Farm King

OPERATOR AND PARTS MANUAL

Backsaver Auger

Models 1684 &16104

082016 FK370 Revision 3

TABLE OF CONTENTS

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

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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:
Auger Model:	Serial Number:	Delivery Date:	

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

Dealer Inspection Report

- ☐ Bearings Turn Freely
- ☐ Belt Tension Checked
- ☐ Check Oil Level In Auger Drive Gear Box
- ☐ Pulleys Aligned
- ☐ Fasteners Tight
- ☐ Lubricate Machine
- ☐ Check Tire Pressure
- ☐ Unloading Auger Folds / Extends Freely

Safety

- ☐ All Lights And Reflectors Installed
- ☐ All Lights And Reflectors Cleaned And Working
- ☐ Safety Chain On Hitch
- ☐ 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 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.

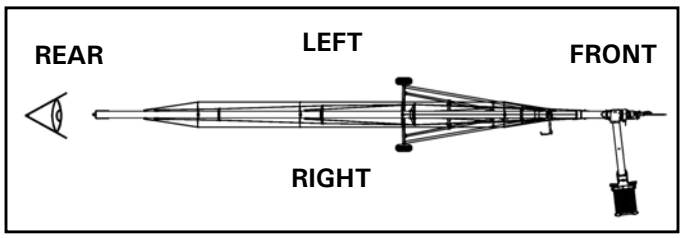
Operate and maintain this equipment in a safe manner and in accordance with all applicable local, state, and federal codes, regulations and / or laws. Follow all on-product labeling and instructions.

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.

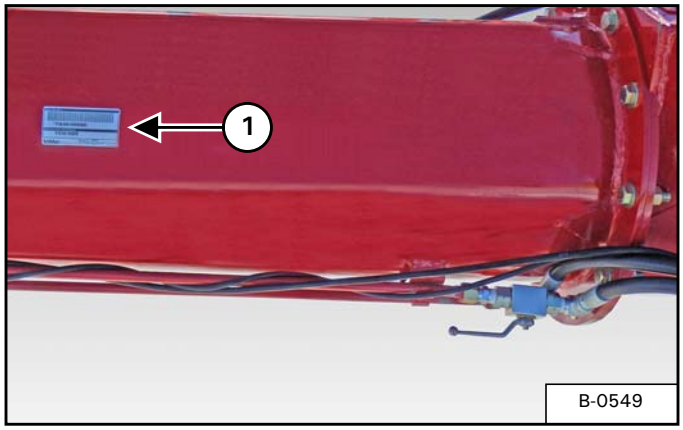


The directions left, right, front and rear, as mentioned throughout this manual, are as viewed from the rear of the equipment.

Serial Number Location

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

Figure 1



Model Number: _____

Serial Number: _____

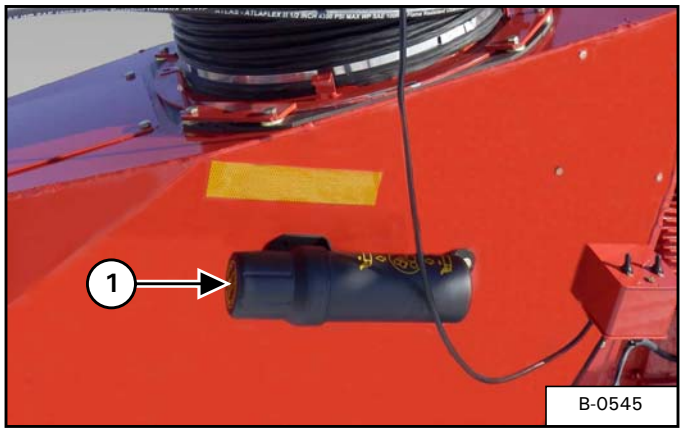
The serial number plate (Item 1) **[Figure 1]** is located on the front right side of tube #1.

NOTE: Tube #1 is connected to the input box.

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

Manual Storage

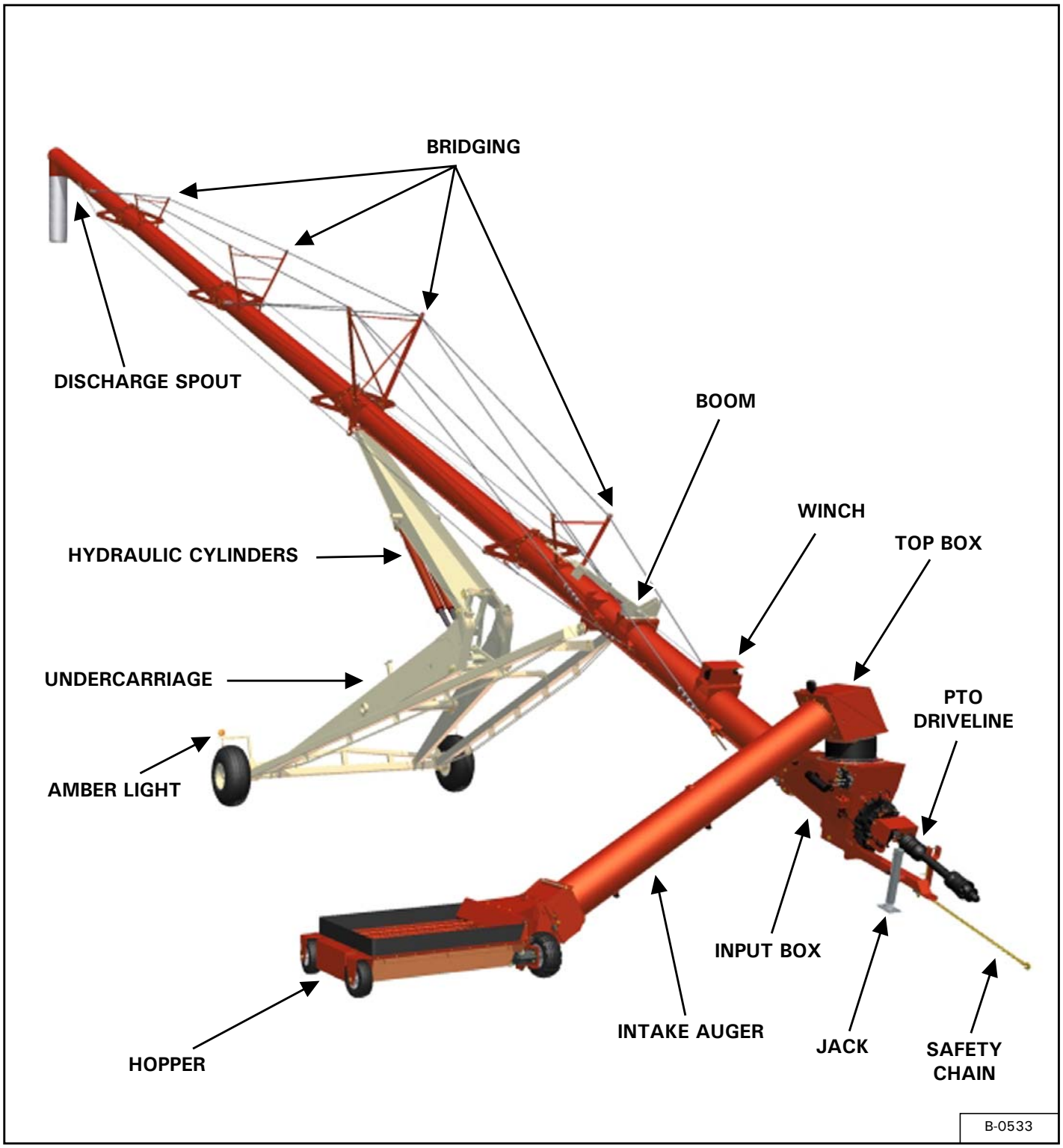
Figure 2



The operator and parts manual and other documents can be stored in the canister (Item 1) **[Figure 2]** located on the right side of the input box.

EQUIPMENT IDENTIFICATION

Component Location



SAFETY

Farm King

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.

CAUTION

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.

DANGER

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.

WARNING

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.

IMPORTANT

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

Safe Operation Needs A Qualified Operator

WARNING

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. Electrocution 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 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

- Review Transport Safety instructions in tractor manual before moving.
- The equipment should never be towed without the safety chain securely attached to the auger and the towing vehicle.
- Empty the auger before moving to prevent upending.
- Always transport the auger in the down position, with the weight of the auger on the undercarriage, not the hydraulic cylinder.
- Raise the intake auger and hopper to the transport position.
- Inflate transport tires to recommended pressure.
- Remove the implement driveline from the tractor when moving the auger.
- Always install transport locks, pins or brackets before transporting.
- Do not tow equipment at speeds over 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.
- Take extreme caution in maneuvering on or around tight corners so as not to catch the end of the auger on trees, buildings, power lines, etc.
- 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.
- When moving the auger on the road, always use a red flag, or if moving at night, use accessory lights to warn operators of other vehicles.
- 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).

SAFETY INSTRUCTIONS (CONT'D)

Operation Safety

- Ensure bystanders are clear of the area before operating.
- The auger must be attached to the drawbar of the tractor at all times during operation.
- Never stand under the auger while raising or lowering.
- Be sure all shields are in place and in good condition before operating.
- The auger must be on a level surface and wheels free to move when raising and lowering.
- Do not operate the intake auger when it is folded or in the transport position.
- Stay clear of PTO driveline when engaging and during operation.
- When filling tall bins, tanks, or granaries, it is advised to anchor the auger to the bin or building to prevent it from being tipped over by sudden movement or wind.
- Do not allow anyone other than the operator close to the auger when in operation.

Service And Maintenance Safety

- Stop engine, set brake, remove ignition key, and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.
- Wear appropriate protective gear.
- Support the equipment with blocks or safety stands before working underneath.
- Use tools, jacks, and lifting equipment of sufficient capacity.
- Relieve hydraulic pressure on hydraulic system before repairing or adjusting.
- Check hydraulic system for leaks. Use cardboard to look for leaks and use hand and eye protection.
- Use heavy leather gloves to handle sharp objects.
- Replace and secure all shields removed during servicing before operating equipment.

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.

SAFETY INSTRUCTIONS (CONT'D)

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.
- 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.

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 122.)

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 / acid 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)

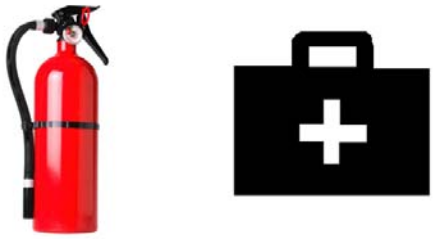
Welding And Grinding

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.

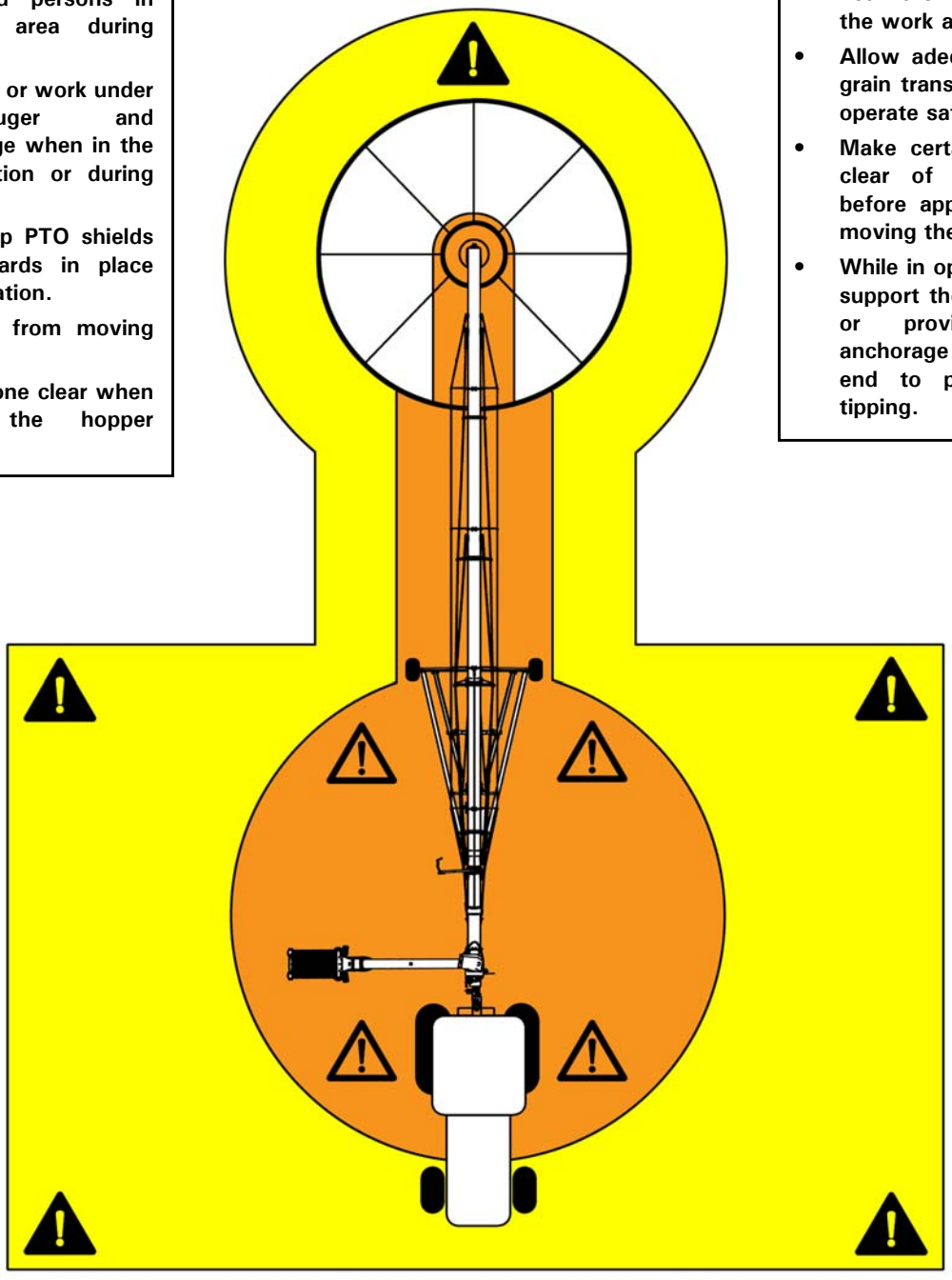
⚠ DANGER

ELECTROCUTION HAZARD

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

⚠ CAUTION

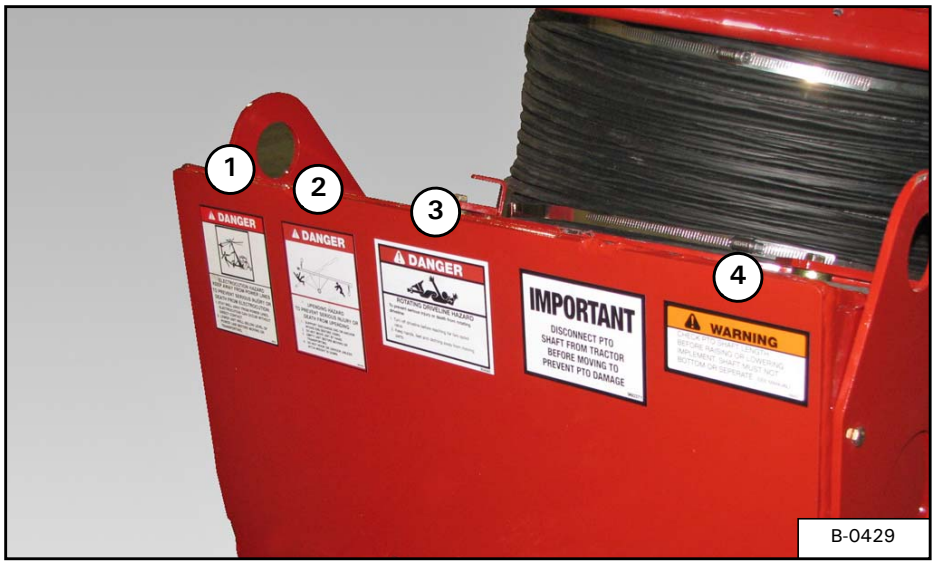
- Owners and operators should allow only authorized personnel and grain transport vehicles near the auger or inside the work area.
- Allow adequate space for grain transport vehicles to operate safely.
- Make certain everyone is clear of the equipment before applying power or moving the machine.
- While 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.

Input Box



1

p/n 909745

2

p/n 960569

3

p/n 904585

4

p/n 108431

SAFETY SIGNS (DECALS) (CONT'D)

Input Box Elbow

1

p/n 963206

Intake Auger

1

p/n 961016

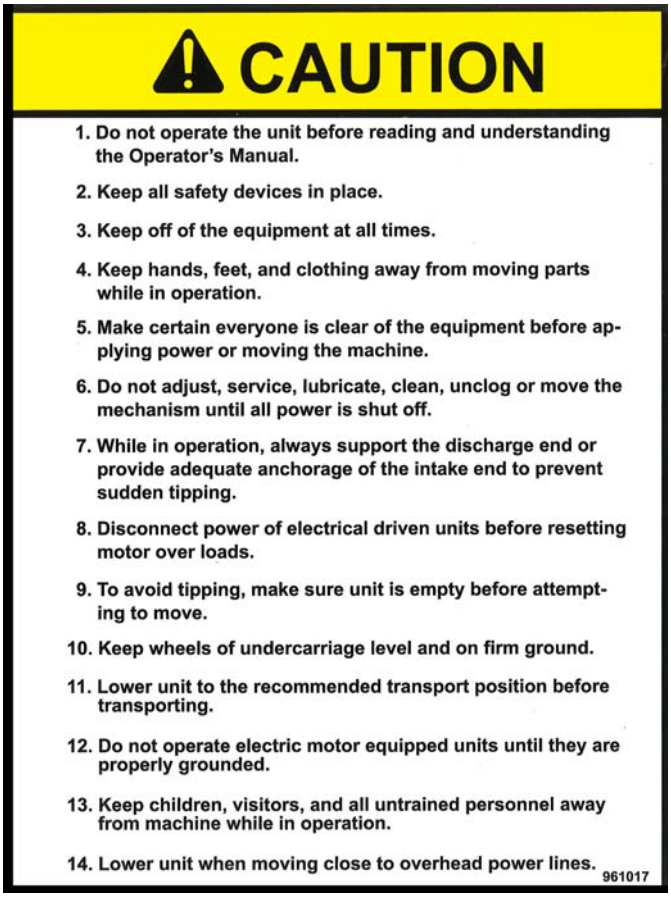
SAFETY SIGNS (DECALS) (CONT'D)

Intake Auger

2

p/n 917765

1



p/n 961017

EQUIPMENT DECALS AND SIGNS

NOTE: All safety related decals are shown in the Safety Signs Section. (See "SAFETY SIGNS (DECALS)" on page 19.)

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

Part Number 912849

1684

Part Number 910579

16104

Part Number 910582

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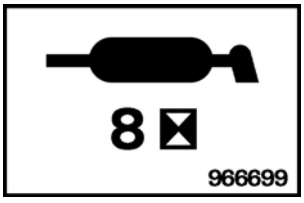
Part Number 52773-000 (Amber)

Part Number 52774-000 (Red)

Part Number 966699



Part Number 960372

Part Number 961015

Part Number 967388

Part Number 960371

SAFETY SIGN-OFF FORM

⚠ 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.

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**

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ASSEMBLY

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GENERAL ASSEMBLY INFORMATION

Component Unloading And Identification

DANGER

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.**

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.**

Unload the crate(s) and components in flat level area of adequate size to assemble the 1684 and 16104 Backsaver Auger.

IMPORTANT

Unload crate(s) and auger components carefully, not to cause 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 1684 & 16104 Backsaver Augers in the following order:

1. Undercarriage (See "1684 Undercarriage Assembly" on page 28.) or (See "16104 Undercarriage Assembly" on page 38.)

   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 (1684 & 16104)" on page 50.)

   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.

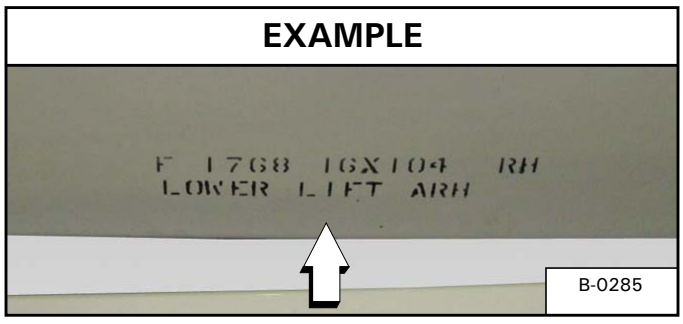
3. Intake Auger (See "Installing The Intake Auger (1684 & 16104)" on page 71.)

   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 "1684 HYDRAULIC ASSEMBLY" on page 80.) or (See "16104 HYDRAULIC ASSEMBLY" on page 83.)

   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]**.

1684 & 16104 BASE GROUP

1684 Undercarriage Assembly

Assemble the undercarriage on flat level surface.

⚠ WARNING

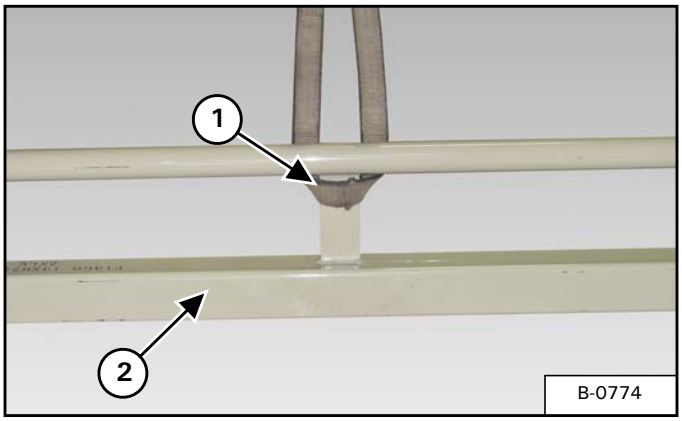
- **DO NOT permit bystanders to be in the work area when unloading and assembling the auger components.**
- **DO NOT work under suspended parts.**
- **Keep away from moving parts.**
- **Always use lifting devices / vehicles, chains or straps of adequate size and strength when unloading and assembling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

⚠ WARNING

AVOID INJURY OR DEATH

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

Figure 4



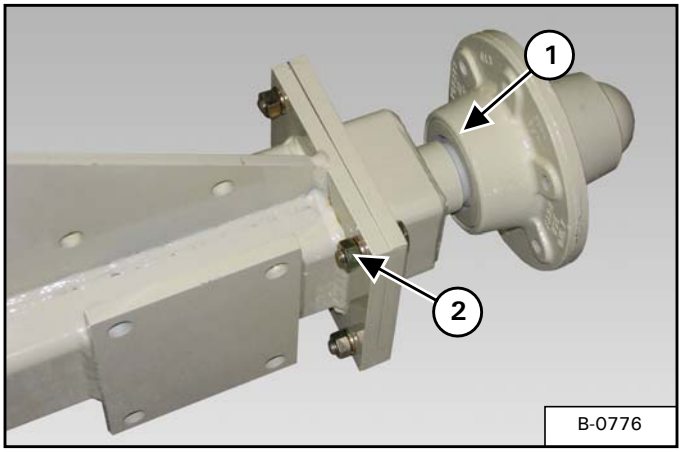
Install a strap (Item 1) around the center of the axle (Item 2) **[Figure 4]**.

Connect the strap to an approved lifting device.

Raise and move the axle to the assembly area.

Lower the axle to the ground and remove strap.

Figure 5



Align the hub (Item 1) **[Figure 5]** with the axle.

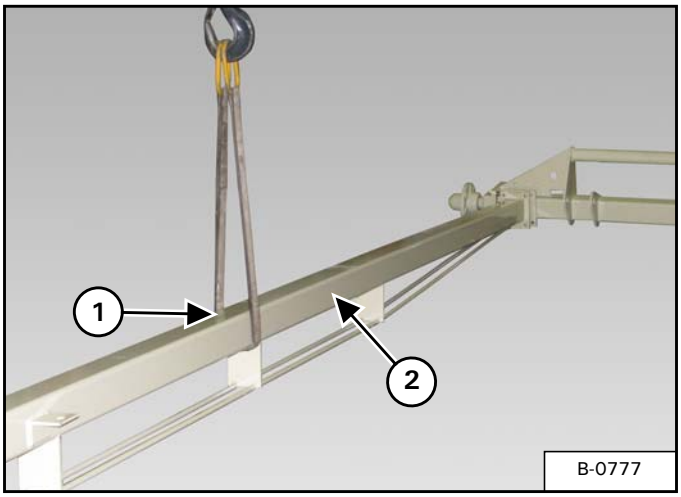
Stub Axle Mounting Bolt Size

1/2″ x 1-3/4″

Install and tighten the four bolts (Item 2) **[Figure 5]** and lock nuts.

Repeat procedure **[Figure 5]** and install the opposite hub onto the axle.

Figure 6

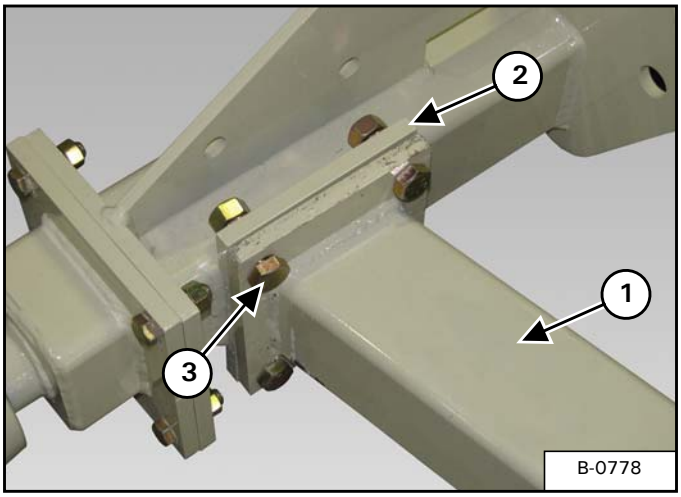


Install a strap (Item 1) around the center of the right undercarriage arm (Item 2) **[Figure 6]**.

Connect the strap to an approved lifting device.

Raise and move the right undercarriage arm towards the axle.

Figure 7



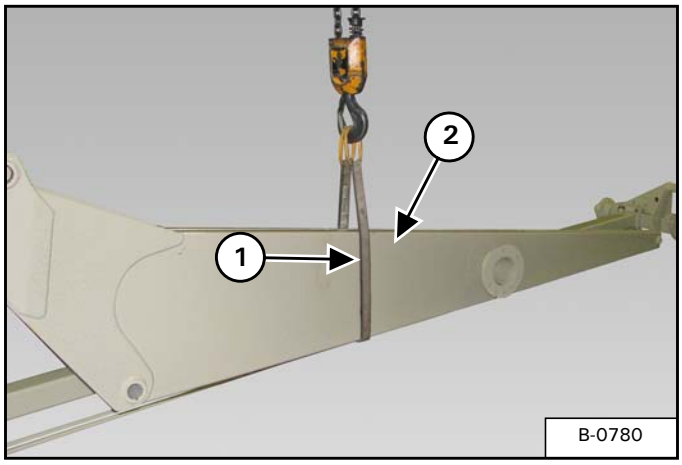
Align the right undercarriage arm (Item 1) with the mounting flange (Item 2) on the axle **[Figure 7]**.

Undercarriage Arm Mounting Bolt Size

5/8″ x 2″

Install four bolts (Item 3) **[Figure 7]** and lock nuts. Do not tighten bolts and nuts at this time.

Figure 8

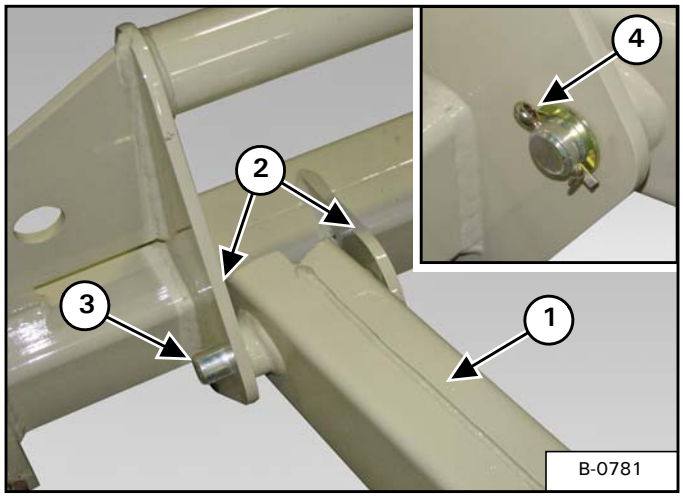


Install a strap (Item 1) around the RH lower lift arm (Item 2) **[Figure 8]**. Connect the strap to an approved lifting device.

NOTE: Move strap forward or backward until the component hangs level when raised off the ground.

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

Figure 9



Locate the two lift arm axle pins.

Lift Arm Axle Pin Size

1″ x 6.38″

Align the RH lower lift arm (Item 1) with the two mounts (Item 2) **[Figure 9]** on the axle.

Install one axle pin (Item 3) **[Figure 9]** through the axle mounts and RH lower lift arm.

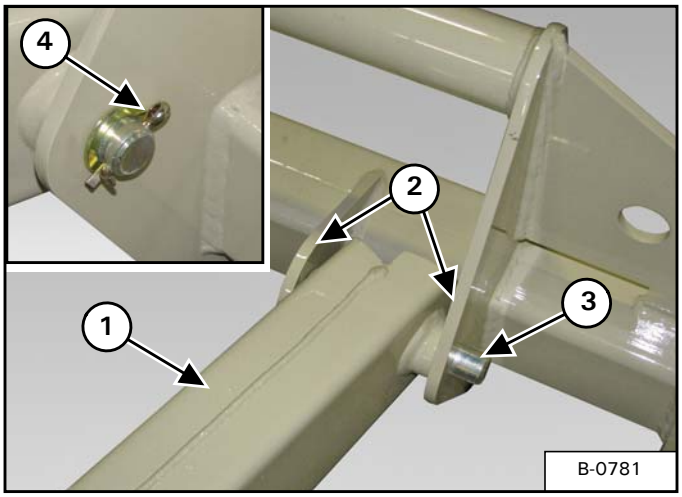
Install one 1-1/4″ narrow rim washer and 1/4″ x 2″ cotter pin (Item 4) **[Figure 9]** onto the axle pin, securing the RH lower lift arm to the axle.

Install a strap around the LH lower lift arm. Connect the strap to an approved lifting device.

NOTE: Move strap forward or backward until the component hangs level when raised off the ground.

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

Figure 10

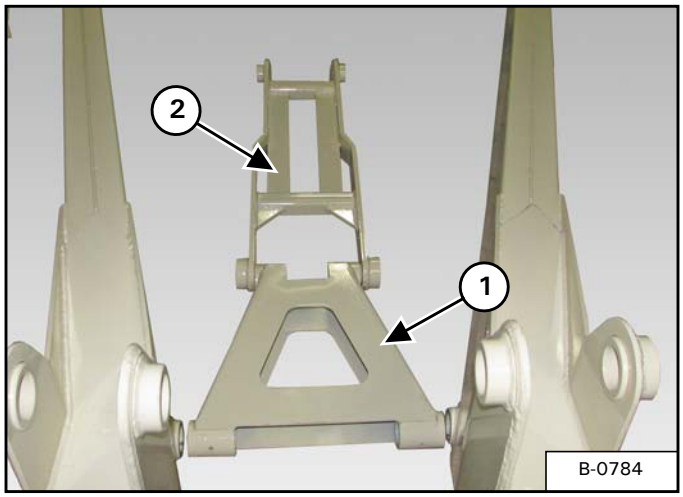


Align the LH lower lift arm (Item 1) with the two mounts (Item 2) **[Figure 10]** on the axle.

Install one axle pin (Item 3) **[Figure 10]** through the axle mounts and LH lower lift arm.

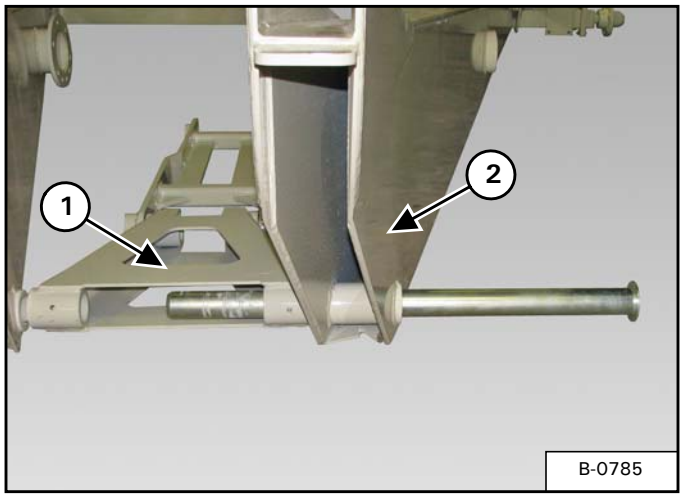
Install one 1-1/4″ narrow rim washer and 1/4″ x 2″ cotter pin (Item 4) **[Figure 10]** onto the axle pin, securing the LH lower lift arm to the axle.

Figure 11



Place the connecting link (Item 1) and pivot yoke (Item 2) **[Figure 11]** on the ground, between the LH & RH lower lift arms.

Figure 12



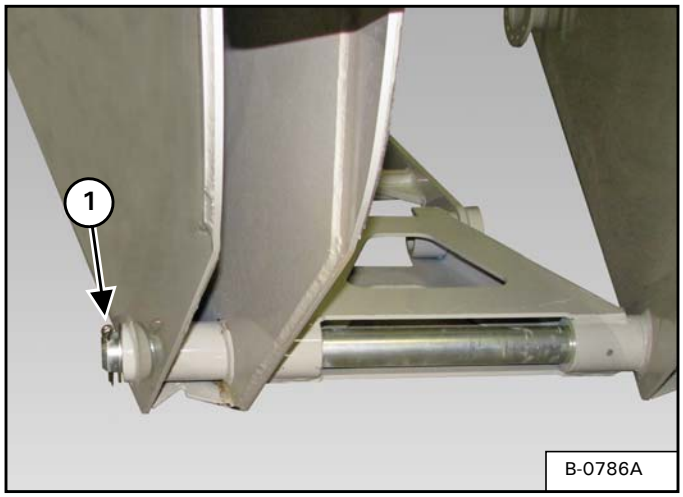
Align the connecting link (Item 1) with LH lower lift arm (Item 2) **[Figure 12]**.

