure auger is empty before attempting to move.
- Keep wheels of undercarriage level and on firm ground.
- Lower unit to the recommended transport position before transporting.

CAUTION

Disconnect The IID (PTO) from the tractor. Failure to follow this step EVERY time BEFORE maneuvering OR changing the auger elevation may cause damage to the tractor and / or auger IID.

Disconnect the PTO driveline from the tractor. (See "Connecting The PTO Driveline" on page 80.)

Enter the tractor, start the engine and release the parking brake.

Move the auger and tractor to the work area and park the auger and tractor on solid level surface.

Engage the tractor's parking brake, stop the engine and exit the tractor.

Install the axle extensions (if required). (See "Axle Extension Installation" on page 85.)

Enter the tractor, start the engine and release the parking brake.

With the axle extensions installed and main auger in the fully down position, move the auger towards the bin or barn. Position the auger as close as possible to the bin or barn with the tractor as close to in-line with the auger as possible.

CAUTION

Keep wheels of undercarriage level and on firm ground. Raise the auger to the desired height and back the auger into position. Do not support the auger on the bin. As the auger becomes full, the weight may cause damage to the underside of the auger or to the bin.

CAUTION

Verify that the auger wheels are free to move. Because of the scissors action of the auger undercarriage assembly, damage will occur to the auger if the wheels are not free to move.

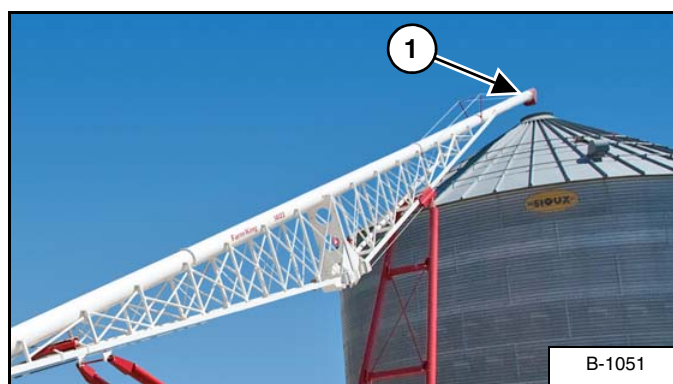
CAUTION

Do not place blocks under the wheels to increase the elevation of auger.

Stop the tractor and engage the parking brake. Engage the tractor's hydraulics. Run the tractor engine at low idle.

Raise the auger. (See "Raising The Auger" on page 90.)

Figure 166



Back the auger into position above the bin until the downspout (Item 1) [Figure 166] is centered on / over the opening on the bin. Lower the auger to the desired height above the bin.

Disengage the tractor hydraulics.

Engage the tractor's parking brake, stop the engine and exit the tractor. (See "Entering And Leaving The Operator's Position" on page 78.)

IMPORTANT

Disconnect the main auger winch hoses from the tractor to prevent accidental raising or lowering of the auger.

Disconnect the main auger winch hoses from the tractor.

Connect the PTO driveline. (See "Connecting The PTO Driveline" on page 80.)

Lower the hopper. (See "Lowering And Raising The Hopper" on page 87.)

Lowering The Auger



DANGER

ELECTROCUTION HAZARD

To prevent serious injury or death from electrocution:

- Be aware of overhead power lines.
- Keep away from power lines when transporting or lowering the auger.
- Electrocution can occur without direct contact.



CAUTION

- Do not operate the unit before reading and understanding the Operator's Manual.
- Keep all safety devices in place.
- Keep off the equipment at all times.
- Keep hands, feet and clothing away from moving parts while in operation.
- Make certain everyone is clear of the equipment before applying power or moving the machine.
- Do not adjust, service, lubricate, clean, unclog or move the mechanism until all power is shut off.
- While in operation, always support the discharge end or provide adequate anchorage of the intake end to prevent sudden tipping.
- Disconnect power of electrical driven units before resetting motor over loads.
- To avoid tipping, make sure auger is empty before attempting to move.
- Keep wheels of undercarriage level and on firm ground.
- Lower unit to the recommended transport position before transporting.



CAUTION

Disconnect The IID (PTO) from the tractor. Failure to follow this step EVERY time BEFORE maneuvering OR changing the auger elevation may cause damage to the tractor and / or auger IID.

Disconnect the PTO driveline from the tractor. (See "Connecting The PTO Driveline" on page 80.)

Connect hydraulic hoses. (See "Connecting Hydraulic Hoses" on page 84.)

Raise the hopper. (See "Lowering And Raising The Hopper" on page 87.)

Enter the tractor, start the engine and release the parking brake.

Engage the tractor hydraulics.

NOTE: Verify that the discharge spout will clear the top of the bin (raise auger if needed).

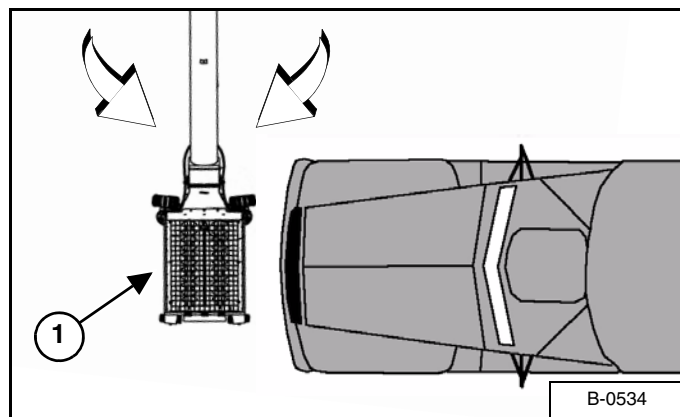
Move the auger and tractor away from the bin until there is adequate space to fully lower the auger.

Engage the tractor's parking brake, stop the engine and exit the tractor.

LOADING GRAIN INTO THE HOPPER

Unloading Belly Dump Units

Figure 167



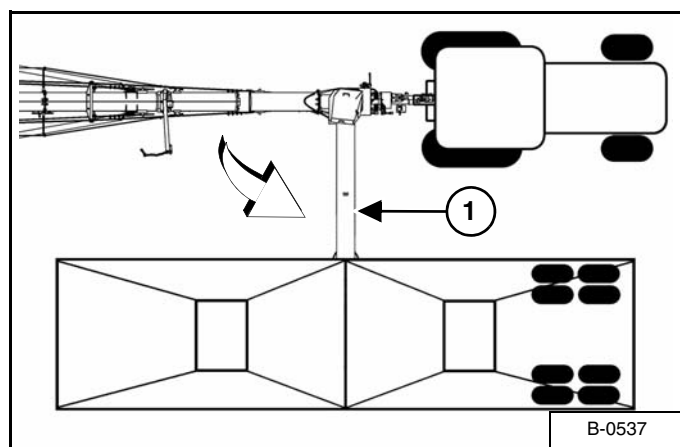
Move the hopper (Item 1) [Figure 167] out, at a 90° angle from the auger.

Move the belly dump unit into position, centered on the hopper [Figure 167].

Mark the path of the belly dump unit for future units to unload and maintain the proper distance from the auger to allow adequate space for the hopper to be moved in and out without interference.

Move the hopper mover lever left or right to move the hopper in towards the auger, away from vehicle traffic.

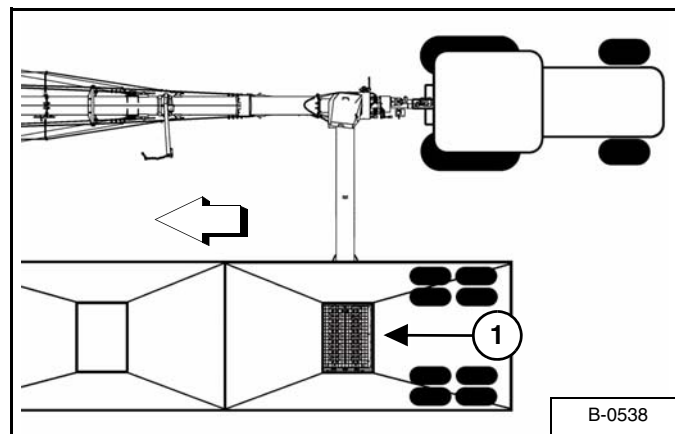
Figure 168



Move the belly dump unit straight forward until centered on the intake auger pivot. Stop the belly dump unit.

Move the hopper (Item 1) [Figure 168] under the belly dump unit.

Figure 169



Move the belly dump unit forward until the rear compartment is directly over the hopper (Item 1) [Figure 169].

WARNING



- Do NOT exceed 1000 RPM PTO.
- Keep PTO shields and all guards in place.
- Keep away from moving parts.
- Keep bystanders away.

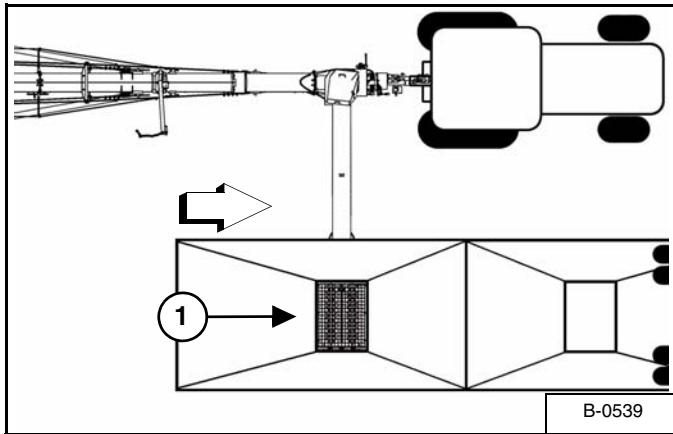
With tractor running at a low idle, engage the tractor PTO slowly to start the auger. Increase engine RPM (do not exceed 1000 RPM PTO speed).

Slowly open the rear compartment gate.

Adjust gate until the hopper augers and intake auger can move grain to the main auger without overflowing the hopper.

When the rear compartment is empty, close the gate, disengage the PTO and lower engine RPM speed.

Figure 170



Move the belly dump unit back until the front compartment is directly over the hopper (Item 1) **[Figure 170]**.

WARNING



- **Do NOT exceed 1000 RPM PTO.**
- **Keep PTO shields and all guards in place.**
- **Keep away from moving parts.**
- **Keep bystanders away.**

With tractor running at a low idle, engage the tractor PTO slowly to start the auger. Increase engine RPM (do not exceed 1000 RPM PTO speed).

Slowly open the front compartment gate.

Adjust gate until the hopper augers and intake auger can move grain to the main auger without overflowing the hopper.

When the front compartment is empty, close the gate, disengage the PTO and lower engine RPM speed.

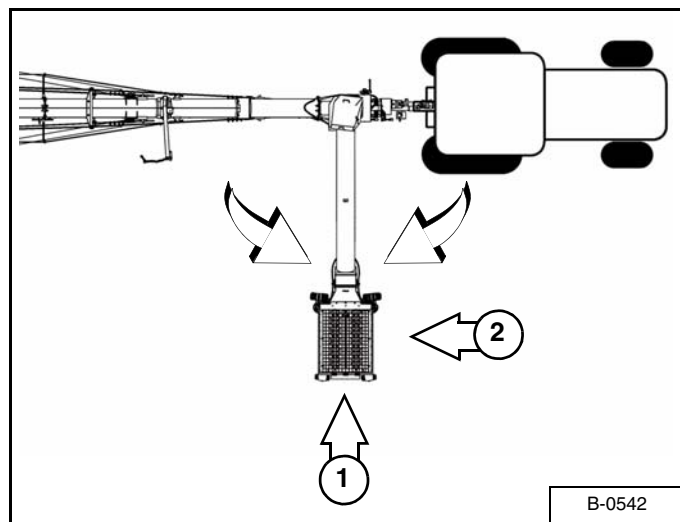
Move the hopper in the desired position away from vehicle traffic.

Disengage the tractor hydraulics and exit the tractor.

Unloading Rear And Side Dump Units

Rear Dump Units

Figure 171



Move the hopper out at a 90° angle from the auger [Figure 171].

Move the rear dump unit into the unloading position at the end of the hopper (Item 1) or on the tractor side of the hopper (Item 2) [Figure 171].

Position the gate of the rear dump unit over the hopper (as close to the center of the hopper as possible).

Stop the rear dump unit and engage the parking brake (if equipped).

WARNING



- Do NOT exceed 1000 RPM PTO.
- Keep PTO shields and all guards in place.
- Keep away from moving parts.
- Keep bystanders away.

With tractor running at a low idle, engage the tractor PTO slowly to start the auger. Increase engine RPM (do not exceed 1000 RPM PTO speed).

Slowly open the gate on the rear dump unit.

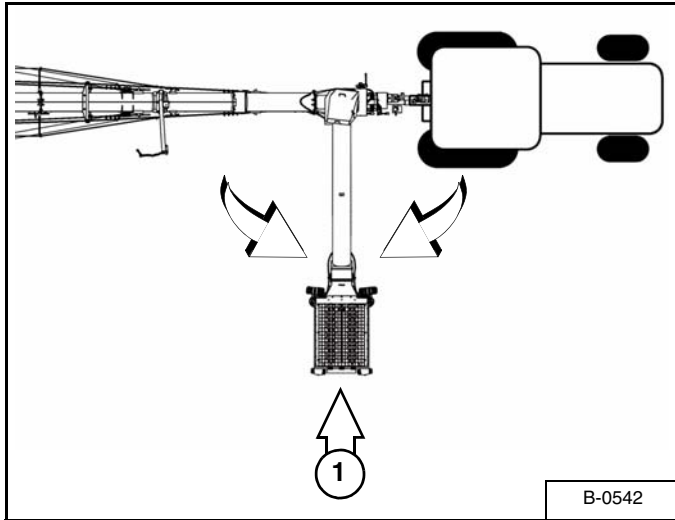
Adjust gate until the hopper augers and intake auger can move grain to the main auger without overflowing the hopper.

When the unit is empty, close the gate, disengage the PTO and lower engine RPM speed.

Disengage the tractor hydraulics and exit the tractor.

Side Dump Units

Figure 172



Move the hopper out at a 90° angle from the auger [Figure 172].

Move the side dump unit into the unloading position at the end of the hopper (Item 1) [Figure 172].

Position the gate of the side dump unit over the hopper (as close to the center of the hopper as possible).

Stop the side dump unit and engage the parking brake (if equipped).

WARNING



- Do NOT exceed 1000 RPM PTO.
- Keep PTO shields and all guards in place.
- Keep away from moving parts.
- Keep bystanders away.

With tractor running at a low idle, engage the tractor PTO slowly to start the auger. Increase engine RPM (do not exceed 1000 RPM PTO speed).

Slowly open the gate on the side dump unit.

Adjust gate until the hopper augers and intake auger can move grain to the main auger without overflowing the hopper.

When the unit is empty, close the gate, disengage the PTO and lower engine RPM speed.

Disengage the tractor hydraulics and exit the tractor.

TRANSPORTING

Requirements



ELECTROCUTION HAZARD

To prevent serious injury or death from electrocution:

- Be aware of overhead power lines.
- Keep away from power lines when transporting or raising auger.
- Electrocution can occur without direct contact.



Use of an unapproved hitch or tractor / tow vehicle can result in loss of control, leading to serious injury or death.

Tractor / tow vehicle and hitch must have the rated capacity to tow equipment.



- Do not operate the unit before reading and understanding the Operator's Manual.
- Make certain everyone is clear of the equipment before applying power or moving the machine.
- To avoid tipping, make sure auger is empty before attempting to move.
- Keep wheels of undercarriage level and on firm ground.
- Lower unit to the recommended transport position before transporting.
- Disconnect PTO driveline from the tractor before moving or transporting.



Never exceed 20 mph (32 kph).



Do not move or transport the auger unless the hopper and intake auger are in the raised / transport position and securely fastened before transporting.

Comply with federal, state, local and provincial laws regarding the transport of farm equipment on public roadways.

Verify that the tractor / tow vehicle are approved for transporting the equipment and that the equipment is securely attached to the tractor / tow vehicle.

Verify safety chain is installed and properly connected before transporting equipment.

Verify that the SMV (Slow Moving Vehicle) emblem, all lights and reflectors are clean and visible.

Always attach a red flag to the end of the auger when transporting on roads.

Disconnect the PTO driveline from the tractor before transporting.

Transporting Guidelines

The ratio of the tractor / tow vehicle weight to the loaded equipment weight plays an important role in defining acceptable travel speed.

TRAVEL SPEED - Acceptable travel speed.

WEIGHT RATIO - Weight of fully equipped or loaded implement(s) relative to weight of tractor / tow vehicle.

TRAVEL SPEED	WEIGHT RATIO
Up to 20 mph (32 kph)	1 to 1 (or less)
Up to 10 mph (16 kph)	2 to 1 (or less)
DO NOT TOW	More than 2 to 1

Transporting Procedure

Remove all supports on the discharge end and anchoring from the intake end (if required).

Disconnect the PTO driveline from the tractor. (See "Connecting The PTO Driveline" on page 80.)

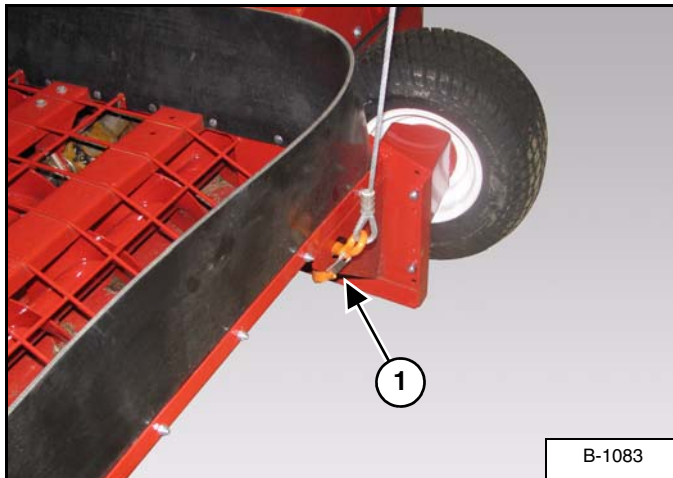
Lower the auger. (See "Lowering The Auger" on page 94.)

Raise the hopper. (See "Lowering And Raising The Hopper" on page 87.)

Enter the tractor, start the engine and engage the tractor's hydraulics.

Engage the hydraulic circuit for the hopper / winch control valve on the intake box. Run the tractor engine at low idle.

Figure 173



Install the boom cable (Item 1) [Figure 173] onto the hopper.

Figure 174



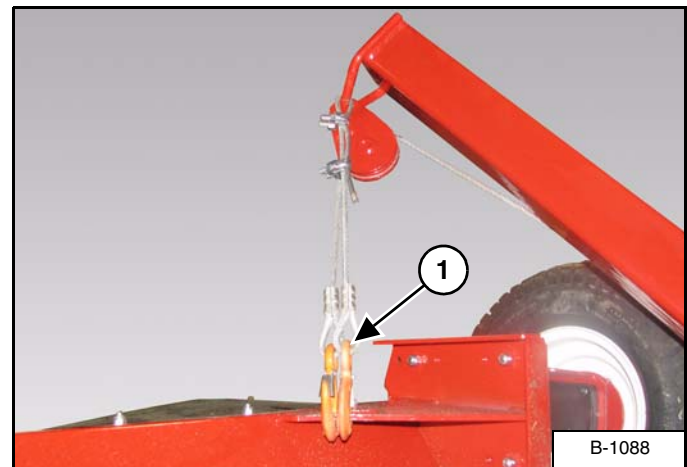
Using the tractor controls, slowly raise the hopper into the transport position [Figure 174].

Raise the hopper until the transport cable can be installed.



The weight of the hopper and intake auger assembly must be supported by the transport cable, whenever the auger is moved.

Figure 175

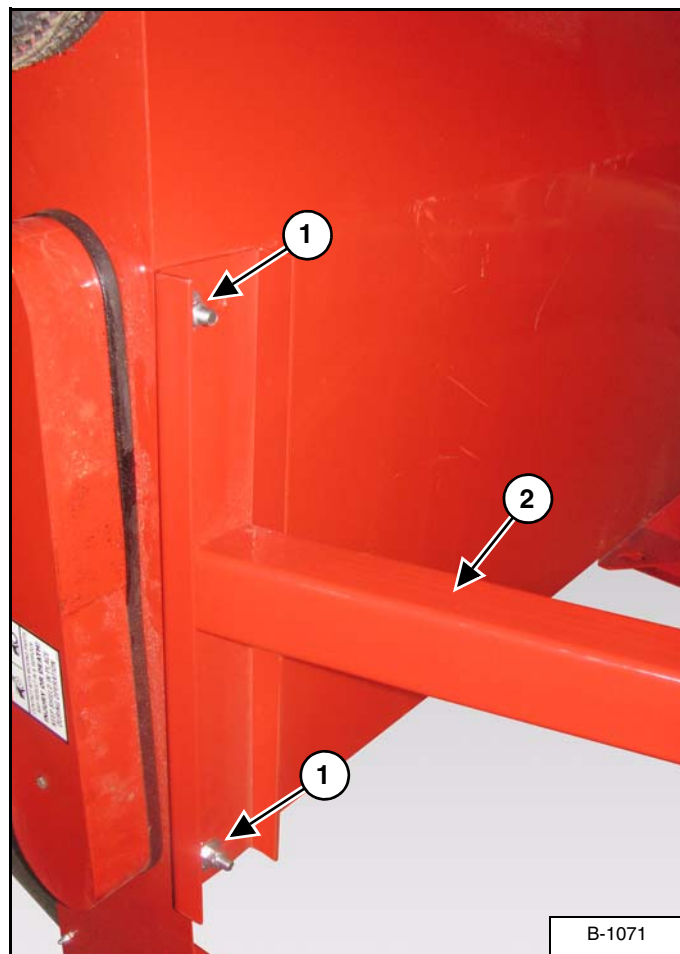


Install the transport cable (Item 1) [Figure 175] onto the hopper.