Connecting Link Pin Size

2″ x 34 - 3/16″

Install the connecting link pin through the LH lower lift arm and connecting link.

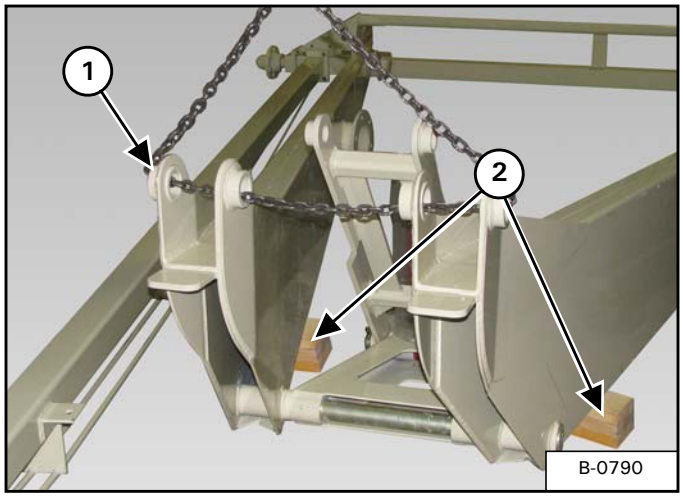
Figure 13



Continue installing the connecting link pin through the connecting link and RH lower lift arm.

Install one 2″ x 10 ga. narrow rim washer and one 15/16″ x 3″ cotter pin (Item 1) **[Figure 13]** onto the connecting link pin and secure.

Figure 14



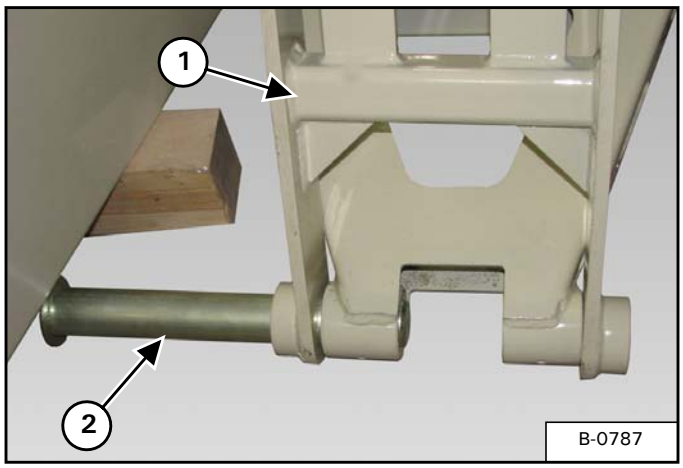
Install a chain (Item 1) **[Figure 14]** through the upper LH & RH lower lift arm mounts. Connect the chain to an approved lifting device.

Lift the LH & RH lower lift arms. Install blocks (Item 2) **[Figure 14]** under the LH & RH lower lift arms.

NOTE: Verify that there is adequate space under the LH & RH lower lift arms for installing the bottom cylinder pin.

Lower the LH & RH lower lift arms onto the blocks.

Figure 15



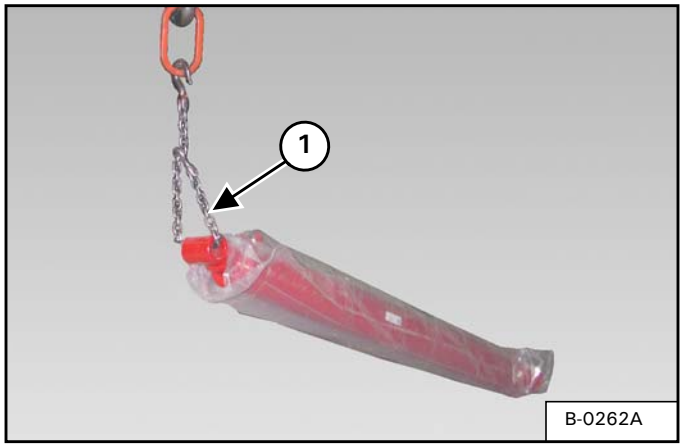
Rotate the pivot yoke (Item 1) **[Figure 15]** up.

Bottom Cylinder Pin Size

2″ x 14-13/16″

Align the pivot yoke and connecting link. Install the bottom cylinder pin (Item 2) **[Figure 15]** through the connecting link and first side of the pivot yoke.

Figure 16

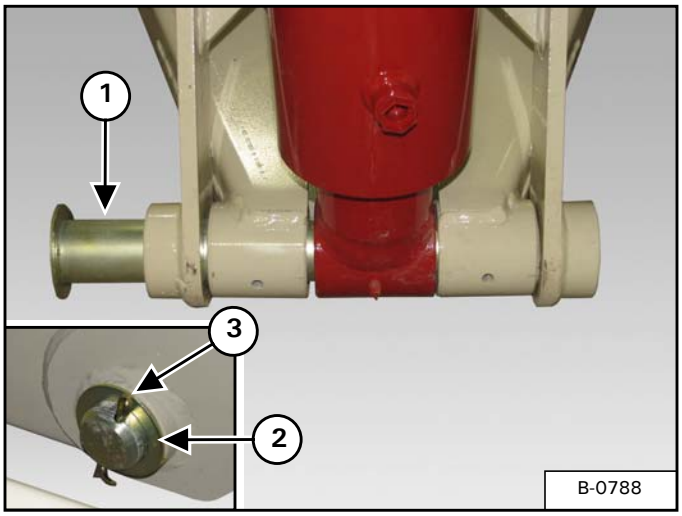


NOTE: It is recommended to leave the plastic on the hydraulic cylinders during assembly. This will help to prevent damage to the paint and minimize touch-up painting.

Install a chain or strap (Item 1) **[Figure 16]** through the base end of the hydraulic cylinder. Connect the chain or strap to an approved lifting device.

Raise and move the hydraulic cylinder to the assembly area.

Figure 17



Lower the hydraulic cylinder and align the rod end of the cylinder with the pivot yoke **[Figure 17]** (with grease zerks facing as shown).

Continue installing the bottom cylinder pin (Item 1) **[Figure 17]** through the connecting link and opposite side of the pivot yoke.

Narrow Rim Washer Size

2″ x 10 Ga.

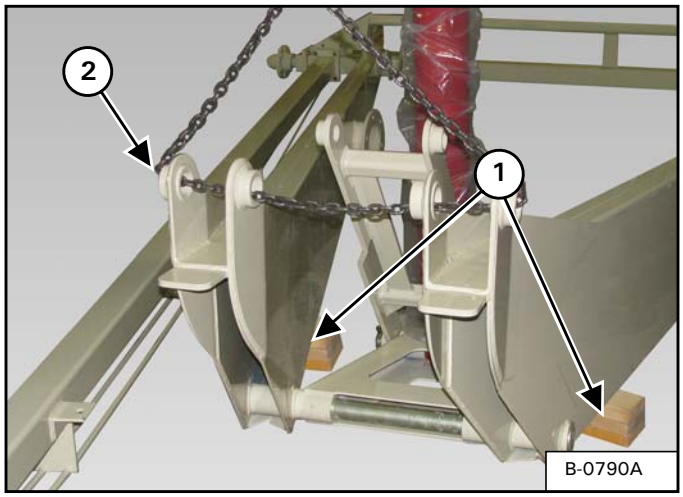
Cotter Pin Size

5/16″ x 3″

Install one 2″ narrow rim washer (Item 2) and one cotter pin (Item 3) **[Figure 17]** onto the bottom cylinder pin.

NOTE: Do not remove chain from base end of the cylinder.

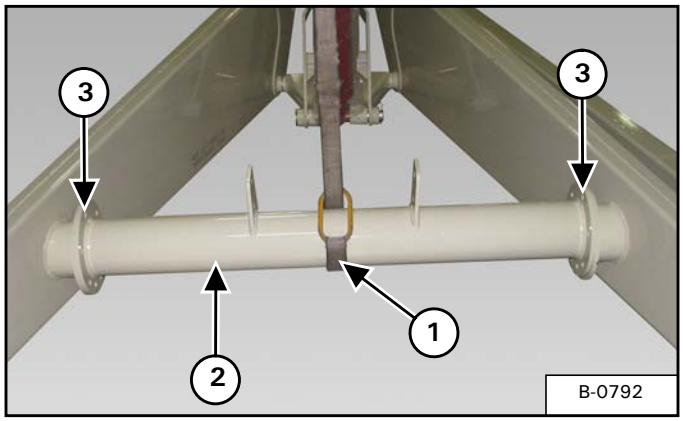
Figure 18



Lift the LH & RH lower lift arms. Remove blocks (Item 1) **[Figure 18]**. Lower LH & RH lower lift arms to the ground.

Remove chain (Item 2) **[Figure 18]**.

Figure 19

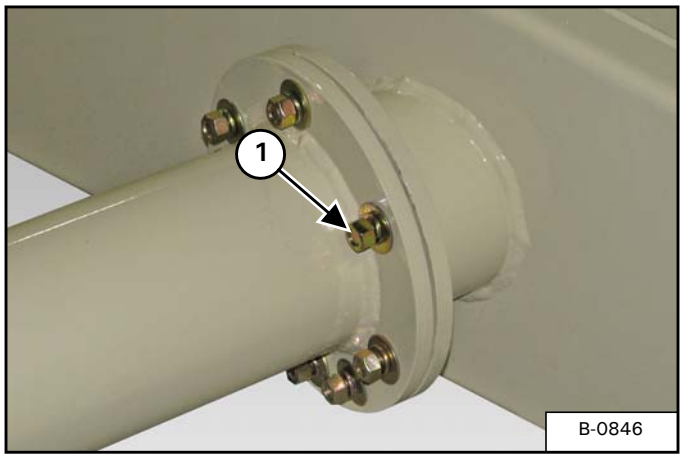


Install a strap (Item 1) around the lift arm torque tube (Item 2) **[Figure 19]**. Connect the strap to a second approved lifting device.

Raise and move the lift arm torque tube to the assembly area.

Align the lift arm torque tube with the LH & RH lower lift arm mounting plates. Install one 1/2″ flat washer on two 1/2″ x 2″ bolts (Item 3) **[Figure 19]**, install the two bolts through the top holes (both ends). Install one 1/2″ flat washer and 1/2″ lock nut on the bolts.

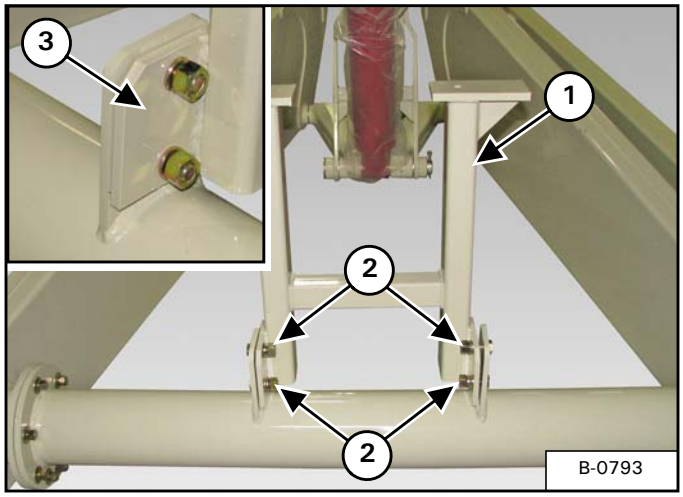
Figure 20



Install one 1/2″ flat washer on the remaining 1/2″ x 2″ bolts (Item 1) **[Figure 20]**, install bolts through the lift arm torque tube and LH & RH lower lift arm mounting plates. Install 1/2″ flat washers and 1/2″ lock nuts (both sides). Do not tighten bolts and lock nuts at this time.

Remove the strap.

Figure 21

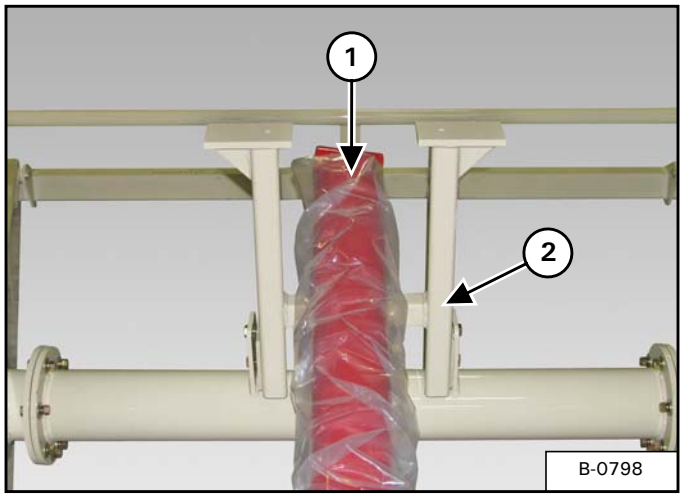


Align the cradle rest (Item 1) **[Figure 21]** with the two mounting plates on the lift arm torque tube.

Install the four 5/8″ x 3-1/2″ bolts (Item 2) **[Figure 21]** and 5/8″ lock nuts.

NOTE:Install the cradle rest with the tabs (Item 3) [Figure 21] towards the axle.

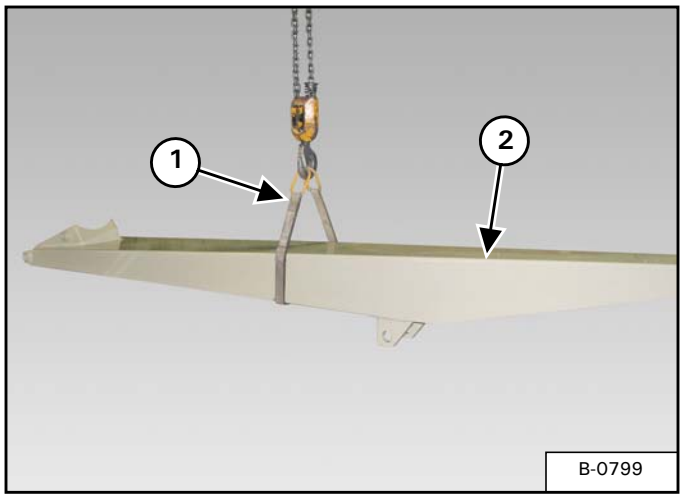
Figure 22



Lower the hydraulic cylinder (Item 1) onto the cradle rest (Item 2) **[Figure 22]**.

Rotate the cylinder 180° or until the hydraulic fitting ports are facing down.

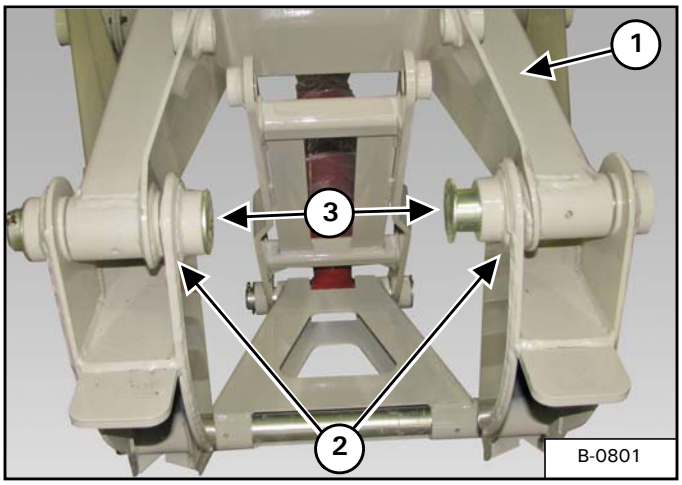
Figure 23



Install a strap (Item 1) around the upper lift arm (Item 2) **[Figure 23]**. Connect the strap to an approved lifting device.

Raise and move the upper lift arm to the assembly area.

Figure 24



Align and lower the upper lift arm (Item 1) until the upper lift arm is inside the two mounts (Item 2) **[Figure 24]** on the lower lift arms.

Lower Lift Arm Pin Size

2″ x 9-1/16″

Narrow Rim Washer Size

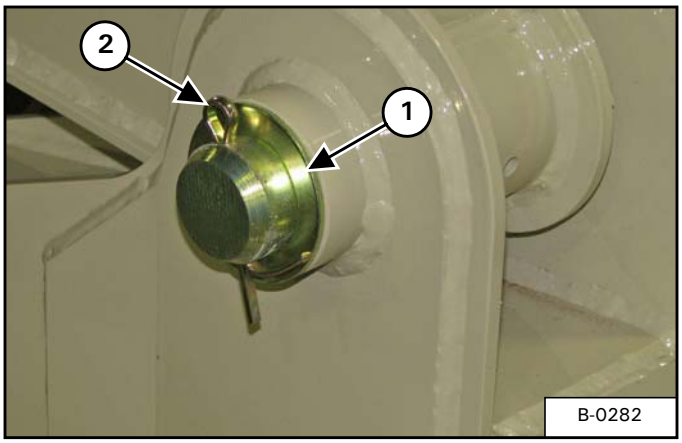
2″ x 10 Ga.

Cotter Pin Size

5/16″ - 3″

Install the two lift arm pins (Item 3) **[Figure 24]** (from the inside).

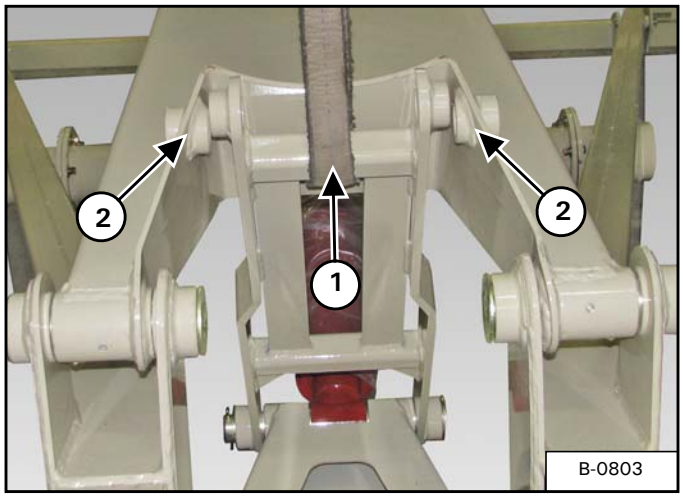
Figure 25



Install one 2″ narrow rim washer (Item 1) and cotter pin (Item 2) **[Figure 25]** on the lift arm pin (both pins).

Lower the upper lift arm onto the cradle rest.

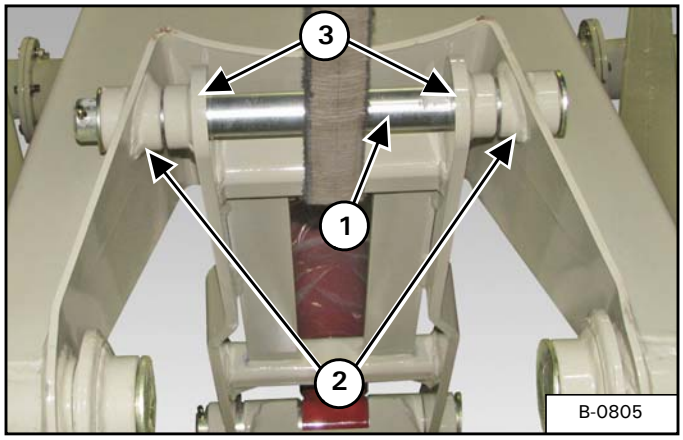
Figure 26



Install a strap (Item 1) **[Figure 26]** on the upper cross member of the connecting link.

Lift and align the connecting link with the mounts (Item 2) **[Figure 26]** on the upper lift arm.

Figure 27



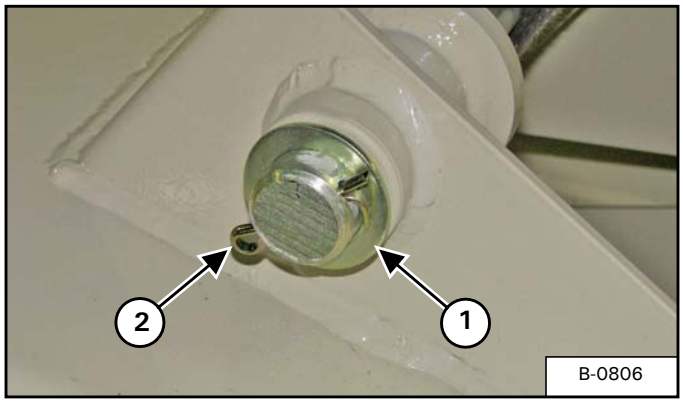
Install the top yoke pin (Item 1) through the upper lift arm mounting holes (Item 2) and pivot yoke mounting holes (Item 3) **[Figure 27]**.

Top Yoke Pin Size

1-1/2″ x 16-11/16″

Remove the strap from the pivot yoke.

Figure 28



Install one narrow rim washer (Item 1) and cotter pin (Item 2) **[Figure 28]** onto the top yoke pin.

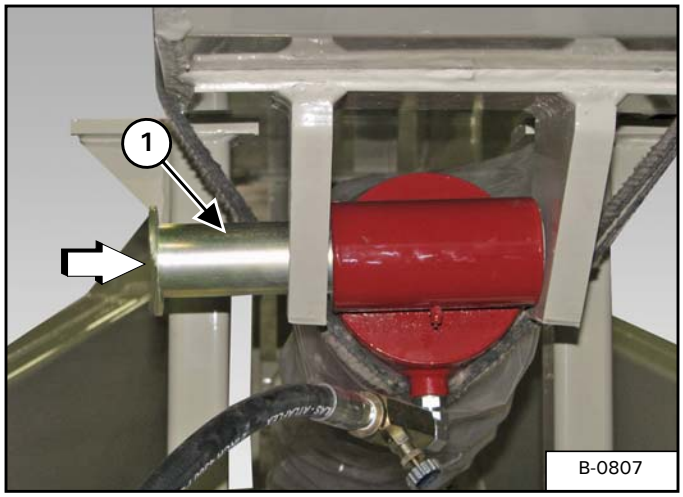
Narrow Rim Washer Size

1-1/2″ x 10 Ga.

Cotter Pin Size

1/4″ x 2″

Figure 29



Align the base end of the hydraulic cylinder with the mounting holes of the upper lift arm.

Top Cylinder Pin Size

2″ x 9″

Install the cylinder pin (Item 1) **[Figure 29]** through the upper lift arm and cylinder.

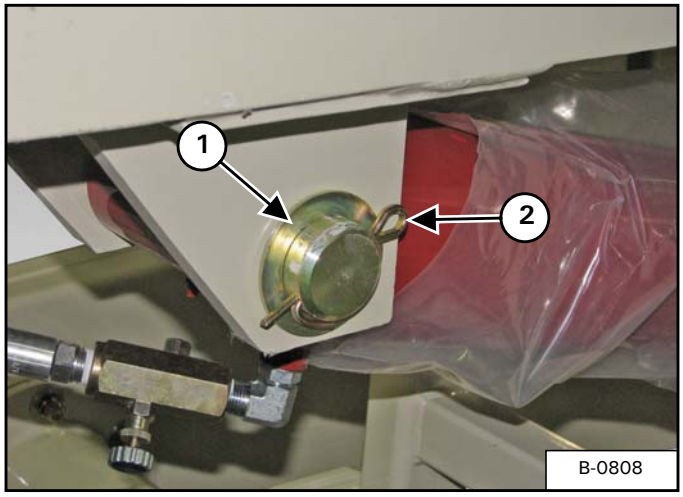
Narrow Rim Washer Size

2" x 10 Ga.

Cotter Pin Size

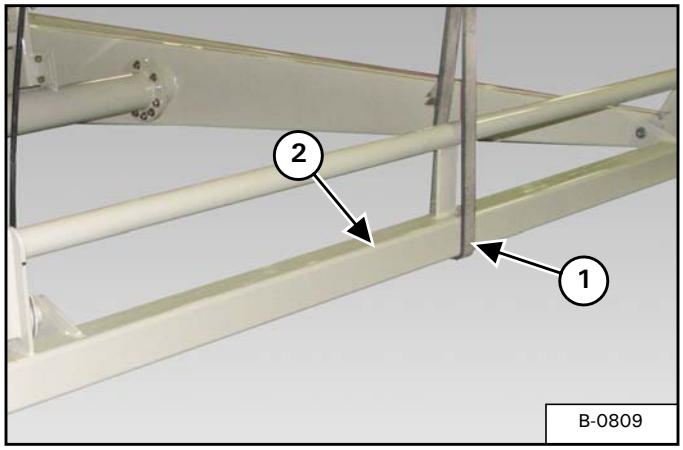
5/16" x 3"

Figure 30



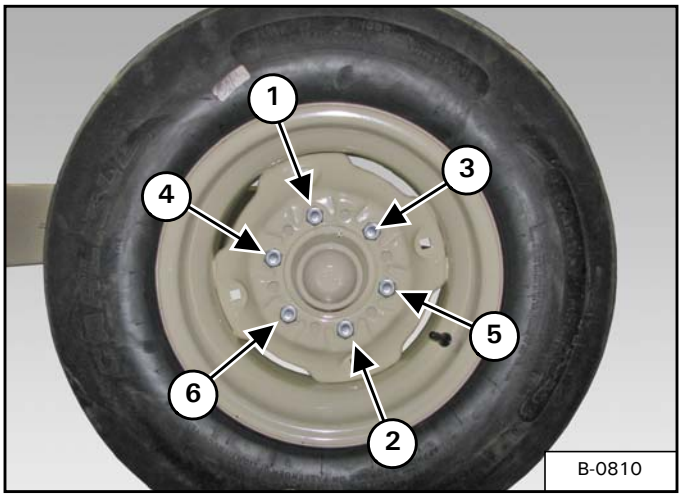
Install one narrow rim washer (Item 1) and cotter pin (Item 2) **[Figure 30]** onto the cylinder pin, securing the cylinder to the upper lift arm.

Figure 31



Install a strap (Item 1) around the center brace (Item 2) **[Figure 31]** on the axle. Connect the strap to an approved lifting device. Raise the axle high enough to install the tires.

Figure 32



Install the tire with the valve stem facing out (both sides). Install the six wheel bolts (both sides) **[Figure 32]**.

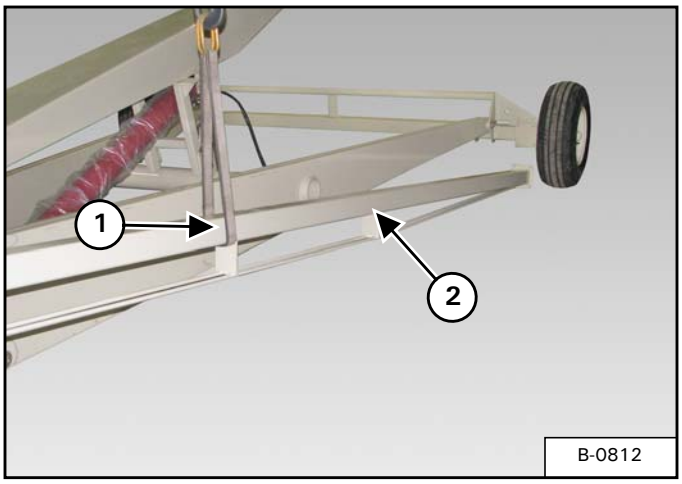
Tighten wheel nuts in a criss-cross pattern **[Figure 32]**. Tighten wheel nuts to 133 lb. / ft. (180 N•m) of torque.

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

Check tire pressure.

NOTE: Recommended tire pressure is 90 PSI (620 kpa).

Figure 33

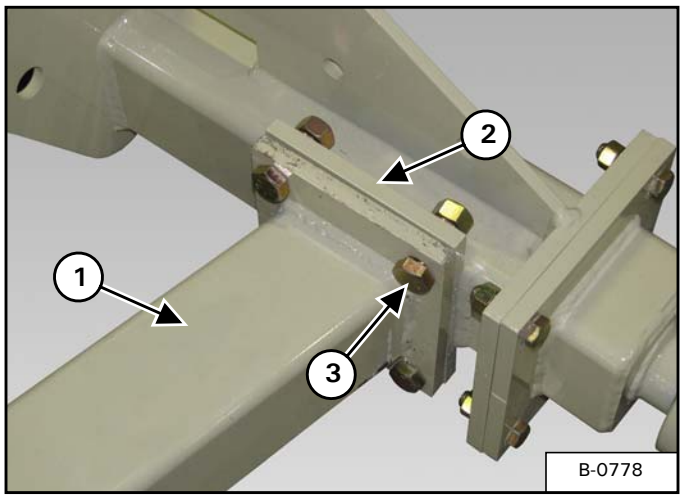


Install a strap (Item 1) around the center of the left undercarriage arm (Item 2) **[Figure 33]**.

Connect the strap to an approved lifting device.

Raise and move the left undercarriage arm towards the axle.

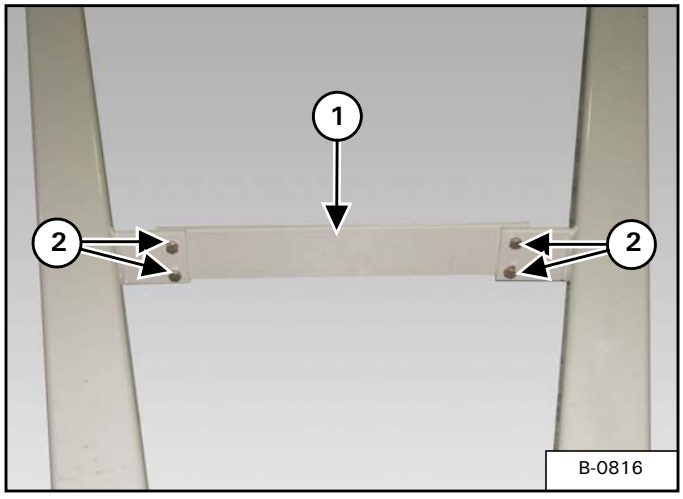
Figure 34



Align the left undercarriage arm (Item 1) with the mounting flange (Item 2) on the axle **[Figure 34]**.

Install four 5/8" x 2" bolts (Item 3) **[Figure 34]** and 5/8" lock nuts. Do not tighten bolts and nuts at this time.

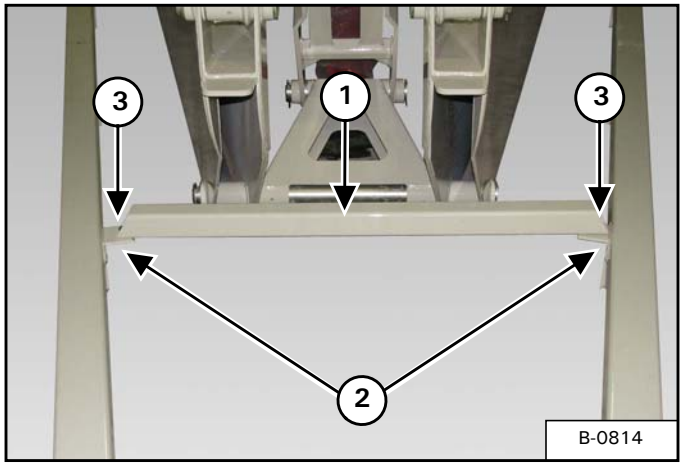
Figure 35



Align the brace plate (Item 1) **[Figure 35]** with the mounting plates on the LH & RH undercarriage arms.

Install four 7/16" flat washers onto four 7/16" x 1-1/2" bolts (Item 2) **[Figure 35]**. Install the bolts, then install 7/16" lock nuts on each bolt. Do not tighten at this time.

Figure 36

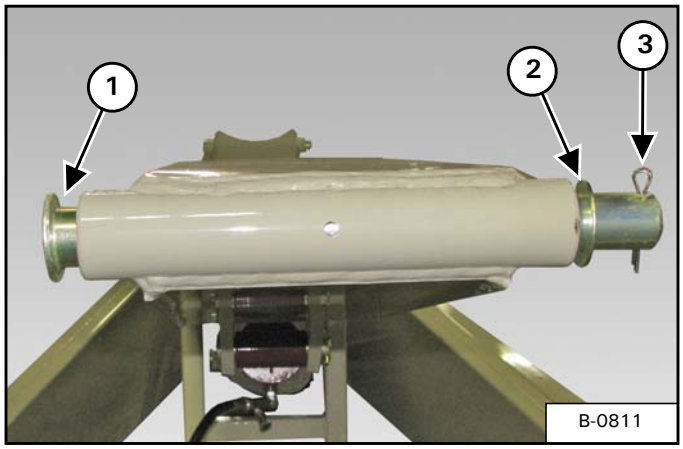


NOTE: Lift arm rest tube mounts on top of the tabs on the LH & RH undercarriage arms.

Place the lift arm rest tube (Item 1) on top of the mounts (Item 2) **[Figure 36]** on the LH & RH undercarriage arms.

Install one 5/8" x 1-3/4" bolt (Item 3) **[Figure 36]** down through the lift arm rest tube and undercarriage arm mount. Install one 5/8" flat washer and 5/8" lock nut on the bolt (both sides). Do not tighten at this time.

Figure 37



Locate and install the 1-1/2" x 15-5/16" lift arm pivot pin (Item 1), one 1-1/2" x 10 Ga. narrow rim washer (Item 2) and one 1/4" x 2" cotter pin (Item 3) **[Figure 37]**.

NOTE: The upper lift arm pin, narrow rim washer and cotter pin are installed at this time, so these components are available when connecting to the tube.

16104 Undercarriage Assembly

Assemble the undercarriage on flat level surface.

⚠ WARNING

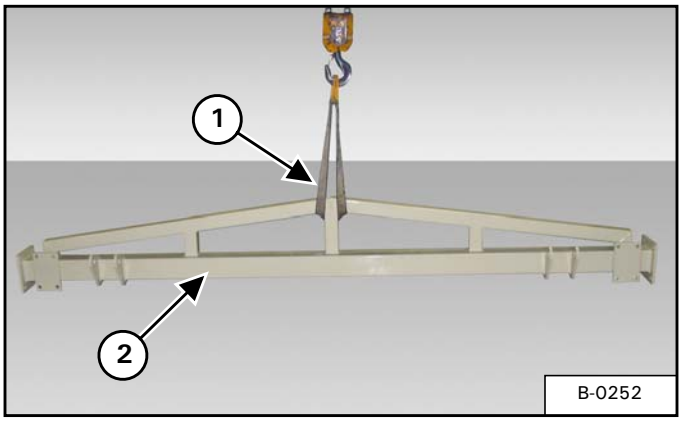
- **DO NOT permit bystanders to be in the work area when unloading and assembling the auger components.**
- **DO NOT work under suspended parts.**
- **Keep away from moving parts.**
- **Always use lifting devices / vehicles, chains or straps of adequate size and strength when unloading and assembling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

⚠ WARNING

AVOID INJURY OR DEATH

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

Figure 38



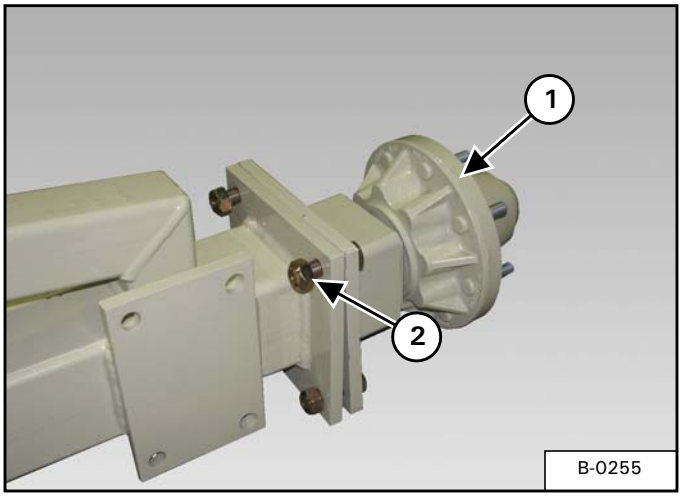
Install a strap (Item 1) around the center of the axle (Item 2) **[Figure 38]**.

Connect the strap to an approved lifting device.

Raise and move the axle to the assembly area.

Lower the axle to the ground and remove strap.

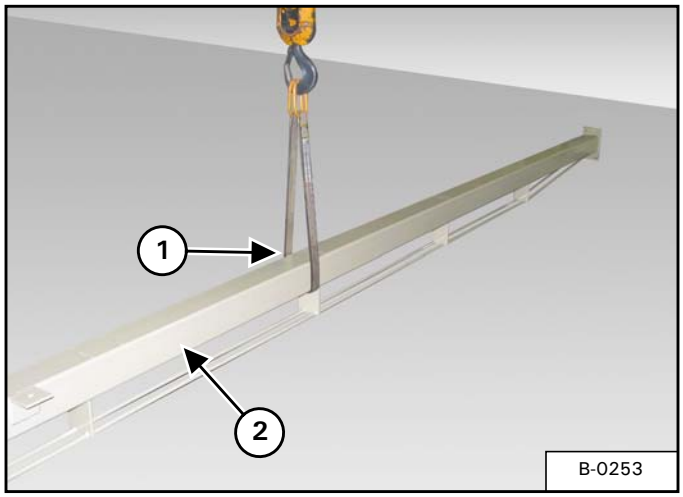
Figure 39



Align the hub (Item 1) **[Figure 39]** with the axle.

Install the four 3/4″ x 2-1/2″ bolts (Item 2) **[Figure 39]** and 3/4″ lock nuts. Do not tighten bolts and nuts at this time.

Figure 40

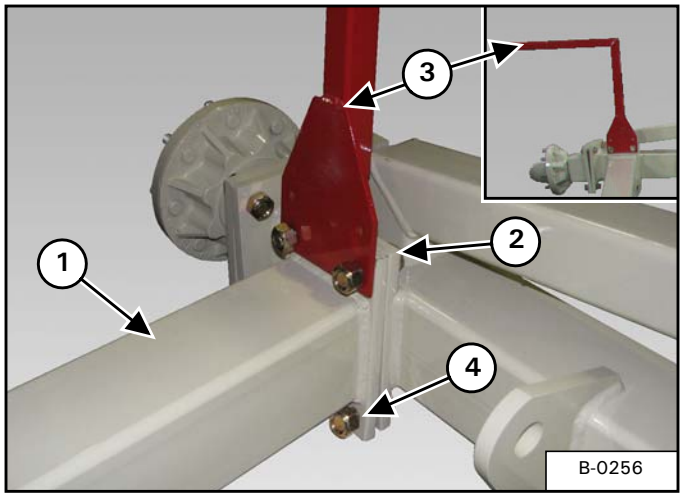


Install a strap (Item 1) around the center of the right undercarriage arm (Item 2) **[Figure 40]**.

Connect the strap to an approved lifting device.

Raise and move the right undercarriage arm towards the axle.

Figure 41

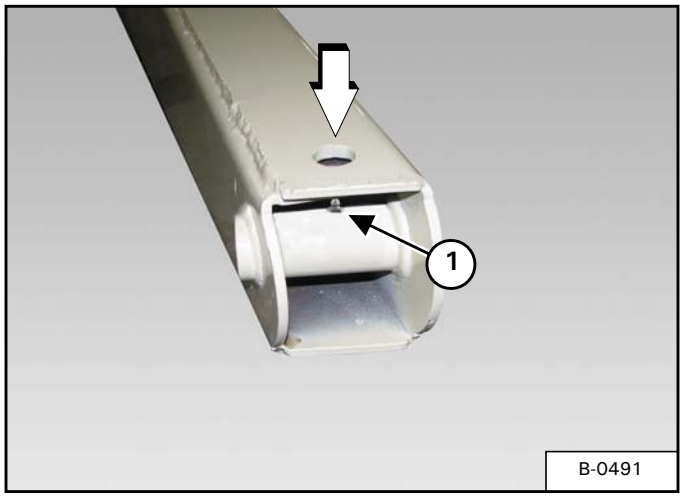


Align the right undercarriage arm (Item 1) with the mounting flange (Item 2) on the axle **[Figure 41]**.

Place the RH blinker mount (Item 3) **[Figure 41]** onto the right undercarriage arm mounting plate (with the blinker mount facing to the outside).

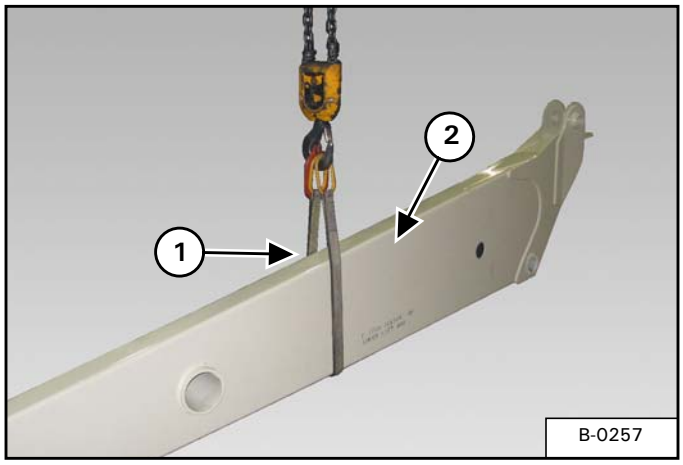
Install four 3/4″ x 2-1/2″ bolts (Item 4) **[Figure 41]** and 3/4″ lock nuts. Do not tighten bolts and nuts at this time.

Figure 42



Install the grease zerk (Item 1) **[Figure 42]** into the right and left lower lift arms.

Figure 43

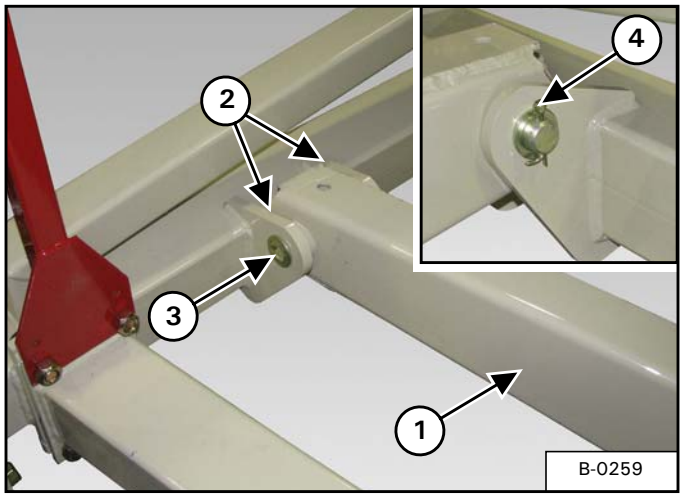


Install a strap (Item 1) around the RH lower lift arm (Item 2) **[Figure 43]**. Connect the strap to an approved lifting device.

NOTE: Move strap forward or backward until the component hangs level when raised off the ground.

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

Figure 44

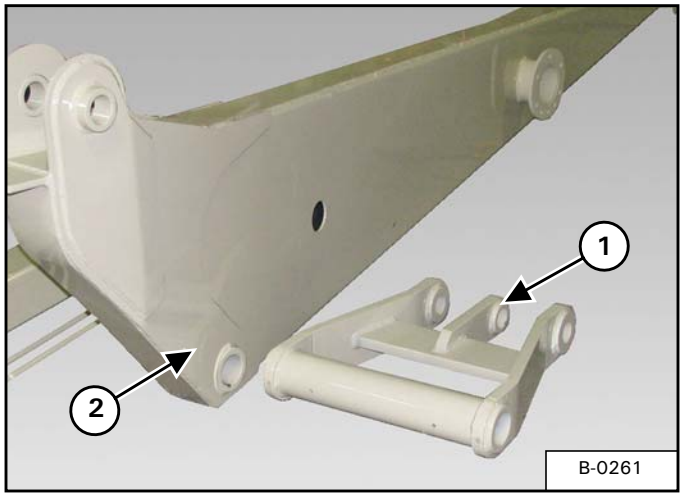


Align the RH lower lift arm (Item 1) with the two mounts (Item 2) **[Figure 44]** on the axle.

Install one 1-1/4" x 7-1/8" axle pin (Item 3) **[Figure 44]** through the axle mounts and RH lower lift arm.

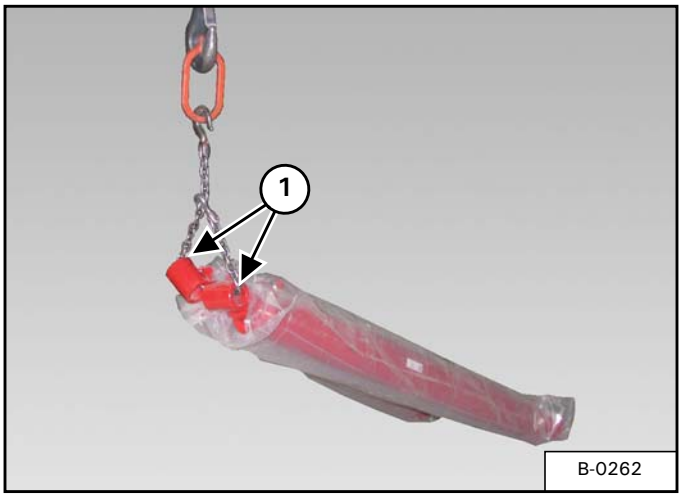
Install one 1-1/4" narrow rim washer and 1/4" x 2" cotter pin (Item 4) **[Figure 44]** onto the axle pin, securing the RH lower lift arm to the axle.

Figure 45



Place the link (Item 1) on the ground, at the front of the RH lower lift arm (Item 2) **[Figure 45]**.

Figure 46

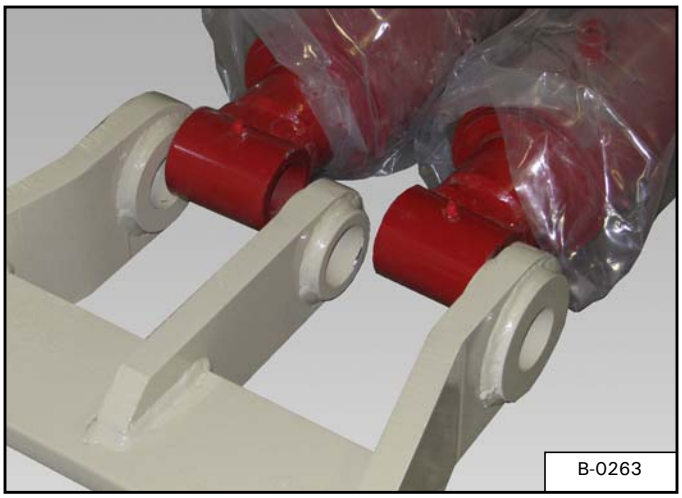


NOTE: It is recommended to leave the plastic on the hydraulic cylinders during assembly. This will help to prevent damage to the paint and minimize touch-up painting.

Install a chain or strap (Item 1) **[Figure 46]** through the rod end of the two hydraulic cylinders. Connect the strap to an approved lifting device.

Raise and move the two hydraulic cylinders to the assembly area.

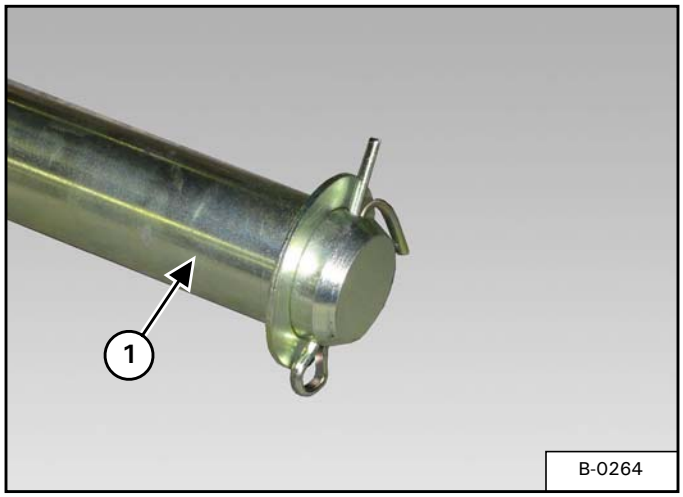
Figure 47



Raise the hydraulic cylinders and move the two cylinders on the back side of the link. Lower the cylinders to the ground and remove the chain or strap.

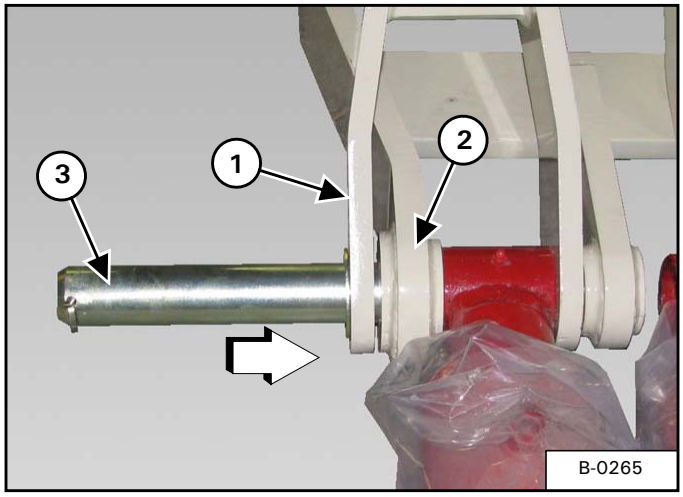
Align the two rod ends of the cylinders with the link **[Figure 47]** (with grease zerks facing up).

Figure 48



Install one 2″ narrow rim washer and one 5/16″ x 3″ cotter pin onto the 2″ x 18-7/8″ lift pin rod (Item 1) **[Figure 48]**.

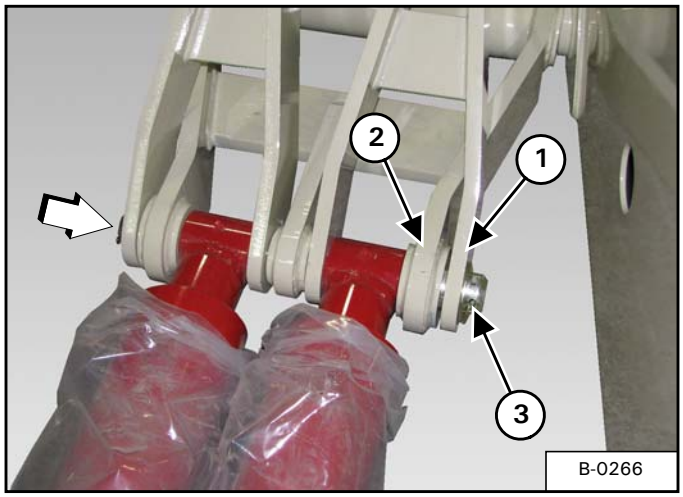
Figure 49



Place the left yoke arm (Item 1) on the outside of the link (Item 2) **[Figure 49]**. Position cylinder inside the link and opposite side of the yoke arm.

Install the lift pin rod (Item 3) **[Figure 49]** through the left yoke arm, link and cylinder (stop when the pin enters the center mount of the link).

Figure 50

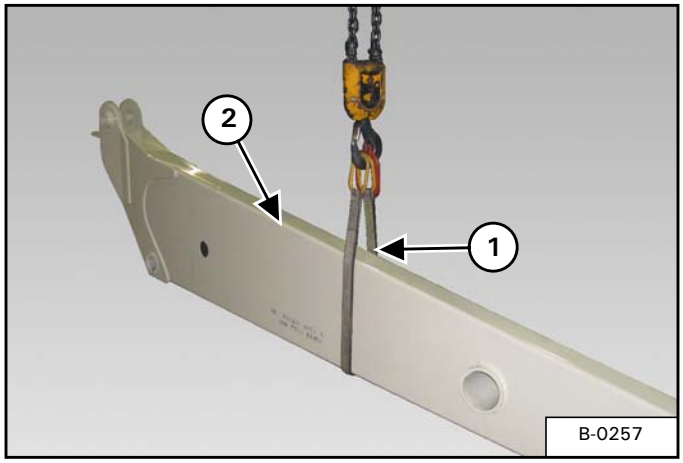


Place the right yoke arm (Item 1) on the outside of the link (Item 2) **[Figure 50]**. Position cylinder inside the link and opposite side of the yoke arm.

Continue installing the lift pin rod through the right yoke arm, cylinder and link **[Figure 50]**.

Install one 2″ narrow rim washer and one 5/16″ x 3″ cotter pin (Item 3) **[Figure 50]** to secure the yoke arms, cylinders and link together.

Figure 51

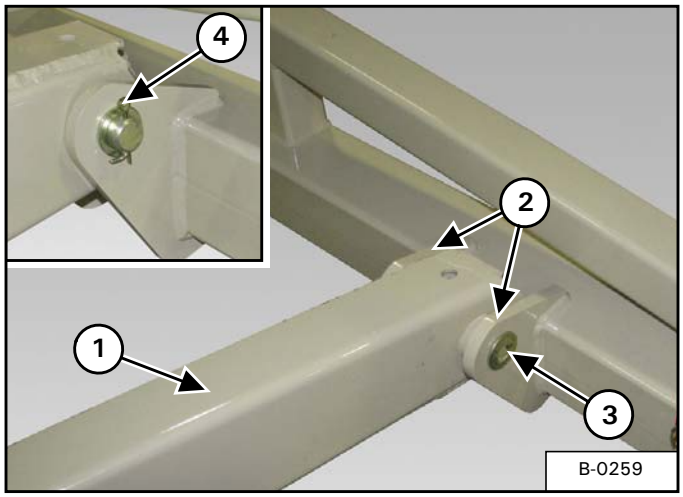


Install a strap (Item 1) around the LH lower lift arm (Item 2) **[Figure 51]**. Connect the strap to an approved lifting device.

NOTE: Move strap forward or backward until the component hangs level when raised off the ground.

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

Figure 52

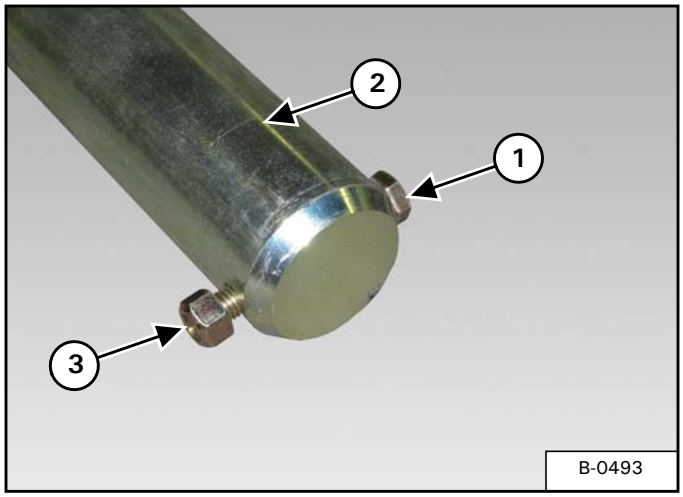


Align the LH lower lift arm (Item 1) with the two mounts (Item 2) **[Figure 52]** on the axle.

Install one 1-1/4" x 7-1/8" axle pin (Item 3) **[Figure 52]** through the axle mounts and LH lower lift arm.

Install one 1-1/4" narrow rim washer and 1/4" x 2" cotter pin (Item 4) **[Figure 52]** onto the axle pin, securing the LH lower lift arm to the axle.

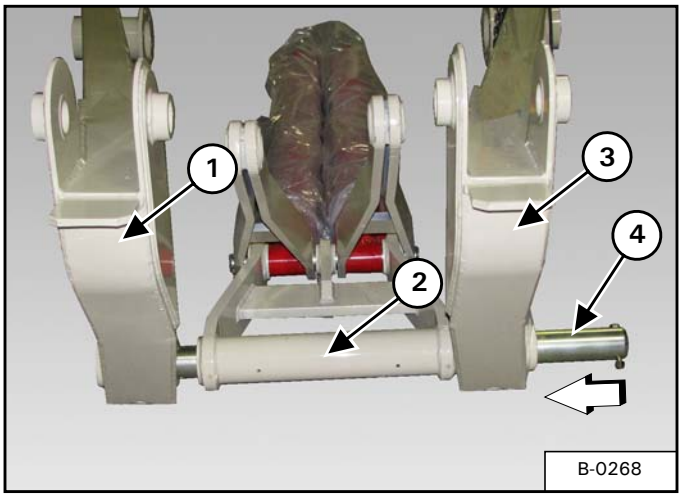
Figure 53



Install one 1/2" x 3-1/2" bolt (Item 1) through one end of the 2 3/4" x 39" connecting yoke pin (Item 2), then install one 1/2" lock nut (Item 3) **[Figure 53]** onto the bolt.

Slide a flat washer (not shown) onto the connecting link pin before installing.

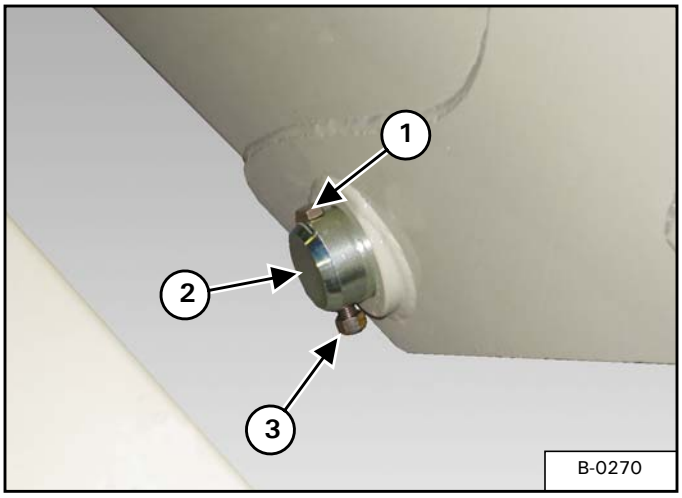
Figure 54



Align the RH lower lift arm (Item 1), link (Item 2) and LH lower lift arm (Item 3) **[Figure 54]**.

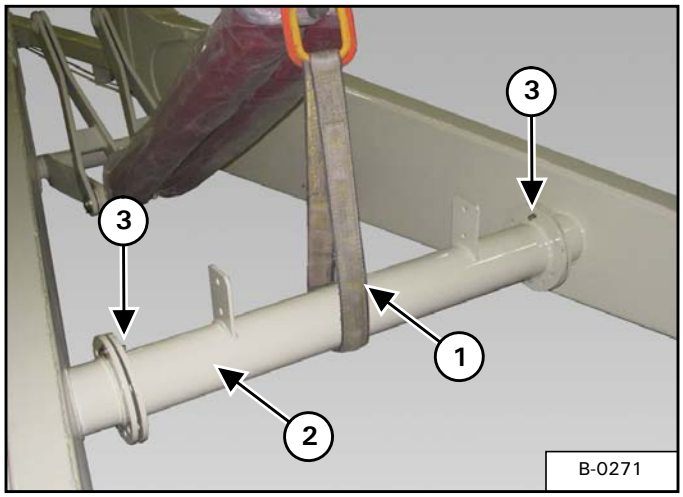
Install the 2-3/4" x 39" connecting yoke pin (Item 4) **[Figure 54]** through the LH lower lift arm, link and RH lower lift arm.

Figure 55



Install one 1/2" x 3-1/2" bolt (Item 1) through one end of the 2-3/4" x 39" connecting yoke pin (Item 2), then install one 1/2" lock nut (Item 3) **[Figure 55]** onto the bolt.

Figure 56



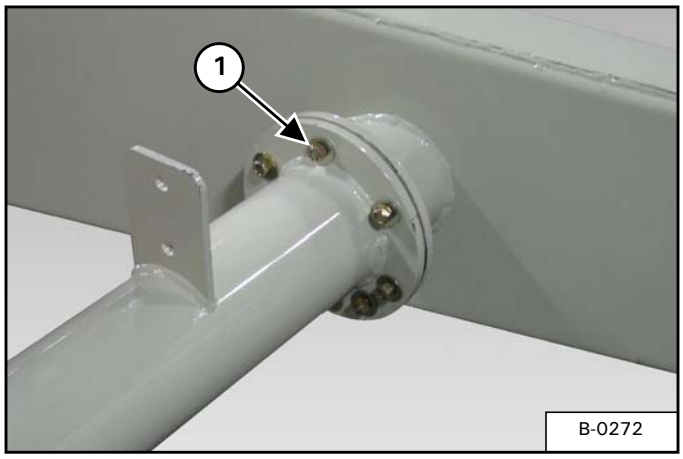
NOTE: Install a chain or strap through the base ends of the hydraulic cylinders. Connect the chain or strap to an approved lifting device. Raise the hydraulic cylinders above the RH & LH lower lift arms before installing the lift arm torque tube.

Install a strap (Item 1) around the lift arm torque tube (Item 2) **[Figure 56]**. Connect the strap to a second approved lifting device.

Raise and move the lift arm torque tube to the assembly area.

Align the lift arm torque tube with the LH & RH lower lift arm mounting plates. Install one 1/2″ x 2″ bolt (Item 3) **[Figure 56]** through the top holes (both ends). Install one 1/2″ flat washer and 1/2″ lock nut on the bolts.

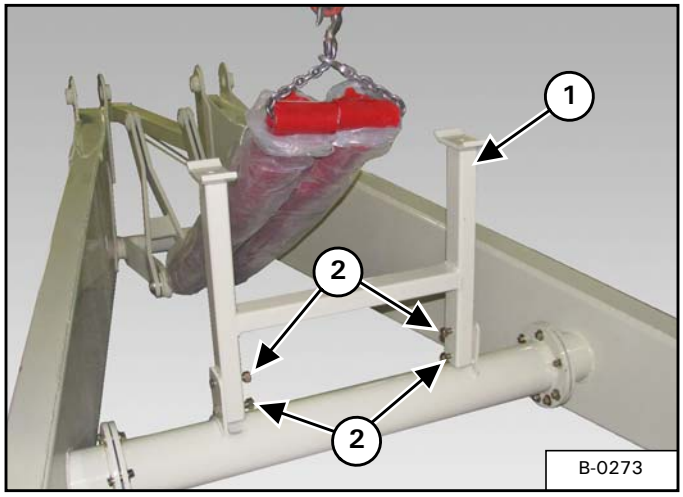
Figure 57



Install the remaining 1/2″ x 2″ bolts (Item 1) **[Figure 57]**, 1/2″ flat washers and 1/2″ lock nuts (both sides). Do not tighten bolts and lock nuts at this time.

Remove the strap.

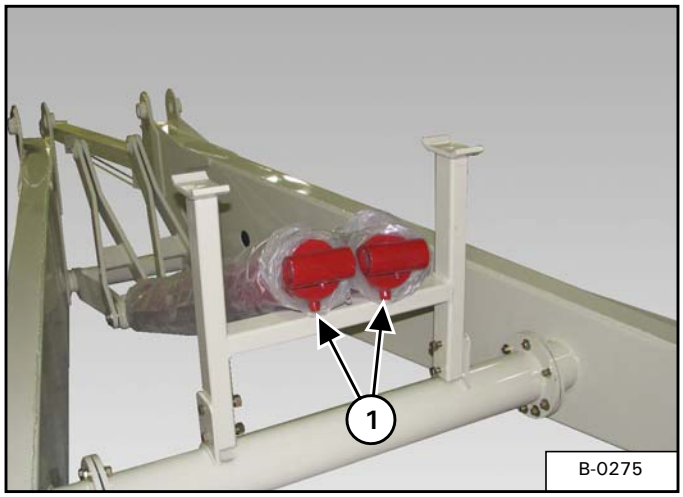
Figure 58



Align the cradle rest (Item 1) **[Figure 58]** with the two mounting plates on the lift arm torque tube.

Install the four 5/8″ x 3-1/2″ bolts (Item 2) **[Figure 58]** and 5/8″ lock nuts.

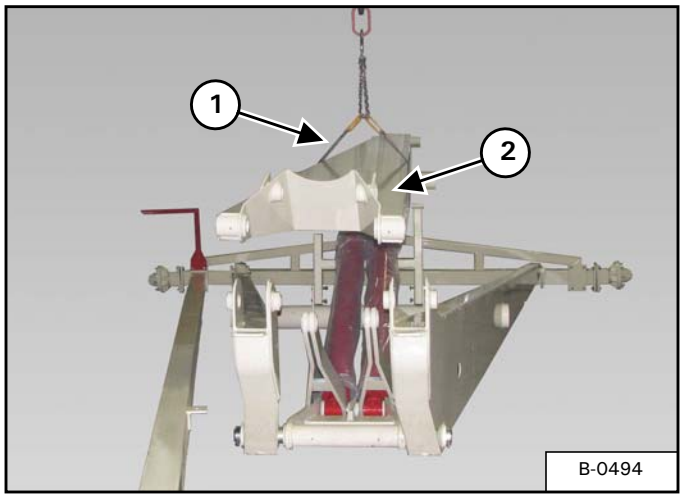
Figure 59



Lower the two hydraulic cylinders onto the cradle rest **[Figure 59]**.

Rotate each cylinder 180° or until the hydraulic fitting ports (Item 1) **[Figure 59]** are facing down.

Figure 60

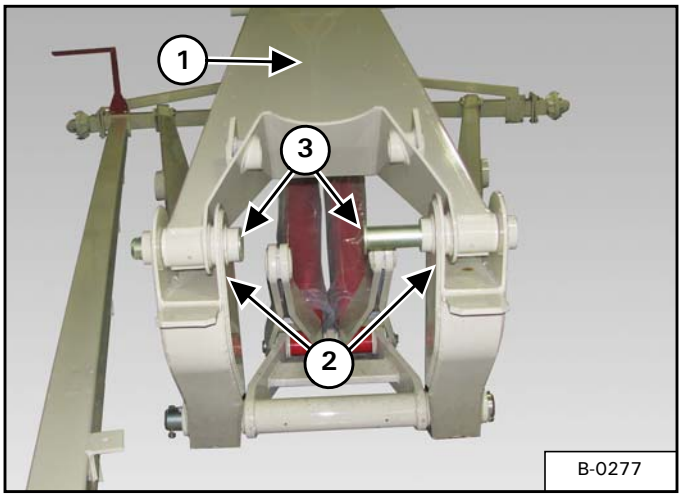


Install a strap (Item 1) around the upper lift arm (Item 2) **[Figure 60]**. Connect the strap to an approved lifting device.

Raise and move the upper lift arm to the assembly area.

Move the upper lift arm over the lower lift arms **[Figure 60]**.

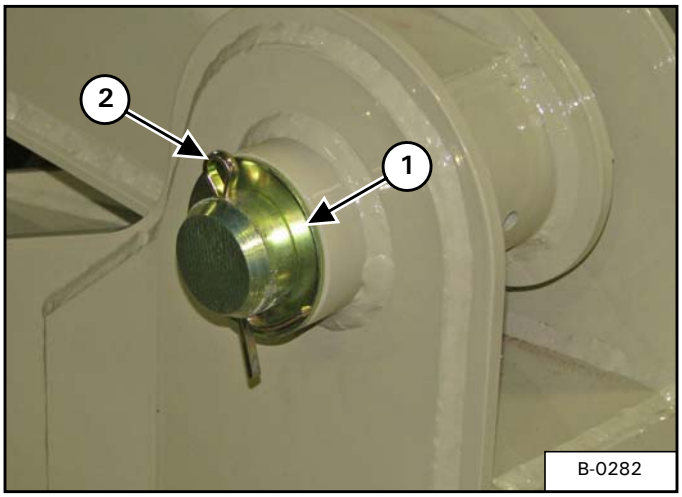
Figure 61



Align and lower the upper lift arm (Item 1) until the upper lift arm is inside the two mounts (Item 2) **[Figure 61]** on the lower lift arms.

Install the two 2″ x 9-1/16″ lift arm pins (Item 3) **[Figure 61]** (from the inside).

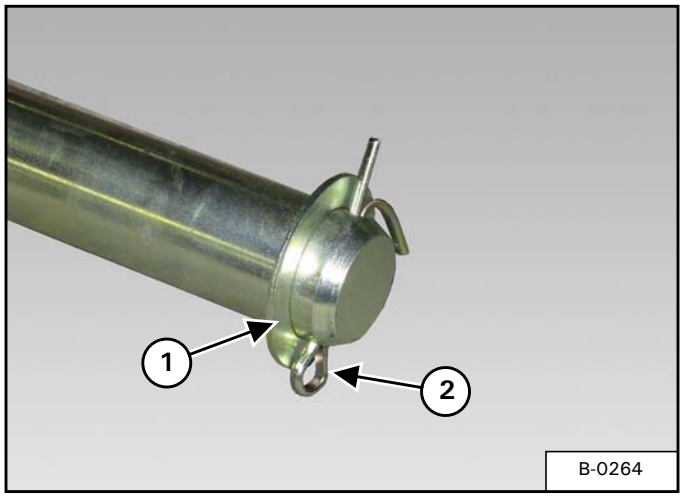
Figure 62



Install one 2″ narrow rim washer (Item 1) and 5/16″ x 3″ cotter pin (Item 2) **[Figure 62]** on the lift arm pin (both pins).