Lower the hopper until the transport cable is supporting the weight of the hopper and intake auger.

Engage the tractor's parking brake, stop the engine and exit the tractor.

Figure 176



Align the two holes (Item 1) in the bottom of the hopper with the two holes in the transport arm (Item 2) [Figure 176].

Install two 1/2" x 2-1/2" bolts through the bottom of the hopper and transport arm. Install one 1/2" flat washer and 1/2" lock nut onto each bolt. Tighten the bolts and nuts to secure the hopper to the transport arm.

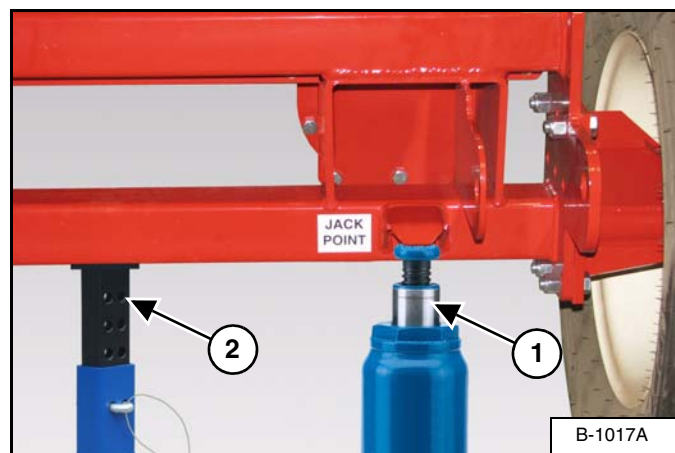
⚠ WARNING



CRUSHING HAZARD

- Park the equipment on a solid level surface before raising any part of the equipment.
- Always support the load after raised.
- Do not work under a load supported by a jack or blocked parts.

Figure 177



Place a 5 Ton jack (Item 1) [Figure 177] under the axle.

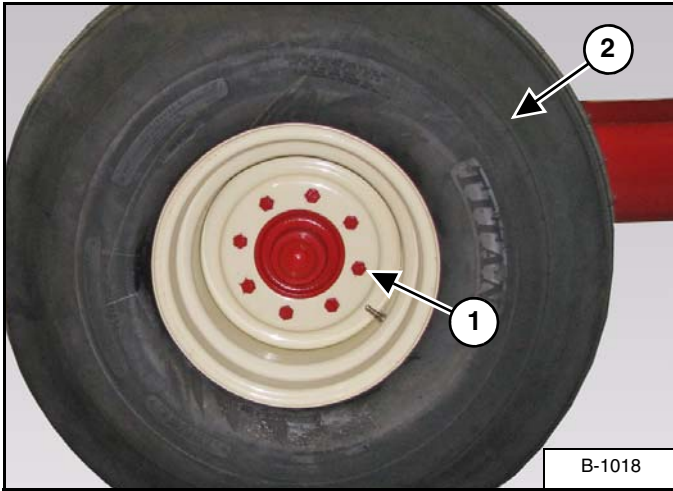
⚠ IMPORTANT

The base of the jack and jack stand should be fully supported and on solid level surface. When working on soft surfaces, put a sturdy metal plate under the base of the jack for stability.

Raise the jack / axle until the tire is off the ground.

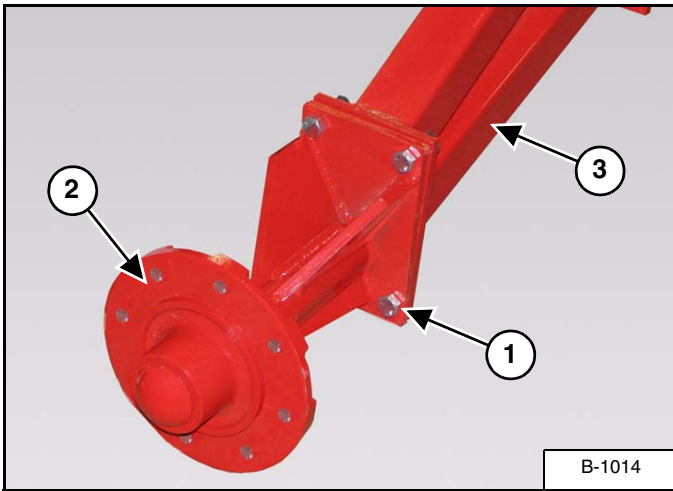
Place a jack stand (Item 2) [Figure 177] under the axle in the raised position (tire off the ground).

Figure 178



Remove the eight wheel bolts (Item 1) and remove tire (Item 2) **[Figure 178]**.

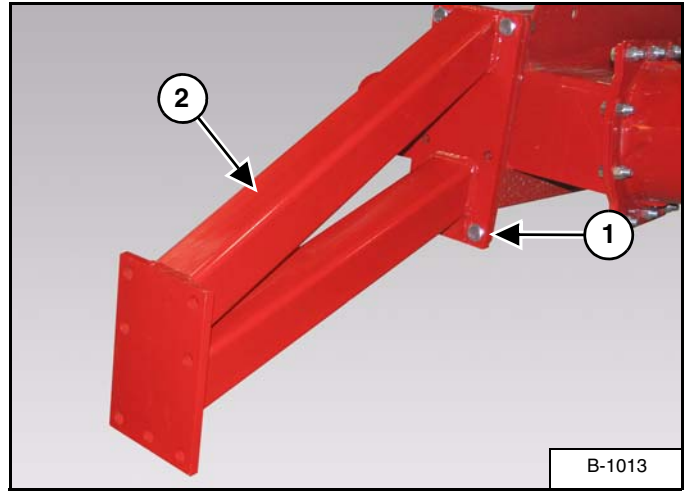
Figure 179



Remove five 5/8" x 2" bolts (Item 1) **[Figure 179]** (three bolts on the bottom / two on top).

Remove the hub assembly (Item 2) from the axle extension (Item 3) **[Figure 179]**.

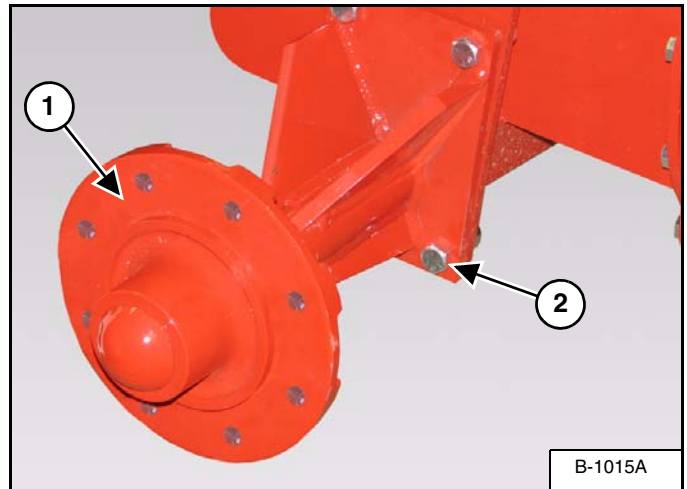
Figure 180



Remove the five 5/8" x 2" bolts (Item 1) **[Figure 180]** (three bolts on the bottom / two on top).

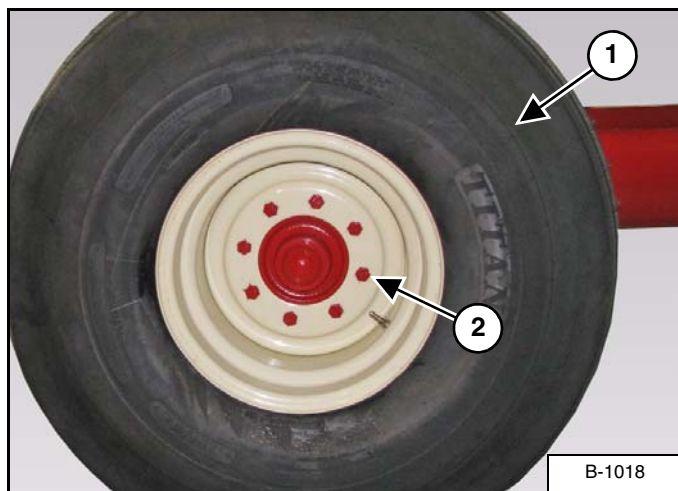
Remove the axle extension (Item 2) **[Figure 180]**.

Figure 181



Install the hub assembly (Item 1) onto the axle. Install the five 5/8" x 2" bolts (Item 2) **[Figure 181]** and 5/8" lock nuts (three bolts on the bottom / two on top).

Figure 182



Align and install the tire (Item 1). Install the eight wheel bolts (Item 2) [Figure 182].

Tighten wheel bolts to 110 - 125 lb ft (149 - 169 N•m) of torque in a criss-cross pattern [Figure 182].

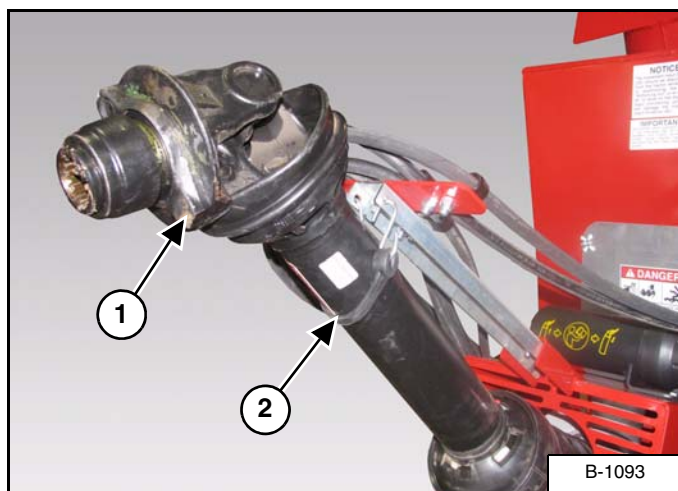
NOTE: Recommended tire pressure is 45 - 50 PSI (310 - 345 kpa). Maximum tire pressure of 60 PSI (415 kpa).

Remove the jack and jack stand.

Repeat the procedure for the opposite axle extension.

Disconnect all hydraulic hoses from the tractor. (See "To Disconnect:" on page 84.)

Figure 183



Verify the PTO driveline (Item 1) is secured in the transport position with the rubber strap (Item 2) [Figure 183].

Farm King



MAINTENANCE

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Farm King



TROUBLESHOOTING

Chart



Instructions are necessary before operating or servicing equipment. Read and understand the Operator And Parts Manual and safety signs (decals) on equipment. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

NOTE: If a problem is encountered that is difficult to solve, even after having read through this troubleshooting section, please call your local distributor, dealer or factory. Before you call, please have this Operator And Parts Manual and the serial number of your machine at hand.

PROBLEM	CAUSE	CORRECTION
Excessive auger vibration.	Improper break-in of the auger.	Inspect flighting and / or tube. Replace flighting and / or tube if damaged.
	Running auger empty.	Inspect flighting and / or tube. Replace flighting and / or tube if damaged.
	Bent auger flighting.	Remove the flighting from the tube and inspect for straightness. Straighten the flight and re-install.
	Improper PTO speed.	Operate the auger at 1000 RPM PTO speed. Adjust speed as required.
Excessive shear bolt failure.	Starting or stopping the auger at maximum PTO speed.	Start and stop the auger at reduced PTO speed (approximately 500 RPM).
	Reduced PTO speed when full feeding the intake hopper.	Increase the PTO speed or reduce feed rate.
	Overloading the intake hopper.	Avoid overloading and force-feeding of the hopper.
	Starting the auger under load.	Empty auger completely before stopping.
	Wet grain.	Reduce the rate of flow into the intake hopper.
Plugging the auger.	Reduced PTO speed when full feeding the intake hopper.	Avoid overloading and force-feeding of the hopper.
	Overloading the intake hopper.	Avoid overloading and force-feeding of the hopper.
	Foreign objects in the auger.	Remove foreign objects from flighting and tube.
	Wet grain.	Reduce the rate of flow into the intake hopper.
	Snow or ice in grain.	Reduce the rate of flow into the intake hopper.

SERVICE SCHEDULE

Maintenance Intervals

Maintenance work must be done at regular intervals. Failure to do so will result in excessive wear and early failures. The service schedule is a guide for correct maintenance of the Backsaver Auger.



WARNING

Instructions are necessary before operating or servicing equipment. Read and understand the Operator and Parts Manual and safety signs (decals) on equipment. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

#	DESCRIPTION	SERVICE PROCEDURES						
		Check	Clean	Lube	Change	Adjust	Drain	Locations
Daily Maintenance (or every 6 - 8 hours)								
1	Hopper Hanger Bearings			•				
2	Drop Spout Hanger Bearing			•				
3	Hopper Flight U-Joints			•				
4	Hopper Telescoping Power Driveline			•				
5	Auger Main PTO Driveline			•				
Weekly (or every 50 hours)								
6	Track Car Sheaves			•				
7	Hopper Upper Gear Box			•				
8	Lower Auger Gear Box			•				
Annually (or every 500 hours)								
9	Hopper Upper Gear Box				•			
10	Lower Auger Gear Box				•			
11	Hopper Chain Case			•				

LUBRICATION

Recommendations

Always use a good quality multi-purpose / lithium base grease when lubricating the equipment.

! IMPORTANT

Do not over-grease bearings. Greasing too often can damage seals and lead to premature bearing failure.

- Always use a hand-held grease gun.
- Clean fitting before greasing, to avoid injecting dirt and grit.
- Replace and repair broken fittings immediately.
- If fittings will not take grease, remove and clean thoroughly. Replace fitting if necessary.

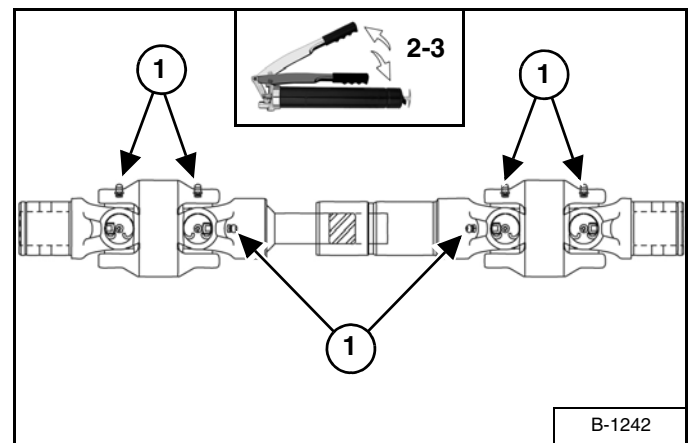
Locations

! IMPORTANT

Fluid such as engine oil, hydraulic fluid, coolants, grease, etc. must be disposed of in an environmentally safe manner. Some regulations require that certain spills and leaks on the ground must be cleaned in a specific manner. See local, state and federal regulations for the correct disposal.

Lubricate the following grease locations EVERY 8 HOURS:

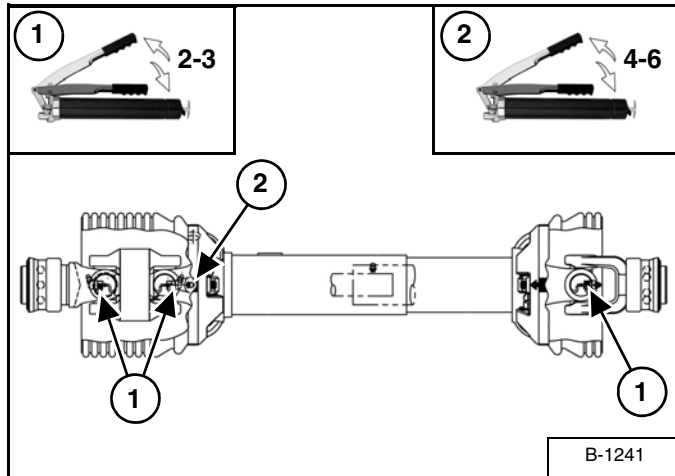
Figure 184



Apply two - three pumps of grease to the hopper telescoping power driveline (Item 1) [Figure 184].

NOTE: The auger PTO driveline is equipped with extended life bearings. Do not over-grease.

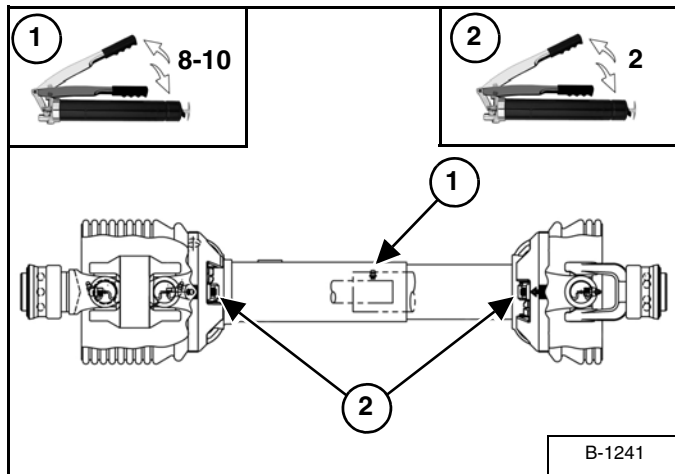
Figure 185



Apply two - three pumps of grease to the cross and bearings (Item 1) [Figure 185] on the auger PTO driveline.

Apply four - six pumps of grease to the C.V. ball and socket (Item 2) [Figure 185] on the auger PTO driveline.

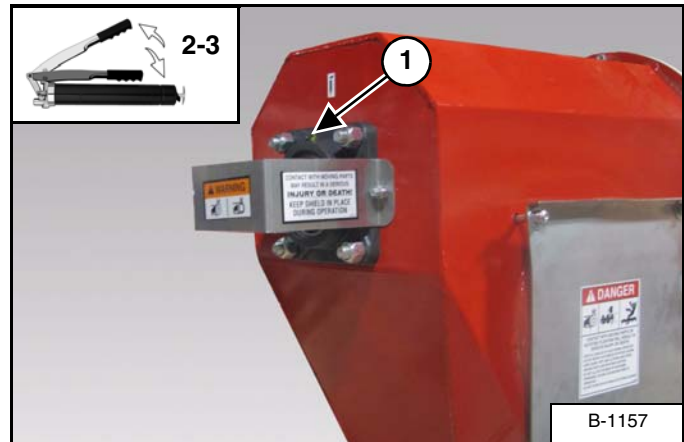
Figure 186



Apply eight - ten pumps of grease to the telescoping members (Item 1) [Figure 186] on the PTO driveline.

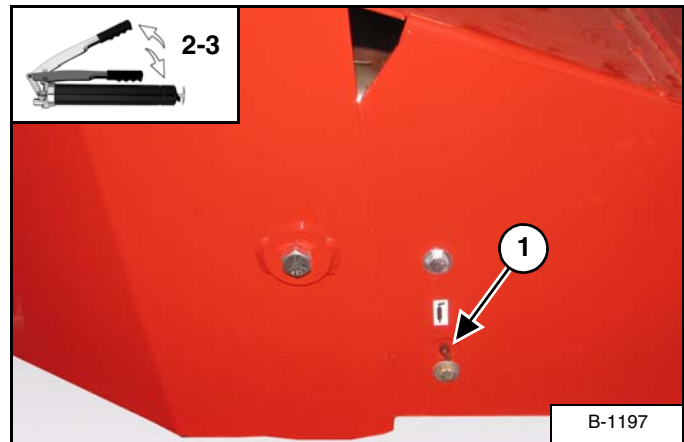
Apply two pumps of grease to the non-rotating guard bushings (Item 2) [Figure 186] on the PTO driveline.

Figure 187



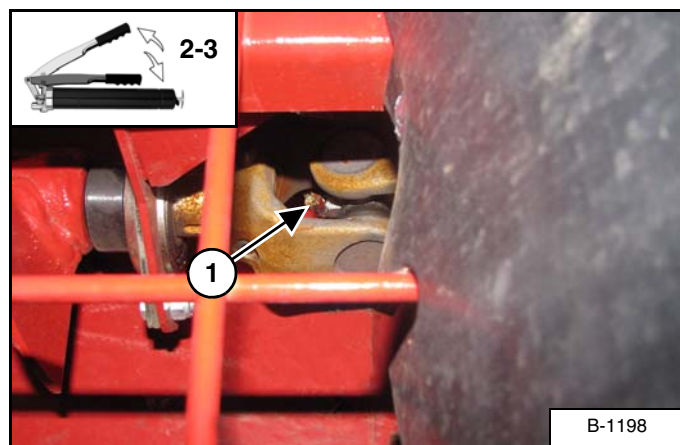
Apply two - three pumps of grease to the drop spout hanger bearing (Item 1) [Figure 187].

Figure 188



Apply two - three pumps of grease to the hopper hanger bearings (Item 1) [Figure 188] (both sides).