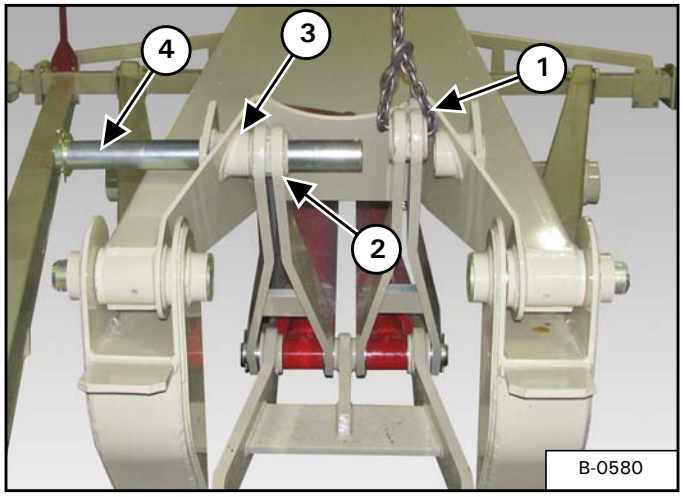
Lower the upper lift arm onto the cradle rest.

Figure 63



Install one 2″ narrow rim washer (Item 1) and 5/16 x 3″ cotter pin (Item 2) **[Figure 63]** onto the 2″ x 20-1/2″ upper lift arm pin rod.

Figure 64

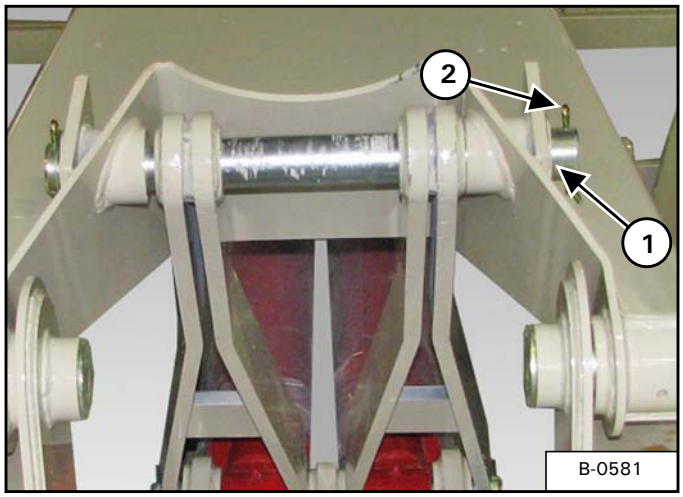


Install a chain through the mounting hole of the left yoke arm (Item 1). Lift the left yoke arm until the right yoke arm (Item 2) (lift right yoke arm by hand) is aligned with the upper lift arm mounting hole (Item 3) **[Figure 64]**.

Install the upper lift arm pin rod (Item 4) **[Figure 64]** through the upper lift arm mounting hole and right yoke arm.

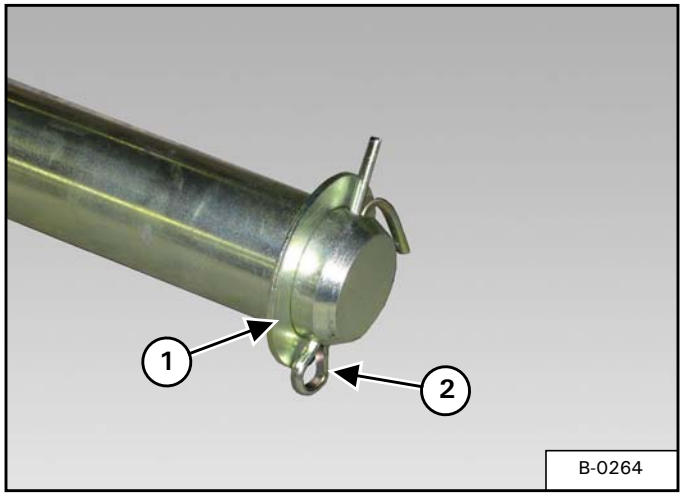
Remove the chain from the left yoke arm. Lift the left yoke arm and install the upper lift arm pin rod through the left yoke arm and upper lift arm mounting hole.

Figure 65



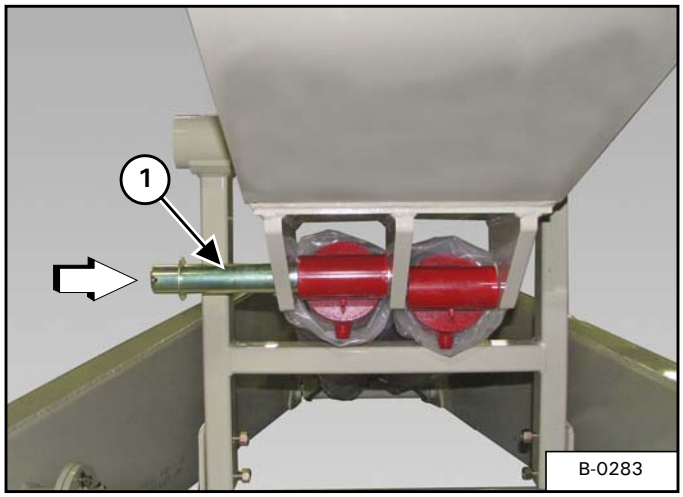
Install one 2″ narrow rim washer (Item 1) and 5/16 x 3″ cotter pin (Item 2) **[Figure 65]** onto the 2″ x 20-1/2″ upper lift arm pin rod.

Figure 66



Install one 2″ narrow rim washer (Item 1) and 5/16 x 3″ cotter pin (Item 2) **[Figure 66]** onto the 2″ x 17-1/4″ cylinder pin rod.

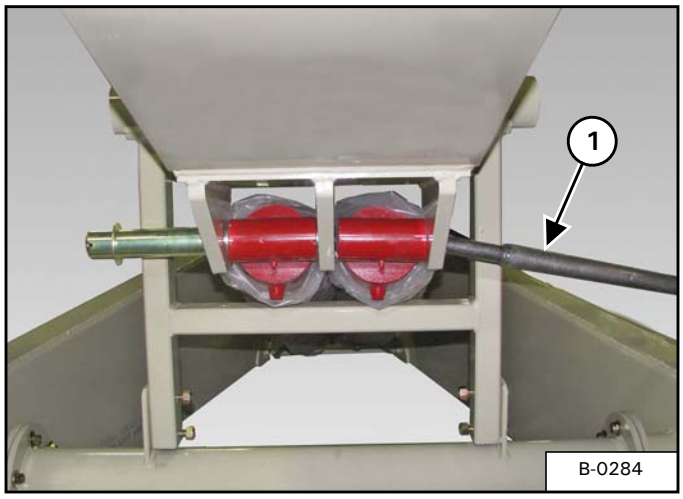
Figure 67



Align the left cylinder mounting holes of the upper lift arm.

Install the cylinder pin rod (Item 1) **[Figure 67]** through the upper lift arm and left cylinder (stop when the pin enters the center mount of the upper lift arm).

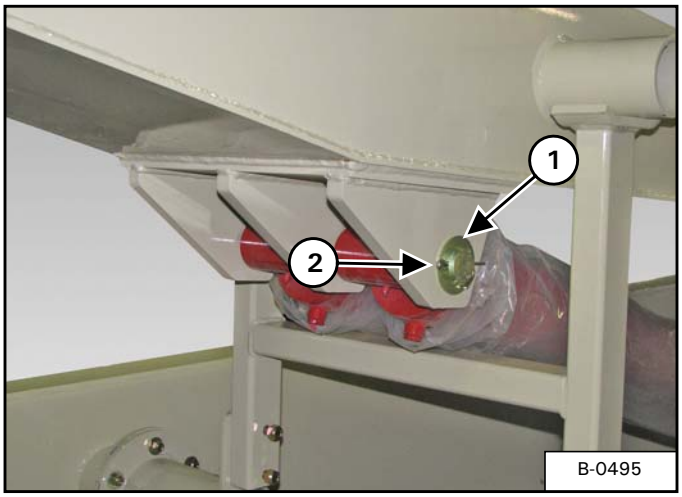
Figure 68



Using a bar (Item 1) **[Figure 68]**, align the right cylinder with the mounting holes of the upper lift arm.

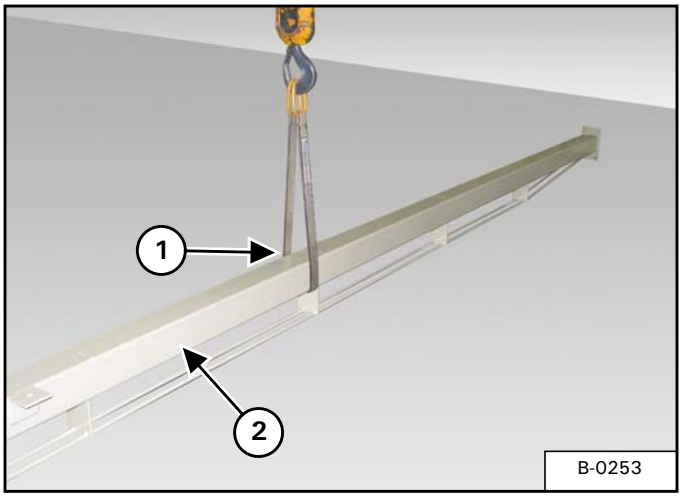
Continue installing the cylinder pin rod through the upper lift arm and right cylinder.

Figure 69



Install one 2" narrow rim washer (Item 1) and 5/16" x 3" cotter pin (Item 2) **[Figure 69]** onto the cylinder pin rod, securing the cylinders to the upper lift arm.

Figure 70

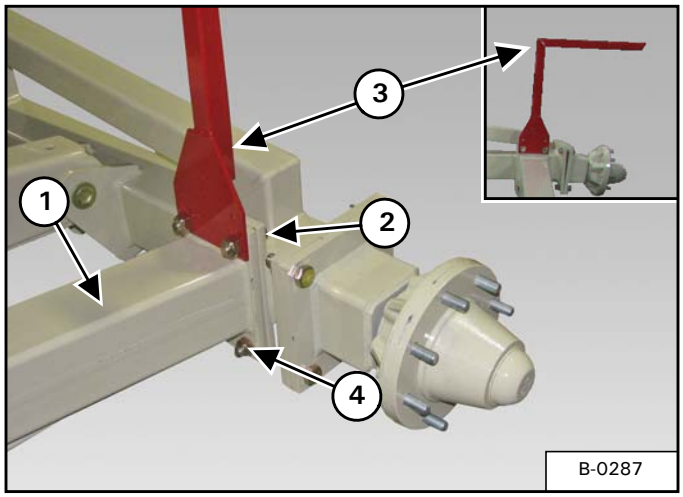


Install a strap (Item 1) around the center of the left undercarriage arm (Item 2) **[Figure 70]**.

Connect the strap to an approved lifting device.

Raise and move the left undercarriage arm towards the axle.

Figure 71

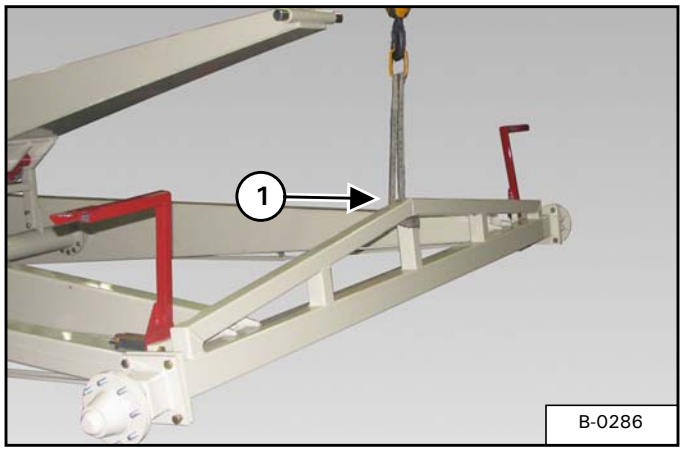


Align the left undercarriage arm (Item 1) with the mounting flange (Item 2) on the axle **[Figure 71]**.

Place the LH blinker mount (Item 3) **[Figure 71]** onto the left undercarriage arm mounting plate (with the blinker mount facing to the outside).

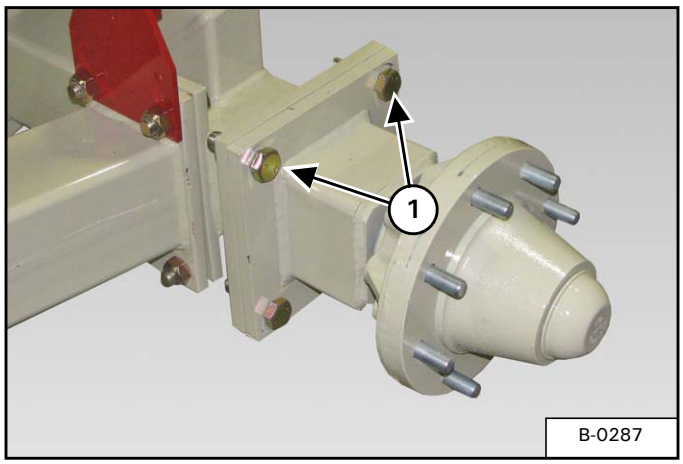
Install the four 3/4" x 2-1/2" bolts (Item 4) **[Figure 71]** and 3/4" lock nuts. Do not tighten bolts and nuts at this time.

Figure 72



Install a strap (Item 1) around the center brace (Item 2) **[Figure 72]** on the axle. Connect the strap to an approved lifting device. Raise the axle high enough to install the tires.

Figure 73



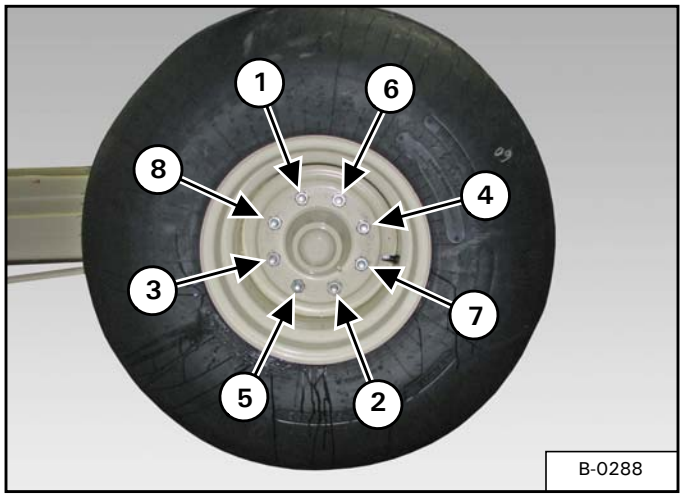
Tighten the bottom two bolts (Item 1) **[Figure 73]** first. Tighten the bottom bolts until the two mounting plates are touching (no gap).

NOTE: If the top bolts cannot be tightened to close the gap between the two mounting plates, tighten the bolts as much as possible, then after the tube has been installed (adding additional weight and down pressure), finish tightening the top bolts until the two mounting plates are touching (no gap).

Tighten the top two bolts. Tighten the bolts until the two mounting plates are touching (no gap).

Repeat the procedure for tightening the opposite hub assembly.

Figure 74



Install the tire with the valve stem facing out (both sides). Install the eight wheel nuts (both sides) **[Figure 74]**.

Tighten wheel nuts in a criss-cross pattern **[Figure 74]**. Tighten wheel nuts to 110 - 125 lb ft (149 - 169 N•m) of torque.

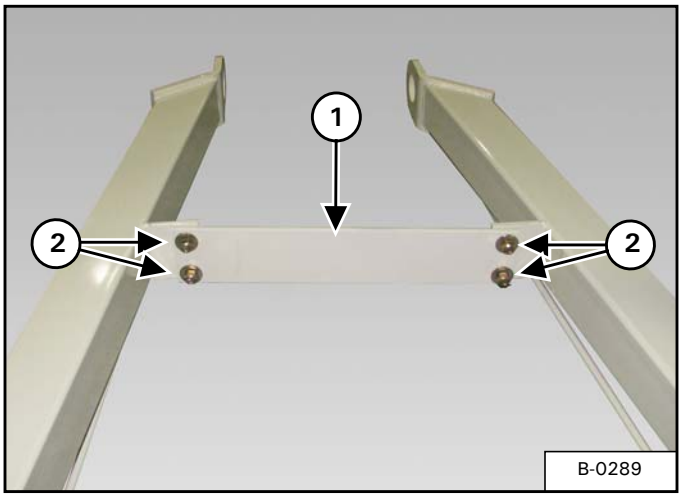
Lower the axle and tires to the ground. Remove the strap and lifting device.

Check tire pressure.

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

Tighten the four 3/4" x 2-1/2" bolts on the LH undercarriage arm and LH blinker mount until the lock nuts are snug. Do not fully tighten at this time. Repeat for the RH undercarriage arm and RH blinker mount.

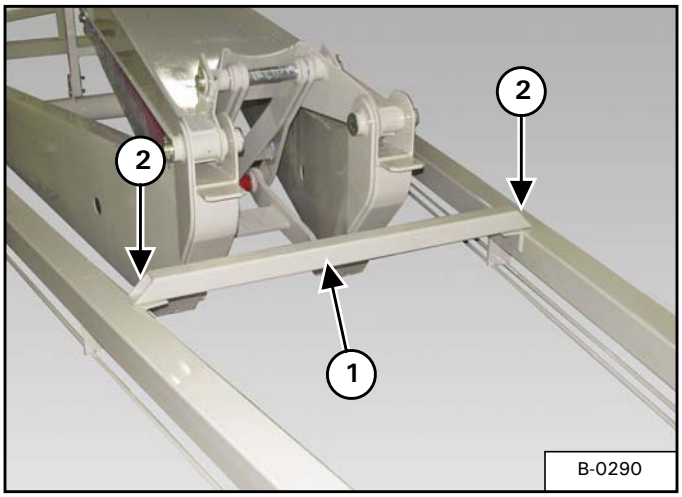
Figure 75



Align the brace plate (Item 1) **[Figure 75]** with the mounting plates on the LH & RH undercarriage arms.

Install four 5/8" flat washers onto four 5/8" x 2" bolts (Item 2) **[Figure 75]**. Install the bolts, then install 5/8" lock nuts on each bolt. Do not tighten at this time.

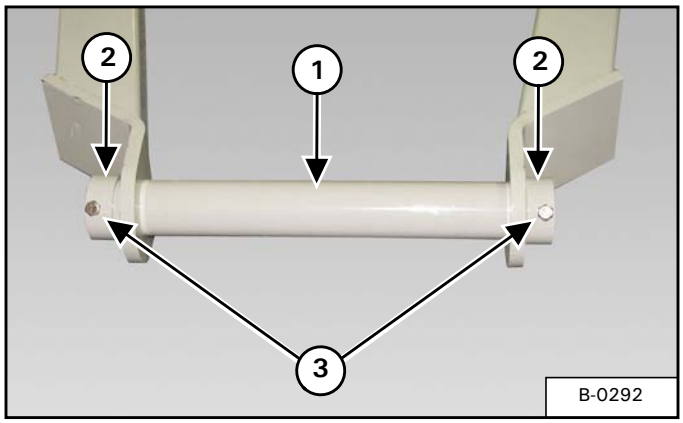
Figure 76



Align the lift arm rest tube (Item 1) **[Figure 76]** with the mounts on the LH & RH undercarriage arms.

Install two 5/8" x 2" bolts (Item 2) **[Figure 76]** and 5/8" lock nuts. Do not tighten at this time.

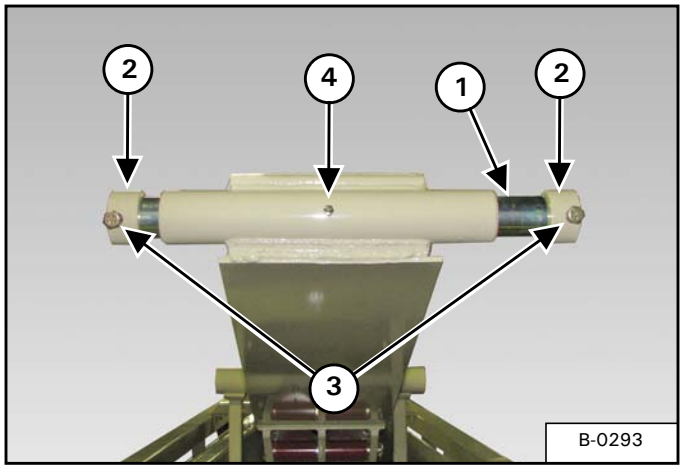
Figure 77



Locate and install the undercarriage lift arm pin (Item 1), undercarriage lift arm pin collars (Item 2), 1/2" x 3-1/2" bolts (Item 3) **[Figure 77]** and 1/2" lock nuts. Do not tighten bolts and nuts at this time.

NOTE: The undercarriage lift arm pin, collars, bolts and lock nuts are installed at this time, so these components are available when connecting to the tube.

Figure 78

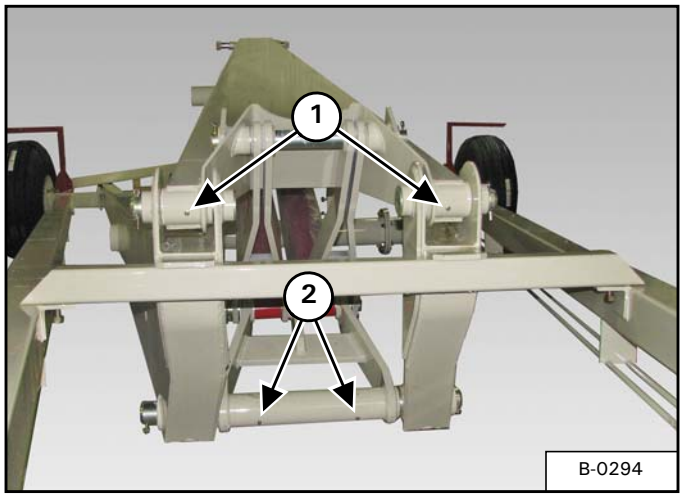


Locate and install the upper lift arm pin (Item 1), upper lift arm pin collars (Item 2), 1/2" x 3-1/2" bolts (Item 3) **[Figure 78]** and 1/2" lock nuts. Do not tighten bolts and nuts at this time.

NOTE: The upper lift arm pin, collars, bolts and lock nuts are installed at this time, so these components are available when connecting to the tube.

Install grease zerk (Item 4) **[Figure 78]**.

Figure 79



Install the two grease zerks (Item 1) into the upper lift arm. Install the two grease zerks (Item 2) **[Figure 79]** into the link.

BASE GROUP (CONT'D)

Tube Assembly (1684 & 16104)

Assemble the tube on flat level surface.

⚠ WARNING

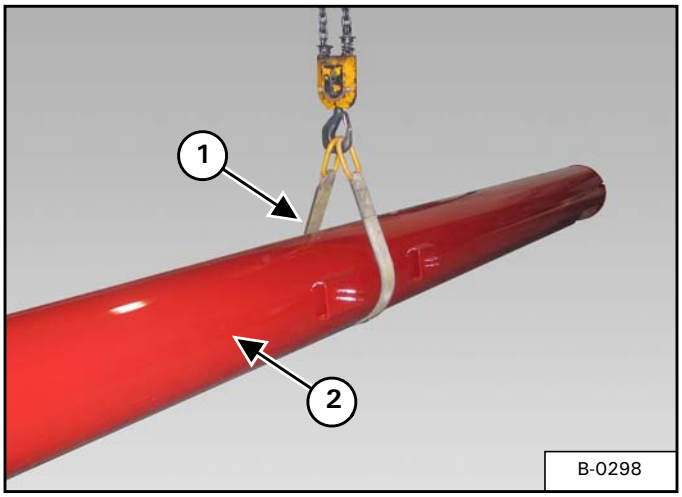
- **DO NOT permit bystanders to be in the work area when unloading and assembling the auger components.**
- **DO NOT work under suspended parts.**
- **Keep away from moving parts.**
- **Always use lifting devices / vehicles, chains or straps of adequate size and strength when unloading and assembling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

⚠ WARNING

AVOID INJURY OR DEATH

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

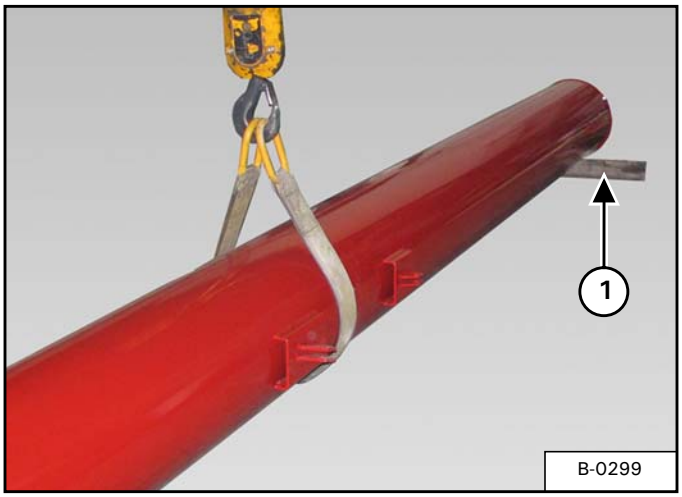
Figure 80



Install a strap (Item 1) around #5 tube (Item 2) **[Figure 80]**.

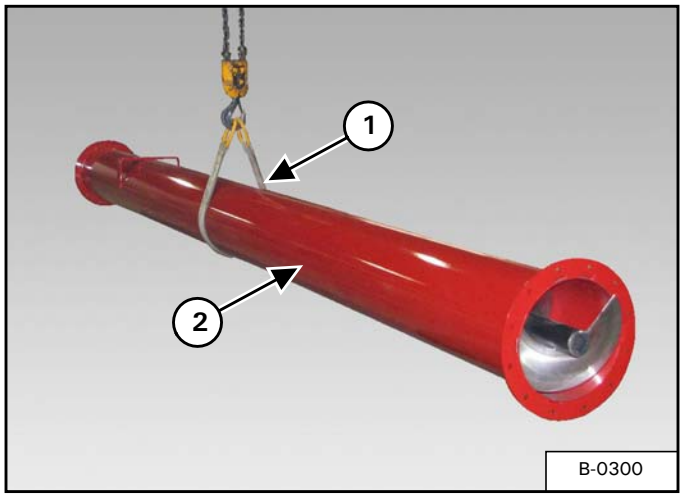
Raise and move the #5 tube to the assembly area.

Figure 81



Place a block (Item 1) **[Figure 81]** under the discharge spout end of the tube. Lower the tube onto the block. Remove strap.

Figure 82



Model 1684

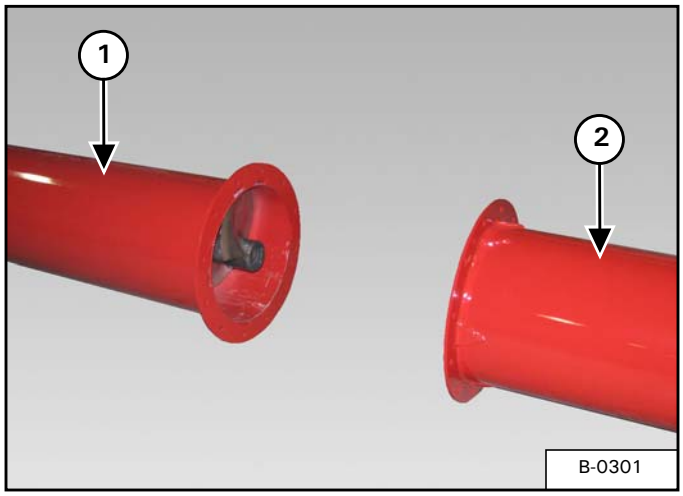
Install a strap (Item 1) around #3 tube (Item 2) **[Figure 82]**.

Model 16104

Install a strap (Item 1) around #4 tube (Item 2) **[Figure 82]**.

Raise and move the #3 (1684) or #4 (16104) tube to the assembly area.

Figure 83



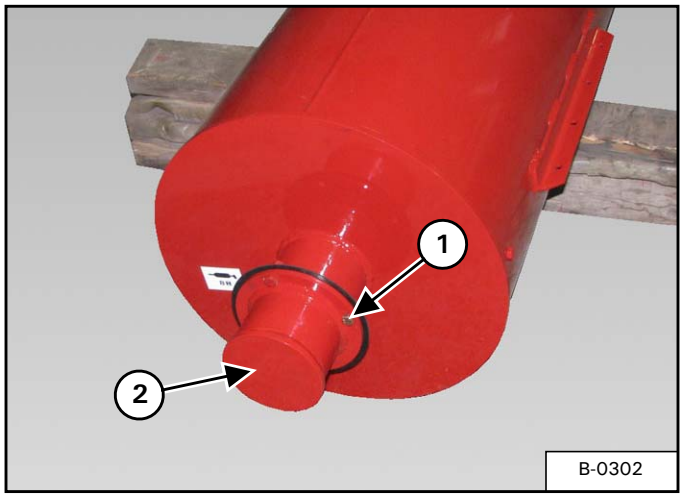
Model 1684

Align the mounting flanges of the #5 tube (Item 1) and #3 tube (Item 2) **[Figure 83]**.

Model 16104

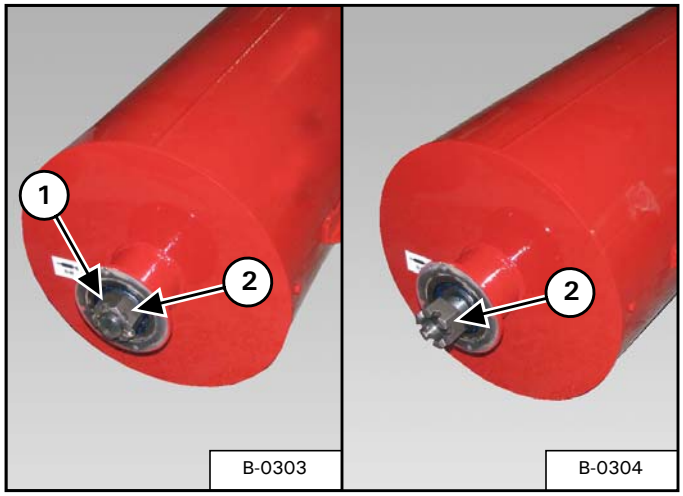
Align the mounting flanges of the #5 tube (Item 1) and #4 tube (Item 2) **[Figure 83]**.

Figure 84



Remove the four bolts (Item 1) and remove the dust cap (Item 2) **[Figure 84]**.

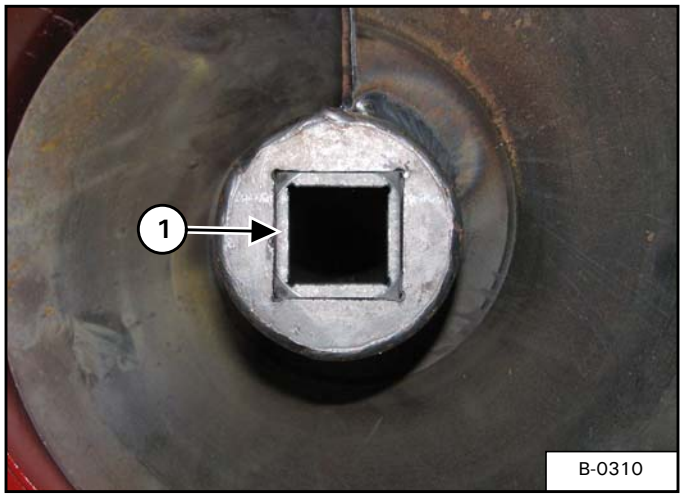
Figure 85



Remove the cotter pin (Item 1) and loosen the castle nut (Item 2) **[Figure 85]**. Do not remove the castle nut.

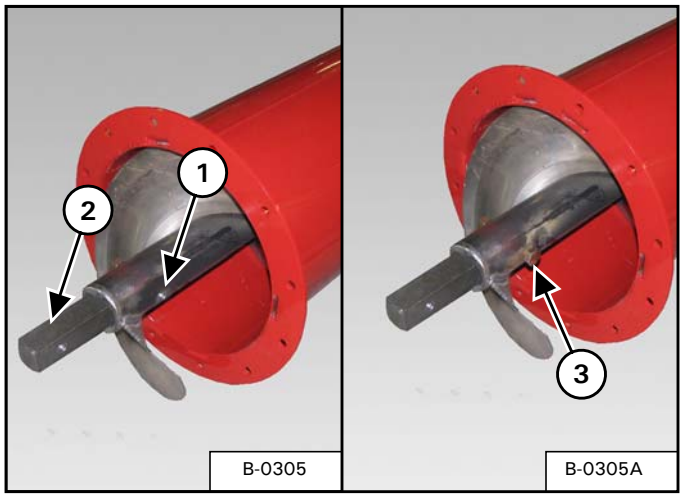
NOTE: Loosening the castle nut will allow the flighting to move in the tube for connecting additional tubes.

Figure 86



When installing the connecting shaft, the shaft will need to be aligned with and inserted into the inner collar (Item 1) **[Figure 86]** of flighting tube.

Figure 87

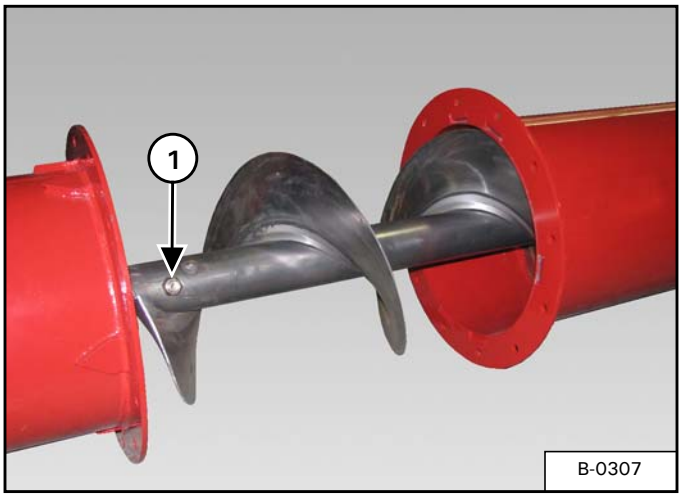


Slide the flighting out of the #5 tube until the bolt hole (Item 1) **[Figure 87]** is clear of the mounting flange.

Align the bolt holes and install the connecting shaft (Item 2) **[Figure 87]**.

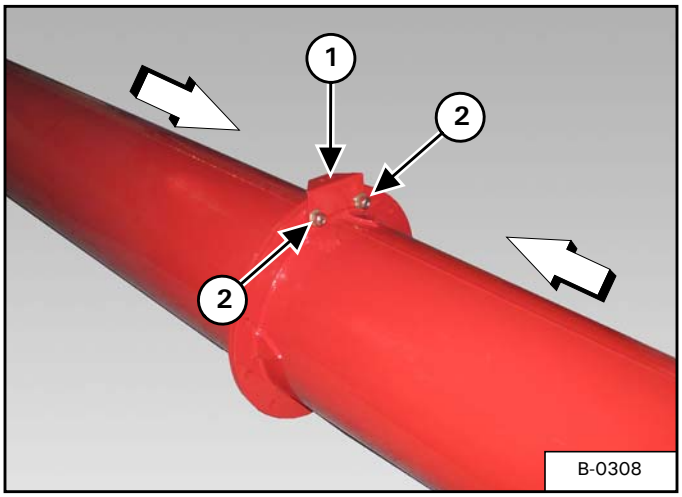
Install and tighten one 3/4" x 4-1/2" bolt (Item 3) **[Figure 87]** and 3/4" lock nut.

Figure 88



Slide the flighting from the #3 (1684) or #4 (16104) tube forward onto the connecting shaft and install one 3/4" x 4-1/2" bolt (Item 1) **[Figure 88]** and 3/4" lock nut. Tighten bolt and lock nut.

Figure 89



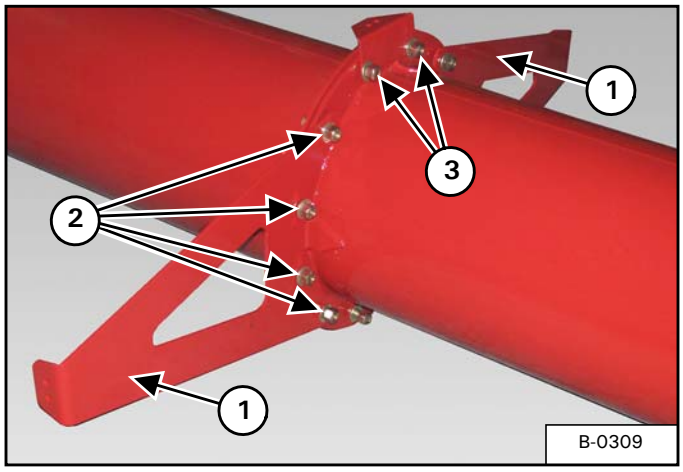
Slide the #5 and #3 (1684) or #4 (16104) tubes together until the mounting flanges contact each other **[Figure 89]**.

Align and install the mounting bracket (Item 1) (with the angled flange (top) towards the discharge spout).

NOTE: Place one 5/8" flat washer on each (Grade 8) 5/8" x 2" bolt before installing.

Install two (Grade 8) 5/8" x 2" bolts (Item 2) **[Figure 89]** (with flat washers) through the tube flanges and mounting bracket. Install one 5/8" flat washer and 5/8" lock nut on each bolt. Do not tighten bolts and lock nuts at this time.

Figure 90



Align and install two side bridging brackets (Item 1) **[Figure 90]**.

NOTE: Place one 5/8" flat washer on each (Grade 8) 5/8" x 2" bolt before installing.

Install four (Grade 8) 5/8" x 2" bolts (Item 2) **[Figure 90]** (with flat washers) through the tube flanges and side bridging brackets (both sides). Install one 5/8" flat washer and 5/8" lock nut on each bolt.

Install the bottom two (Grade 8) 5/8" x 2" bolts (with flat washers) through the tube mounting flanges. Install one 5/8" flat washer and 5/8" lock nut on each bolt.

Raise the opposite end of tube #3 (1684) or #4 (16104) until the mounting flanges make contact.

Tighten the top two bolts (Item 3) **[Figure 90]** and lock nuts first.

Lower tube #3 (1684) or #4 (16104) and tighten bottom two bolts and lock nuts.

Starting at the left or right of the top two bolts, tighten bolts and lock nuts across from each other, while working around the mounting flanges.

Repeat **[Figure 87]** thru **[Figure 90]** for the remaining tubes.

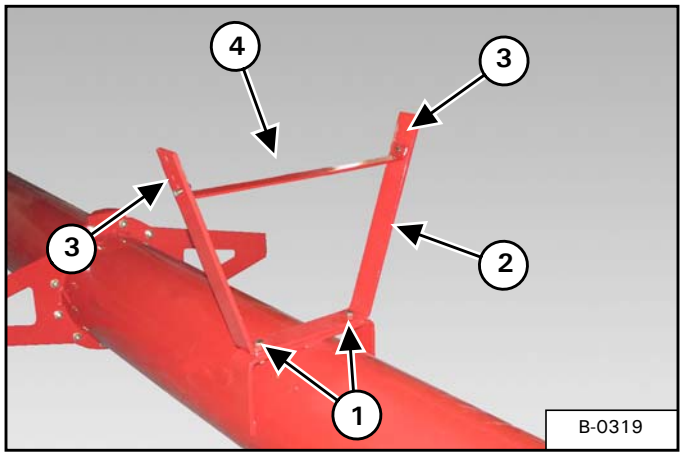
Locate and uncoil the four 3/4" cables.

Locate and uncoil the two 1/2" cables.

Place one long and one short 3/4" cable on each side of the tube assembly (longest 3/4" cable towards the outside).

Place one 1/2" cable outside of the 3/4" cables.

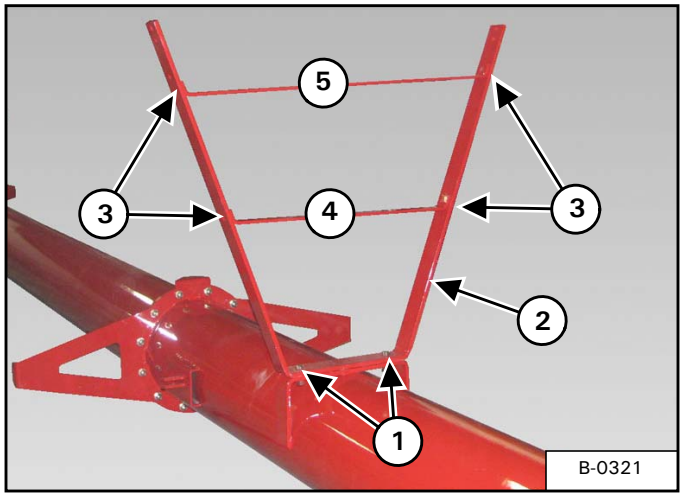
Figure 91



Using two 5/8" x 2" bolts (Item 1) and 5/8" lock nuts, align and install the 1/2" x 3" x 60" (Tube #3 (1684) or #4 (16104) bridging yoke (Item 2) **[Figure 91]** (onto the #3 (1684) or #4 (16104) tube). Tighten bolts and lock nuts.

Using two 1/2" x1-3/4" bolts (Item 3) and 1/2" lock nuts, install the 3/8" x 2" x 27-3/4" bridging brace (Item 4) **[Figure 91]** (use bottom holes). Tighten bolts and lock nuts.

Figure 92



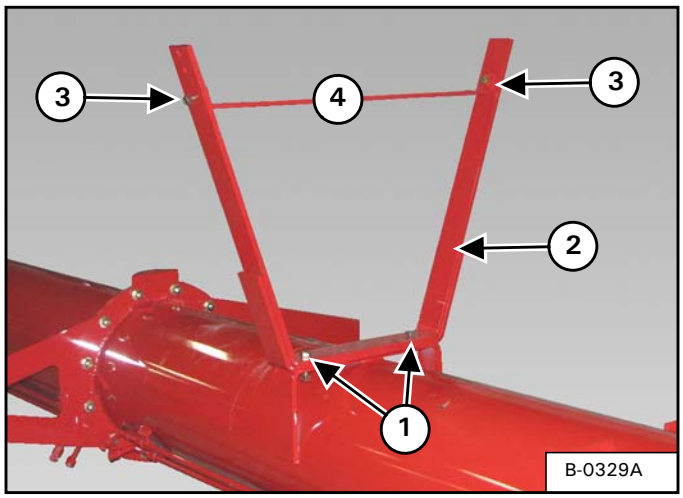
Model 16104 Only

Using two 5/8" x 2" bolts (Item 1) and 5/8" lock nuts, align and install the 1/2" x 3" x 103" (Tube #3) bridging yoke (Item 2) **[Figure 92]** (onto the #3 tube). Tighten bolts and lock nuts.

Using four 1/2" x 1-3/4" bolts (Item 3) and 1/2" lock nuts, install the 3/8" x 2" x 31-5/8" lower bridging brace (Item 4) and 3/8" x 2" x 43" upper bridging

brace (Item 5) **[Figure 92]** (use bottom holes for upper brace). Tighten bolts and lock nuts.

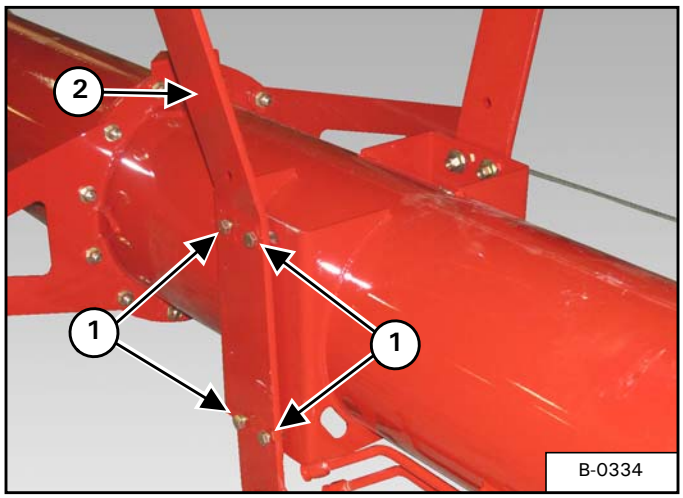
Figure 93



Using two 5/8" x 2-1/2" bolts (Item 1) and 5/8" lock nuts, align and install the 3" x 35-5/8" x 28-1/4" bridging yoke (Item 2) **[Figure 93]** (onto the Tube #1). Tighten bolts and lock nuts.

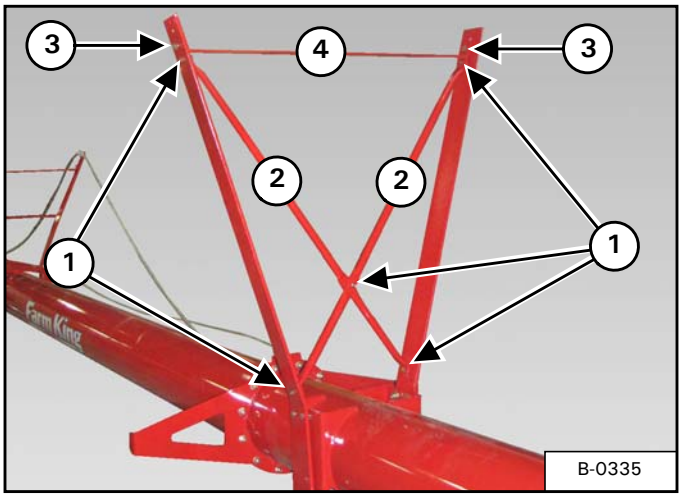
Using two 1/2" x 1-3/4" bolts (Item 3) and 1/2" lock nuts, install the 3/8" x 34" bridging brace (Item 4) **[Figure 93]** (use bottom holes). Tighten bolts and lock nuts.

Figure 94



Using four 5/8" x 2" bolts (Item 1), four 11/16" flat washers and 5/8" lock nuts, align and install one bridging plate (Item 2) **[Figure 94]** (onto the #2 tube) (both sides). Snug up bolts so bridging and tube plate are together but not tight.

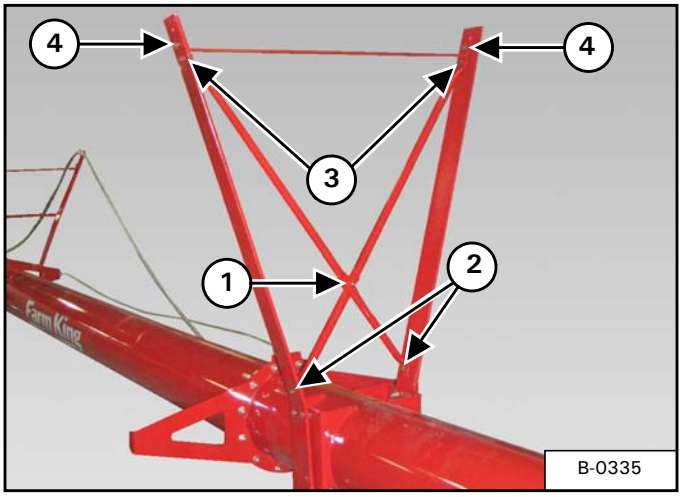
Figure 95



Using five 1/2" x 1-3/4" bolts (Item 1) and 1/2" lock nuts, align and install the two bridging cross braces (Item 2) **[Figure 95]**.

Using two 5/8" x 2" bolts (Item 3) and 5/8" lock nuts, align and install the upper bridging brace (Item 4) **[Figure 95]**. Tighten bolts and lock nuts.

Figure 96

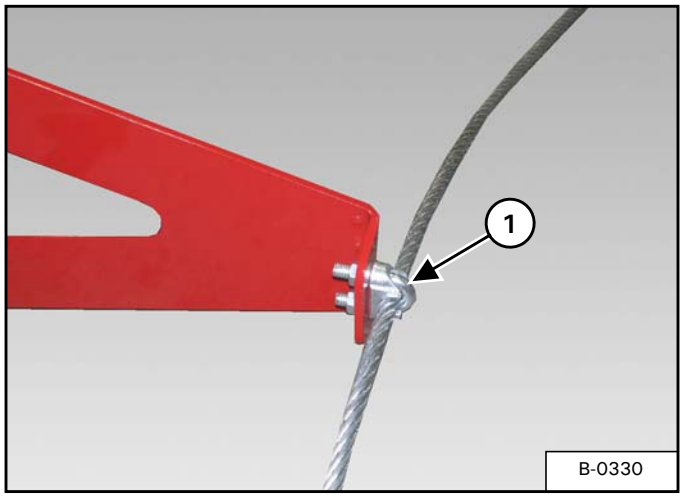


Tighten center cross brace bolt (Item 1) **[Figure 96]** and lock nut first.

Tighten the bottom cross brace bolts (Item 2) and lock nuts, then tighten upper cross brace bolts (Item 3) **[Figure 96]** and lock nuts.

Tighten the two upper bridging brace bolts (Item 4) **[Figure 96]** and lock nuts

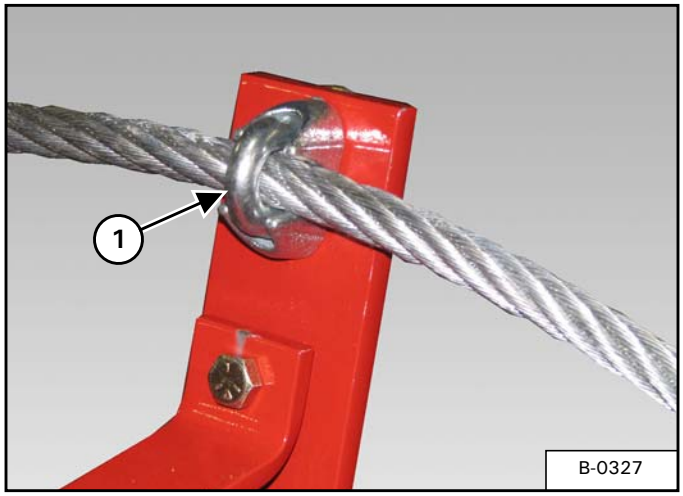
Figure 97



Install one 1/2" cable clamp (Item 1) **[Figure 97]** around the 1/2" cable, then install into the side bridging bracket. Do not tighten cable clamp at this time.

Install one 1/2" cable clamp on each side bridging bracket (both sides). Do not tighten the 1/2" cable clamps at this time.

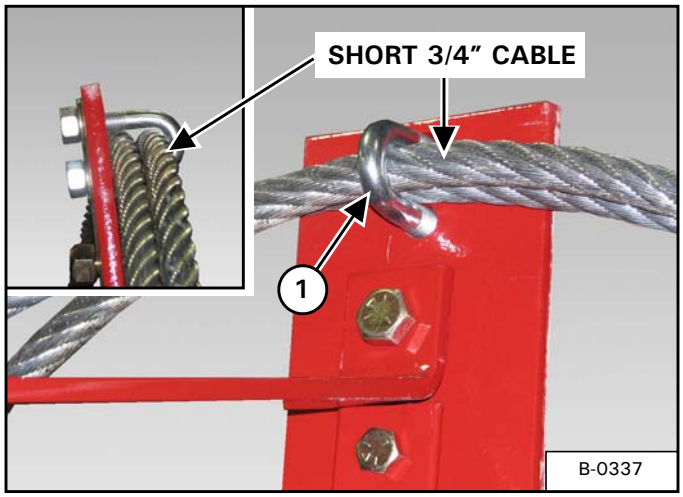
Figure 98



Install one 3/4" cable clamp (Item 1) **[Figure 98]** around the long 3/4" cable, then install into the upper bridging yoke (on the #3 & #1 tubes). Do not tighten cable clamp at this time.

Install one 3/4" cable clamp on two shorter bridging yokes (on the #4 tube) side bridging bracket (both sides). Do not tighten the 3/4" cable clamps at this time.

Figure 99

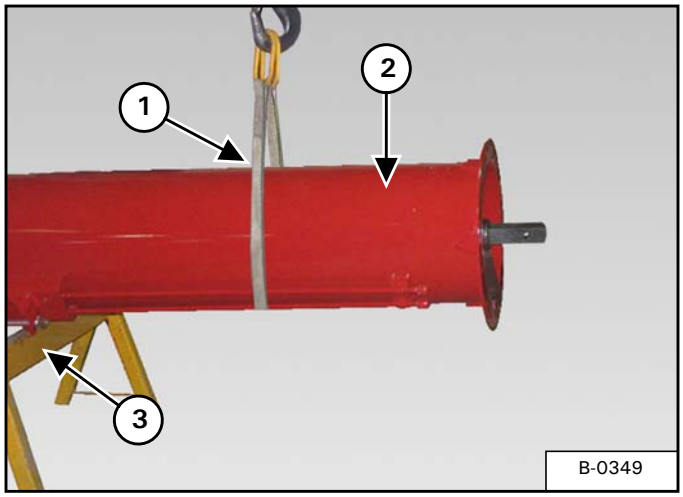


NOTE: Remove clamp section of two 3/4" cable clamps. Use only the u-bolts and nuts.

NOTE: When installing the u-bolt around the two 3/4" cables, place the short 3/4" cable into the u-bolt first (both sides).

Install one 3/4" cable clamp (Item 1) **[Figure 99]** around both the long and short 3/4" cables, then install into the bridging plate (on the #2 tube) (both sides). Do not tighten cable clamp at this time.

Figure 100

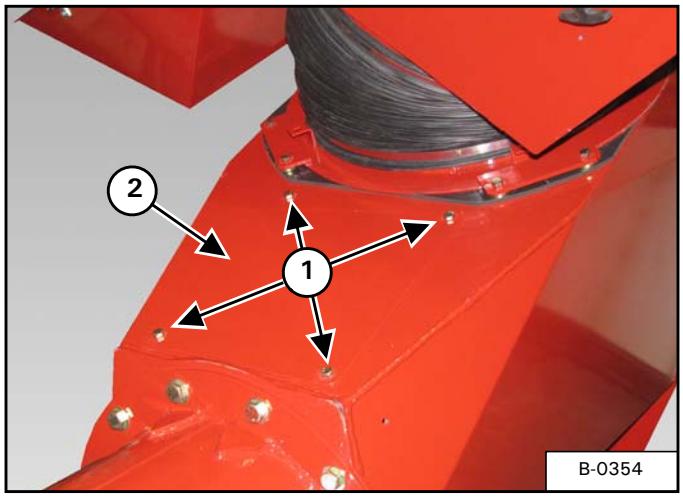


Install a strap (Item 1) around the end of #1 tube (Item 2) **[Figure 100]**.

Raise and place a support stand (Item 3) **[Figure 100]** under the tube, lower the tube onto the support stand.

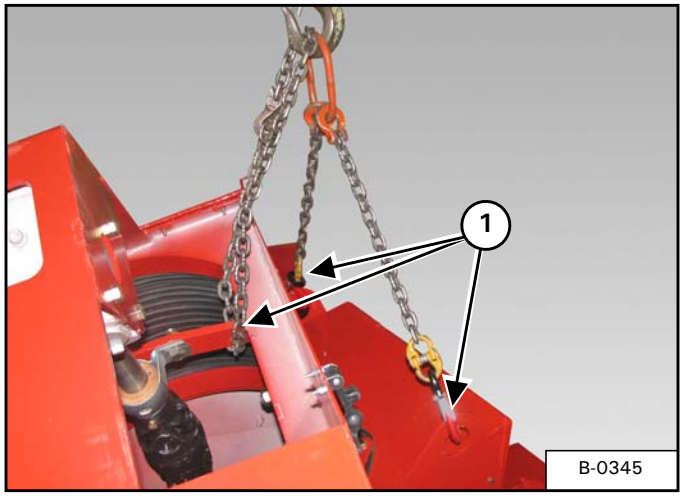
Remove strap.

Figure 101



Remove the four bolts (Item 1) and cover (Item 2) **[Figure 101]** from the intake auger.

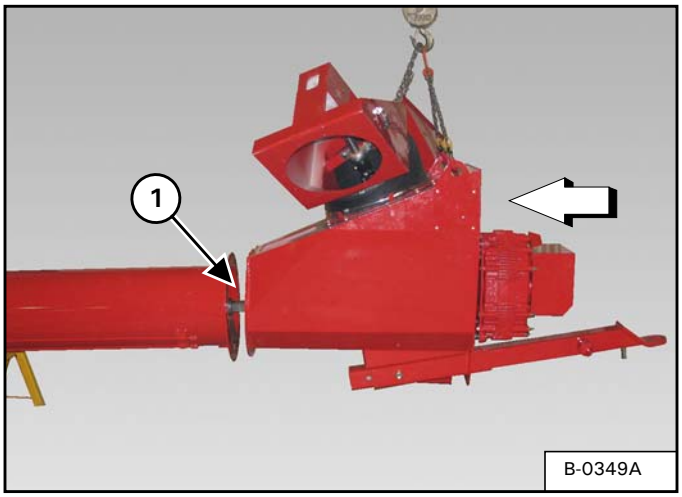
Figure 102



Install chains on the intake auger in the positions (Item 1) **[Figure 102]** shown.

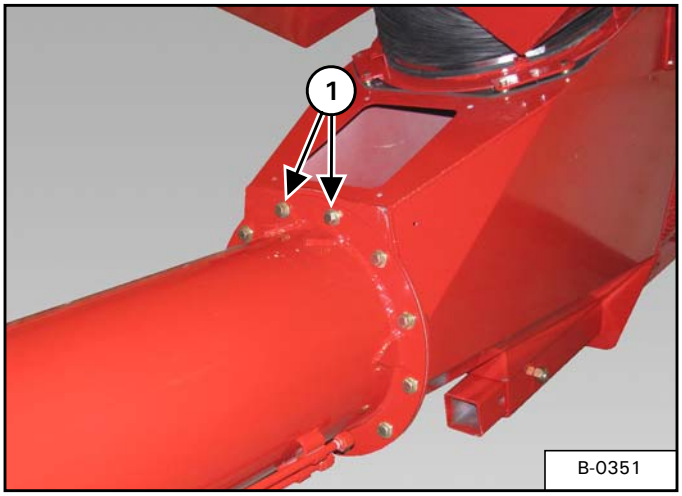
Raise the intake auger and move to the end of the #1 tube.

Figure 103



Align and install the intake auger onto the connecting shaft (Item 1) **[Figure 103]** of the #1 tube.

Figure 104

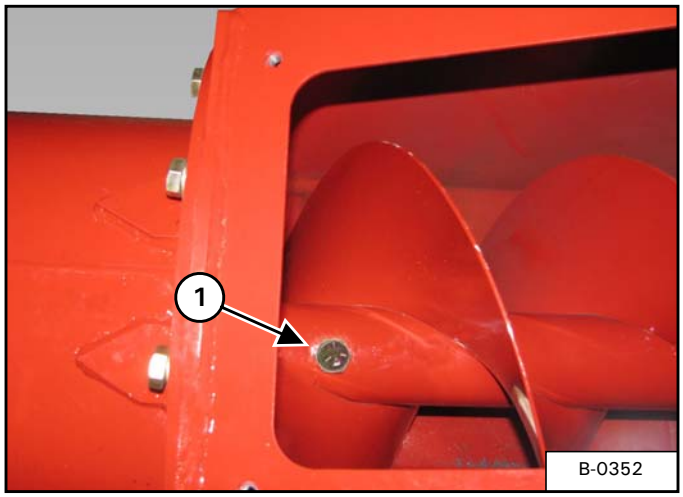


Install the 12 (Grade 8) 5/8" x 2" bolts and 5/8" lock nuts around the mounting flanges of the #1 tube and intake auger.

Tighten the top two bolts (Item 1) **[Figure 104]** and lock nuts first.

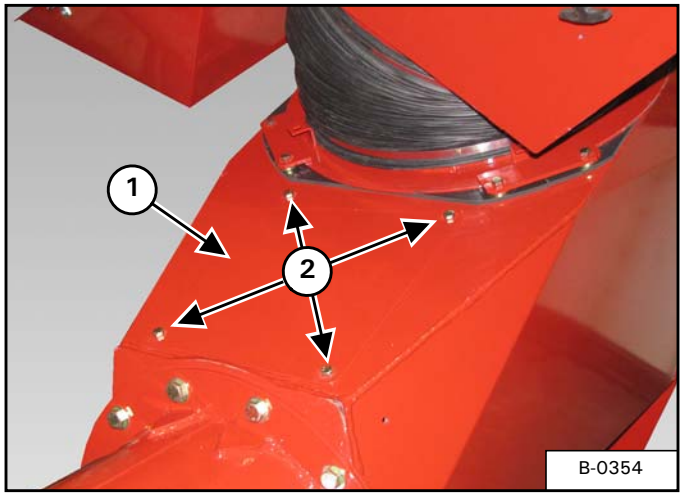
Starting at the left or right of the top two bolts, tighten bolts and lock nuts across from each other, while working around the mounting flanges.

Figure 105



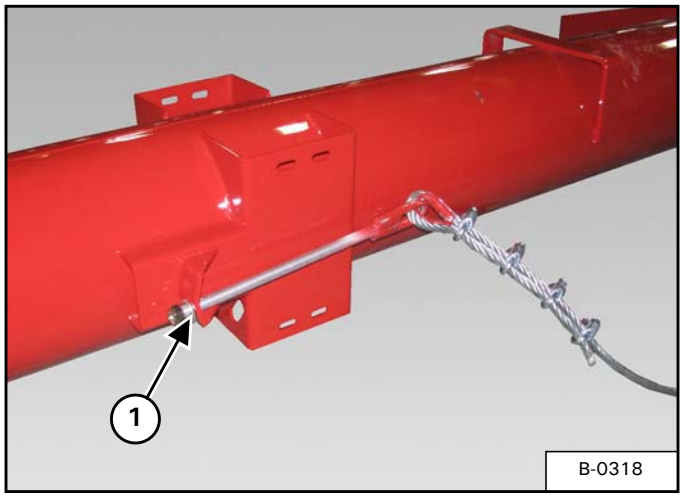
Install one 3/4″ x 4-1/2″ bolt (Item 1) **[Figure 105]** and 3/4″ lock nut.

Figure 106



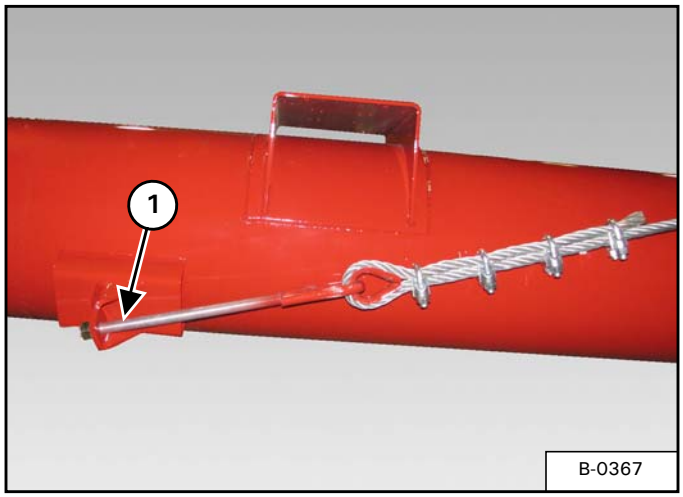
Install the cover (Item 1) and four bolts (Item 2) **[Figure 106]** on the intake auger.

Figure 107



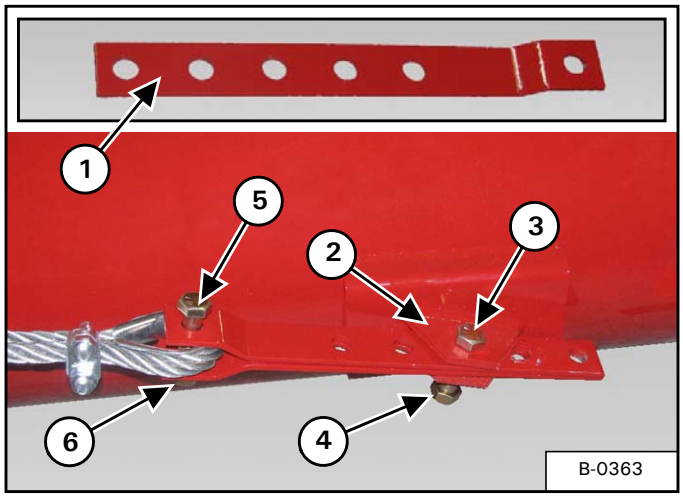
Install the eyebolt (Item 1) **[Figure 107]** of the short 3/4″ cable into the center hole of the mounting bracket on the #1 tube (both sides).

Figure 108



Install the eyebolt (Item 1) **[Figure 108]** of the long 3/4″ cable into the forward mounting bracket on the #1 tube (both sides).

Figure 109



Locate two cable yoke brackets (Item 1) **[Figure 109]** (3/4″ cables).

Install the 3/4″ cable loop into the end of the cable yoke bracket.

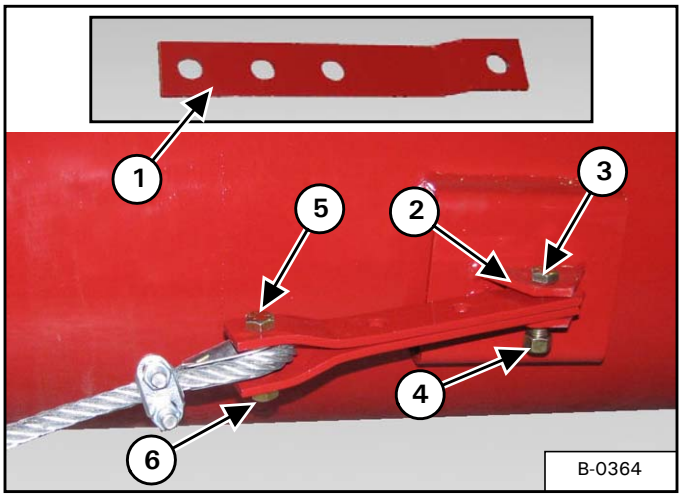
Install one 3/4″ x 3″ bolt (Item 3) through the mounting bracket and cable yoke bracket. Install one 3/4″ lock nut (Item 4) **[Figure 109]** on the bolt. Do not tighten at this time.

Pull the 3/4″ cable assembly as tight as possible. Align the closest hole of the cable yoke bracket with the mounting bracket (Item 2) **[Figure 109]** (angled up) on the #5 tube.

Install one 3/4″ x 3″ bolt (Item 5) through the cable yoke bracket and cable loop (long 3/4″ cable). Install one 3/4″ lock nut (Item 6) **[Figure 109]**. Do not tighten at this time.

Repeat the above procedure for the remaining three 3/4″ cable connections.

Figure 110



Locate two cable yoke brackets (Item 1) **[Figure 110]** (1/2″ cables).

Install the 1/2″ cable loop into the end of the cable yoke bracket.

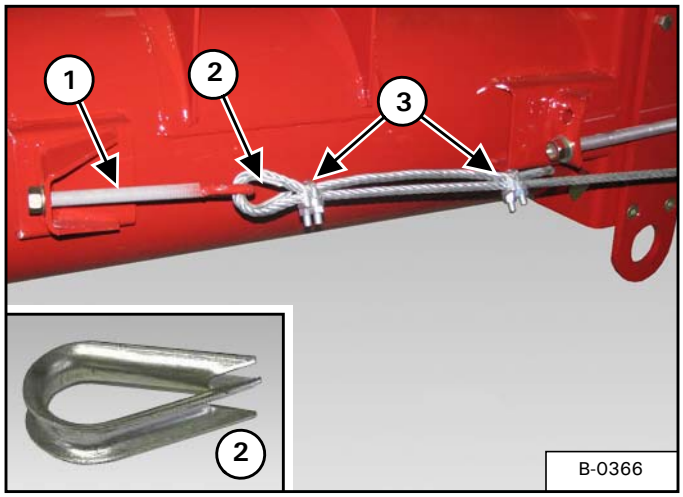
Install one 1/2″ x 2″ bolt (Item 3) through the mounting bracket and cable yoke bracket. Install one 1/2″ lock nut (Item 4) **[Figure 110]** on the bolt. Do not tighten at this time.

Align the end hole of the cable yoke bracket with the mounting bracket (Item 2) **[Figure 110]** (parallel with tube) on the #5 tube.

Install one 1/2″ x 2″ bolt (Item 5) through the cable yoke bracket and cable loop (1/2″ cable). Install one 1/2″ lock nut (Item 6) **[Figure 110]**. Do not tighten at this time.