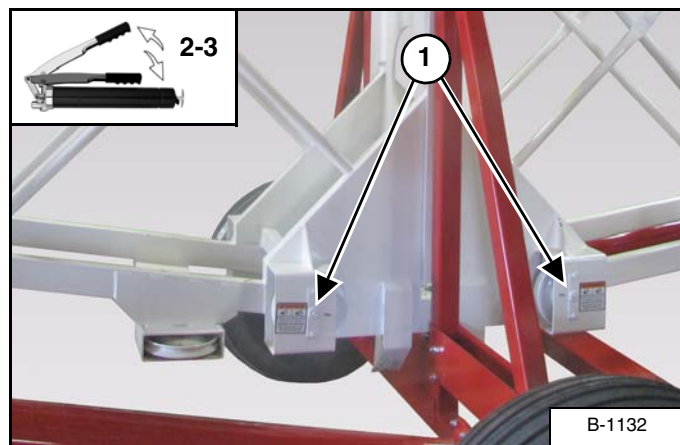
Figure 189



Apply two - three pumps of grease to the hopper flight u-joints (Item 1) [Figure 189].

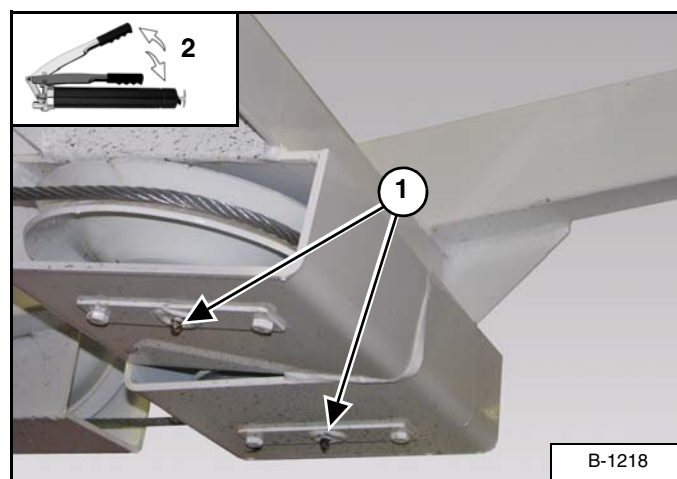
Lubricate the following grease locations EVERY 50 HOURS:

Figure 190



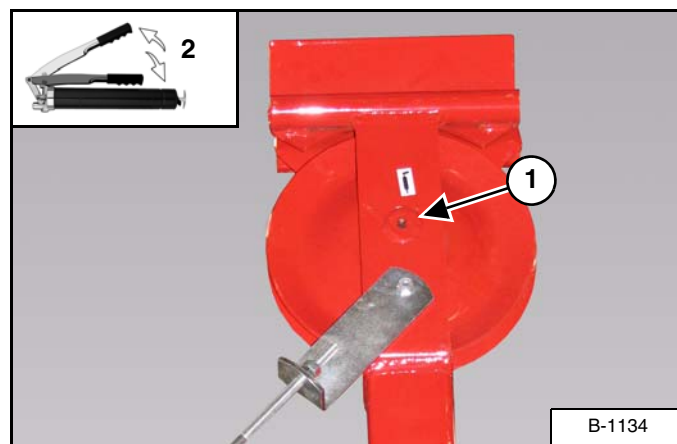
Apply two - three pumps of grease to the vertical sheaves (Item 1) [Figure 190] on the trusses (both sides).

Figure 191



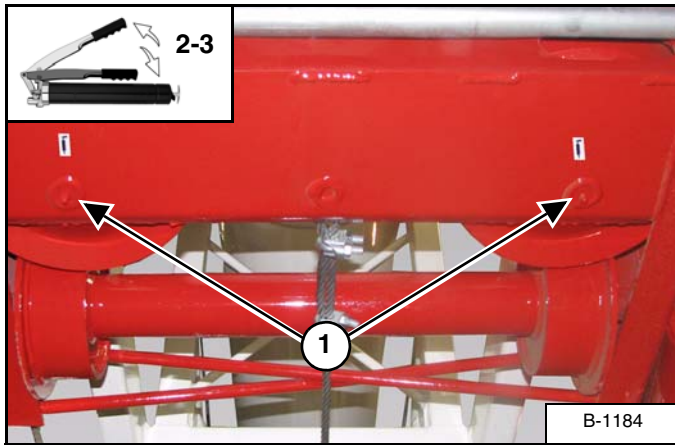
Apply two - three pumps of grease to the horizontal sheaves (Item 1) [Figure 191].

Figure 192



Apply two - three pumps of grease to the top sheave (Item 1) [Figure 192] on the axle riser (both sides).

Figure 193



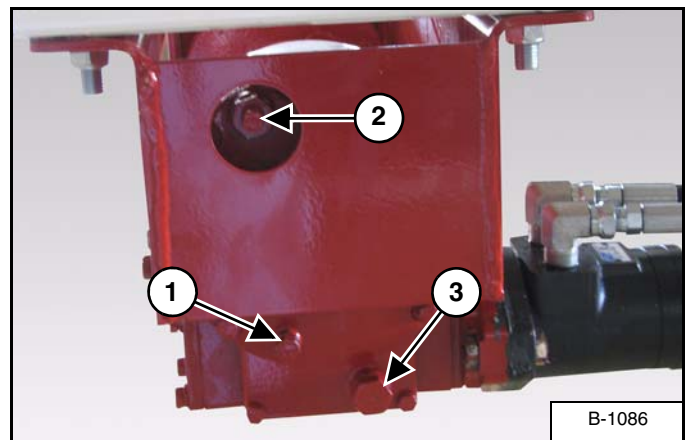
Apply two - three pumps of grease to the sheaves (Item 1) [Figure 193] on the track car.

Figure 194



Apply two - three pumps of grease to the hopper chain case (Item 1) [Figure 194].

Figure 195



Check the winch gearbox oil level every 50 hours or weekly.

NOTE: Oil should be changed after the first 24 hours of operating time. Then the oil should be changed every 100 hours of operating time, or every six months, whichever comes first.

Remove the level plug (Item 1) [Figure 195] from the gearbox. Oil level should be at the bottom of the plug hole.

If the oil level is low, Remove the vent / fill plug (Item 2) [Figure 195] and add SAE 90 (GL-S) gear oil until the oil is at the bottom of the hole.

Changing Gear Oil

Remove the drain plug (Item 3) [Figure 195] and drain gear oil in a collection container.

When gear oil is drained completely, install and tighten the drain plug.

Remove the level plug (Item 1) [Figure 195].

Remove the vent / fill plug (Item 2) [Figure 195] and siphon all the gear oil from the gearbox.

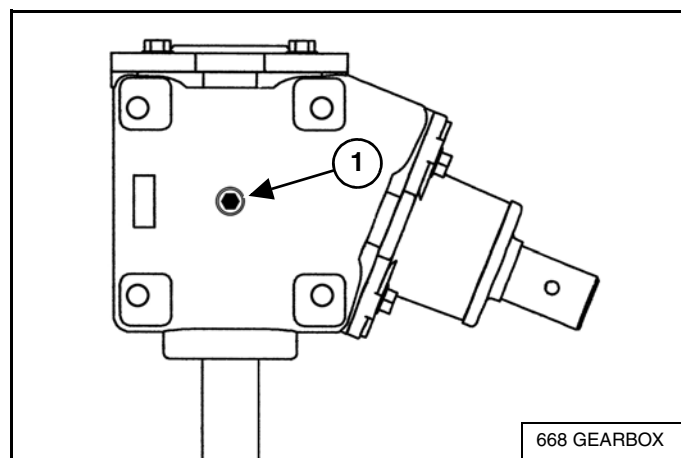
Fill with SAE 90 gear oil (8 oz. capacity) to the bottom of the level plug hole. Install vent / fill plug and level plug.

! IMPORTANT

The oil capacity is 1/2 pint (8 oz.) to the bottom of the level plug opening; however, with heavy use, up to 2 pints should be used to cool and lubricate the winch properly.

668 Upper Gearbox

Figure 196



Check the gearbox oil level every 50 hours or weekly.

Remove the fill / drain plug (Item 1) **[Figure 196]** from the gearbox. Oil level should be at the bottom of the plug hole.

If the oil level is low, add SAE 90 gear oil until the oil is at the bottom of the hole.

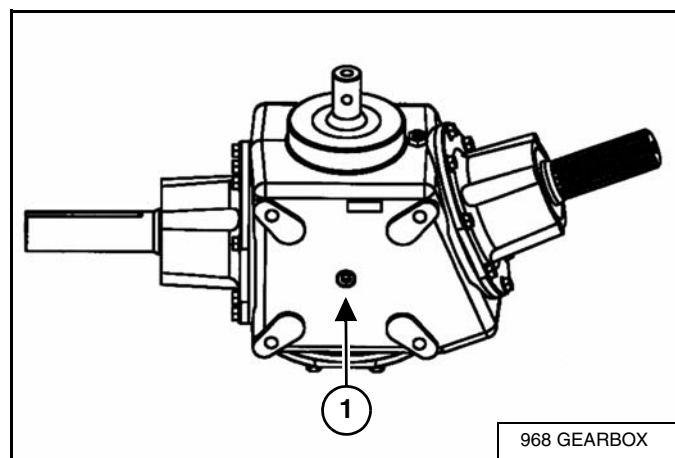
Changing Gear Oil

Remove the fill / drain plug (Item 1) **[Figure 196]** and siphon all the gear oil from the gearbox.

Fill with SAE 90 gear oil (18 oz. capacity) to the bottom of the plug hole. Install fill / side plug.

968 Lower Gearbox

Figure 197



Check the gearbox oil level every 50 hours or weekly.

Remove the fill / drain plug (Item 1) **[Figure 197]** from the gearbox. Oil level should be at the bottom of the plug hole.

If the oil level is low, add SAE 75W-90 synthetic gear oil until the oil is at the bottom of the hole.

Changing Gear Oil

Remove the fill / drain plug (Item 1) **[Figure 197]** and siphon all the gear oil from the gearbox.

Fill with SAE 75W-90 synthetic gear oil (192 oz. capacity) to the bottom of the plug hole. Install fill / side plug.

Cleaning And Inspection

NOTE: Inspect the driveline components, replace all damaged or worn components.

Use solvent to clean the shaft and tube. Use compressed air to dry and remove excess solvent from the parts.

Apply a light coat of grease to the shaft and the tube end.

Use solvent to clean the slide collars, yokes, crosses and bearings. Use compressed air to dry the parts.

Apply a light coat of grease to the inside of the slide collars.

AXLE

Wheel Lug Nut Torque

Check the torque on wheel lug nuts daily. Tighten lug nuts to 110 - 125 lb. / ft. (149 - 169 N•m) torque.

Tire / Wheel Replacement

Empty the Backsaver Auger (if required).



WARNING

AVOID INJURY OR DEATH

Before you leave the operator's position:

- Always park on a flat level surface.
- Place all controls in **NEUTRAL**.
- Engage the park brake.
- Stop the engine and remove the key.
- Wait for all moving parts to stop.

Park the tractor / equipment on a flat level surface.

Place all controls in neutral, engage the park brake, stop the engine and wait for all moving parts to stop. Leave the operator's position.



WARNING

AVOID INJURY OR DEATH

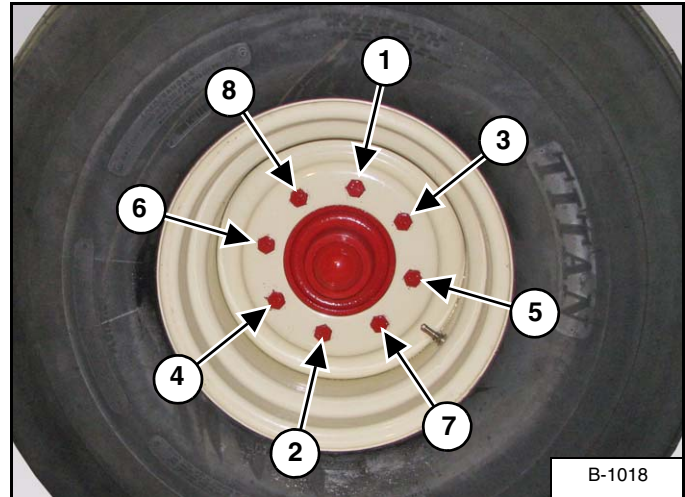
- The parking brake must be engaged before leaving the operator's position. Rollaway can occur because the transmission may not prevent machine movement.
- Always chock tires before performing any maintenance or service.

Place chock blocks behind and in front of the auger tire(s).

Place a jack under the axle frame on the side the wheel is to be replaced. Raise the jack until the wheel is slightly off the ground.

NOTE: Place blocks under the frame to help secure the auger when wheel is raised off the ground.

Figure 198



Tighten wheel nuts in a criss-cross pattern [Figure 198]. Tighten wheel nuts to 110 - 125 lb ft (149 - 169 N•m) of torque.

Lower the axle and tires to the ground. Remove the lifting device.

Check tire pressure.

NOTE: Recommended tire pressure is 45 - 50 PSI (310 - 345 kpa). Maximum tire pressure of 60 PSI (415 kpa).

SAFETY SIGN (DECAL) INSTALLATION

Procedure



When replacing safety signs (decals), the temperature must be above 10° C (50° F).

- Remove all portions of the damaged safety sign (decal).
- Thoroughly clean the area with glass cleaner. Removing all adhesive residue.
- Allow the area to dry completely before installing the new safety sign (decal).
- Position the safety sign (decal) in the correct location. Remove a small portion of the backing paper on the safety sign (decal).
- Press on the safety sign (decal) where the backing paper has been removed.
- Slowly remove the remaining backing paper, pressing on the safety sign (decal) as the backing paper is removed.
- Using the backing paper, pressing firmly, move the backing paper over the entire safety sign (decal) area.

NOTE: Small air pockets can be pierced with a pin and smoothed out using the piece of the backing paper.

STORAGE AND RETURN TO SERVICE**Storage**

Sometimes it may be necessary to store your Farm King Backsaver Auger for an extended period of time. Below is a list of items to perform before storage.



DO NOT permit children to play on or around the stored machine.

Return To Service

After the Farm King Backsaver Auger has been in storage, it is necessary to follow a list of items to return the equipment to service.

- Be sure all shields and guards are in place.
- Lubricate the equipment.
- Connect to a tractor and operate equipment, verify all functions operate correctly.
- Check for leaks. Repair as needed.

- Thoroughly clean the equipment.
- Lubricate the equipment.
- Inspect the hitch and all welds on the equipment for wear and damage.
- Check for loose hardware, missing guards, or damaged parts.
- Check for damaged or missing safety signs (decals). Replace if necessary.
- Replace worn or damaged parts.
- Touch up all paint nicks and scratches to prevent rusting.
- Check the tightness of all cable clamps to avoid slipping.
- Inspect the cables for wear or corrosion. Replace if worn.
- Lubricate the cables.
- If stored outside, lower the auger to its lowest position and block the wheels so the auger will not move.
- Place the equipment flat on the ground.

PARTS IDENTIFICATION

GENERAL INFORMATION	119
8 BOLT HUB	119
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UPPER GEARBOX #SZ103280	122
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LIFT STOP	133
HOPPER BODY	134
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HOPPER LIFT ASSEMBLY	138
TRUSS LIFT WINCH	139
BRIDGING CABLE PARTS	140
HYDRAULIC PARTS	141
LH HYDRAULIC MOTOR ASSEMBLY	142
RH HYDRAULIC MOTOR ASSEMBLY	143

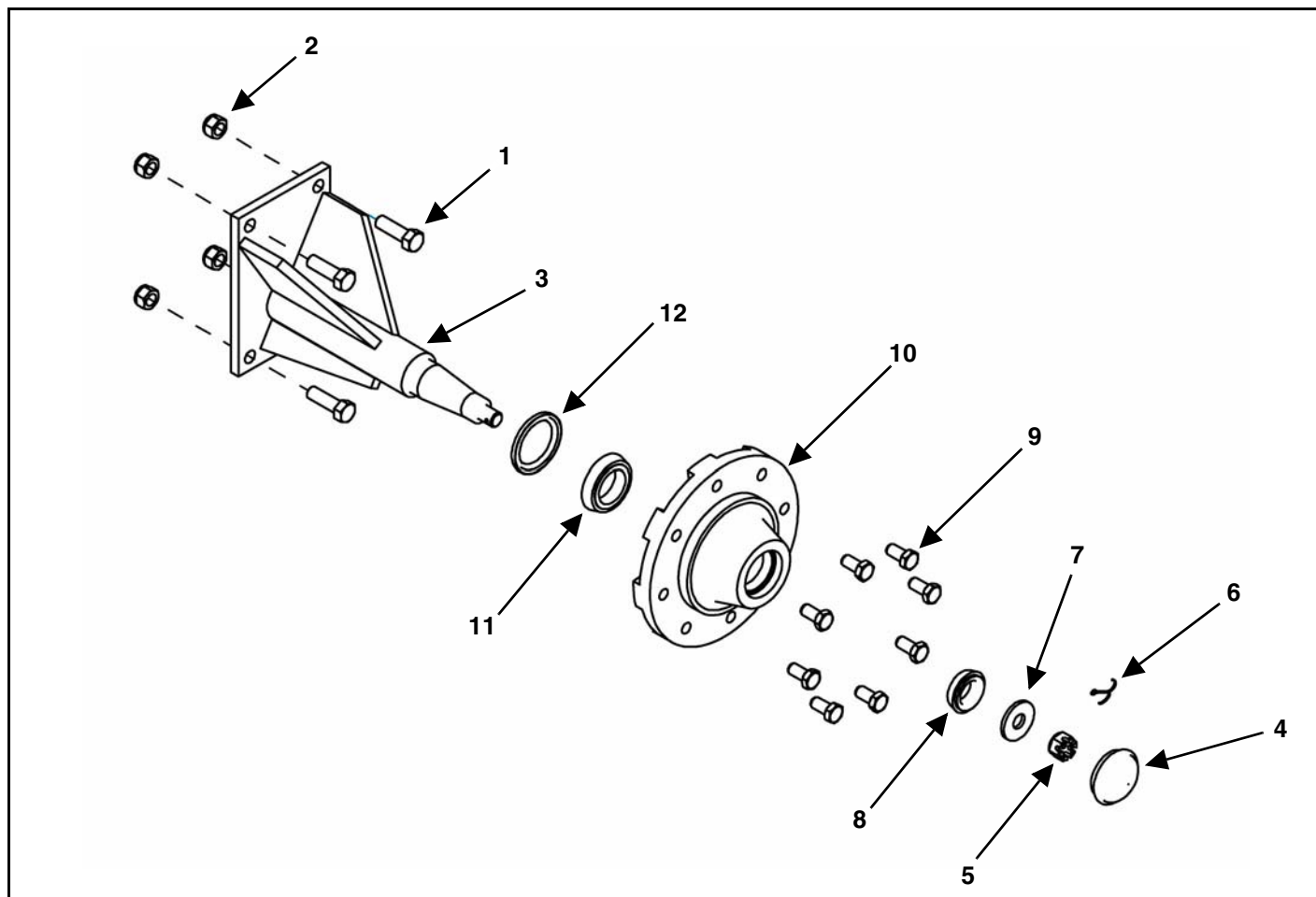
Farm King



GENERAL INFORMATION

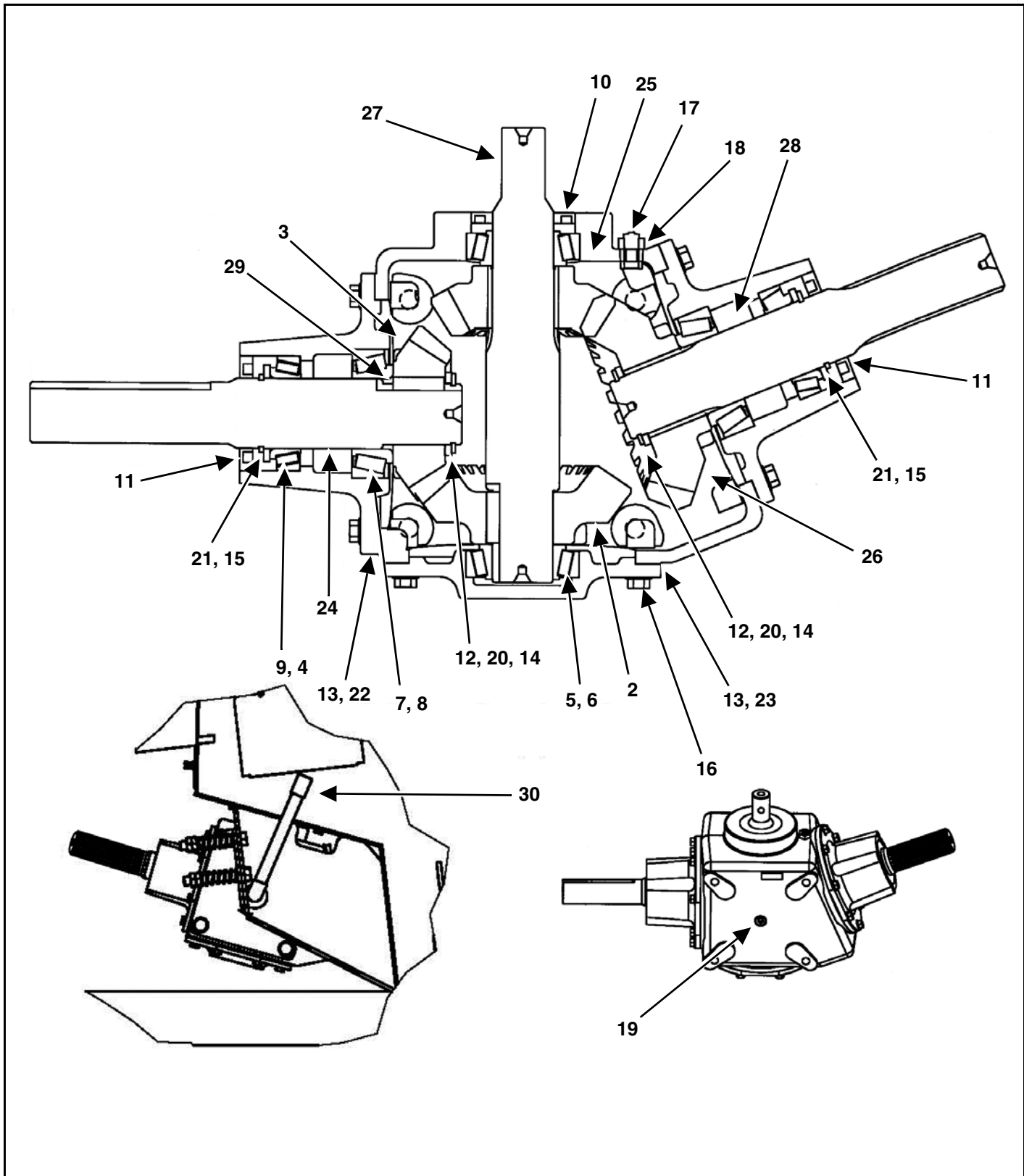
The parts identification section list descriptions, part numbers and quantities for the 14122 Backsaver Auger. Contact your Farm King dealer for additional 14122 Backsaver Auger parts information.