Repeat the above procedure for the second 1/2″ cable.

Figure 111



Install the eyebolt of the 1/2″ cable into the mounting bracket (Item 1) **[Figure 111]** on the #1 tube (both sides).

Install the thimble (Item 2) onto the eyebolt (both sides).

Thread the 1/2″ cable through the eyebolt (both sides). Pull cable as tight as possible.

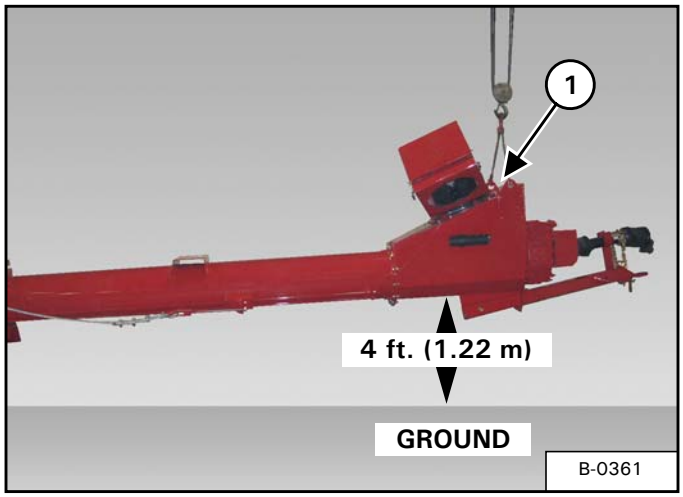
IMPORTANT

Always insert the tail of the cable into the clamp first when forming a loop in a cable.

Install the two 1/2″ cable clamps (Item 3) **[Figure 111]** onto the cable. Slide the first cable clamp (loop end) as close to the thimble as possible and tighten (both sides).

Slide the second cable clamp approximately 2 inches (51 mm) from the end of the tail and tighten (both sides).

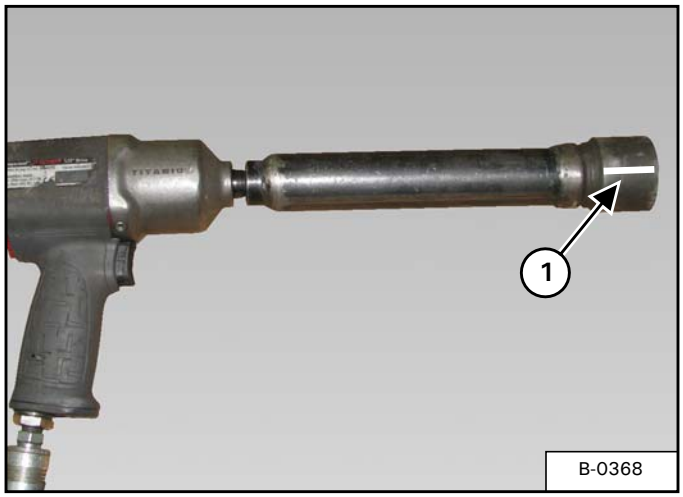
Figure 112



Install chains onto the two lifting hooks (Item 1) **[Figure 112]** on the intake auger.

Raise the intake auger / tube assembly approximately 4 ft. (1.22 m) off the ground **[Figure 112]**.

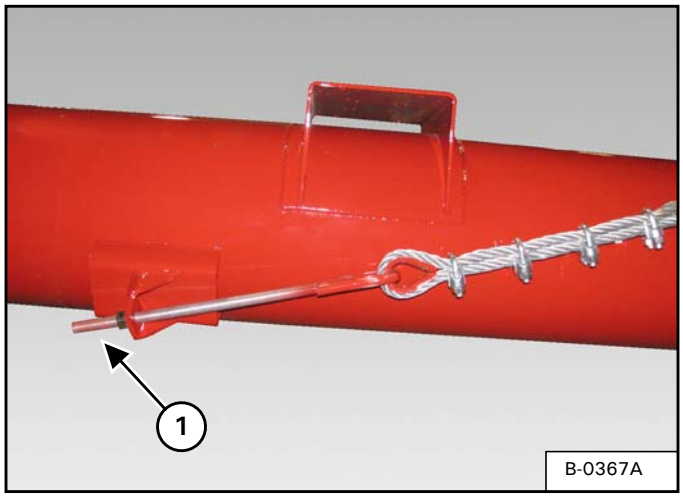
Figure 113



Place a mark (Item 1) **[Figure 113]** on the cable tightening tool. This will help to tighten the cables evenly.

Count the revolutions as the tool is turning while tightening.

Figure 114



NOTE: Cable lengths may vary. The following is a starting point and cables may need to be tightened more or loosened depending on the cable length.

Tighten the long 3/4" cable until there is approximately 3 - 4 inches (76 - 102 mm) of exposed threads (Item 1) **[Figure 114]** on the eyebolt.

Repeat tightening procedure for the remaining cables.

NOTE: Tighten short 3/4" cables less than the longer 3/4" cables.

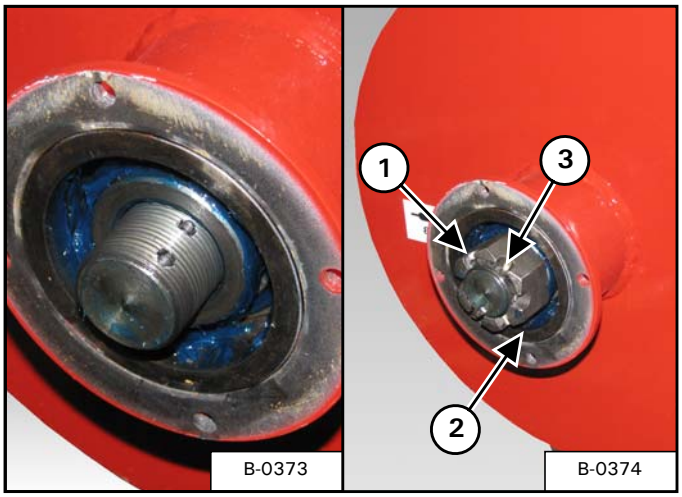
Lower the intake auger / tube assembly to the ground.

With the intake auger / tube assembly on the ground, the discharge spout end of the tube assembly should be bowed up (enough to install the discharge spout).

Stand behind the intake auger and look down the full length of the tube assembly to verify the tube is straight. Adjust 1/2" cables to straighten the tube (left to right) as needed.

With the tube assembly straight and slightly bowed up, tighten all the cable clamps and brackets on the tube assembly.

Figure 115



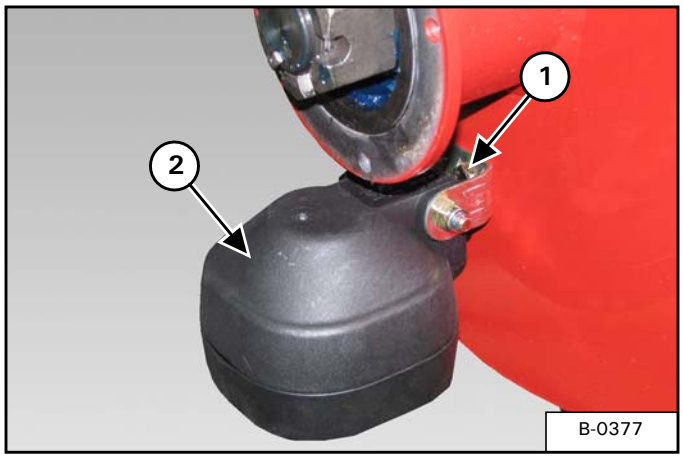
NOTE: The castle nut has been removed in the left picture to show cotter pin hole options.

With the tube assembly complete, tighten the castle nut (Item 1) until the castle nut contacts the washer / flighting shaft (Item 2) **[Figure 115]**.

Check for cotter pin hole in the shaft. Tighten or back the castle nut off (applying some tension on the flighting) until the closest cotter pin hole(s) is exposed.

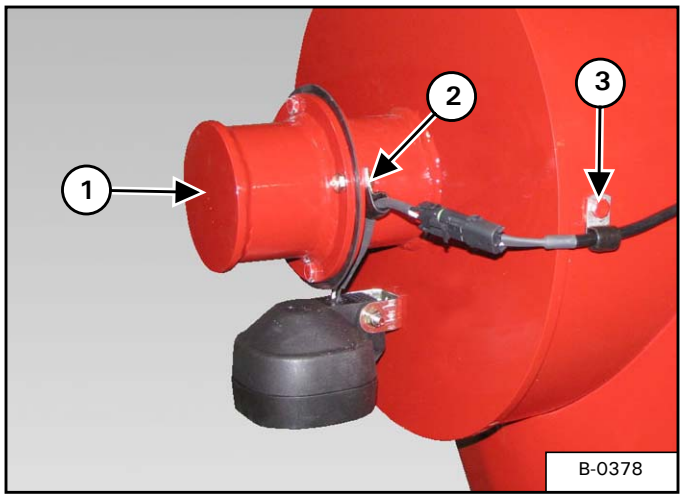
Install the cotter pin (Item 3) **[Figure 115]**.

Figure 116



Using one bolt (Item 1) and lock nut (included with light), install the light (Item 2) **[Figure 116]**.

Figure 117



Install the dust cap (Item 1) **[Figure 117]** using the four bolts and lock nuts removed at the start of the tube assembly.

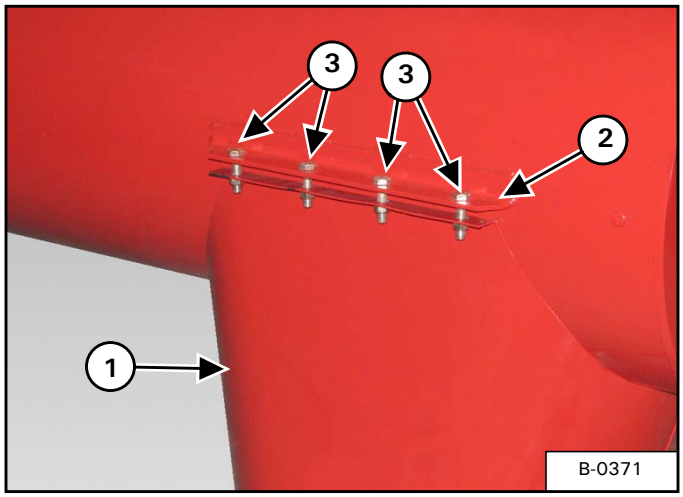
Install a cable clamp around the light pigtail.

When installing the dust cap bolts, install one cable clamp (Item 2) **[Figure 117]** on the bolt shown and secure in place with the lock nut.

Connect the light harness to the pigtail. Install a cable clamp around the light harness.

Using a bolt and lock nut, install a second cable clamp (Item 3) **[Figure 117]** in the #5 tube.

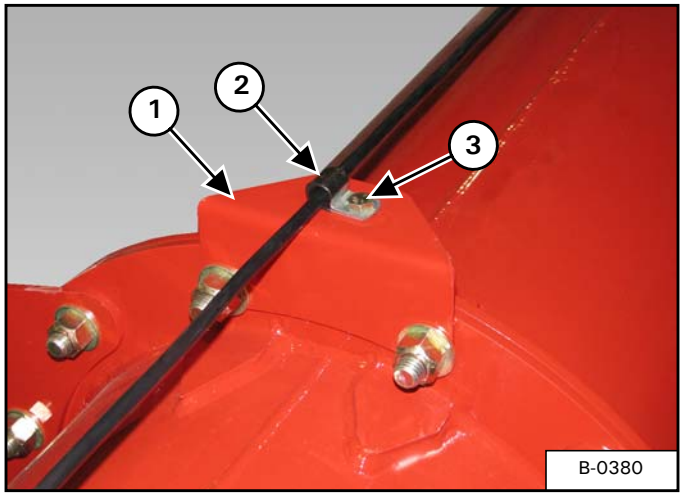
Figure 118



Align the discharge spout (Item 1) with the mounting brackets (Item 2) **[Figure 118]** on both sides of the #5 tube.

Install the eight 3/8″ x 1-1/2″ bolts (Item 3) **[Figure 118]** and 3/8″ lock nuts. Tighten bolts and lock nuts evenly until the discharge spout contacts the #5 tube.

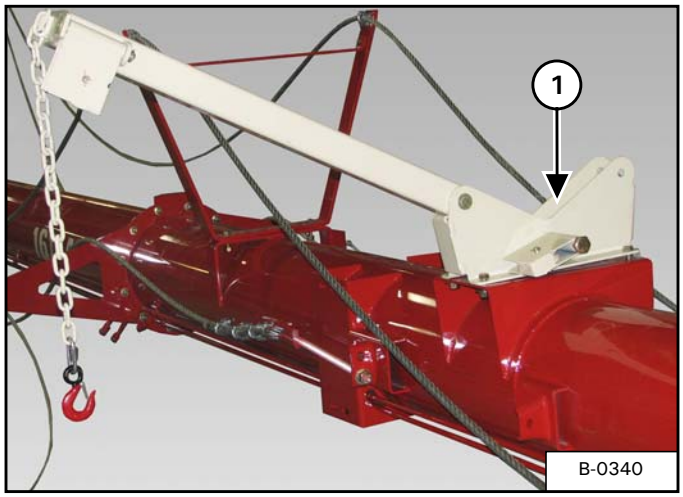
Figure 119



Route the light harness along the top of tube assembly.

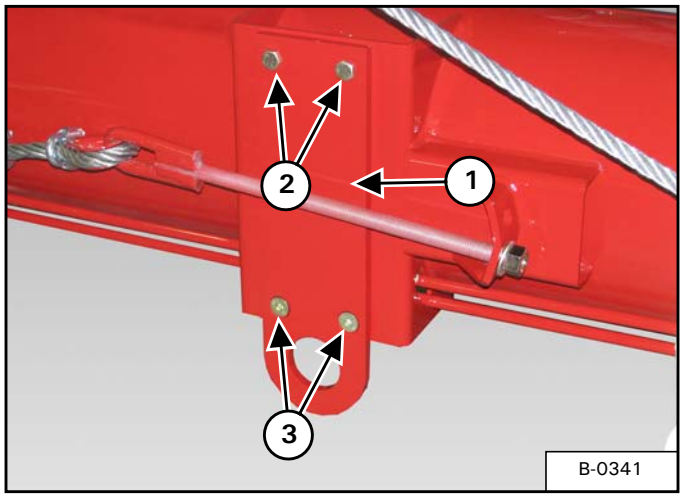
Secure the light harness to the top bracket (Item 1) at each tube connection using one cable clamp (Item 2), one 5/16″ x 3/4″ bolt (Item 3) **[Figure 119]** and 5/16″ lock nut at each location.

Figure 120



Using four 5/8" x 1-3/4" bolts, four 5/8" flat washers and four 5/8" lock nuts, install the lift boom assembly (Item 1) **[Figure 120]**. Tighten bolts and lock nuts.

Figure 121



Align the undercarriage connector plate (Item 1) **[Figure 121]** with the mounting bracket on the #1 tube.

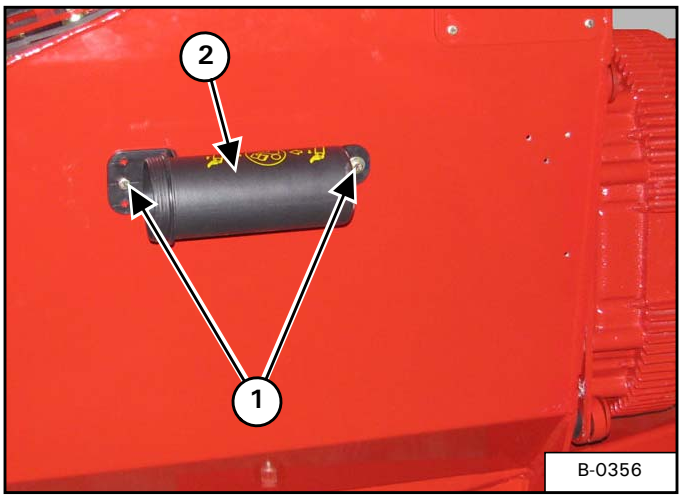
Install two 5/8" x 2" bolts (Item 2) **[Figure 121]** through the top two holes of the undercarriage connector plate and mounting bracket. Install one 5/8" flat washer and 5/8" lock nut on each bolt.

Install two 5/8" x 1-3/4" flat head bolts (Item 3) **[Figure 121]** through the bottom two holes of the undercarriage connector plate and mounting bracket. Install one 5/8" flat washer and 5/8" lock nut on each bolt.

Do not tighten bolts and lock nuts at this time.

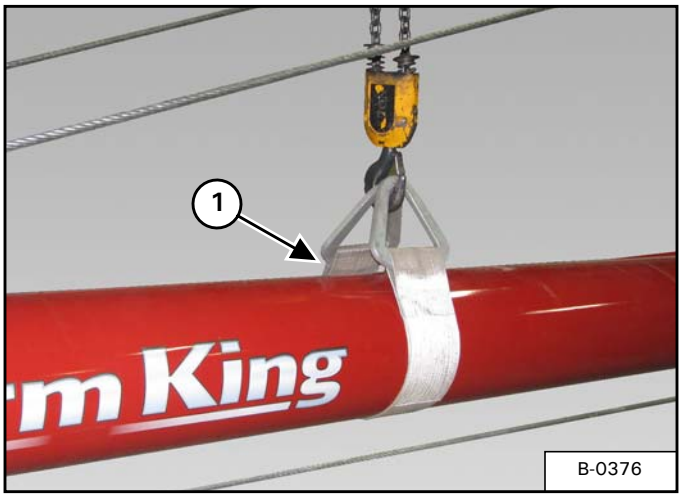
Repeat above procedure for second undercarriage connector plate.

Figure 122



Using two 5/16" x 3/4" bolts (Item 1) and two 5/16" lock washers, align and install the manual holder (Item 2) **[Figure 122]** on the right side of the input box. Do not over-tighten the bolts and damage mounting flanges.

Figure 123

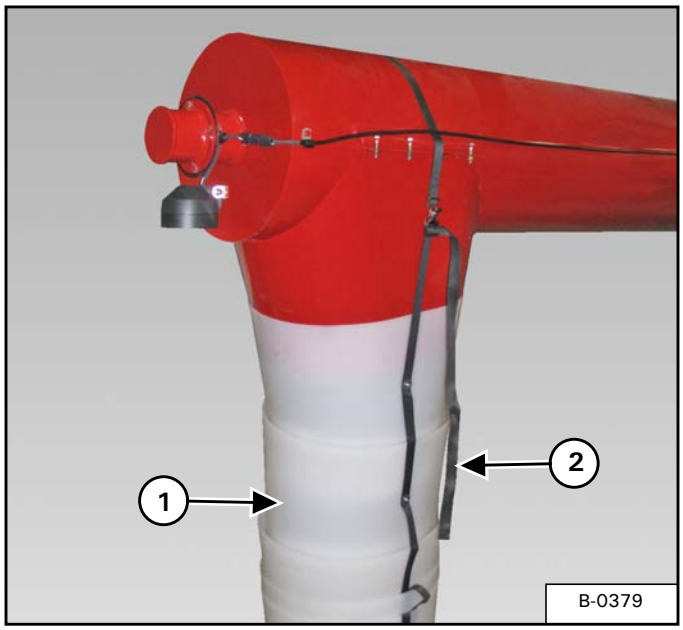


Install a strap (Item 1) **[Figure 123]** around the #3 tube.

Connect the strap to an approved lifting device.

Raise the tube assembly high enough to install the flex spout.

Figure 124



Slide the flex spout (Item 1) **[Figure 124]** onto the discharge spout.

Pull strap (Item 2) **[Figure 124]** up and over the #5 tube and connect the two ends of the strap together. Pull the strap tight to secure the flex spout to the #5 tube and discharge spout.

Lower the tube assembly to the ground.

IMPORTANT

Fully tighten all tube assembly hardware before installing the tube assembly onto the undercarriage.

Installing Tube On Undercarriage (1684)

Install the tube on 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

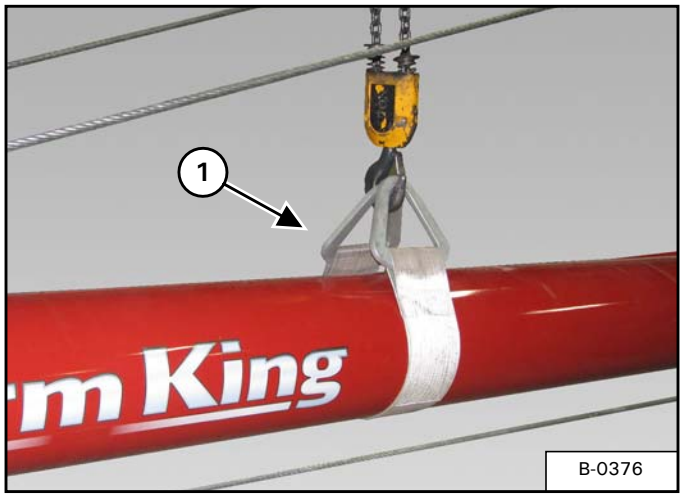
AVOID INJURY OR DEATH

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

IMPORTANT

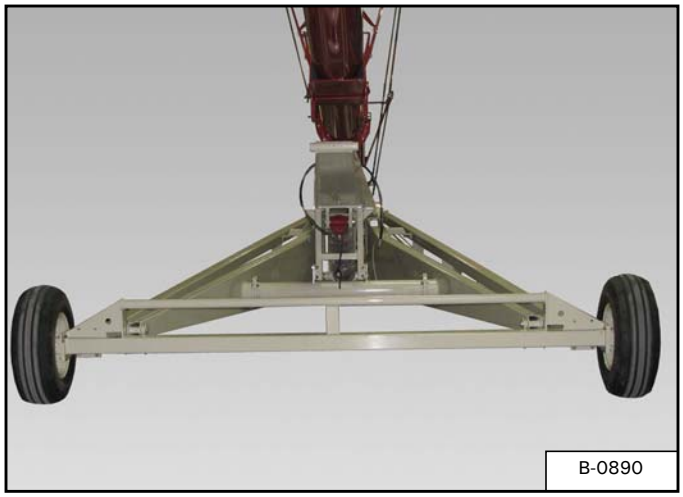
Fully tighten all tube assembly hardware before installing the tube assembly onto the undercarriage.

Figure 125



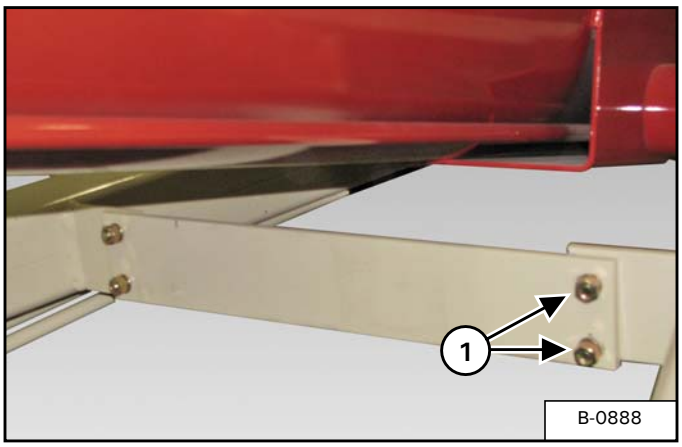
With the strap (Item 1) **[Figure 125]** installed around the center tube and connected to an approved lifting device, raise the tube assembly high enough to allow the undercarriage to be moved under the tube assembly.

Figure 126



Move the undercarriage into position below the tube assembly **[Figure 126]**.

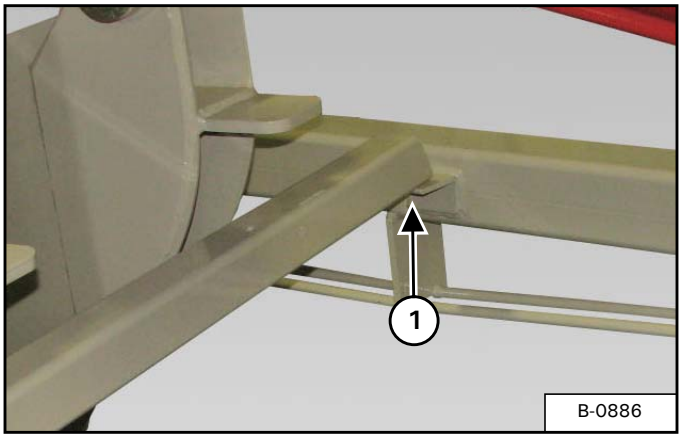
Figure 127



Remove the two 7/16″ x 1-1/2″ bolts (Item 1) **[Figure 127]**, 7/16″ lock nut and 7/16″ flat washers from the undercarriage tie plate.

NOTE: Loosening the undercarriage tie plate will allow the RH & LH undercarriage arms to be moved during installation to the tube assembly.

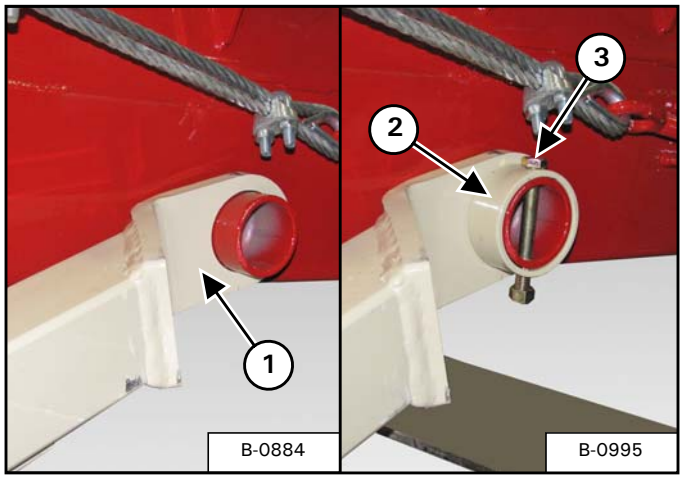
Figure 128



Remove the 5/8″ x 1-3/4″ bolt (Item 1) **[Figure 128]**, 5/8″ lock nut and 5/8″ flat washer from the lift arm cradle. Rotate the lift arm cradle away from the LH undercarriage arm.

NOTE: Loosening the lift arm cradle will allow the RH & LH undercarriage arms to be moved during installation to the tube assembly.

Figure 129

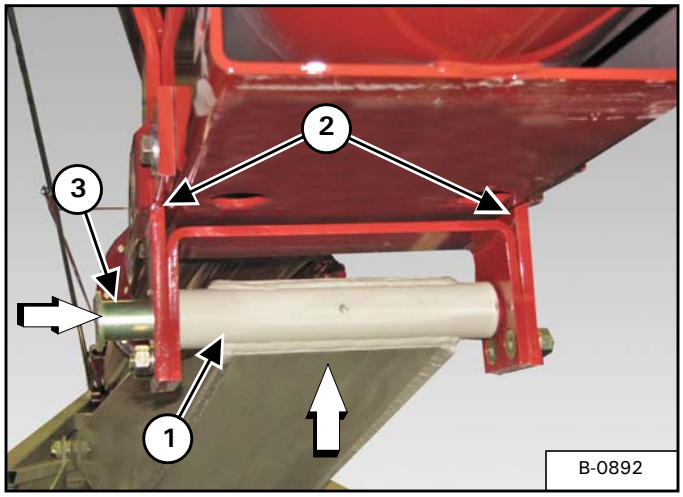


Fully install the RH & LH undercarriage arms (Item 1) **[Figure 129]** onto the mounts of the bottom tube section.

Install the undercarriage pin sleeve (Item 2), align holes and install one 1/2" X 4-1/2" bolt (Item 3) **[Figure 129]** through the sleeve and mount of the bottom tube section. Install one 1/2" lock nut on the bolt and tighten (both sides)

Reinstall the two 7/16" x 1-1/2" bolts (Item 1) **[Figure 129]**, 7/16" lock nuts and 7/16" flat washers. Do not tighten bolts and lock nuts at this time.

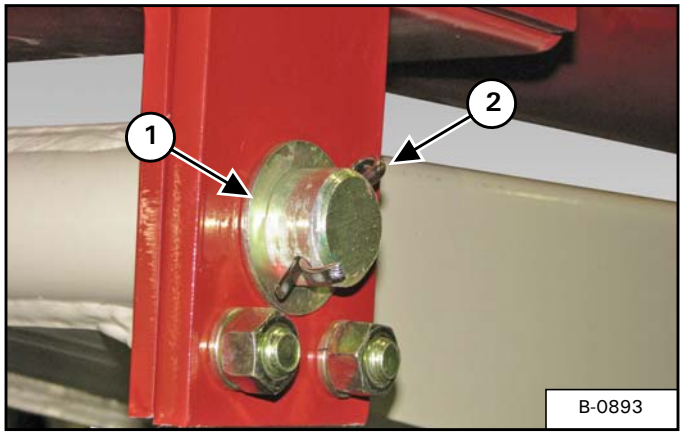
Figure 130



Align upper lift arm (Item 1) with the main bridging yoke (Item 2) **[Figure 130]** on the center tube section.

Install the lift arm pivot pin (Item 3) **[Figure 130]** through the main bridging yoke and upper lift arm.

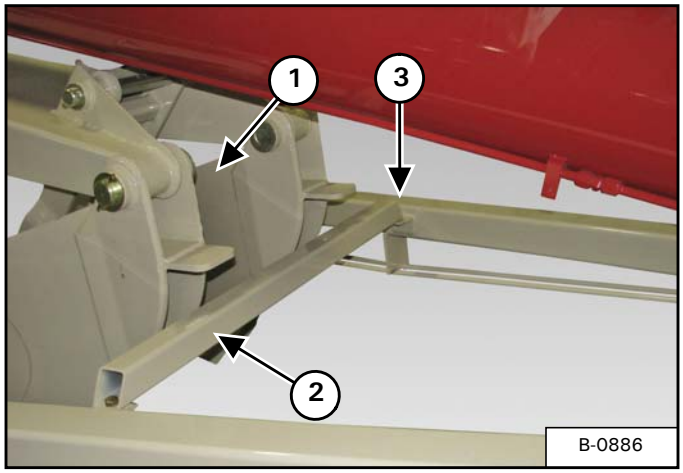
Figure 131



Install one 1-1/2" x 10 ga. narrow rim washer (Item 1) and one 1/4" x 2" cotter pin (Item 2) **[Figure 131]** through the lift arm pivot pin.

Place chock blocks in front and behind the tires of the undercarriage to prevent the auger assembly from moving.

Figure 132

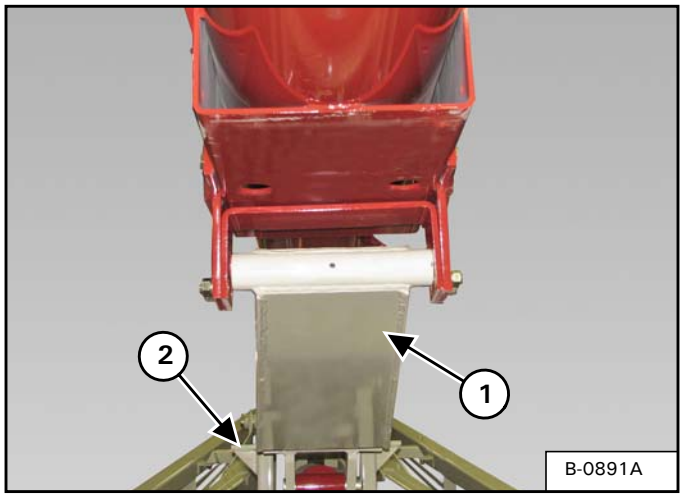


Install a strap around the LH or RH lower lift arm. Connect the strap to an approved lifting device and raise the lower lift arm assembly (Item 1) above the lift arm cradle (Item 2) **[Figure 147]**.

Position the lift arm cradle on top of the undercarriage arm mount. Install bolt (Item 3) **[Figure 147]** and lock nut.

Lower the lower lift arm assembly onto the lift arm cradle.

Figure 133



With the upper lift arm (Item 1) resting on the lift arm rest (Item 2) **[Figure 133]** and cradle rest, verify that the tube assembly is centered left to right on the undercarriage.

Adjust tube assembly as needed until the tube assembly is centered on the undercarriage.

Slightly raise the tube assembly above the undercarriage lift arm rest and cradle rest.

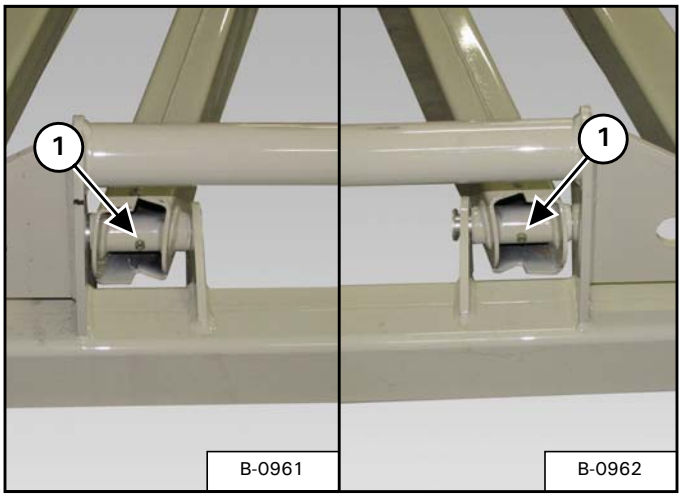
Tighten all remaining undercarriage bolts.

IMPORTANT

Fully tighten all undercarriage hardware before lowering the tube assembly onto the undercarriage.

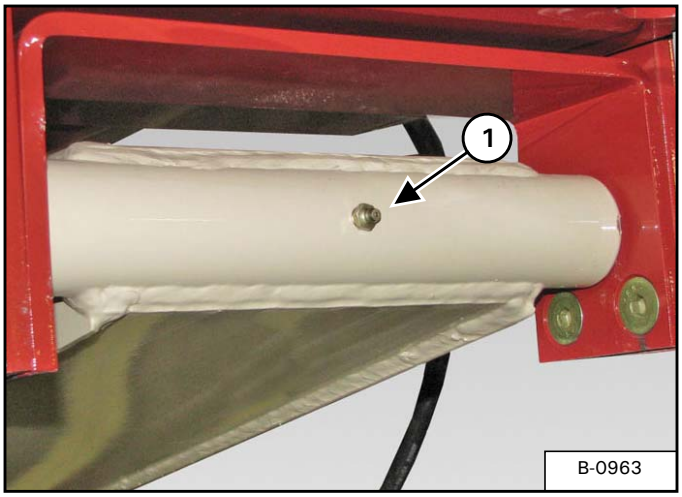
Lower tube assembly onto the undercarriage and remove the strap from tube assembly.

Figure 134



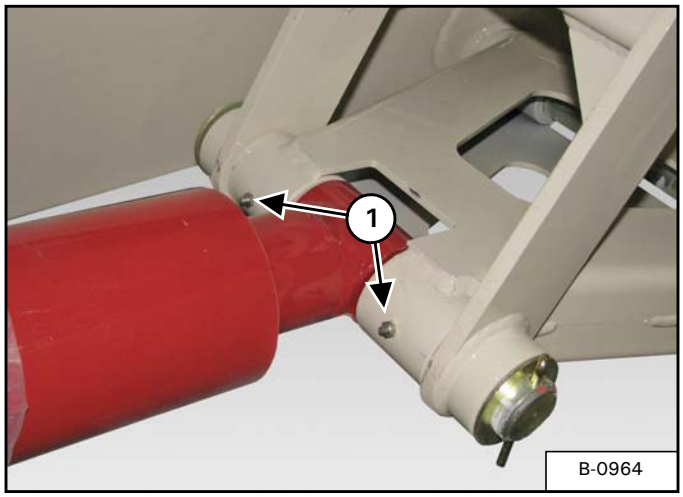
Install grease zerks (Item 1) **[Figure 134]** in the axle end of the LH & RH lower lift arms.

Figure 135



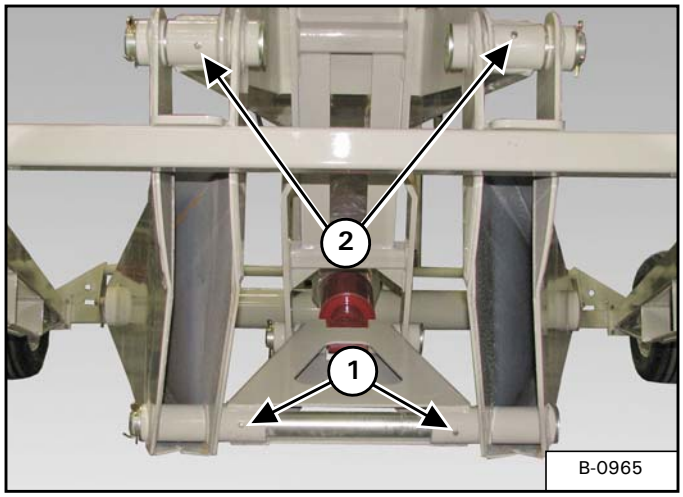
Install one grease zerk (Item 1) **[Figure 135]** into the upper lift arm.

Figure 136



Install two grease zerks (Item 1) **[Figure 136]** into the connecting link.

Figure 137



Install two grease zerks (Item 1) **[Figure 137]** into the connecting link.

Install two grease zerks (Item 2) **[Figure 137]** into the upper lift arm.

Grease all zerks on undercarriage. (See "LUBRICATION" on page 123.)

IMPORTANT

Check over undercarriage, verify all bolts are tight, all zerks are greased and cotter pins bent over.

Installing Tube On Undercarriage (16104)

Install the tube on the undercarriage on a flat level surface.

WARNING

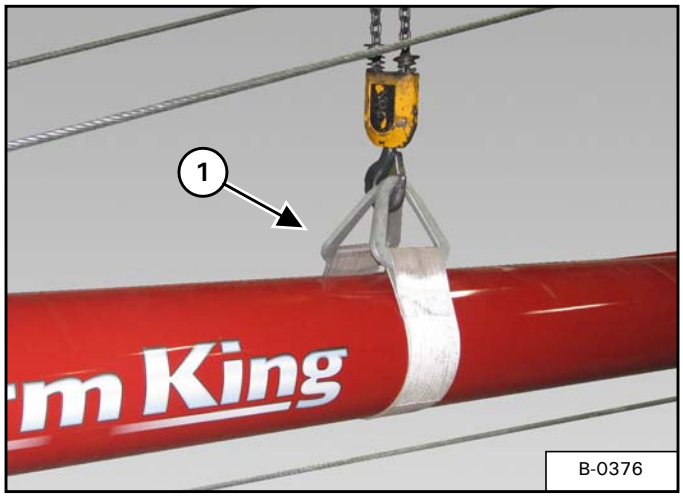
- **DO NOT permit bystanders to be in the work area when unloading and assembling the auger components.**
- **DO NOT work under suspended parts.**
- **Keep away from moving parts.**
- **Always use lifting devices / vehicles, chains or straps of adequate size and strength when unloading and assembling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

WARNING

AVOID INJURY OR DEATH

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

Figure 138

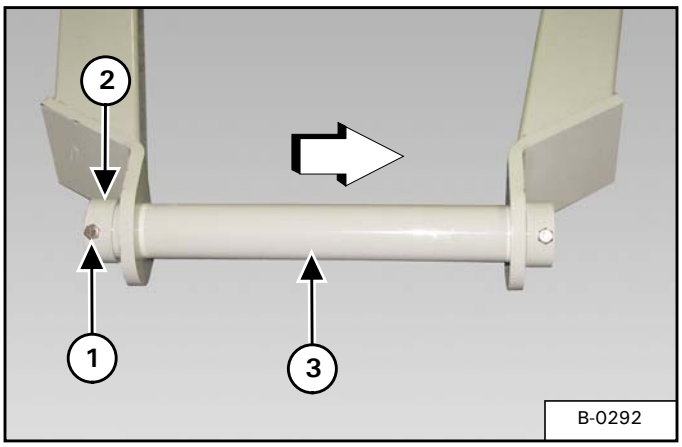


With the strap (Item 1) **[Figure 138]** installed around the #3 tube and connected to an approved lifting device, raise the tube assembly high enough to allow the undercarriage to be moved under the tube assembly.

Figure 139

Move the undercarriage into position below the tube assembly **[Figure 139]**.

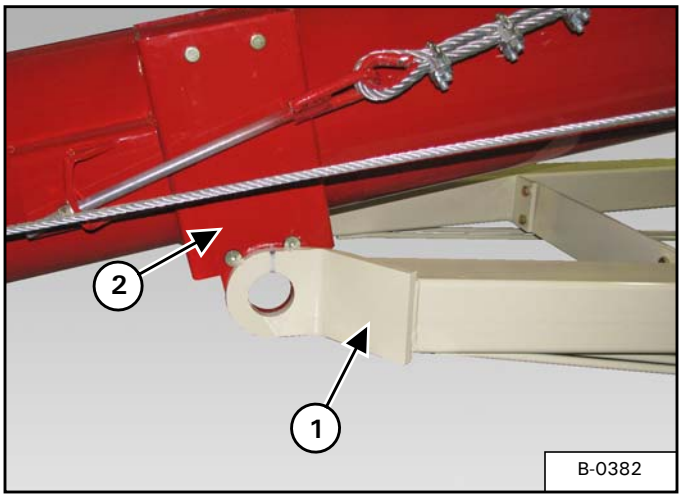
Figure 140



Remove the 1/2" x 4-1/2" bolt (Item 1), 1/2" lock nut and collar (Item 2) **[Figure 140]**.

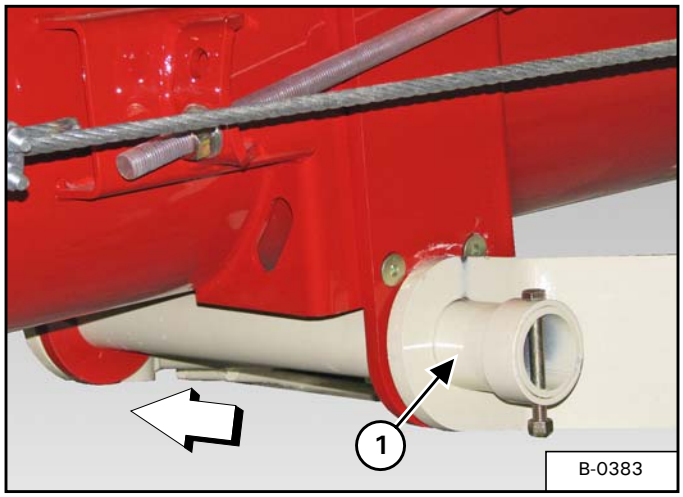
Remove the undercarriage lift arm pin (Item 3) **[Figure 140]**.

Figure 141



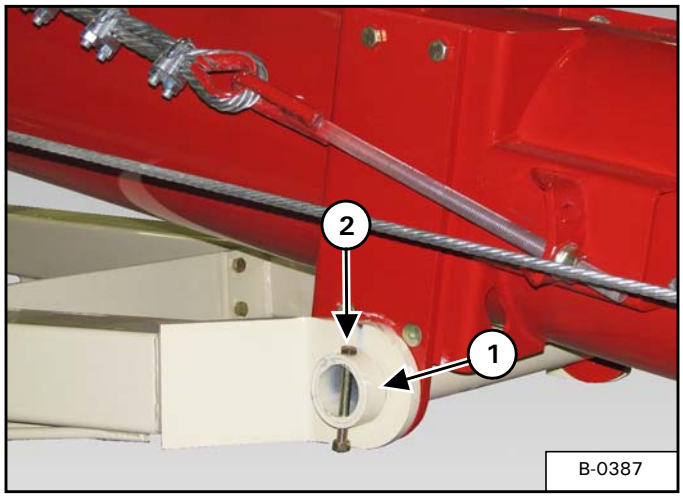
Raise the front of the undercarriage (Item 1) and align the holes of the undercarriage and the undercarriage connector plate(s) (Item 2) **[Figure 141]**.

Figure 142



Install the undercarriage lift arm pin (Item 1) **[Figure 142]** through the left undercarriage arm, undercarriage connector plates and right undercarriage arm.

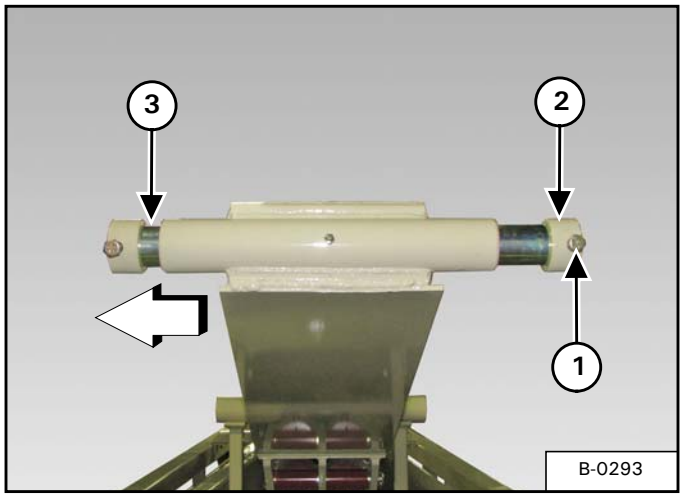
Figure 143



Install the collar (Item 1), 1/2" x 4-1/2" bolt (Item 2) **[Figure 143]** and 1/2" lock nut.

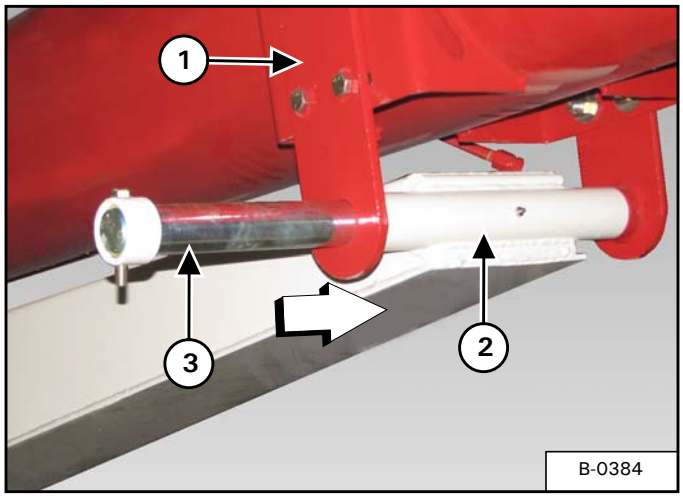
Tighten the bolt and lock nut until the lock nut contacts the collar (both sides).

Figure 144



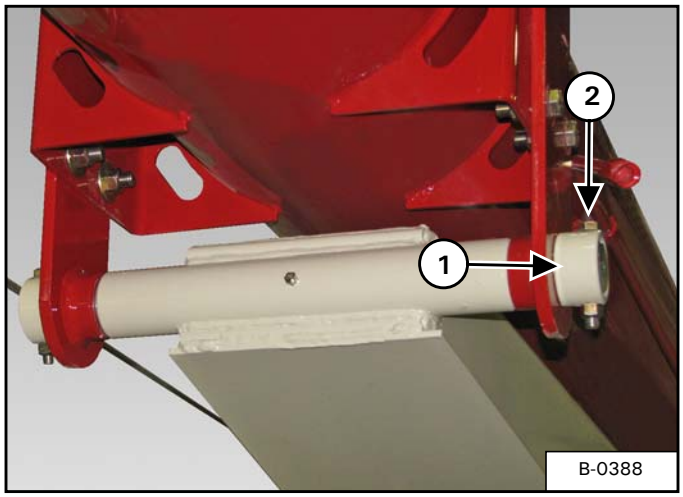
Remove the 1/2" x 3-1/2" bolt (Item 1), 1/2" lock nut, collar (Item 2) and upper lift arm pin (Item 3) **[Figure 144]**.

Figure 145



Lower the tube assembly and align the holes of the bridging plate (Item 1) and upper lift arm (Item 2). Install the upper lift arm pin (Item 3) **[Figure 145]** through the bridging plate and upper lift arm.

Figure 146

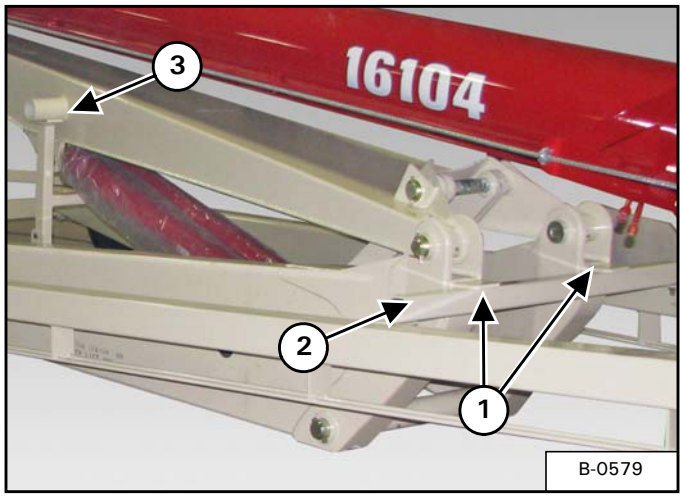


Install collar (Item 1), 1/2″ x 3-1/2″ bolt (Item 2) **[Figure 146]** and 1/2″ lock nut.

Tighten the bolt and lock nut until the lock nut contacts the collar (both sides).

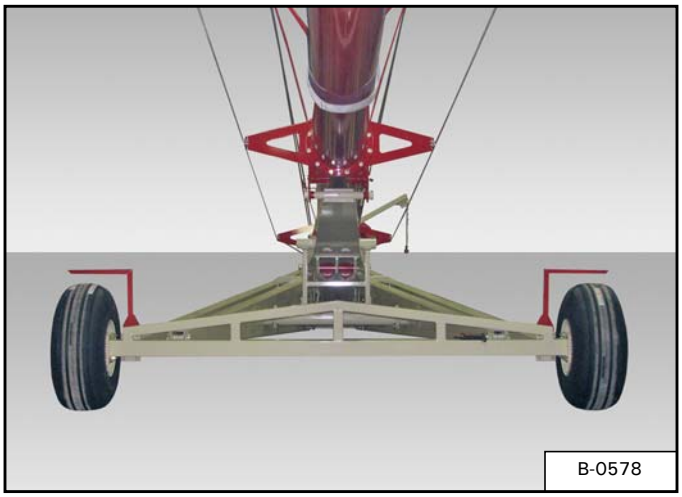
Place chock blocks in front and behind the tires of the undercarriage to prevent the auger assembly from moving.

Figure 147



Lower the tube assembly until the upper lift arm (Item 1) is resting on the lift arm rest (Item 2) and cradle rest (Item 3) **[Figure 147]**.

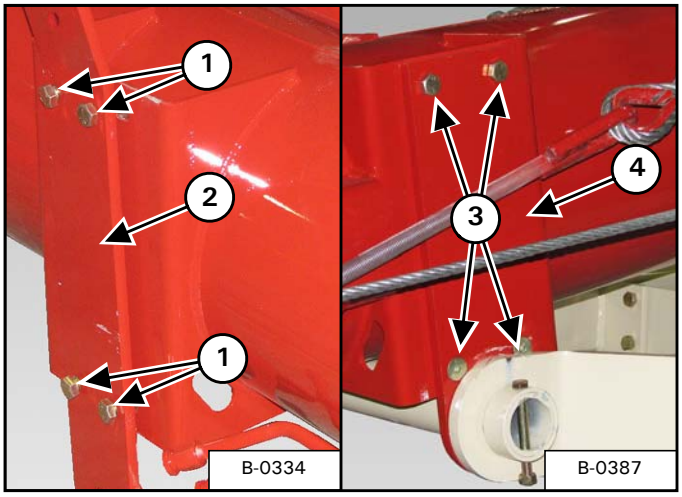
Figure 148



With the upper lift arm resting on the lift arm rest and cradle rest, verify that the tube assembly is centered left to right on the undercarriage **[Figure 148]**.

Adjust tube assembly as needed until the tube assembly is centered on the undercarriage.

Figure 149

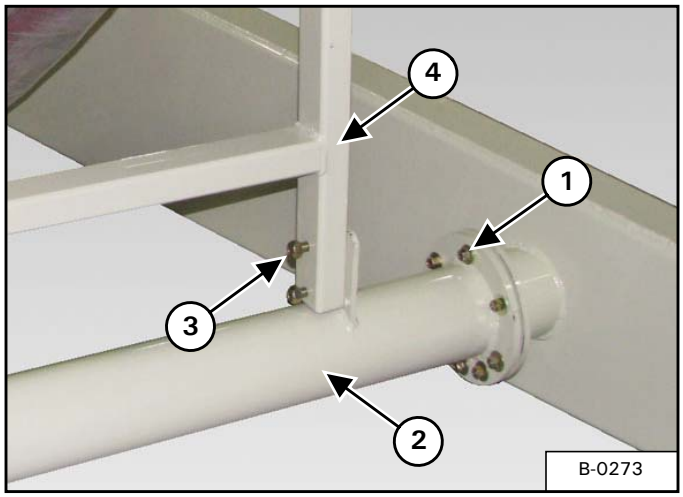


Slightly raise the tube assembly above the undercarriage lift arm rest and cradle rest.

Tighten the four bolts (Item 1) and lock nuts on the bridging plate (Item 2) **[Figure 149]** (connected to the upper lift arm).

Tighten the four bolts (Item 3) and lock nuts on the undercarriage connector plates (Item 4) **[Figure 149]** (connected to the front of the undercarriage).

Figure 150



Remove strap and lifting device from the #3 tube.

Tighten up the sixteen 1/2" bolts (Item 1) and nuts on the torque tube (Item 2) **[Figure 150]**.

Tighten up the four 1/2" bolts (Item 3) and nuts on the cradle rest (Item 4) **[Figure 150]**.

Tighten all remaining undercarriage bolts.

IMPORTANT

Fully tighten all undercarriage hardware before lowering the tube assembly onto the undercarriage.

Lower tube assembly onto the undercarriage and remove the strap from tube assembly.

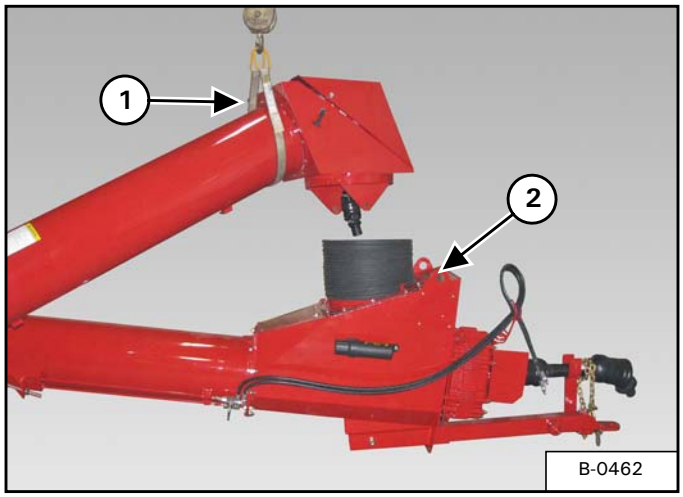
Grease all zerks on undercarriage. (See "LUBRICATION" on page 123.)

IMPORTANT

Check over undercarriage, verify all bolts are tight, all zerks are greased and cotter pins bent over.

Installing The Intake Auger (1684 & 16104)

Figure 151

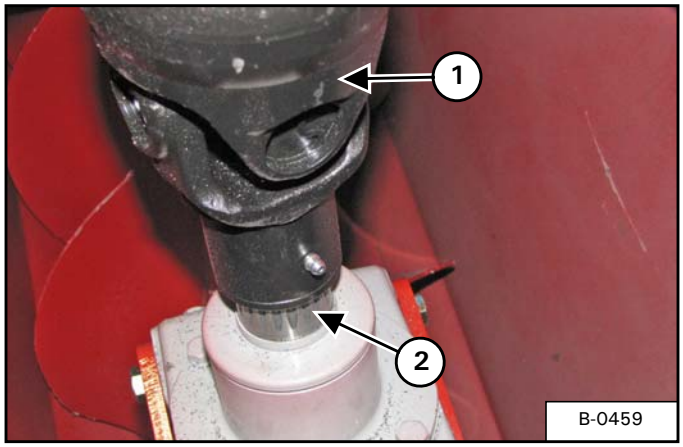


Install a strap (Item 1) **[Figure 151]** around the intake auger.

Connect the strap to an approved lifting device.

Raise the intake auger and position over the input box (Item 2) **[Figure 151]**.

Figure 152

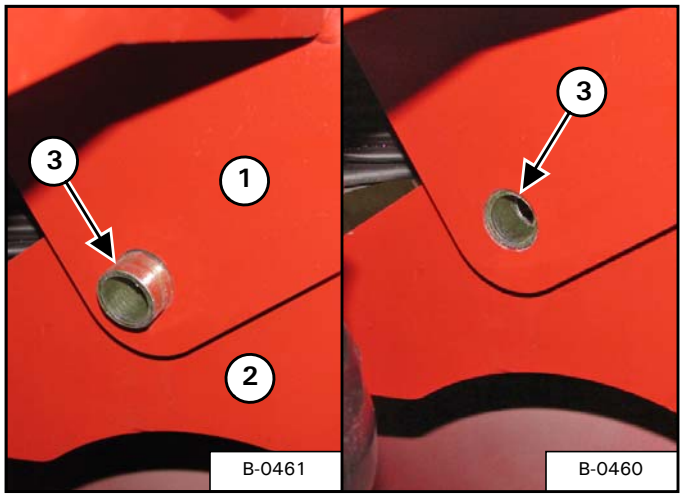


Lower the intake auger, align the u-joint (Item 1) with the top gearbox shaft (Item 2) **[Figure 152]** of the input box.

NOTE: Lubricate top gearbox shaft before lowering the intake auger onto the shaft.

Lower the intake auger onto the shaft.

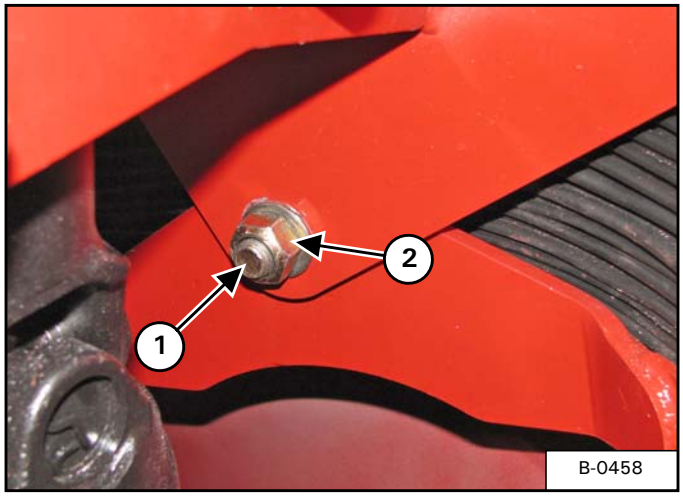
Figure 153



Align the hole of intake auger mounting plate (Item 1) and the hole of intake box mounting plate (Item 2) **[Figure 153]** (both sides).

Install bushing (Item 3) **[Figure 153]** through the intake auger mounting plate and input box mounting plate until flush with the inside of the intake auger mounting plate (both sides).

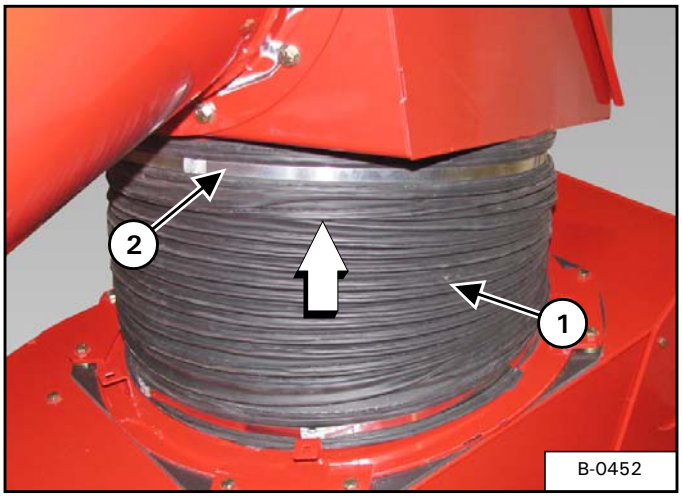
Figure 154



Install one bolt (Item 1) and lock nut (Item 2) **[Figure 154]** (both sides).

Tighten the bolt and lock nut securely against the bushing.

Figure 155

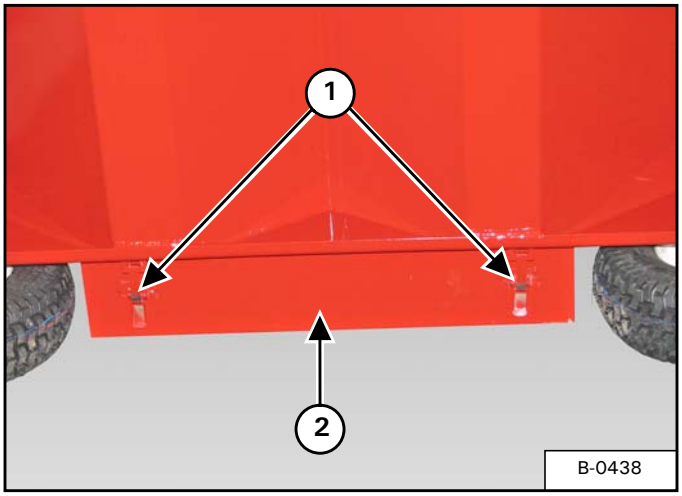


Slide the plastic sleeve (Item 1) up onto the intake auger. Install the clamp (Item 2) **[Figure 155]** and tighten to secure the plastic sleeve to the intake auger.

Remove the strap and lifting device.

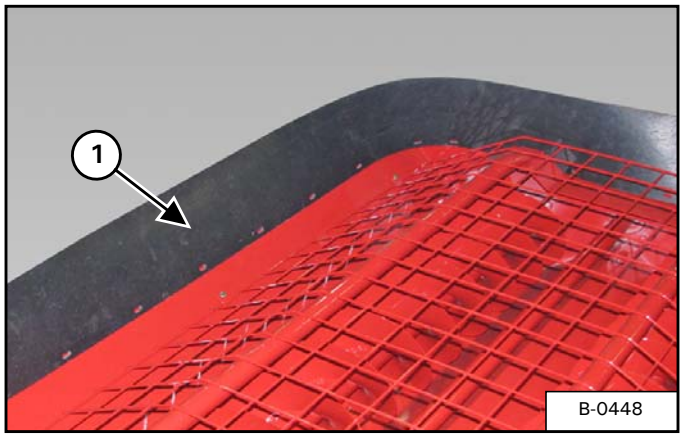
Hopper Assembly And Installation (1684 & 16104)

Figure 156



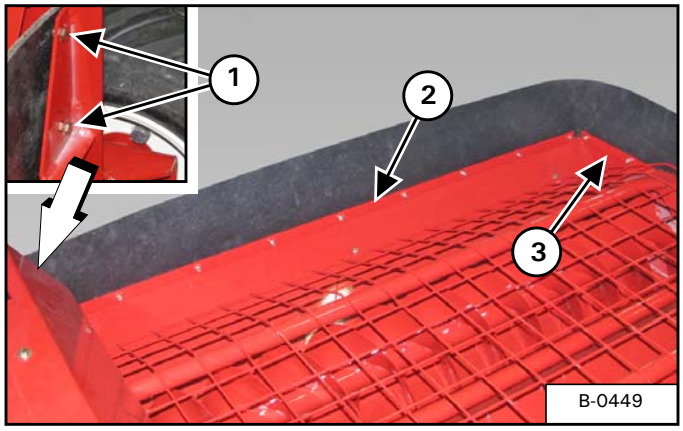
Release the two latches (Item 1) and raise the hopper chain guard cover (Item 2) **[Figure 156]** to access the rubber edge bolt hole locations on the end of the hopper.

Figure 157



Place the rubber edge (Item 1) **[Figure 157]** inside the outer flange of the hopper.

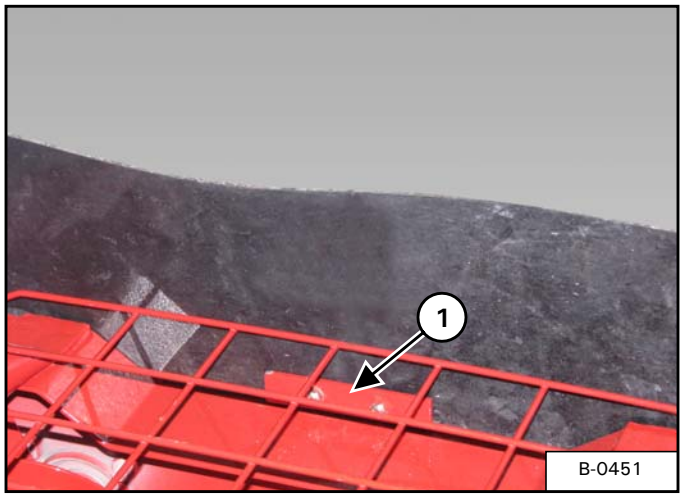
Figure 158



Align the end of the rubber edge with the two holes at the back of the hopper. Install two 1/4" x 1" bolts (Item 1) **[Figure 158]** through the hopper and rubber edge. Install a 1/4" lock nut on each bolt.

Align one long rubber reinforcement (Item 2) and one short rubber reinforcement (Item 3) **[Figure 158]** with holes in the rubber edge and outer hopper flange (both sides). Install 1/4" x 1" bolts through the hopper, rubber edge and rubber reinforcements (install bolts from the outside of the hopper flange). Install a 1/4" lock nut on each bolt. Do not tighten bolts and lock nuts at this time.

Figure 159

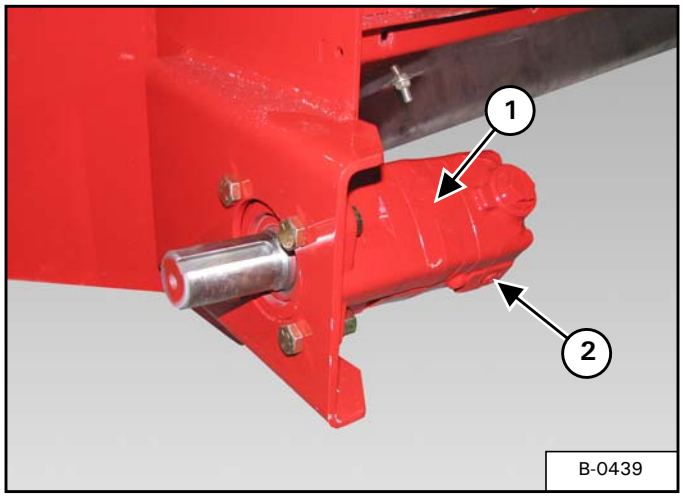


Align the two hole rubber reinforcement (Item 1) **[Figure 159]** with holes in the rubber edge and outer hopper flange. Install two 1/4" x 1" bolts through the hopper, rubber edge and rubber reinforcement (install bolts from the outside of the hopper flange). Install a 1/4" lock nut on each bolt. Do not tighten bolts and lock nuts at this time.

NOTE: When tightening the rubber edge bolts and lock nuts, tighten until the lock nut contacts the rubber reinforcements. Do not over tighten and cause the rubber reinforcements to become wavy.

Tighten all bolts and lock nuts to secure the rubber edge to the hopper.

Figure 160



Align and install one hydraulic wheel motor (Item 1) **[Figure 160]** through the mounting bracket on the side of the hopper.

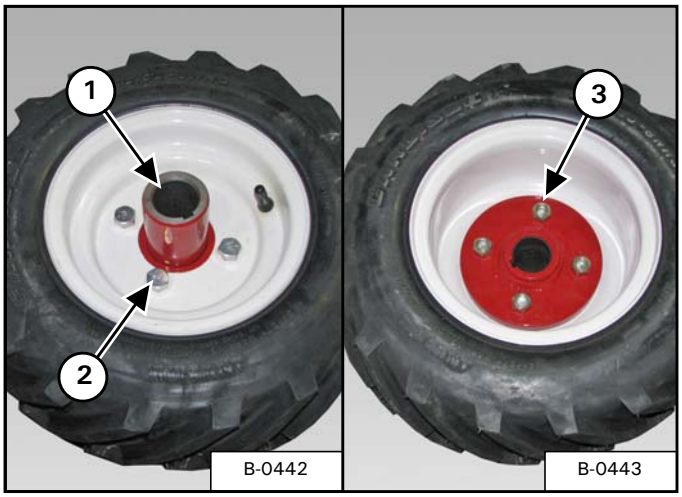
NOTE: Install the left hydraulic wheel motor (Item 1) with the small port (Item 2) [Figure 160] facing down and towards the outside.