8 BOLT HUB



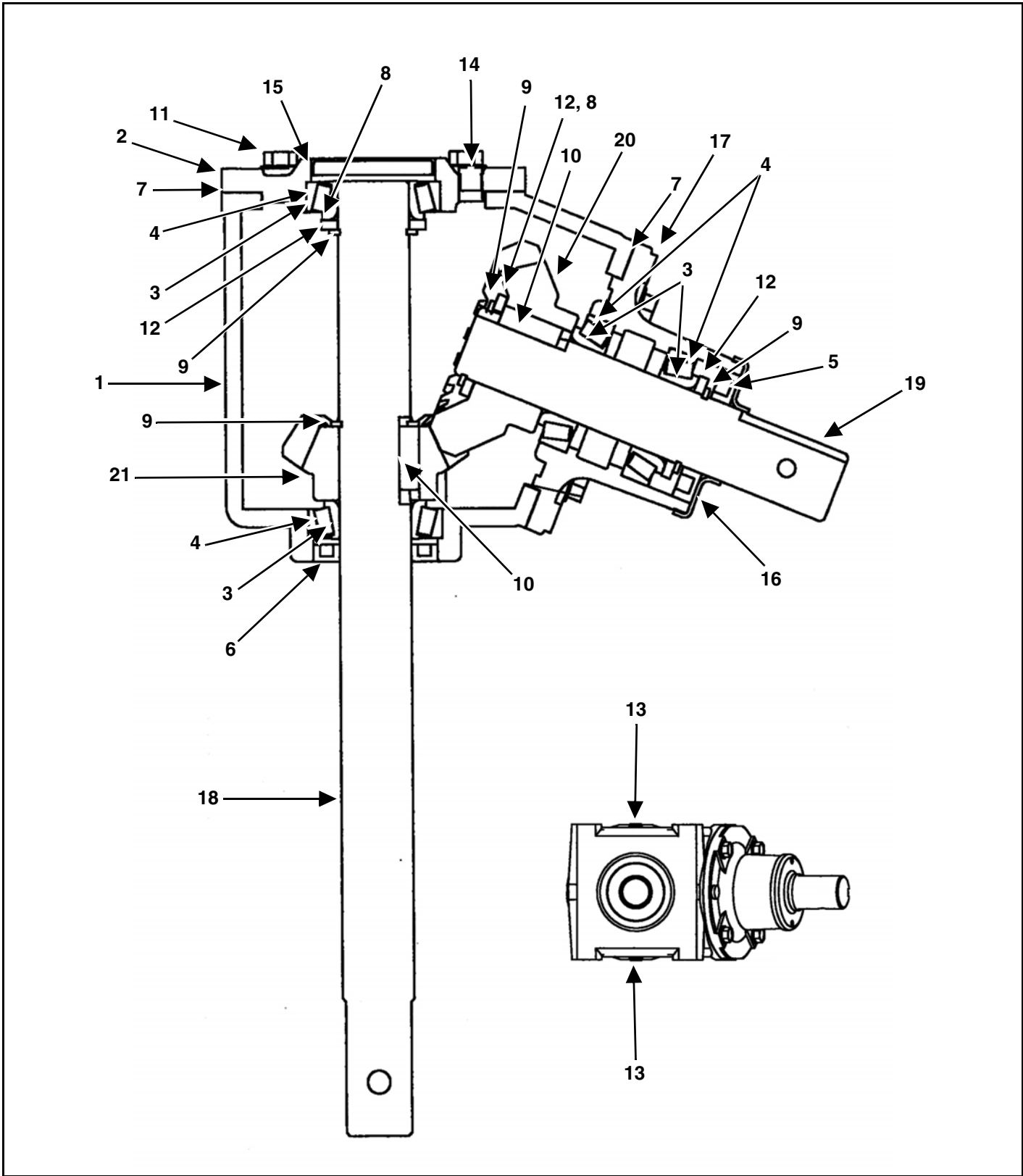
ITEM	PART NUMBER	DESCRIPTION	QTY
1	SZ126114	BOLT, HHCS, 5/8" - 11 UNC x 2" G5	4
2	SZ125036	LOCK NUT, 5/8" - 11 UNC	4
3	SZ0211300	SPINDLE WELDMENT	1
4	SZDC13	DUST CAP	1
5	SZ600NUT0SLOT1	SPINDLE NUT	1
6	SZ66C5/32X13/4	PIN COTTER 5/32 x 1-3/4"	1
7	SZ6002X3/4WA	SPINDLE WASHER, 2" OD x 0.812" ID x 0.140"	1
8	SZ100125	BEARING CONE, LM67048	1
9	SZWB11250	LUG BOLT, 9/16" x 1-1/8"	8
10	SZ01181181	8-BOLT HUBS, W / CUPS	1
11	SZLM603049	BEARING, 8 BOLT HUB	1
12	SZSE-1300	GREASE SEAL, P602115	1

LOWER GEARBOX #SZ000154



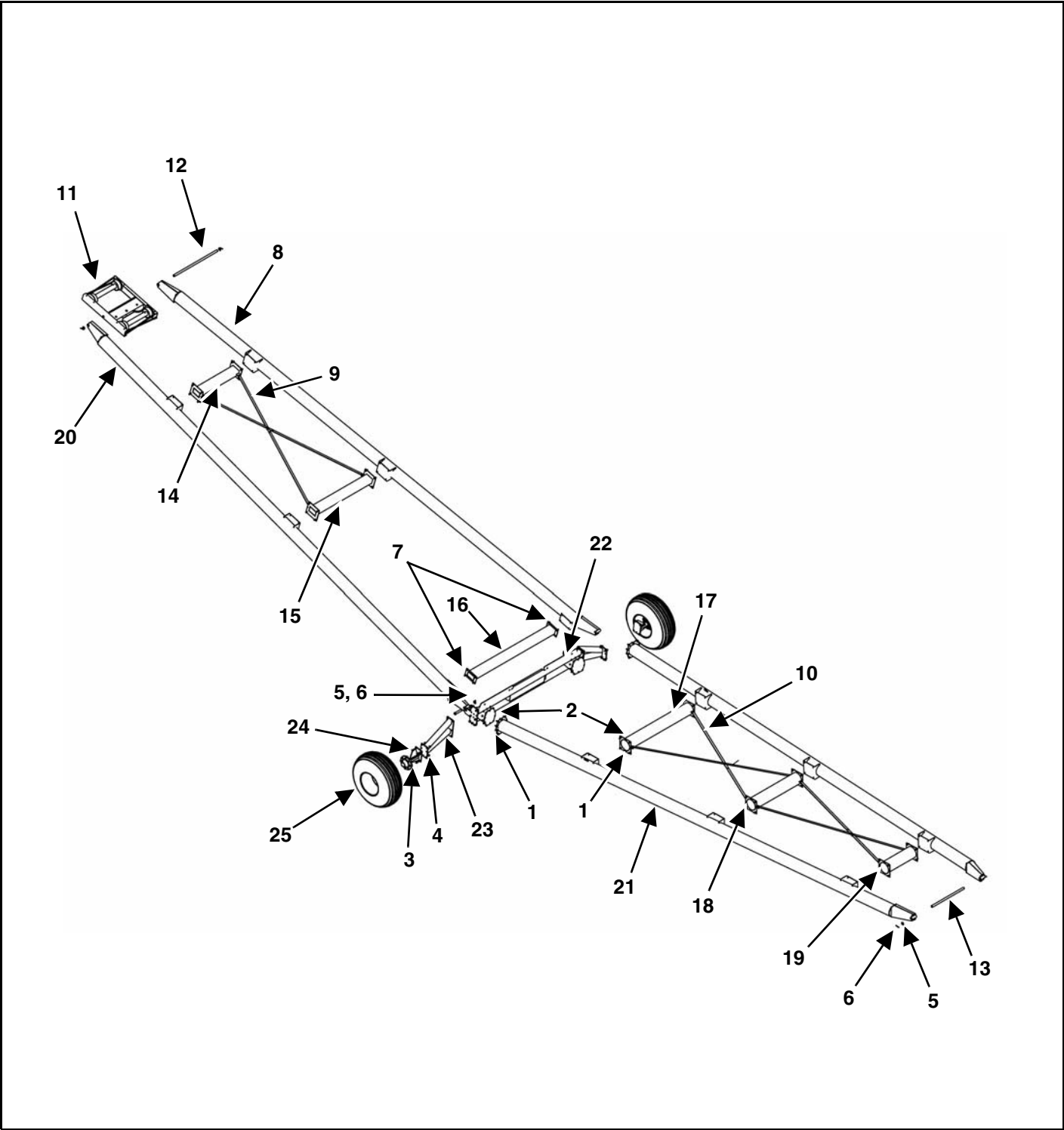
ITEM	PART NUMBER	DESCRIPTION	QTY
1	N/A	CASE - 968	1
2	SZ000156	GEAR-27T	1
3	SZ108786	GEAR-20T	1
4	SZLM104949	BEARING CONE, LM104949	2
5	SZ625581	BEARING CONE, 25581	2
6	SZ625520	BEARING CUP, 25520	2
7	SZ603730	BEARING CUP, 3730	2
8	SZ603780	BEARING CONE, 3780	2
9	SZLM104912	BEARING CUP, LM104912	2
10	SZ000158	OIL SEAL, 1.750" x 0.313"	1
11	SZ105122	SEAL	2
12	SZ000159	SHIM, 1.75" - 0.007"	2
13	SZ000160	SHIM, COVER	3
14	SZ000161	SNAP RING, 5160 - 175	2
15	SZ000162	SNAP RING, 5160 - 200	2
16	SZ000163	BOLT, 3/8" - 16 UNC x 1.00"	24
17	SZ000164	VENT, 5 PSI, 1/8" NPT	1
18	SZ105123	BUSHING, 3/8" - 1/8" NPT	1
19	SZ000165	PLUG, 1/2" NPT	2
20	SZ000166	WASHER, 1.75" x 0.179"	2
21	SZ105124	WASHER, 2.00" x 0.179"	2
22	SZ000167	QUILL HOUSING	2
23	SZ000168	COVER, CLOSED	1
24	SZ108785	QUILL SHAFT	1
25	SZ000169	PINION, 68° - 17T	1
26	SZ000170	GEAR, 68° - 23T	1
27	SZ000171	SHAFT, CROSS	1
28	SZ105129	SHAFT, QUILL	1
29	SZPG1659	KEY, 3/8"	2
30	SZ000682	14" GEARBOX STANPIPE KIT	1

UPPER GEARBOX #SZ103280



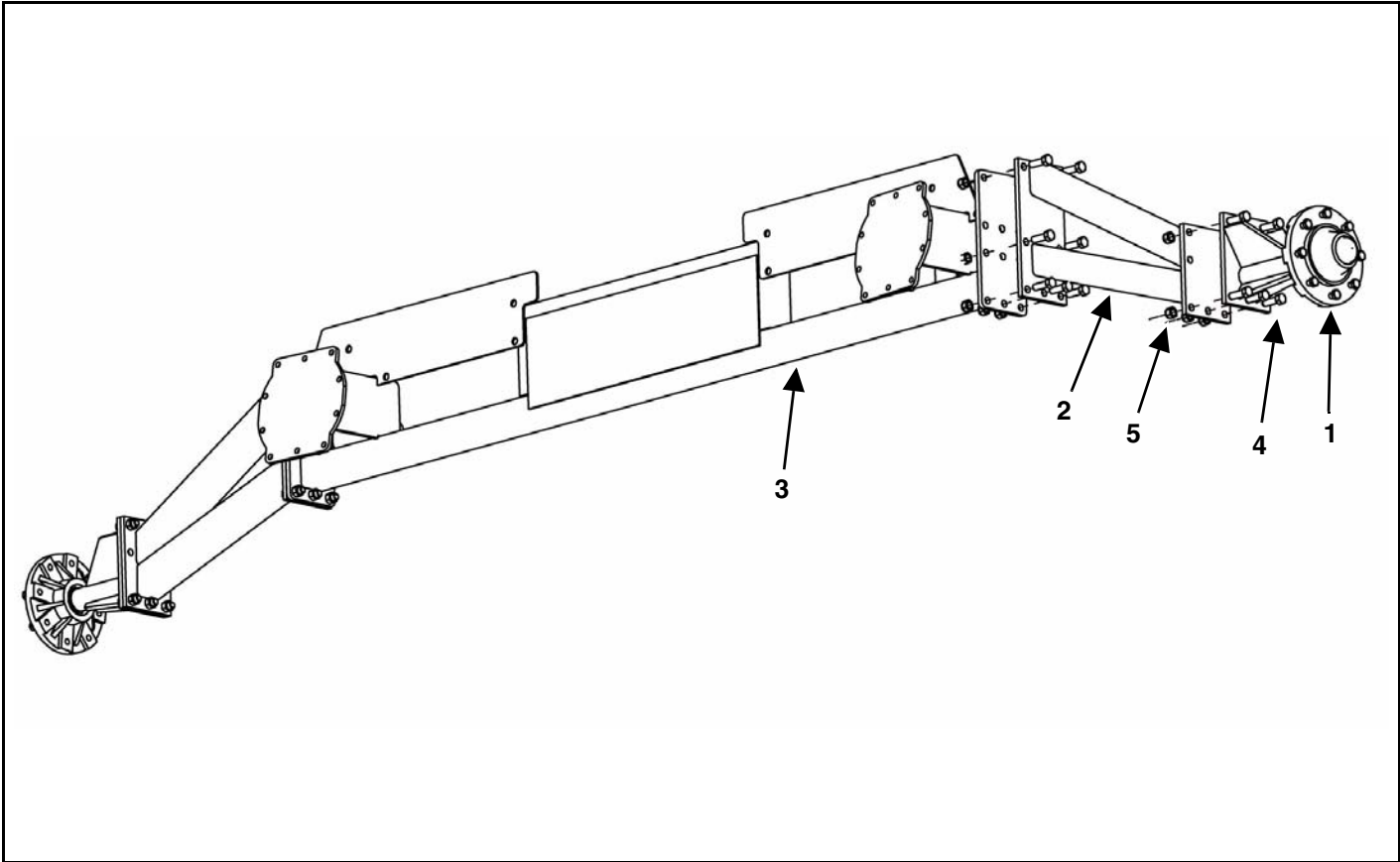
ITEM	PART NUMBER	DESCRIPTION	QTY
1	N/A	CASE - 668	1
2	N/A	COVER, 1/8" NPT	1
3	SZ101151	BEARING CONE, LM48548	4
4	SZ100152	BEARING CUP, LM48510	4
5	SZK313	SEAL, 1.375 - 2.562	1
6	SZPG-1480	SEAL, 1.375 - 2.375	1
7	SZPG-1511	SHIM, COVER, 0.005	2
8	SZPG-1534	SHIM, 1.375 - 0.007	2
9	SZPG-1614	SNAP RING, 5160 - 137	4
10	SZPG-1661	KEY, 3/8" SQ.	2
11	SZPG-1705	BOLT, 3/8" - 16 UNC x 1.00"	8
12	SZPG-1824	WASHER, 2.00" x 0.179"	3
13	SZPG-1850	PLUG, 1/4" NPT	2
14	SZPG-1853	VENT, 5 PSI, 1/8" NPT	1
15	SZPG-1881	EXP. PLUG, 2.375	1
16	SZPG-2828	SHIELD, 1.375	1
17	SZPG-4105	COVER, QUILL	1
18	SZ105282	SHAFT, CROSS	1
19	SZ105114	SHAFT, QUILL	1
20	SZPG-6316	GEAR, 19T	1
21	SZPG-6317	PINION, 14T	1

UNDERCARRAIGE

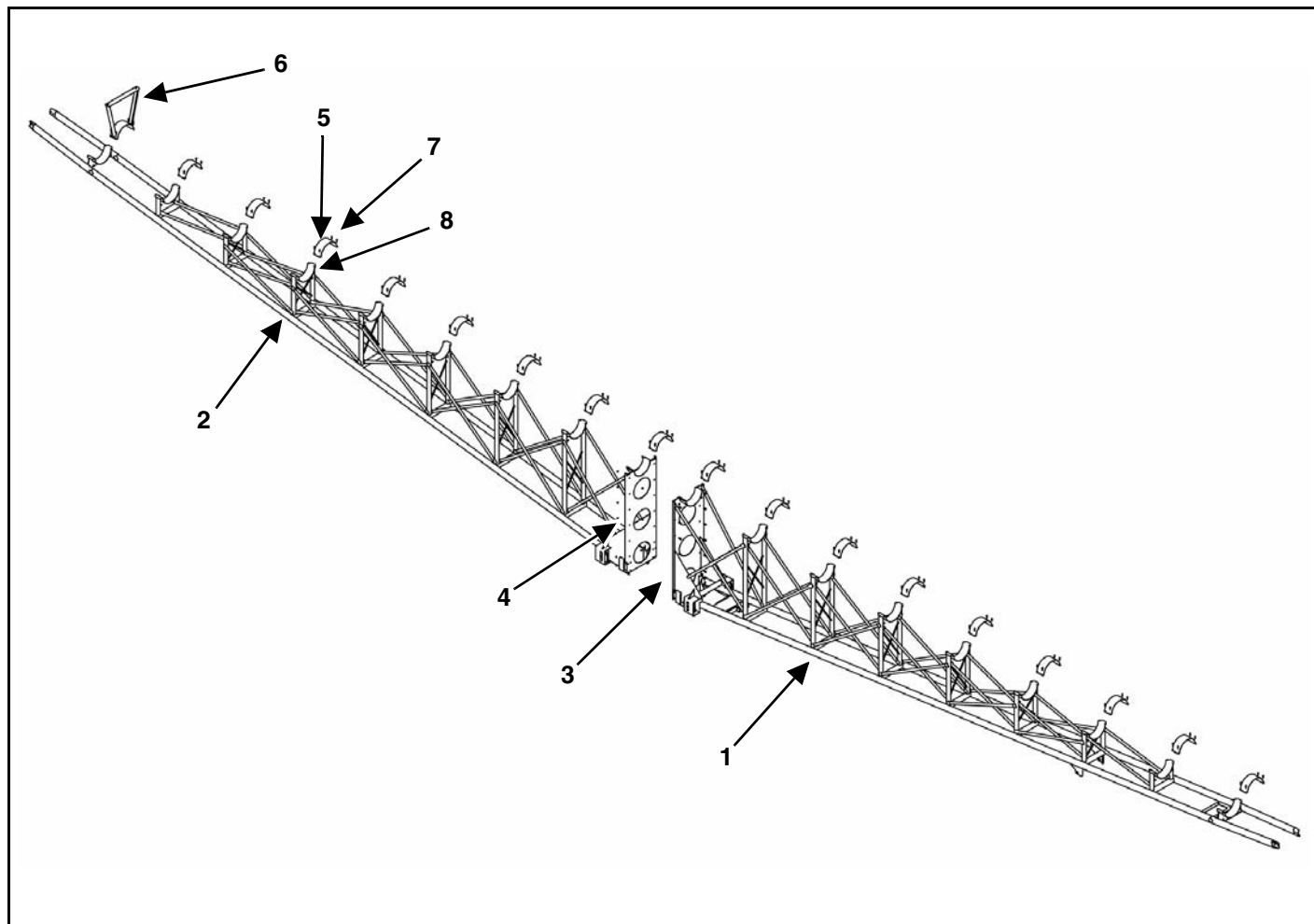


ITEM	PART NUMBER	DESCRIPTION	QTY
1	SZ126092	BOLT, HHCS 1/2" - 13 UNC x 1-1/2" G5	81
2	SZ125032	LOCK NUT, 1/2" - 13 UNC NYLOCK	83
3	SZ126114	BOLT, HHCS 5/8" - 11 UNC x 2" G5	24
4	SZ125036	LOCK NUT, 5/8" - 11 UNC	34
5	SZ0231250	WASHER, FLAT, 1-1/4 x 1-7/8 10GA	6
6	SZ6001420	PIN, COTTER 1/4" x 2"	6
7	SZ126090	BOLT, HHCS, 1/2" - 13 UNC, x 1-1/4", G5	2
8	SZ106033	UNDERCARRIAGE, WELDMENT, 122 REAR RH	1
9	SZ106049	BAR XBRACE, UNDERCARRIAGE, 122 REAR	2
10	SZ106063	BAR XBRACE, UNDERCARRIAGE, 122 FRONT	4
11	SZ0211248	TRACK CAR ASSEMBLY	1
12	SZ1247011	1-1/4" CR ROUND x 40-1/4"	1
13	SZ0216329	1-1/4" CR ROUND x 29-5/8" FRONT	1
14	SZ106034	XBRACE, WELDMENT, TBG 4" x 6" x 36.75"	1
15	SZ106035	XBRACE, WELDMENT, TBG 4" x 6" x 52.38"	1
16	SZ106479	XBRACE, WELDMENT, TBG 4" x 6"	1
17	SZ106061	XBRACE, WELDMENT, TBG 8" ROUND x 59.06"	1
18	SZ106059	XBRACE, WELDMENT, TBG 8" ROUND x 42.81"	1
19	SZ106057	XBRACE, WELDMENT, TBG 8" ROUND x 25.63"	1
20	SZ106031	UNDERCARRIAGE, WELDMENT, 122 REAR LH	1
21	SZ106050	ARM, UNDERCARRIAGE, WELDMENT, LOWER 122	2
22	SZ106052	AXLE, WELDMENT	1
23	SZ0211302	AXLE EXTENSION, WELDMENT	2
24	SZ02113001	SPINDLE & HUB ASSEMBLY	2
25	F0679	WHEEL & 16.5" TIRE ASSEMBLY	2

AXLE EXTENSIONS

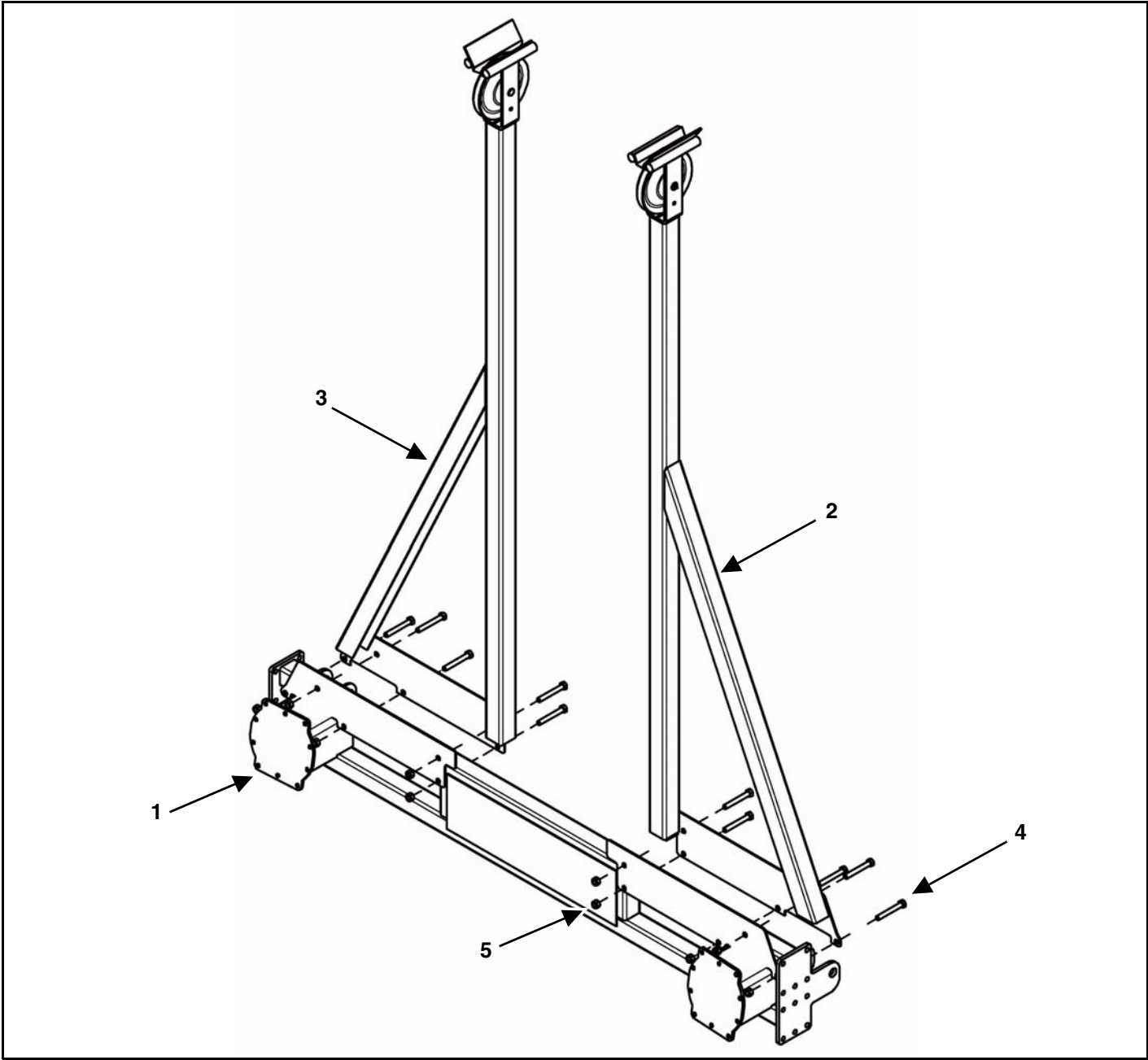


ITEM	PART NUMBER	DESCRIPTION	QTY
1	SZ02113001	SPINDLE & HUB ASSEMBLY	2
2	SZ0211302	AXLE EXTENSION, WELDMENT	2
3	SZ106052	AXLE, WELDMENT	1
4	SZ126114	BOLT, HHCS, 5/8" - 11 UNC x 2" G5	24
5	SZ125036	LOCK NUT, 5/8" - 11 UNC	24

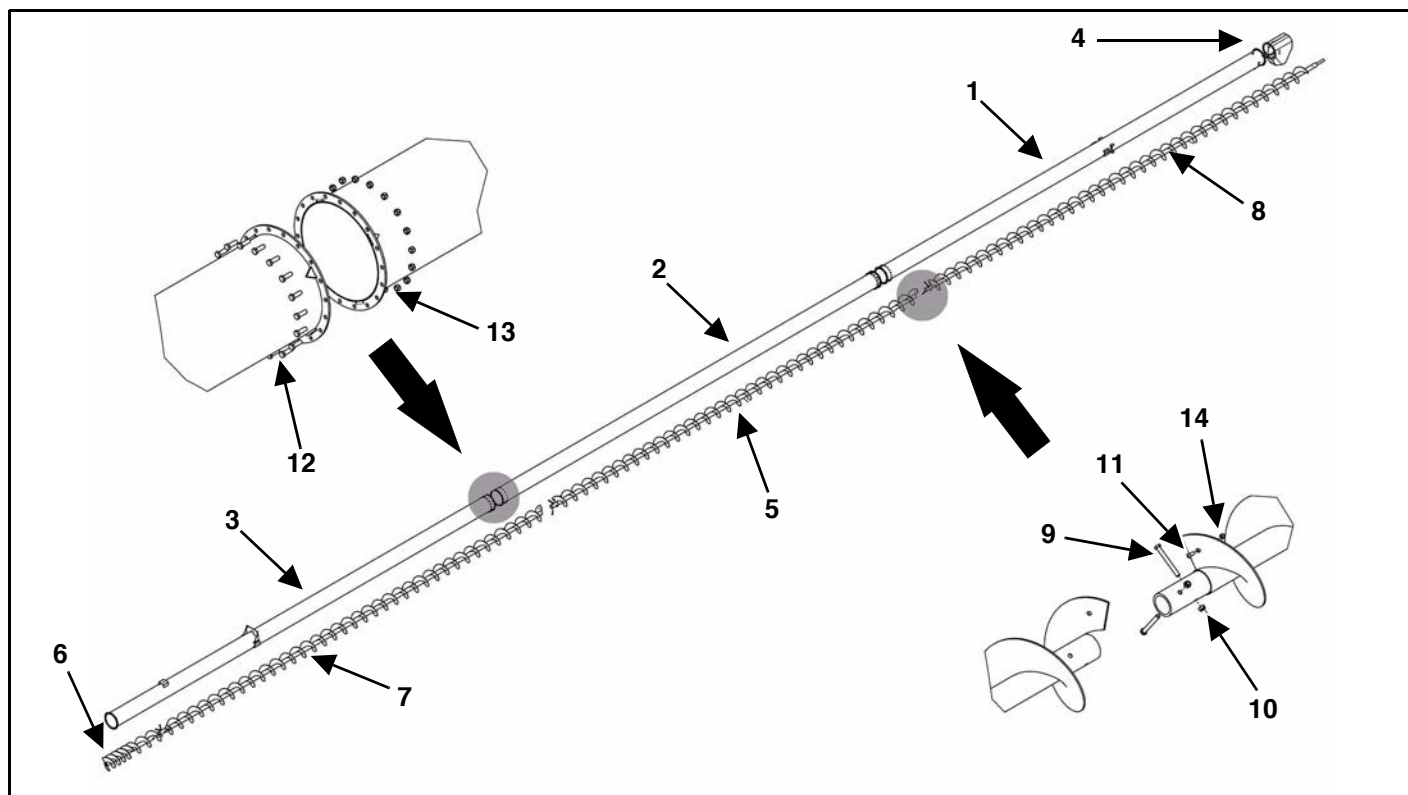
TRUSSES


ITEM	PART NUMBER	DESCRIPTION	QTY
1	SZ104959	WELDMENT, TRUSS, SUPPORT, LOWER, 14"	1
2	SZ105189	WELDMENT, TRUSS, SUPPORT, UPPER, 14" Auger	1
3	SZ126092	BOLT HHCS 1/2" - 13 UNC x 1-1/2" G5	20
4	SZ125032	LOCK NUT, 1/2" -13 UNC NYLOCK	20
5	SZ2031403	HALF CLAMP 14" 2-BOLT PAINTED	17
6	SZ105037	WELDMENT, TRUSS, RISER, CLAMP, HALF, 14	1
7	SZ126068	BOLT, HHCS, 3/8" - 16 UNC x 1-1/2" G5	72
8	SZ125030	LOCK NUT, 3/8" -1 6 UNC NYLOCK	72

AXLE RISERS



ITEM	PART NUMBER	DESCRIPTION	QTY
1	SZ106052	WELDMENT, AXLE	1
2	SZ107233	WELDMENT, RISER, AXLE, RH	1
3	SZ107232	WELDMENT, RISER, AXLE, LH	1
4	SZ126118	BOLT, HHCS, 5/8" - 11 UNC x 4-1/5" G5	10
5	SZ125036	LOCK NUT, 5/8" - 11 UNC	10

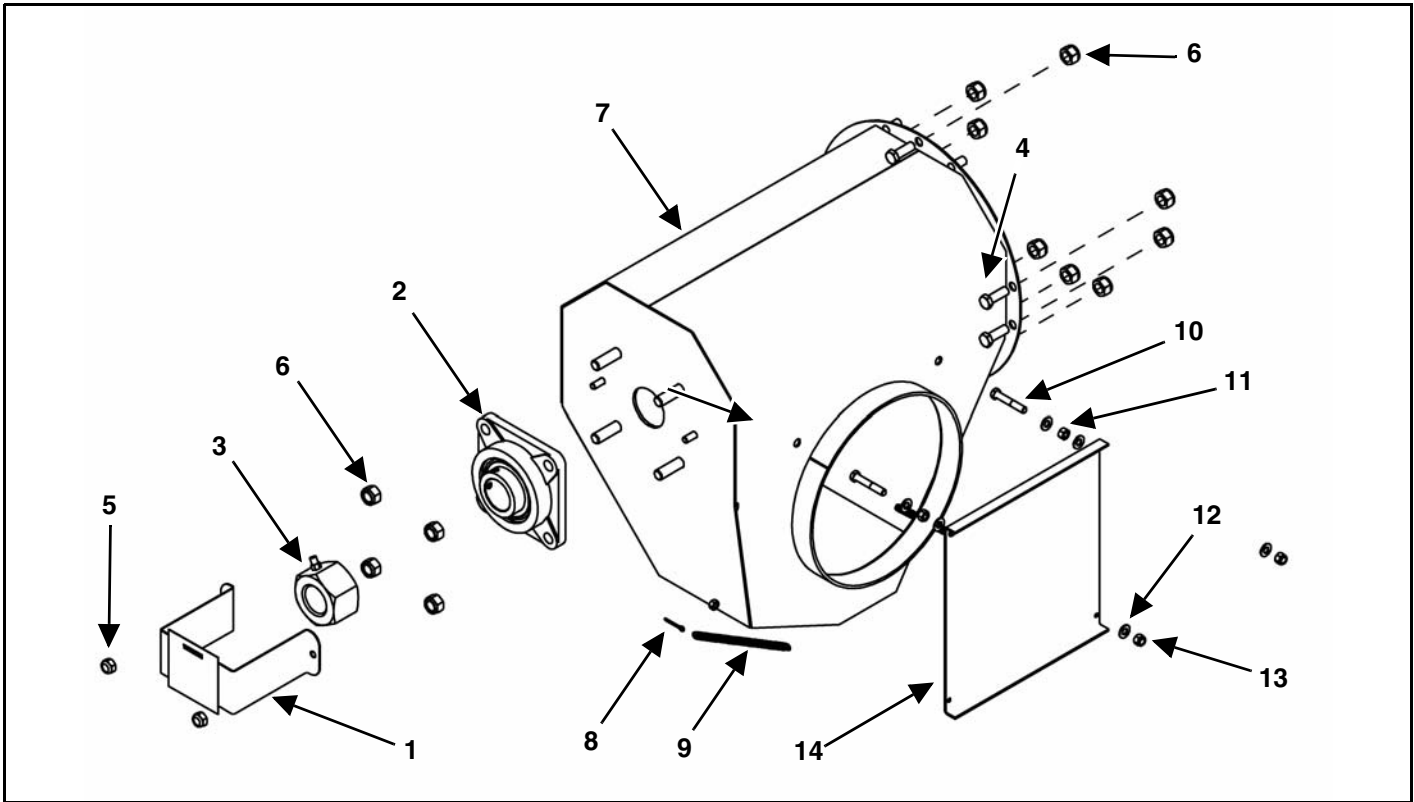
MAIN TUBE AND FLIGHTING


ITEM	PART NUMBER	DESCRIPTION	QTY
1	SZ104963	WELDMENT, AUGER, TUBING, 14", 12 GA, 480" UPPER	1
2	SZ104962	WELDMENT, AUGER, TUBING, 14", 12 GA, 480" CENTER	1
3	SZ104961	WELDMENT, TUBING 14", 12 GA, 480", BOTTOM	1
4	SZ104965	DROP, SPOUT, ASSEMBLY 14", W / RELIEF	1
5	SZ104970	WELDMENT, FLIGHT, MID, 477.5, 14 CSW, 39'9"	1
6	SZ1412005	FLIGHT, 14", W / SPLINE COUPLER	1
7	SZ1412002	FLIGHT, 14" LOWER x 38'	1
8	SZ1408201	FLIGHT, 14" SWING DRIVE, UPPER	1
9	SZ126109	BOLT, HHCS, 1/2" - 20 UNF x 4-1/2" G5	6
10	SZ125033	NUT, LOCK, 1/2" - 20 UNF	6
11	SZ126000	BOLT, HHCS, 3/8" - 16 UNC x 7/8"	3
12	SZ126092	BOLT, HHCS, 1/2" - 13 UNC x 1-1/2" G5	44
13	SZ125032	NUT LOCK, 1/2" - 13 UNC NYLOCK	44
14	SZ125030	NUT LOCK 3/8" - 16 UNC NYLOCK	3

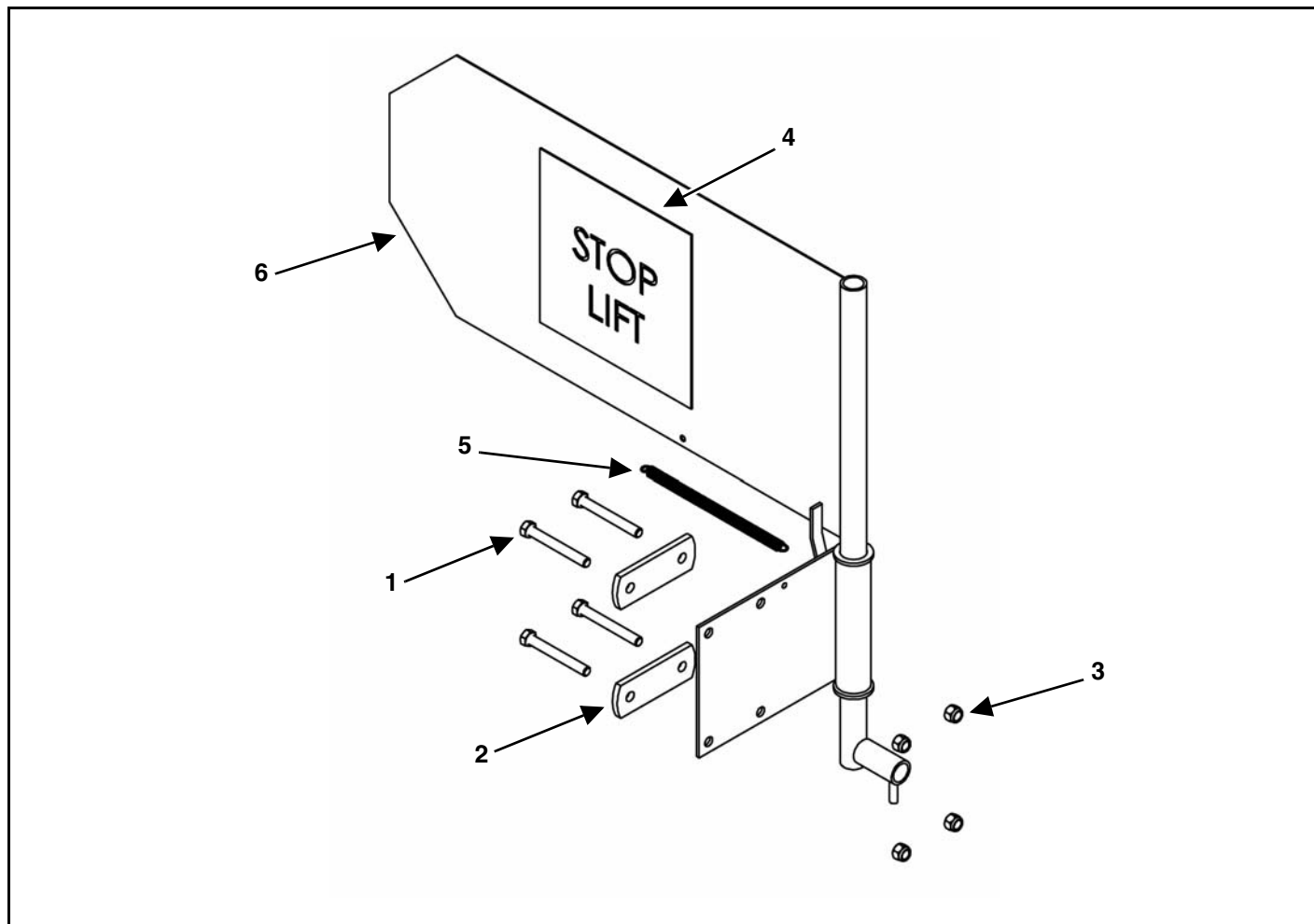
This exploded view diagram illustrates the assembly of a mechanical device, likely a pump or motor. The components are numbered 1 through 32. The main housing (1) is shown at the bottom, with various mounting brackets (2, 3, 4, 13, 14) and fasteners (5, 6, 7, 8, 9, 10, 11, 12, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32) used to secure it. A central shaft assembly (8) is shown on the right, featuring a motor or actuator (20) and a coupling (24). A control panel or display (25) is mounted on the side of the housing. The diagram uses dashed lines to indicate the assembly path and alignment of the parts.

ITEM	PART NUMBER	DESCRIPTION	QTY
1	SZ101997	PLATE, FAN, SHIELD, MOUNT, BOTTOM, 7 GA	1
2	SZ101937	WELDMENT, FAN, SHIELD, MOUNT, 14"	1
3	SZ103674	WELDMENT, FAN, SHIELD, BOTTOM	1
4	SZ105191	WELDMENT, FAN, SHIELD, TOP, 14"	1
5	SZ103296	OWNER'S MAUAL CONTAINER	1
6	SZ105190	HANGER, PTO, FORMED CHANNEL	1
7	SZ000180	BRACKET, HOSE SUPPORT	1
8	SZ0165545	55E CV 1-3/4" - 20-SPLINE x 1-3/4"	1
9	SZ103298	JACK, 2000 LB., DI 6620	1
10	SZ9902517	FLAT WASHER, 1/2" x 1.19" x 0.56"	4
11	SZ9941718	WASHER, FLAT, 0.53" x 2.25" 10 GA GALVANIZED	4
12	SZ12503	LOCK NUT, 1/2" - 13UNC NYLOCK	4
13	SZ126065	BOLT, HHCS, 3/8" - 16 UNC x 1" G5	18
14	SZ125030	LOCK NUT, 3/8" - 16 UNC NYLOCK	22
15	SZ103259	CLAMP, HOSE TIE-DOWN	6
16	SZ91230	STRAP, RUBBER #509-S W/S-HOOK	1
17	SZ126047	BOLT, HHCS, 5/16" -18 UNC x 1" G5	2
18	SZ125035	LOCK NUT, 5/16" -18 UNC, NYLOCK G5	2
19	SZ126068	BOLT, HHCS, 3/8" - 16 UNC x 1-1/2" G5	4
20	SZ0113820	KEY, SQ, 3/8" x 2"	1
21	SZ0161421	CV JOINT, DOUBLE, 14E, 50 DEGREE, 1-1/4 B	1
22	SZ6007025	PIN, SPL, 7/16, 2-1/2	1
23	SZ108114	PLATE, FORMED GEARBOX MOUNT 14 LH	1
24	SZ108116	PLATE, FORMED GEARBOX MOUNT 14 RH	1
25	SZ9902533	14" DRIVE SECTION ACCESS DOOR	1
26	SZ9902137	14" DRIVE SECTION GEARBOX SEAL WASHER	1
27	SZ000154	GEARBOX, 68 DEGREE 14" LOWER POINT	1
28	SZ101990	PLATE, GEARBOX SEAL DRIVE SECTION 14" 10GA	1
29	SZ9902138	14" DRIVE SECTION GEARBOX SEAL PLATE	1
30	SZ103518	DOOR, ACCESS, OFFSET GALVANIZED	1
31	SZ104489	CHANNEL, COVER DRIVE SECTION LOWER	1
32	SZ0161175	ALUMINUM FAN, 11-3/4" OD, 1-7/8" ID, 6-Blade	1

DROP SPOUT

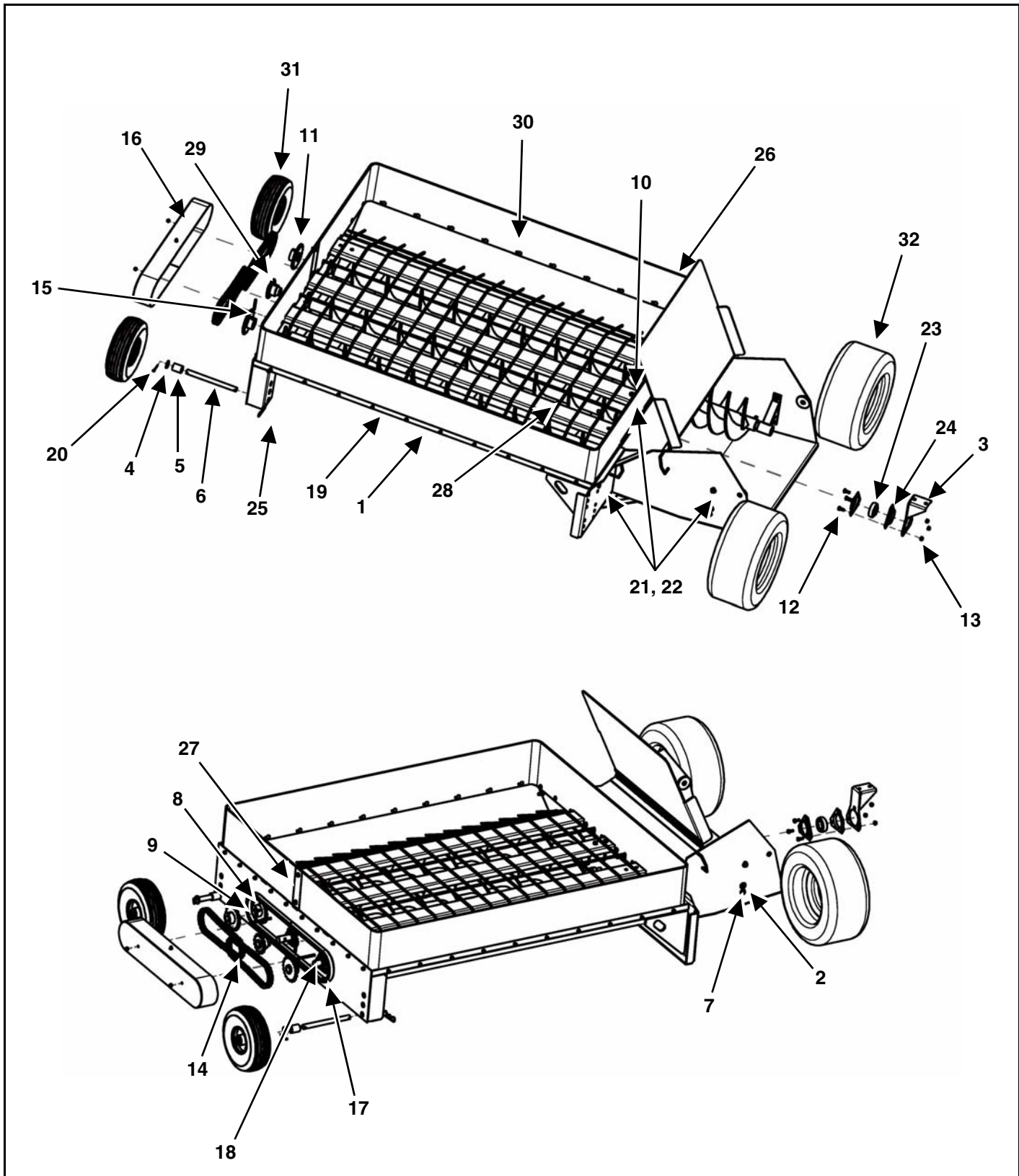


ITEM	PART NUMBER	DESCRIPTION	QTY
1	SZ2127212	SHIELD, ASSEMBLY, CAP, HEAD	1
2	SZ384821	BEARING, 2", 4-BOLT CAST FLANGE	1
3	SZ6001200	2" NC HEX NUT W/ 3/8" Set	1
4	SZ126092	BOLT, HHCS 1/2" - 13 UNC x 1-1/2" G5	8
5	SZ125032	LOCK NUT, 1/2" - 13 UNC NYLOCK	2
6	SZ125036	LOCK NUT, 5/8" - 11 UNC	12
7	SZ104964	DROP SPOUT WELDMENT, 14" W/ RELIEF	1
8	SZ128016	PIN COTTER, 1/8" x 1"	2
9	SZ80.500X5.7	EXTENSION SPRING, 1/2" x 5-3/4"	2
10	SZ126071	BOLT, HHCS 3/8" - 16 UNC x 2-1/4" G5	2
11	SZ125007	NUT, HEX 3/8" - 16 UNC	2
12	SZ127002	FLAT WASHER, 3/8"	6
13	SZ125030	LOCK NUT, 3/8" - 16 UNC NYLOCK	
14	SZ105188	DOOR RELIEF, 14 GALVANIZED	

LIFT STOP


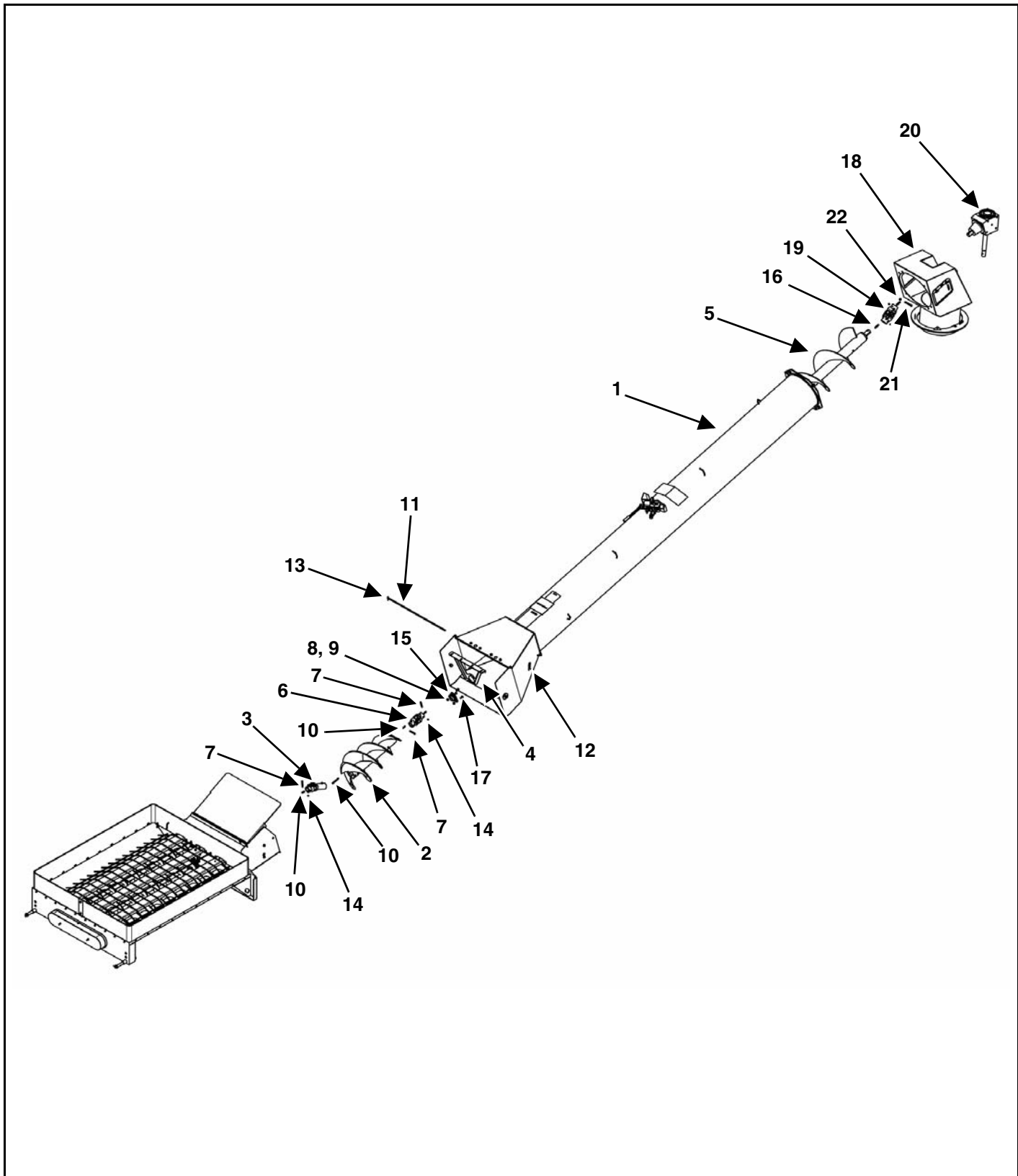
ITEM	PART NUMBER	DESCRIPTION	QTY
1	SZ126076	BOLT, HHCS, 3/8" - 16 UNC x 3" G5	4
2	SZ3032424	PLATE, MOUNT, STRAP, 1.5" x 4.18" x 1/4"	2
3	SZ125030	LOCK NUT, 3/8" - 16 UNC NYLOCK	4
4	SZ06086	DECAL, STOP LIFT 8" x 8-3/4"	1
5	SZ992127201	SPRING, EXT GALVANIZED PLATED 0.054" x 0.5" x 6"	1
6	SZ1200051	FLAG WELDMENT, 12 - 86 THR 12 - 120	1

HOPPER BODY



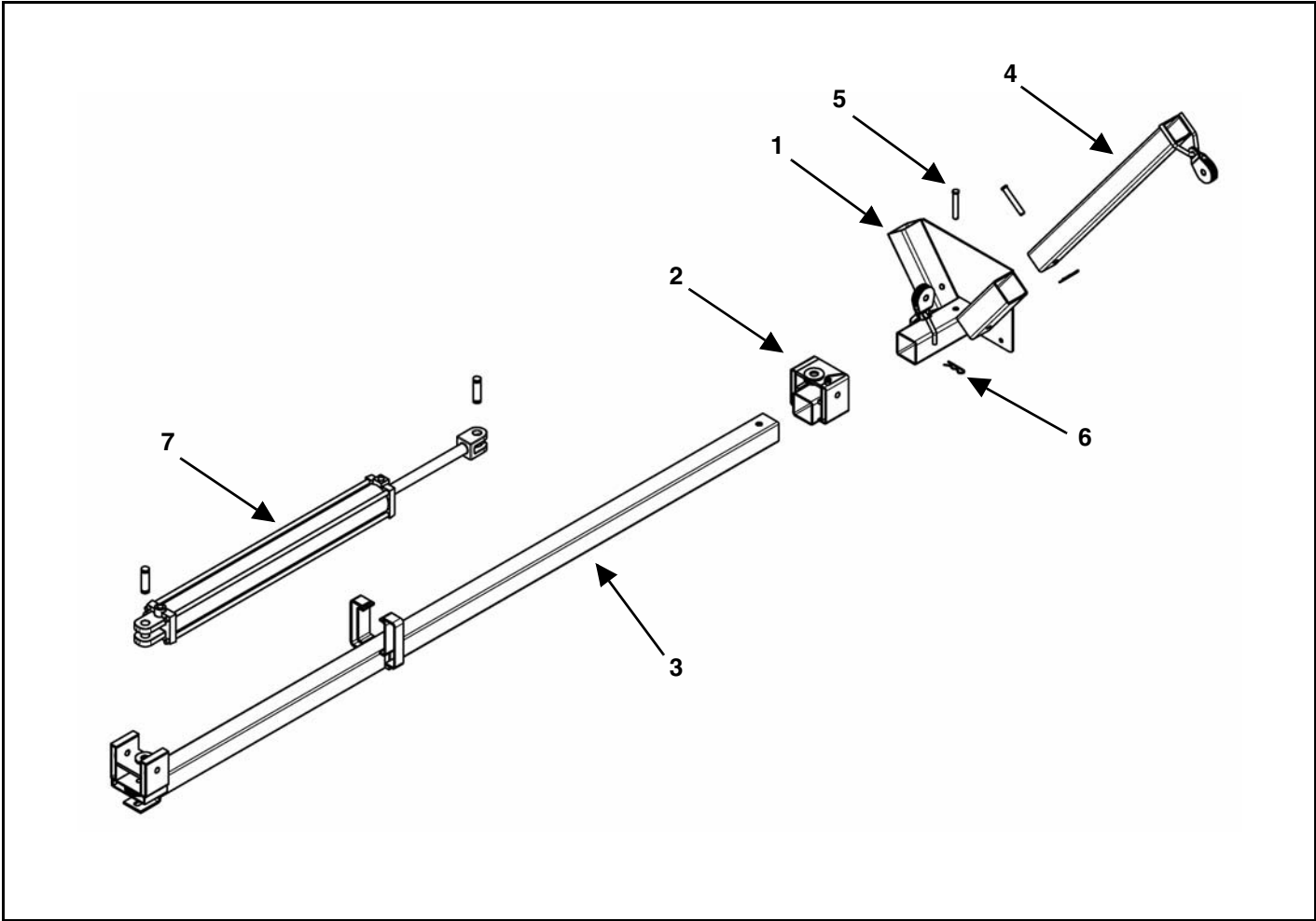
ITEM	PART NUMBER	DESCRIPTION	QTY
1	SZ103782	HOPPER SWING DRIVE, 14, WELDMENT	1
2	SZ9991430	HANGER BEARING, 14" HOPPER FLT	2
3	SZ103828	PLATE FORMED MOUNT BEARING HOPPER 14 BOTTOM	1
4	SZ0237510	BUSHING MACHINE, 3/4"	2
5	SZ9901747	TUBING ROUND, 1-3/16, 3/16, 1.5	2
6	SZ9901748	AXLE, HOPPER WHEEL	2
7	SZ127002	WASHER, FLAT, 3/8"	4
8	SZ65052MSCI000	BEARING, FLANGE 52 MM 3-BOLT	6
9	SZ2017043	BEARING, 1" W/LOOSE LOCK COLLAR	3
10	SZ9869815	FLIGHT, 14" HOPPER SIDE, WELDMENT	2
11	SZ0040520	50-20T SPROCKET - 6-7" AGR	2
12	SZ126046	BOLT, HHCS 5/16" 18 UNC x 3/4" G5	12
13	SZ125035	NUT LOCK, 5/16" -18 UNC, NYLOCK G5	12
14	SZ0043548	ASSEMBLY CHAIN ROLLER #50 48P	2
15	SZ6001602	PIN, SPL 5/16" x 2"	3
16	SZ9981413	WELDMENT SHIELD, CHAIN 14" SWDR	1
17	SZ68RUB0CHL0SL	RUBBER SEAL E-3559	4
18	SZ126042	BOLT, HHCS, 1/4" - 20UNC x 3-3/4" G5	2
19	SZ125028	LOCK NUT, 1/4" - 20UNC NYLOCK	42
20	SZ6003531	PIN COTTER 5/32" x 1-1/4"	2
21	SZ126065	BLT HHCS 3/8" - 16UNC x 1" G5	10
22	SZ125030	NUT LCK 3/8" - 16 UNC NYLOCK	10
23	SZ2018043	BEARING, 1-1/4" HEAD CAP	1
24	SZ65062MSCI000	FLANGE, BREARING, 62 MM, 3-BOLT	2
25	SZ128018	PIN, HAIR, 1/8"	2
26	SZ103839	EXTENSION FLEX, 14" HOPPER 8.00" x 214.00"	1
27	SZ127000	FLAT WASHER, 1/4"	2
28	SZ103781	WELDMENT FLIGHTING 7.13" x 53.88" HOPPER	1
29	SZ00425151	SPROCKET, 12" INTERNAL DRIVE HOPPER, CENTER	1
30	SZ000882	BOLT, CARRIAGE 1/4" - 20 UNC x 3/4"	40
31	SZ101503-6	TIRE & WHEEL ASSEMBLY W / VALVE STEM	2
32	960714	WHEEL W / TIRE 4.10/3.50	2

HOPPER DISCHARGE

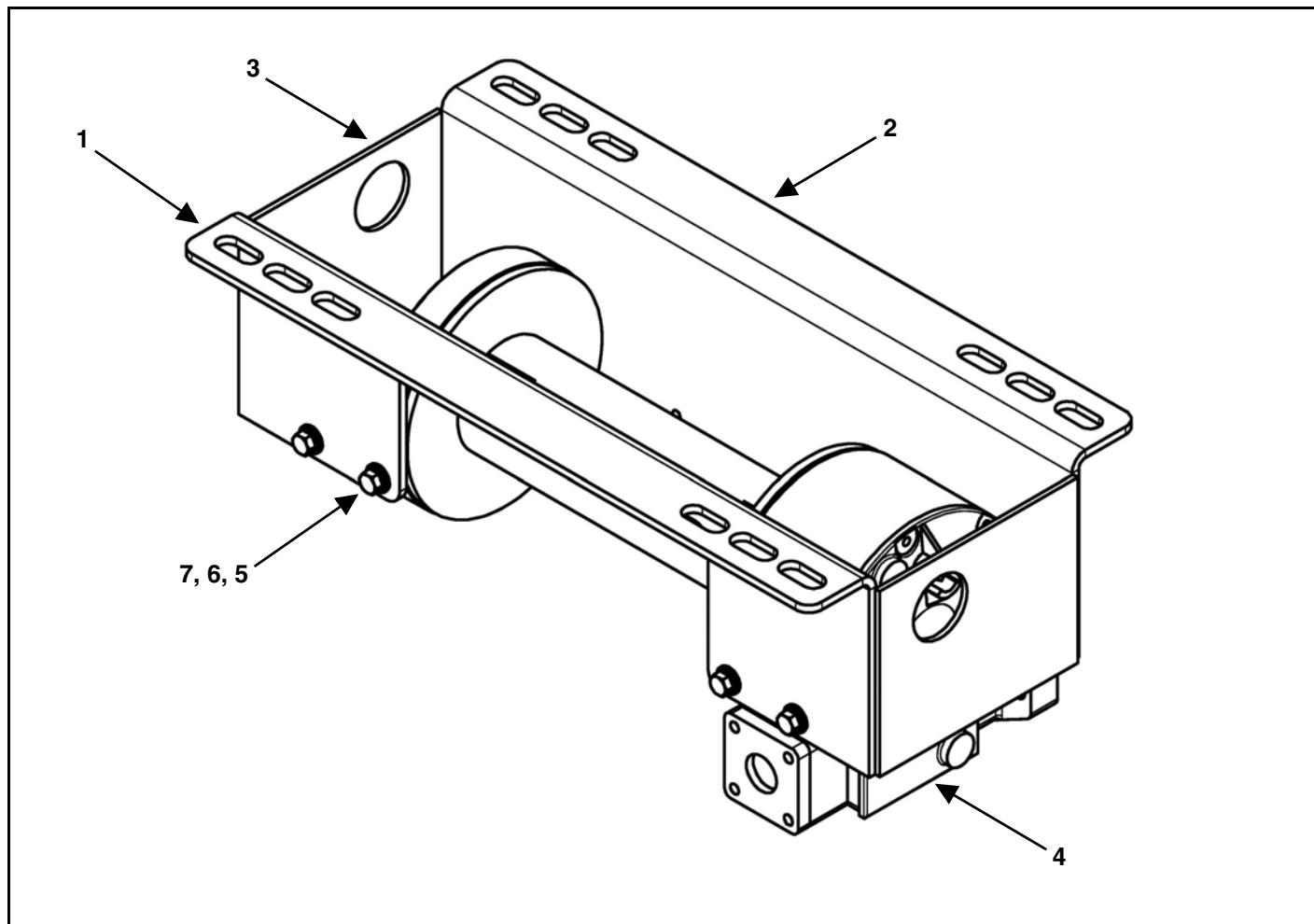


ITEM	PART NUMBER	DESCRIPTION	QTY
1	SZ103780	WELDMENT, TUBING, 14", 168, HOPPER DISCHARGE	1
2	SZ103775	WELDMENT FLIGHTING 13.00 13.00 RH 24.90	1
3	SZ103809	U-JOINT, 12E, 1.25 SLIP	1
4	SZ103788	WELDMENT, HOPPER, HANGER BEARING, 14"	1
5	SZ103821	WELDMENT, FLIGHTING, 13, 13, RH, 159, HOPPER DISCHARGE	1
6	SZ1001604	12N U-JOINT 1-1/4" x 1-1/4"	1
7	SZ6001825	PIN SPL, 3/8" x 2-1/2"	3
8	SZ126065	BOLT HHCS 3/8" - 16 UNC x 1" G5	4
9	SZ125030	LOCK NUT, 3/8" - 16 UNC NYLOCK	8
10	SZ01125118	KEY, SQ 1/4" x 1.19"	3
11	SZ9902532	14" PIVOT HOPPER LID PIN	1
12	SZ128018	PIN HAIR, 1/8"	1
13	SZ128016	COTTER PIN, 1/8" x 1"	1
14	SZ128037	SSC, 5/16-5/16 IMC. 5/8, CP, KNRL	2
15	SZ65062MSCI000	FLANGE, BEARING, 62MM, 3-BOLT	2
16	SZ0113122	KEY, SQ, 5/1" X 1.75"	1
17	SZ126008	BOLT, CARRIAGE, 3/8" x 1", NC, G5	3
18	SZ103811	HOPPER HEAD, 14, WELDMENT	1
19	SZ103424	14E U JOINT 1.38" x 1.38"	1
20	SZ103280	GEARBOX, 68 DEGREE 1.35 1 14" PNT	1
21	SZ126076	BOLT, HHCS, 3/8" - 16 UNC x 3" G5	1
22	SZ125030	LOCK NUT, 3/8" - 16 UNC NYLOCK	1

HOPPER LIFT ASSEMBLY

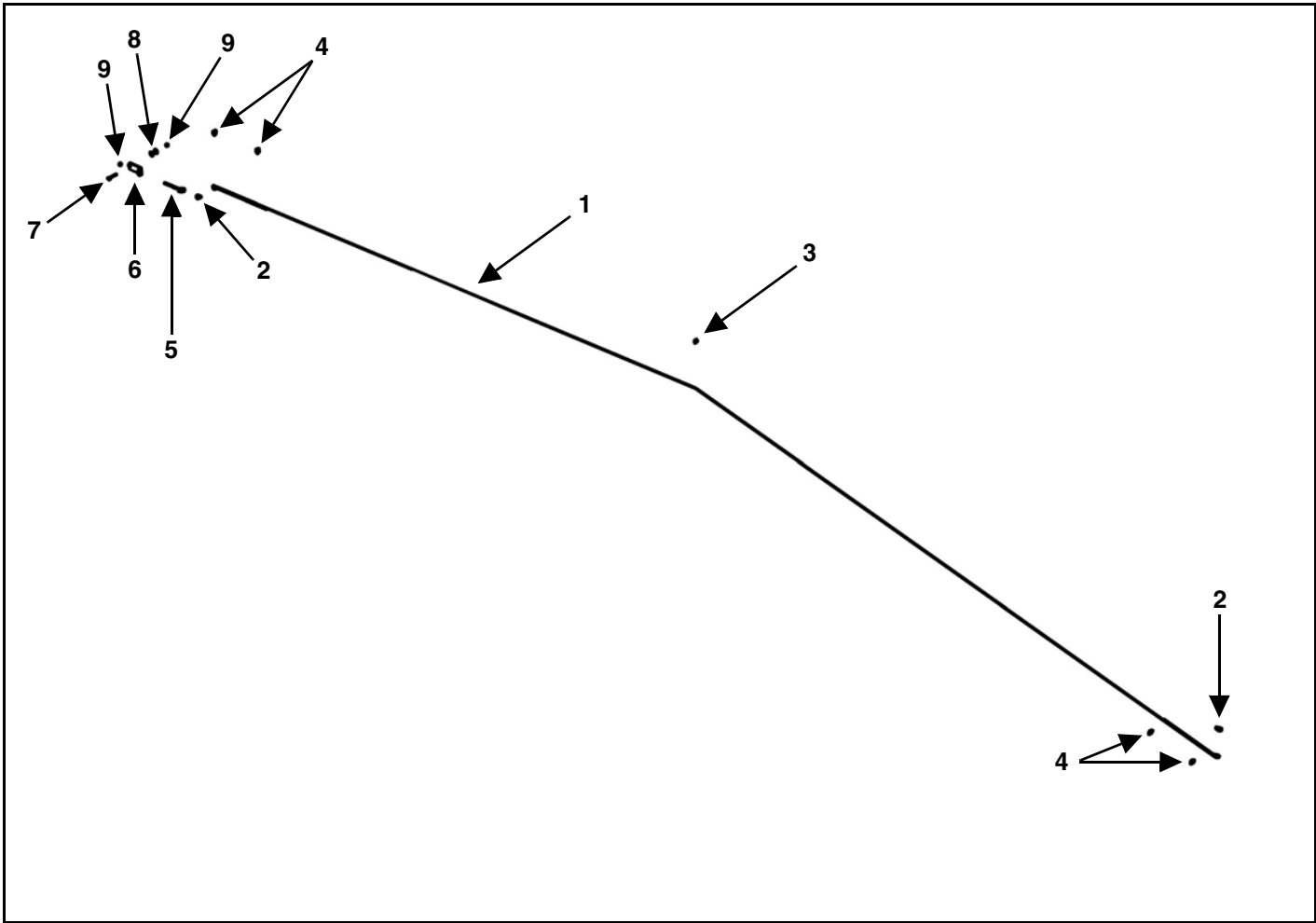


ITEM	PART NUMBER	DESCRIPTION	QTY
1	SZ9981425	ANCHOR, END, LIFT, CYLINDER, HOPPER, 14"	1
2	SZ9981423	SLIDER, CYLINDER, LIFT, 14" HOPPER	1
3	SZ9981424	14" HOPPER CYLINDER LIFT TUBE & ANCHOR	1
4	SZ9981429	ARM, RISER, LIFT, CYLINDER, HOPPER, 14"	1
5	SZ128013	PIN, CLEVIS, 5/8" x 4"	2
6	SZ128018	PIN HAIR, 1/8"	2
7	SZ2122136	CYLINDER	1

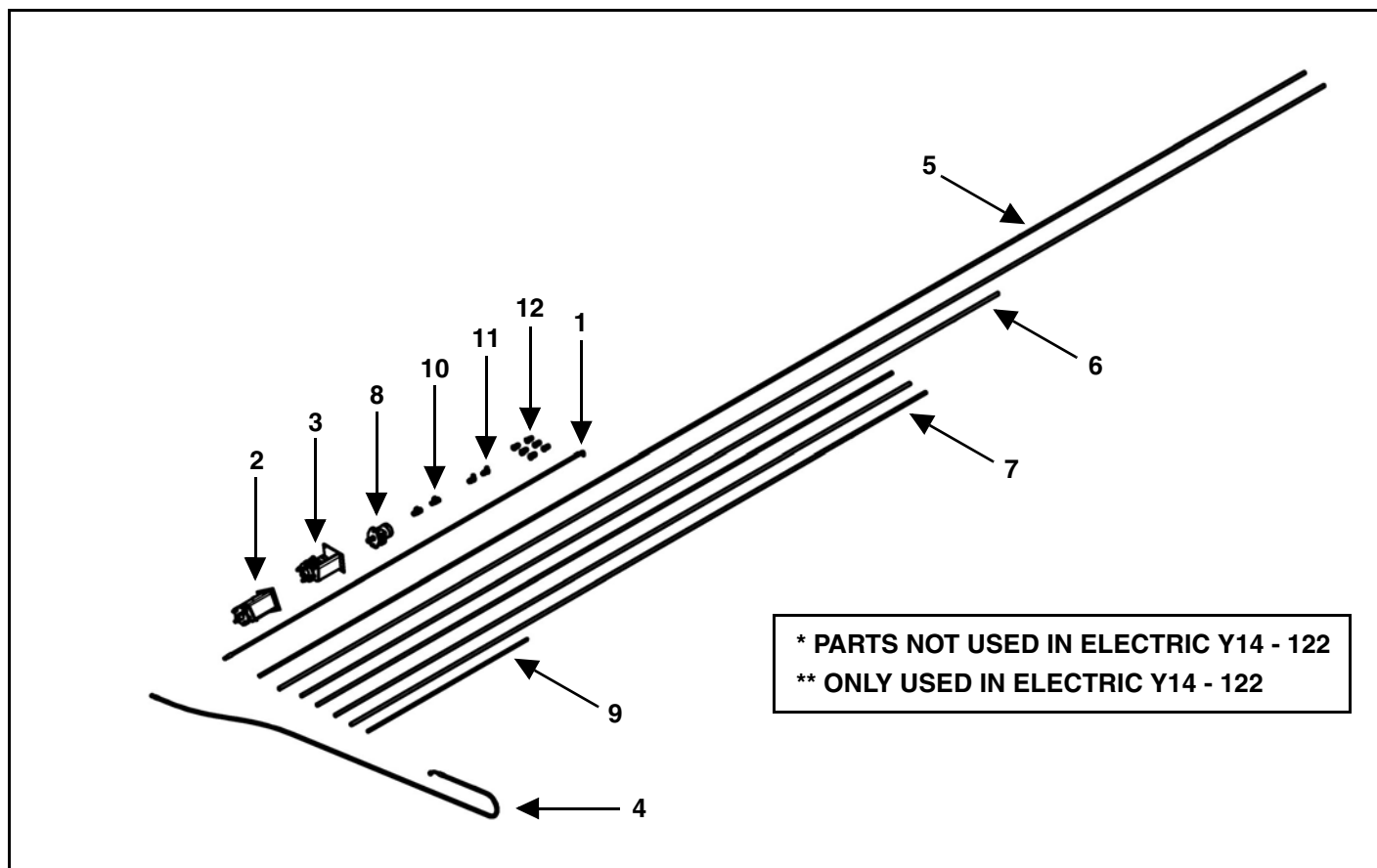
TRUSS LIFT WINCH


ITEM	PART NUMBER	DESCRIPTION	QTY
1	SZ9901233	14" HYDRAULIC WINCH MOUNT, REAR	1
2	SZ9901234	14" AUGER HYDRAULIC WINCH REAR PLATE	1
3	SZ9901235	SIDE PLATE W / HOLE, 14" WINCH MOUNT	2
4	SZ2121250	BRADEN HU 8A WINCH, 12 - 120 AUGER	1
5	SZ126065	BOLT, 3/8" - 16 UNC x 1" HHCS GRADE 5	8
6	SZ127002	FLAT WASHER, 3/8"	8
7	SZ127009	LOCK WASHER, 3/8"	8

BRIDGING CABLE PARTS

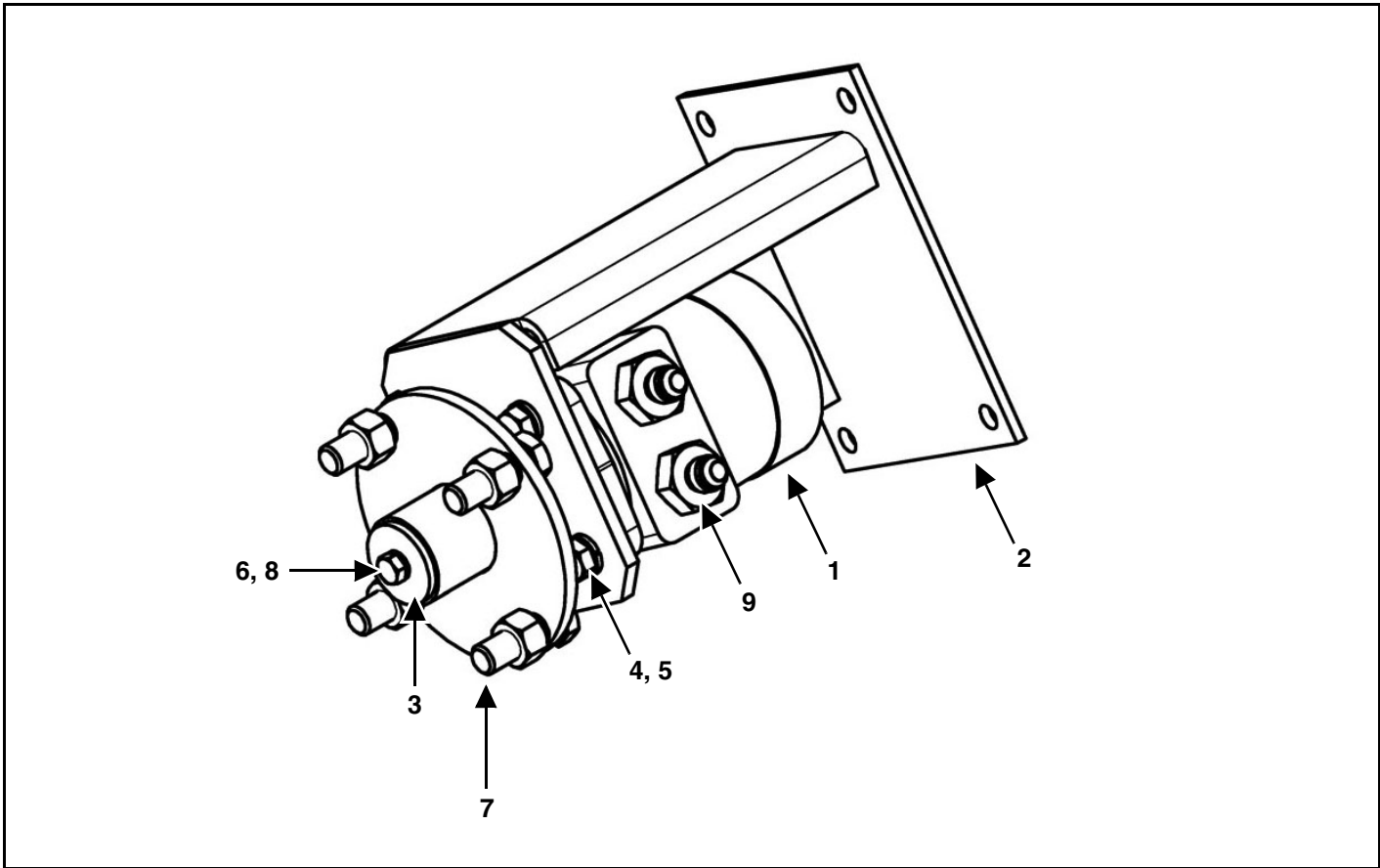


ITEM	PART NUMBER	DESCRIPTION	QTY
1	SZ106487	CABLE, 3/8" 7 x 19 528.00"	1
2	SZ6009375	THIMBLE, CABLE 3/8"	2
3	SZ6003516	CLAMP, CABLE 5/16"	1
4	SZ6003375	CLAMP, CABLE 3/8"	4
5	SZ126017	EYEBOLT, 5/8" - 11 UNC x 6-1/2"	1
6	SZ9901897	TRUSS CABLE EYEBOLT ANCHOR BAR	1
7	SZ102111	BOLT, 5/8" - 11 UNC x 3-1/2" HHCS GRADE 5	1
8	SZ127004	FLAT WASHER, 5/8"	2
9	SZ125036	LOCK NUT, 5/8" - 11UNC	2

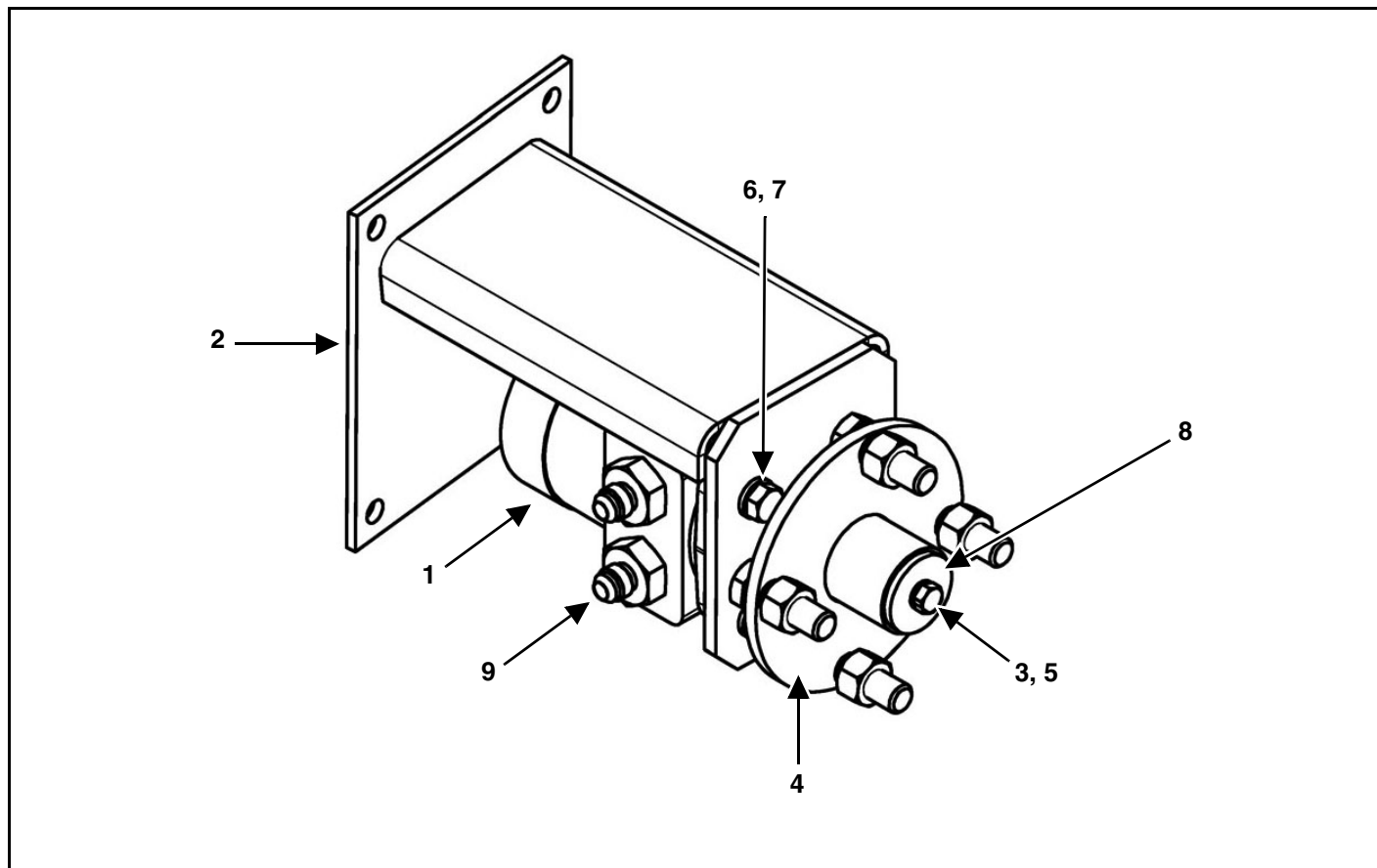
HYDRAULIC PARTS


ITEM	PART NUMBER	DESCRIPTION	QTY
1*	SZ000688	HYDRAULIC HOSE ASSEMBLY, 1/4" x 124" 3000	1
2*	SZ001062	14" MOTOR ASSEMBLY, 14-122 LH	1
3*	SZ001063	14" MOTOR ASSEMBLY, 14-122 RH	1
4*	SZ100511	HYDRAULIC HOSE ASSEMBLY, 1/4" x 156"	1
5	SZ105093	HYDRAULIC HOSE ASSEMBLY, 3/8" x 360"	2
6*	SZ105094	HYDRAULIC HOSE ASSEMBLY, 3/8" x 240"	1
7*	SZ105095	HYDRAULIC HOSE ASSEMBLY, 3/8" x 198"	3
8*	SZ3981155	HYDRAULIC MOTOR, H SERIES 101-1026	1
9*	SZ300925-12	HYDRAULIC HOSE ASSEMBLY, 1/4" x 55.00"	1
10	SZ2123801	FITTING, 90°	2
11*	SZ384132	FITTING, 90° 08 MJ x 08 MB	2
12**	812208	NIPPLE, 1/2" BODY 1/2"-14 NPTF QUICK CONNECT	6

LH HYDRAULIC MOTOR ASSEMBLY



ITEM	PART NUMBER	DESCRIPTION	QTY
1	SZ103960	MOTOR, HYDRAULIC 1013292 IN STEEL	1
2	SZ9981419	WELDMENT, 14" HPR LH PWR WHEEL	1
3	SZ9901357	FLAT WASHER, 0.28" x 1.38" 10 GA GALANIZED	1
4	SZ126065	BOLT, 3/8" - 16 UNC 1" HHCS GRADE 5	4
5	SZ127009	LOCK WASHER, 3/8"	4
6	SZ126033	BOLT, 1/4" - 20UNC x 1-3/4" HHCS GRADE 5	1
7	SZ99812057	POWER SWING WHEEL HUB	1
8	SZ127008	LOCK WASHER, 1/4"	1
9	83000073	JIC(-6) x MALE O-RING (-10), STRAIGHT	2

RH HYDRAULIC MOTOR ASSEMBLY


ITEM	PART NUMBER	DESCRIPTION	QTY
1	SZ103960	MOTOR, HYDRAULIC 1013292 IN STEEL	1
2	SZ9981420	WELDMENT, 14" HPR RH PWR WHEEL	1
3	SZ127008	LOCK WASHER, 1/4"	1
4	SZ99812057	POWER SWING WHEEL HUB	1
5	SZ126033	BOLT, 1/4" - 20UNC x 1-3/4" HHCS GRADE 5	1
6	SZ127009	LOCK WASHER, 3/8"	4
7	SZ126065	BOLT, 3/8" - 16 UNC 1" HHCS GRADE 5	4
8	SZ9901357	FLAT WASHER, 0.28" x 1.38" 10 GA GALANIZED	1
9	83000073	JIC(-6) x MALE O-RING (-10), STRAIGHT	2

Farm King

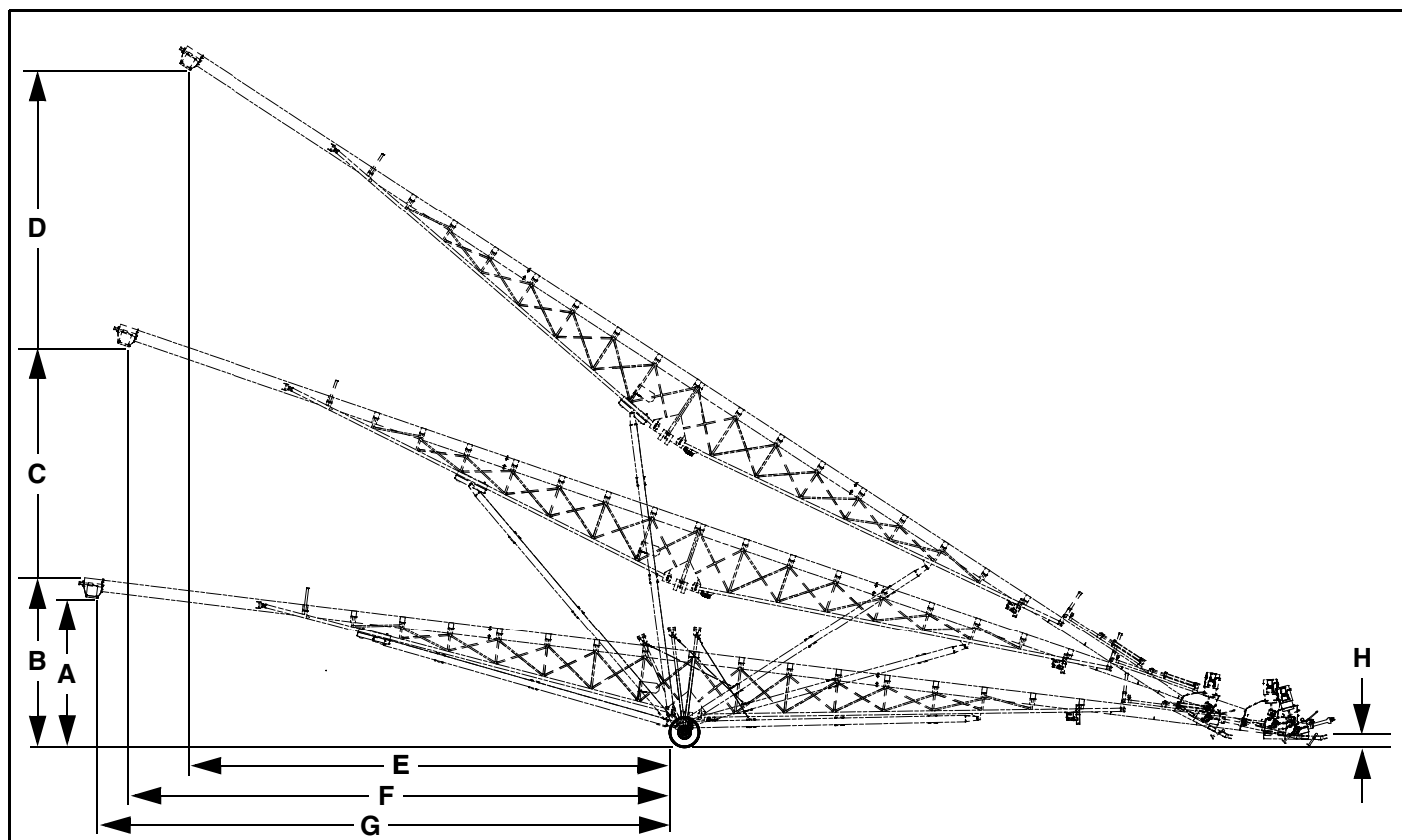


SPECIFICATIONS

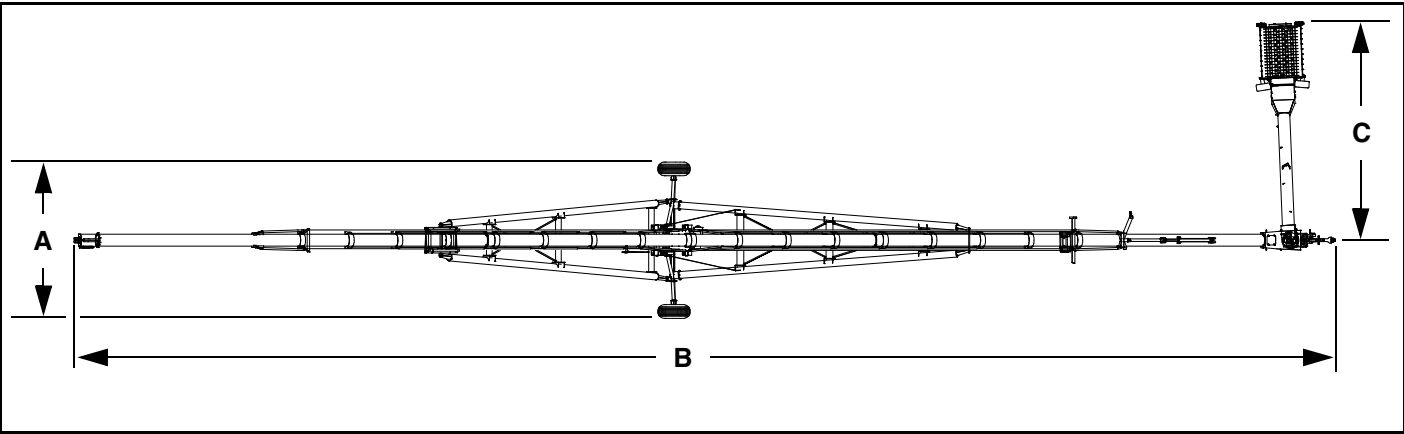
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Farm King



SPECIFICATIONS
Dimensions


DESCRIPTION	BACKSAVER AUGER 14122
Discharge Spout Height (Transport Position) (A)	184 in.
Transport Height (B)	209 in.
Discharge Spout Height @ 18° Angle (C)	492 in.
Discharge Spout Height @ 32° Angle (D)	832 in.
Discharge Spout To Wheels @ 32° Angle (E)	590 in.
Discharge Spout To Wheels @ 18° Angle (F)	664 in.
Discharge Spout To Wheels (Transport Position) (G)	703 in.
Hitch Height (H)	14.9 in.



DESCRIPTION	BACKSAVER AUGER 14122
Overall Width (A)	183 in.
Overall Length (B)	1451 in.
Input Auger / Hopper Length (C)	257 in.

Performance

DESCRIPTION	BACKSAVER AUGER 14122
Tires	16.52L x 16.1
Wheels And Hubs	16 In. With 8 Bolt Hubs
Wheel Track	118 In.
Hopper Dimensions	60 In. x 48 In.
Hopper Drive Chain	#50 48P
Total Weight	10,000 Lb.
Winch	Hydraulic
Upper Gearbox	90W Gear Oil
Lower Gearbox	75W - 90 Synthetic Gear Oil

HARDWARE TORQUE VALUES

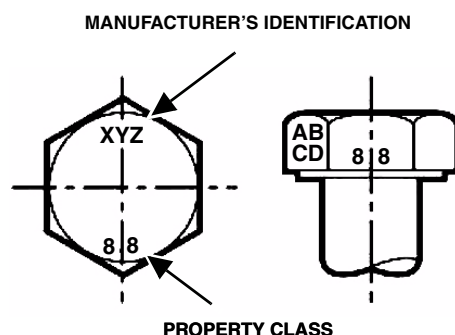
Metric Chart

NOTE: Do not use the values listed in the charts if a different torque value or tightening procedure is specified in this manual for a specific application. Torque values listed are for general use only.

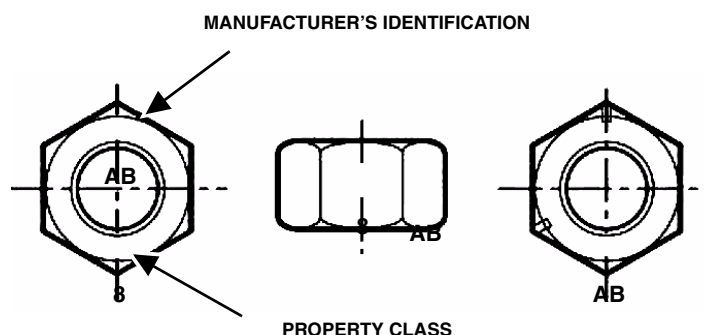
Use the following charts to determine the correct torque when checking, adjusting or replacing hardware. **Torque values are listed in newton-meters (inch* or foot pounds) for normal assembly applications.**

Nominal Size	Class 5.8		Class 8.8		Class 10.9		Lock nuts
	Unplated	Plated W / ZnCr	Unplated	Plated W / ZnCr	Unplated	Plated W / ZnCr	CL.8 w/ CL. 8.8 Bolt
M4	1.7 (15*)	2.2 (19*)	2.6 (23*)	3.4 (30*)	3.7 (33*)	4.8 (42*)	1.8 (16*)
M6	5.8 (51*)	7.6 (67*)	8.9 (79*)	12 (102*)	13 (115*)	17 (150*)	6.3 (56*)
M8	14 (124*)	18 (159*)	22 (195*)	28 (248*)	31 (274*)	40 (354*)	15 (133*)
M10	28 (21)	36 (27)	43 (32)	56 (41)	61 (45)	79 (58)	30 (22)
M12	49 (36)	63 (46)	75 (55)	97 (72)	107 (79)	138 (102)	53 (39)
M16	121 (89)	158 (117)	186 (137)	240 (177)	266 (196)	344 (254)	131 (97)
M20	237 (175)	307 (226)	375 (277)	485 (358)	519 (383)	671 (495)	265 (195)
M24	411 (303)	531 (392)	648 (478)	839 (619)	897 (662)	1160 (855)	458 (338)
NOTE: Torque values shown with * are inch pounds.							

Identification of Hex Cap Screws and Carriage Bolts - Classes 5 and up



Identification of Hex Nuts and Lock Nuts - Classes 5 and up



HARDWARE TORQUE VALUES (CONT'D)
Imperial Chart

NOTE: Do not use the values listed in the charts if a different torque value or tightening procedure is specified in this manual for a specific application. Torque values listed are for general use only.

Use the following charts to determine the correct torque when checking, adjusting or replacing hardware. **Torque values are listed in newton-meters (inch* or foot pounds) for normal assembly applications.**

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

Identification of Hex Cap Screws and Carriage Bolts


SAE GRADE 2 BOLTS



SAE GRADE 5 BOLTS



SAE GRADE 8 BOLTS



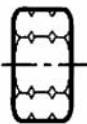
SAE GRADE 2 NUTS



SAE GRADE 2 NUTS



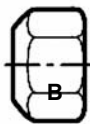
SAE GRADE 2 NUTS

Identification of Hex Nuts and Lock Nuts


Grade A - No Notches

Grade B - One Circumferential Notch

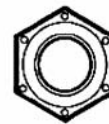
Grade C - One Circumferential Notches



Grade A - No Mark

Grade B - Letter B

Grade C - Letter C



Grade A - No Marks

Grade B - Three Marks

Grade C - Six Marks

(Marks not always located at corners)

HYDRAULIC CONNECTION SPECIFICATIONS

O-Ring Fitting (Straight Thread)

Lubricate the O-ring before installing the fitting. Loosen the jam nut and install the fitting. Tighten the jam nut until the washer is tight against the surface.

O-ring Face Seal Connection

Figure 199

O-ring Face Seal Tightening Torque		
Tubeline O.D.	Thread Size	N•m (ft-lb)
1/4"	9/16" - 18	13 (18)
3/8"	11/16" - 16	22 (30)
1/2"	13/16" - 16	40 (54)
5/8"	1" - 14	60 (81)
3/4"	1-3/16" - 12	84 (114)
7/8"	1-3/16" - 12	98 (133)
1"	1-7/16" - 12	118 (160)
1-1/4"	1-11/16" - 12	154 (209)
1-1/2"	2" - 12	163 (221)

When the fitting is tightened, you can feel when the fitting is tight to eliminate leakage caused by under or over torqued fittings. Use petroleum jelly to hold the O-ring in position until the fittings are assembled.

Flare Fitting

Figure 200

Flare Fitting Tightening Torque		
Tubeline O.D.	Thread Size	N•m (ft-lb)
1/4"	7/16" - 20	13 (18)
5/16"	1/2" - 20	17 (23)
3/8"	9/16" - 18	22 (30)
1/2"	3/4" - 16	40 (54)
5/8"	7/8" - 14	60 (81)
3/4"	1-1/16" - 12	84 (114)
7/8"	1-3/16" - 12	98 (133)
1"	1-5/16" - 12	118 (160)
1-1/4"	1-5/8" - 12	154 (209)
1-1/2"	1-7/8" - 12	163 (221)
2"	2-1/2" - 12	252 (342)

Tighten until the nut makes contact with the seat. Use the chart [Figure 200] to find the correct tightness needed.

NOTE: If the fitting leaks, disconnect and inspect the seat area for damage.

Port Seal (O-ring Boss) Fitting

Figure 201

Port Seal And O-ring Boss Tightening Torque		
Tubeline O.D.	Thread Size	N•m (ft-lb)
1/4"	7/16" - 20	13 (18)
3/8"	9/16" - 18	22 (30)
1/2"	3/4" - 16	40 (54)
5/8"	7/8" - 14	60 (81)
3/4"	1-1/16" - 12	84 (114)
7/8"	1-3/16" - 12	98 (133)
1"	1-5/16" - 12	118 (160)
1-1/8"	1-7/16" - 12	154 (209)
1-1/4"	1-5/8" - 12	163 (221)

NOTE: Port seal and nut, washer and O-ring (O-ring Boss) fittings use the same tightening torque valve chart.

If a torque wrench cannot be used, use the following method.

Tighten the nut until it just makes metal to metal contact, you can feel the resistance.

Tighten the nut with a wrench no more than one hex flat maximum.

Do not over tighten the port seal fitting.

NOTE: If a torque wrench cannot be used, use the hex flat tightening method as an approximate guideline.

NOTE: Port seal fittings are not recommended in all applications. Use O-ring boss fittings in these applications.

Tubelines And Hoses

Replace any tubelines that are bent or flattened. They will restrict flow, which will slow hydraulic action and cause heat.

Replace hoses which show signs of wear, damage or weather cracked rubber.

Always use two wrenches when loosening and tightening hose or tubeline fittings.

Farm King



WARRANTY

WARRANTY155

Farm King



WARRANTY

Farm King

Limited Warranty

BASE LIMITED WARRANTY

Farm King provides this warranty only to original retail purchasers of its products. Farm King warrants to such purchasers that all Farm King manufactured parts and components used and serviced as provided for in the Operator's Manual shall be free from defects in materials and workmanship for a period following delivery to the original retail purchaser of two (2) years. This limited warranty applies only to those parts and components manufactured by Farm King. Parts and components manufactured by others are subject to their manufacturer's warranties, if any.

Farm King will fulfill this limited warranty by, at its option, repairing or replacing any covered part that is defective or is the result of improper workmanship, provided that the part is returned to Farm King within thirty (30) days of the date that such defect or improper workmanship is, or should have been, discovered. Parts must be returned through the selling Farm King Dealer and the buyer must prepay transportation charges.

Farm King will not be responsible for repairs or replacements that are necessitated, in whole or part, by the use of parts not manufactured by or obtained from Farm King. Under no circumstances are component parts warranted against normal wear and tear. There is no warranty on product pump seals, product pump bearings, rubber product hoses, pressure gauges, or other components that require replacement as part of normal maintenance.

REPAIR PARTS LIMITED WARRANTY

Farm King warrants genuine Farm King replacement parts purchased after the expiration of the Farm King Limited Warranty, and used and serviced as provided for in the Operator's Manual, to be free from defects in materials or workmanship for a period of thirty (30) days from the invoice date for the parts. Farm King will fulfill this limited warranty by, at its option, repairing or replacing any covered part that is defective or is the result of improper workmanship, provided that the part is returned to Farm King within thirty (30) days of the date that such defect or improper workmanship is, or should have been, discovered. Such parts must be shipped to the Farm King factory at the purchaser's expense.

WHAT IS NOT COVERED

Under no circumstances does this limited warranty cover any components or parts that have been subject to the following: negligence; alteration or modification not approved by Farm King; misuse; improper storage; lack of reasonable and proper maintenance, service, or repair; normal wear; damage from failure to follow operating instructions; accident; and/or repairs that have been made with parts other than those manufactured, supplied, and or authorized by Farm King.

AUTHORIZED DEALER AND LABOR COSTS

Repairs eligible for labor under this limited warranty must be made by Farm King or an authorized Farm King dealer. Farm King retains the exclusive discretion to determine whether it will pay labor costs for warranty repairs or replacements, and the amount of such costs that it will pay and the time in which the repairs will be made. If Farm King determines that it will pay labor costs for warranty work, it will do so by issuing a credit to the dealer's or distributor's account. Farm King will not approve or pay invoices sent for repairs that Farm King has not previously approved. Warranty service does not extend the original term of this limited warranty.

Farm King

Limited Warranty

WARRANTY REQUIREMENTS

To be covered by warranty, each new product must be registered with Farm King within thirty (30) days of delivery to original retail purchaser. If the customer decides to purchase replacement components before the warranty disposition of such components is determined, Farm King will bill the customer for such components and then credit the replacement invoice for those components later determined to be covered by this limited warranty. Any such replacement components that are determined not to be covered by this limited warranty will be subject to the terms of the invoice and shall be paid for by the purchaser.

EXCLUSIVE EFFECT OF WARRANTY AND LIMITATION OF LIABILITY

TO THE EXTENT PERMITTED BY LAW, FARM KING DISCLAIMS ANY WARRANTIES, REPRESENTATIONS, OR PROMISES, EXPRESS OR IMPLIED, AS TO THE QUALITY, PERFORMANCE, OR FREEDOM FROM DEFECT OF THE COMPONENTS AND PARTS COVERED BY THIS WARRANTY AND NOT SPECIFICALLY PROVIDED FOR HEREIN.

TO THE EXTENT PERMITTED BY LAW, FARM KING DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ON ITS PRODUCTS COVERED HEREIN, AND DISCLAIMS ANY RELIANCE BY THE PURCHASER ON FARM KING'S SKILL OR JUDGMENT TO SELECT OR FURNISH GOODS FOR ANY PARTICULAR PURPOSE. THE PURCHASER'S ONLY AND EXCLUSIVE REMEDIES IN CONNECTION WITH THE BREACH OR PERFORMANCE OF ANY WARRANTY ON FARM KING'S PRODUCTS ARE THOSE SET FORTH HEREIN. IN NO EVENT SHALL FARM KING BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, BY WAY OF EXAMPLE ONLY AND NOT LIMITATION, LOSS OF CROPS, LOSS OF PROFITS OR REVENUE, OTHER COMMERCIAL LOSSES, INCONVENIENCE, OR COST OF REPLACEMENT OF RENTAL EQUIPMENT). IN NO EVENT SHALL FARM KING'S CONTRACT OR WARRANTY LIABILITY EXCEED THE PURCHASE PRICE OF THE PRODUCT. (Note that some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusion may not apply to you.) This warranty gives you specific legal rights and you may also have other rights, which vary from state to state.

Farm King neither assumes nor authorizes any person or entity, including its selling representatives, to assume any other obligations or liability in connections with the sale of covered equipment, or to make any other warranties, representations, or promises, express or implied, as to the quality, performance, or freedom from defect of the components and parts covered herein. No one is authorized to alter, modify, or enlarge this limited warranty, or its exclusions, limitations and reservations.

Corrections of defects and improper workmanship in the manner, and for the applicable time periods, provided for herein shall constitute fulfillment of all responsibilities of Farm King to the purchaser, and Farm King shall not be liable in negligence, contract, or on any other basis with respect to the subject equipment.

This limited warranty is subject to any existing conditions of supply which may directly affect Farm King's ability to obtain materials or manufacturer replacement parts.

Buhler Industries Inc. reserves the right to make improvements in design or changes in specifications to its products at anytime, without incurring any obligation to owners of units previously sold.

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Farm King



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