NOTE: Rotate the right hydraulic wheel motor 180° and install with the small port facing up and towards the outside.

Install four 1/2" x 1-3/4" bolts through the mounting bracket and hydraulic wheel motor. Install 1/2" lock nuts on each bolt and tighten to secure the hydraulic wheel motor to the hopper.

Repeat for the right hydraulic wheel motor (with the small port facing up and towards the outside).

Figure 161



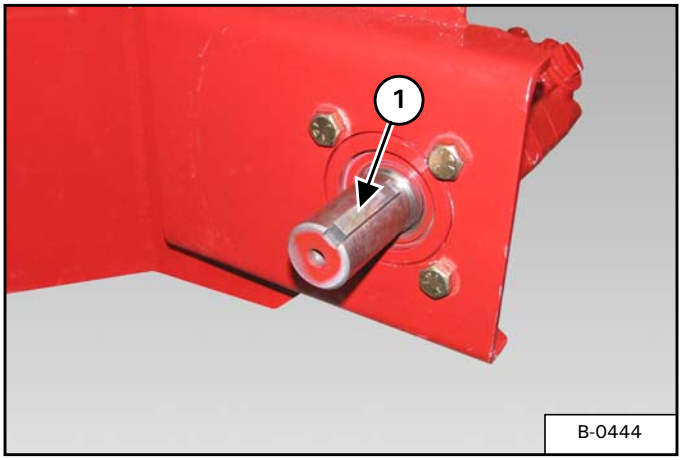
Install the hub (Item 1) **[Figure 161]** through the rim of the wheel (from the back side of the rim, with the valve stem facing up.

Install four 1/2" x 1-3/4" wheel bolts (Item 2) **[Figure 161]** through the rim and hub.

Install four 1/2" wheel nuts (Item 3) **[Figure 161]** on to the bolts. Tighten bolts and nuts to secure the hub to the rim.

Repeat **[Figure 161]** procedure for second rim / wheel assembly.

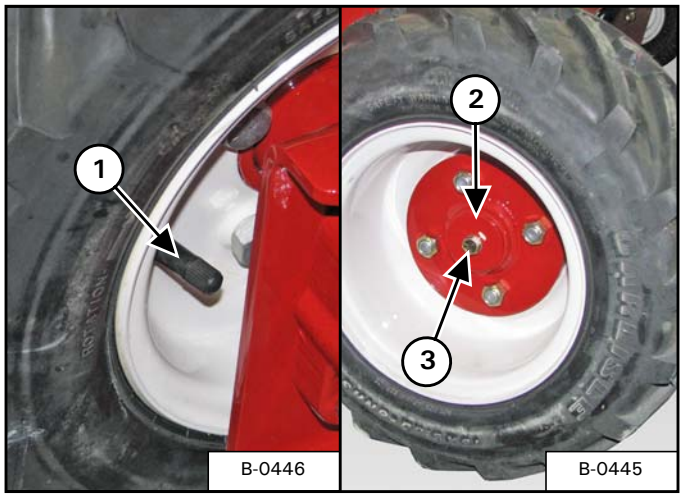
Figure 162



Install the key (Item 1) **[Figure 162]** into groove on the hydraulic wheel motor shaft (both sides).

NOTE: Lubricate shaft before installing wheel assembly.

Figure 163

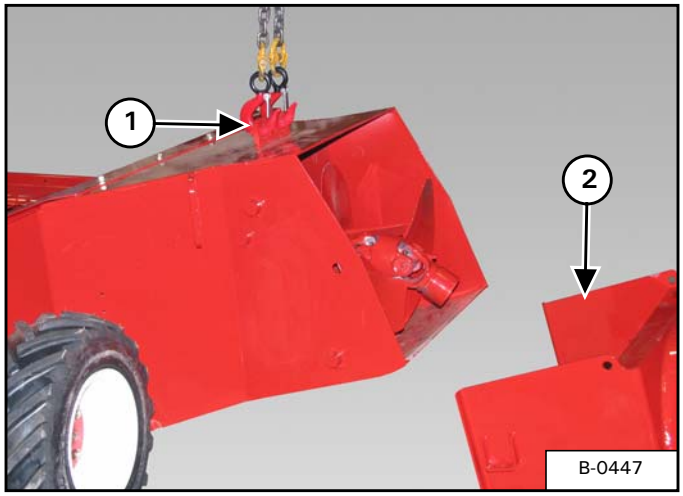


Install the hub onto the hydraulic wheel motor shaft with the valve stem (Item 1) **[Figure 163]** on the inside.

Install one 3/8″ lock washer and one 13/32″ ID x 2″ OD flat washer (Item 2) onto one 3/8″ x 2-1/4″ bolt (Item 3) **[Figure 163]**. Install bolt through the hub and into the hydraulic wheel motor shaft. Tighten the bolt to securely fasten the hub to the hydraulic wheel motor shaft.

Repeat **[Figure 163]** procedure for second hub / wheel assembly.

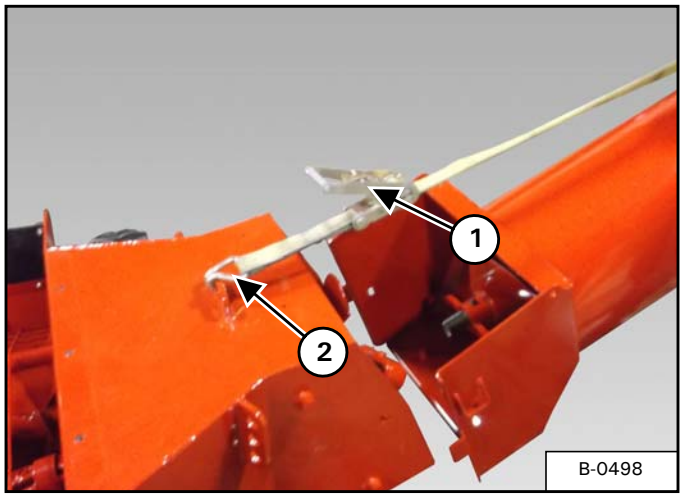
Figure 164



Install chains (Item 1) **[Figure 164]** into the holes on the top of the hopper.

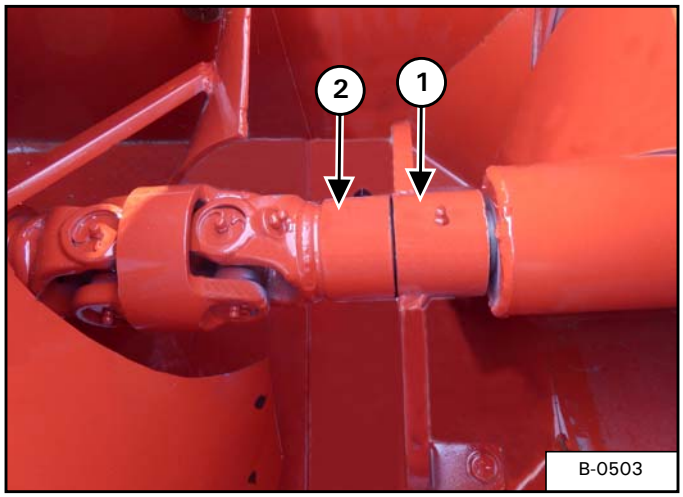
Raise and move the hopper in front of the intake auger (Item 2) **[Figure 164]**.

Figure 165



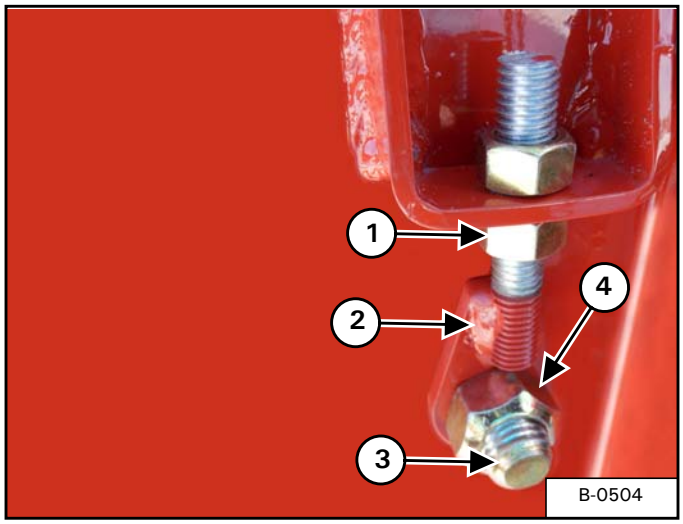
Install a ratchet strap (Item 1) onto the bracket (Item 2) **[Figure 165]** on the top of the hopper (connect the opposite end of the ratchet strap to the mounting bracket on the top of the intake auger).

Figure 166



Tighten the ratchet strap, align the hopper u-joint (Item 1) with the shaft (Item 2) **[Figure 166]** on the intake auger. Tighten the ratchet strap until the u-joint is all the way on the shaft.

Figure 167



Align the mounting holes on the hopper and intake auger.

Thread one 1/2" nut (Item 1) onto the hopper adjustment bolt (Item 2) **[Figure 167]**, install the adjustment bolt up, into the bracket on the intake auger. Install a second 1/2" nut to hold the adjustment bolt in position.

Install one 3/4" x 1-5/8" bolt (Item 3) (from inside) through the hopper, adjustment bolt and intake auger. Install one 3/4" lock nut (Item 4) **[Figure 167]** onto the bolt.

Repeat the **[Figure 167]** procedure on the opposite side of the hopper and intake auger.

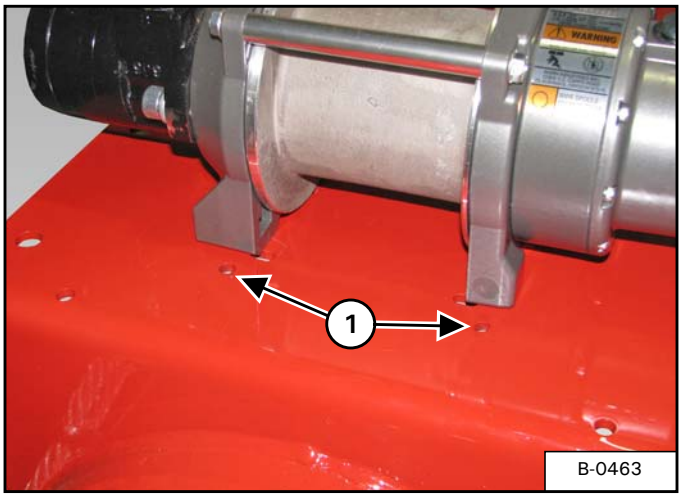
Tighten the bolt (Item 3) **[Figure 167]** and lock nut first (both sides).

Tighten both adjustment bolts (Item 2) **[Figure 167]** evenly.

Installing The Winch (1684 & 16104)

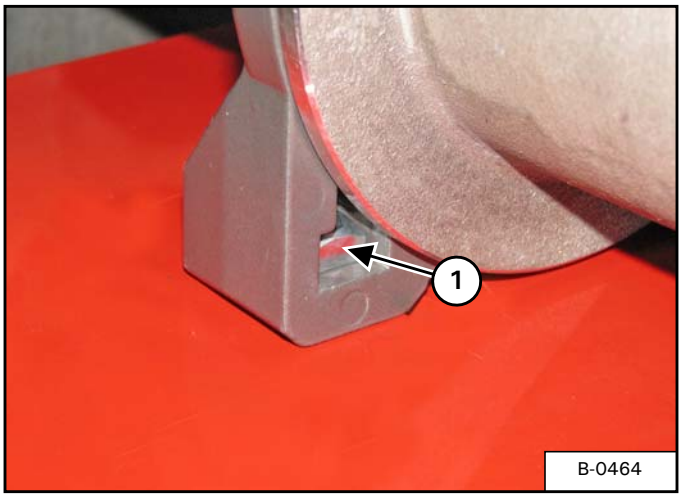
NOTE: The following images may not show your winch exactly as it appears but the procedure is correct for both the electrical and hydraulic winches.

Figure 168



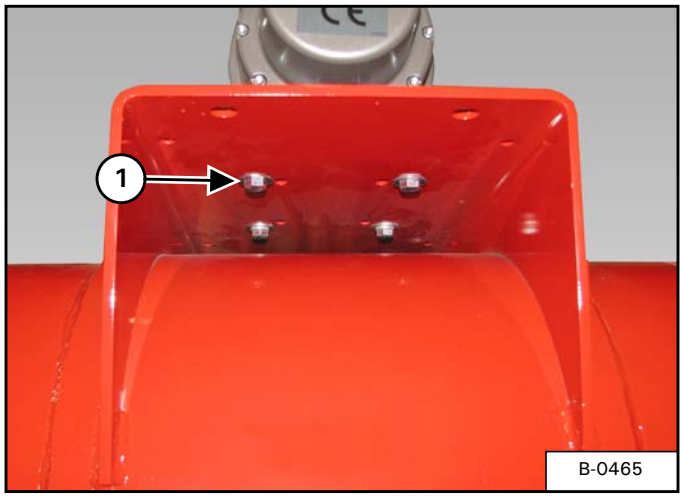
Align the winch with four holes (Item 1) **[Figure 168]** in the winch mounting plate on the top of the #1 tube.

Figure 169



Install one square head nut (Item 1) **[Figure 169]** into each foot of the winch.

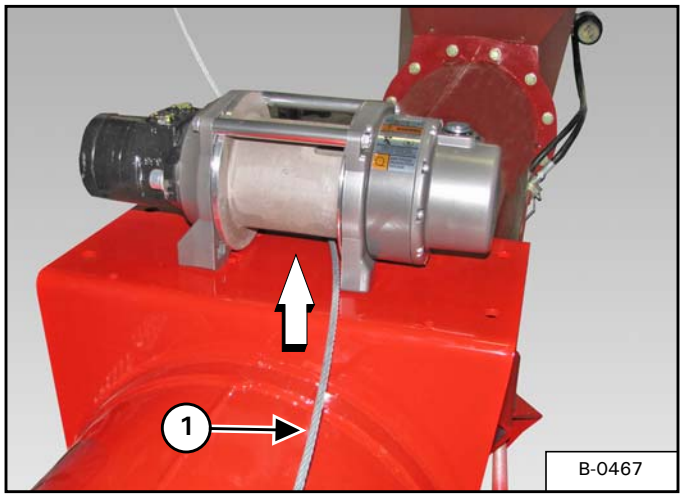
Figure 170



Install one lock washer and flat washer onto the four bolts

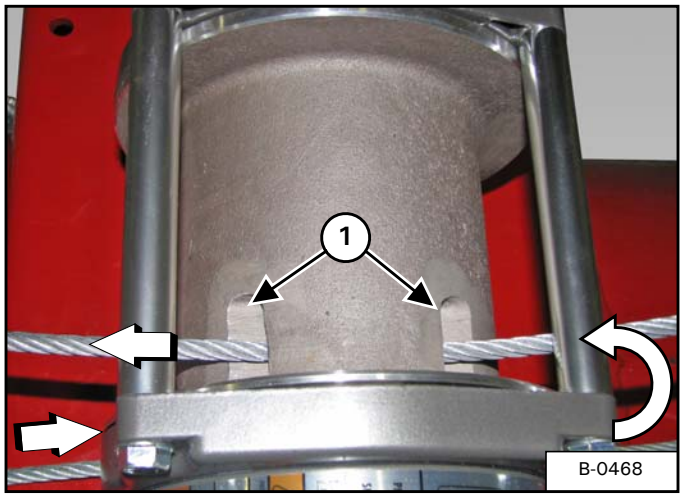
While holding down on the square nut (Item 1) **[Figure 169]**, install one bolt, lock washer and flat washer (Item 1) **[Figure 170]** up through the winch mounting plate and into the square head nut. Repeat for the remaining three bolts, lock washers and flat washers. Tighten all four bolts.

Figure 171



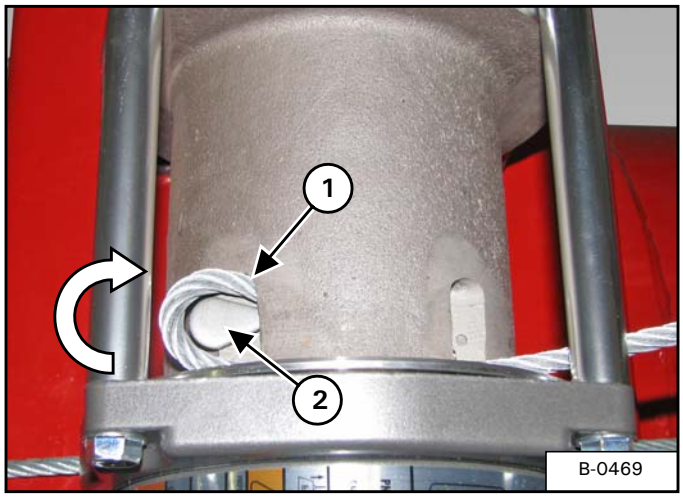
Route the winch cable (Item 1) **[Figure 171]** through the end pulley of the lift boom, down through the bottom pulley of the lift boom, across the top of the #1 tube and between the winch and winch mounting plate.

Figure 172



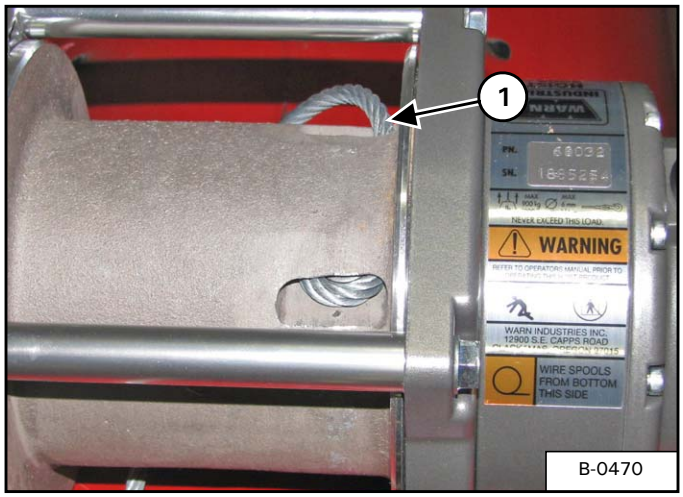
With the winch cable routed under the winch, feed the cable back through the two slots (Item 1) **[Figure 172]** of the winch.

Figure 173



Loop the tail end (Item 1) of the cable and feed back into the slot, install the wedge (Item 2) **[Figure 173]** inside the loop.

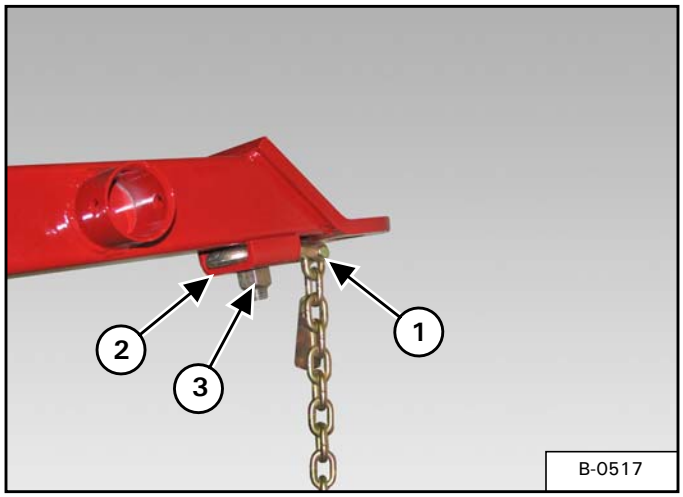
Figure 174



Pull back on the cable (Item 1) **[Figure 174]** until the loop and wedge are inside the slot.

Safety Chain Installation (1684 & 16104)

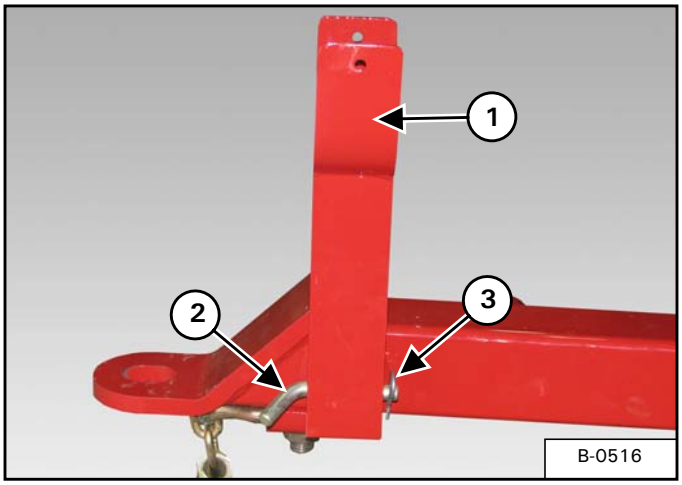
Figure 175



Install the safety chain loop (Item 1) over the bolt on the bottom side of the hitch, install the safety chain bracket (Item 2) on the bolt and over the safety chain loop. Install one 1" lock nut (Item 3) **[Figure 175]** and tighten to secure the safety chain to the hitch.

PTO Holder Installation (1684 & 16104)

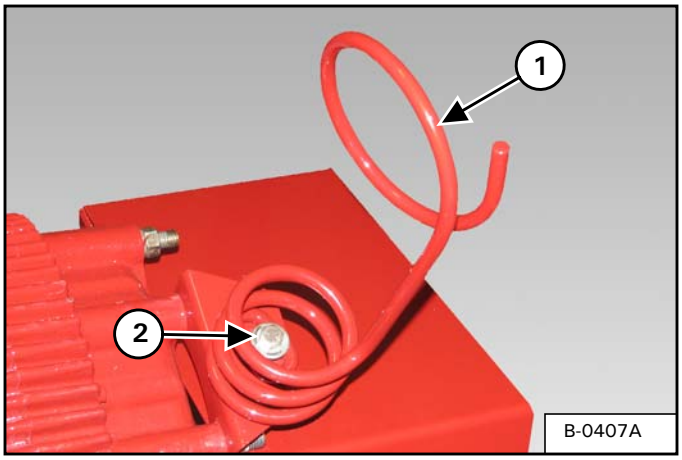
Figure 176



Install the PTO holder (Item 1) onto the left side of the side of the hitch assembly. Install pin (Item 2) through the PTO holder and hitch mount, then secure in position with the hair pin clip (Item 3) **[Figure 176]**.

Hydraulic Hose Holder Installation (1684 & 16104)

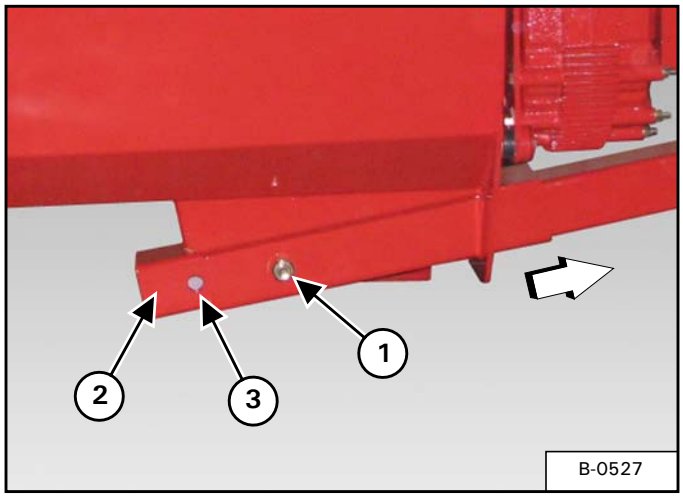
Figure 177



Install the hydraulic hose holder (Item 1) **[Figure 177]** onto the mounting bracket located on the top of the gearbox (above the hitch).

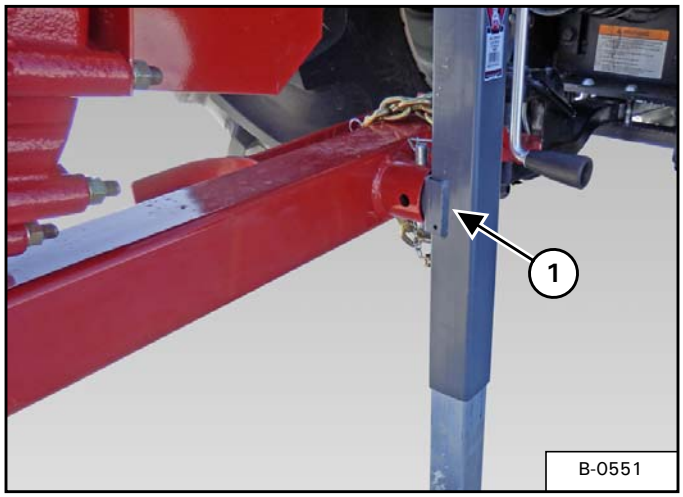
Install one 3/8" flat washer onto one 3/8" x 1" bolt (Item 2) **[Figure 177]**, install the bolt down through the storage bracket and mounting bracket. Install one 3/8" lock washer on the bolt and tighten to secure the storage bracket gearbox.

Figure 178



Remove bolt (Item 1) and lock nut. Move the hitch (Item 2) forward and align the back hole (Item 3) **[Figure 178]** of the hitch with the hitch mount. Re-install and tighten the bolt and lock nut.

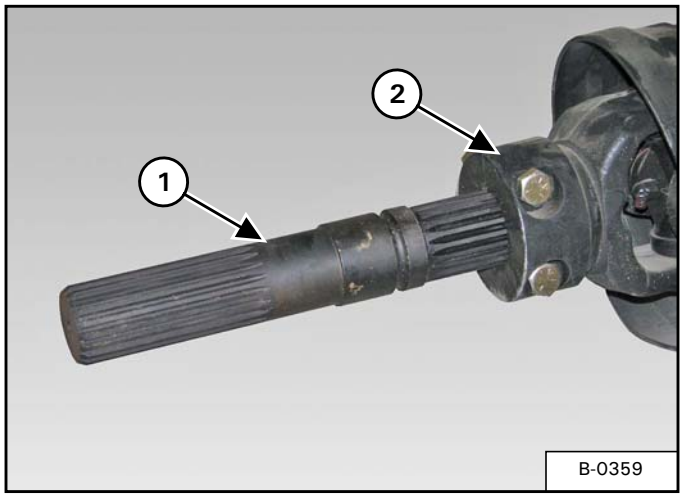
Figure 179



Align and install the jack (Item 1) **[Figure 179]** onto the hitch.

PTO Driveline Installation (1684 & 16104)

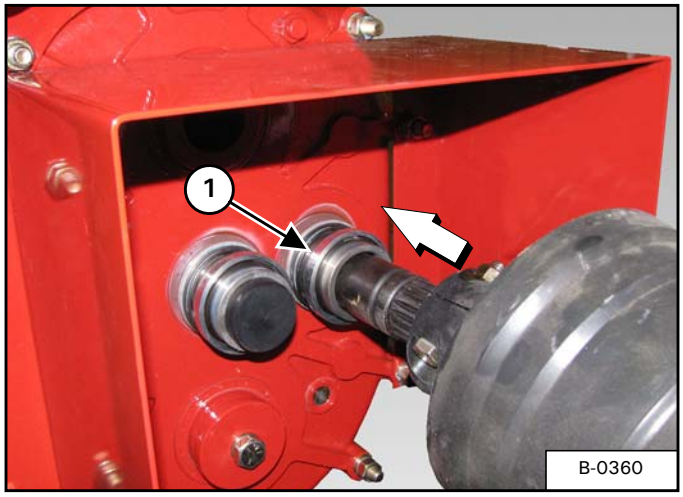
Figure 180



NOTE: Grease spline shaft before assembly.

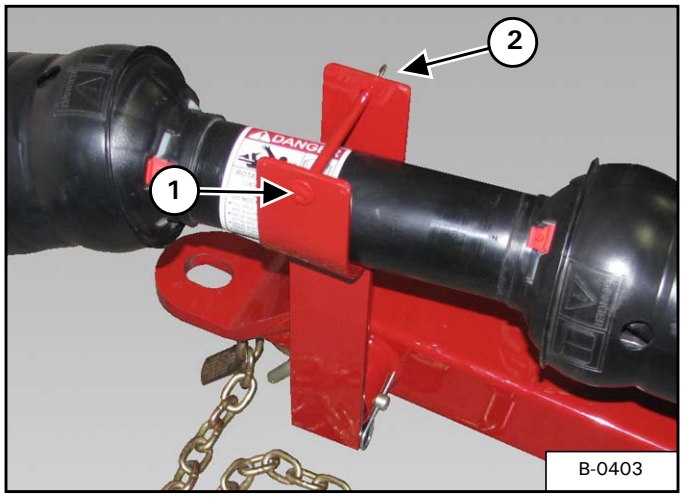
Install the shaft (Item 1) into the PTO driveline (Item 2) **[Figure 180]**. Tighten the two 1/2" bolts and lock nuts.

Figure 181



Push back on the collar (Item 1) **[Figure 181]** and install the shaft into the gearbox until the collar slides forward, locking the shaft in the gearbox.

Figure 182



Install the pin (Item 1) through the storage bracket and install hair pin clip (Item 2) **[Figure 182]**, securing the PTO driveline in the bracket.

1684 HYDRAULIC ASSEMBLY

Hydraulic Cylinder Hose Installation

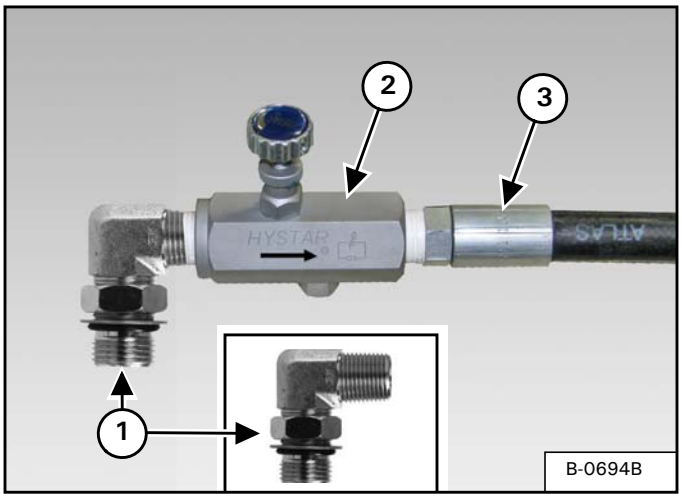
IMPORTANT

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 183



Locate one each of the following components **[Figure 183]**:

1. 08 MNPT x 08 MNPT 90° Elbow (Item 1)
2. 08 FNPT One Way Flow Control Valve (Item 2)
3. 08 x 10 MJIC x 08 MNPT Hydraulic Hose (Item 3)

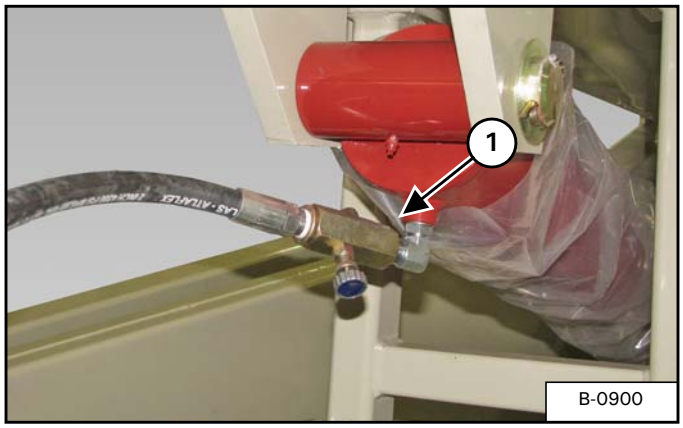
NOTE: Apply teflon tape to the male threads of each fitting.

Install the 08 MNPT x 08 MNPT 90° elbow into the flow control valve **[Figure 183]**.

Install the 08 x 00 MJIC x 08 MNPT hydraulic hose into the 08 FNPT One Way Flow Control Valve **[Figure 183]**.

NOTE: Place a collection container under the hydraulic cylinder ports before removing the plugs.

Figure 184

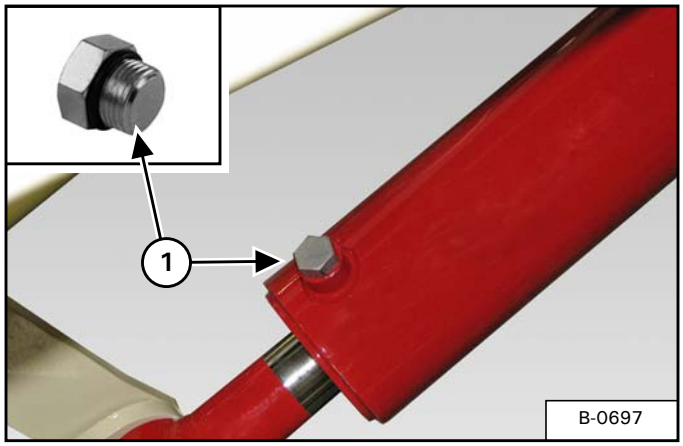


Remove the plastic plug from the base end (upper) of the hydraulic cylinder.

Install the flow control valve assembly (Item 1) **[Figure 184]** into the hydraulic cylinder.

Tighten all connections.

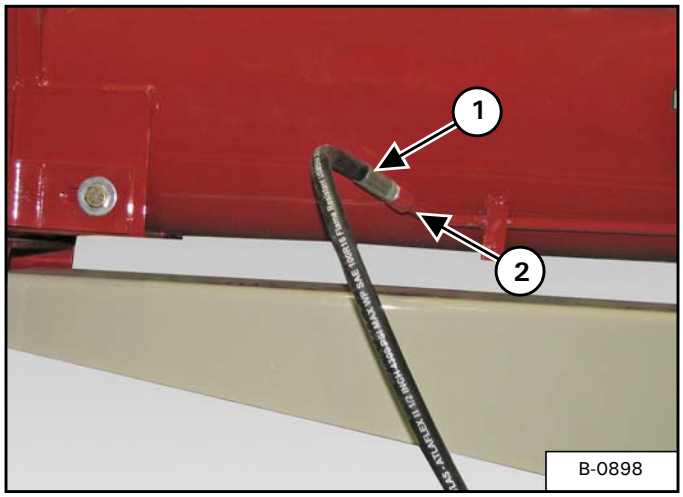
Figure 185



Remove the plastic plug from the rod end (lower) of the hydraulic cylinder.

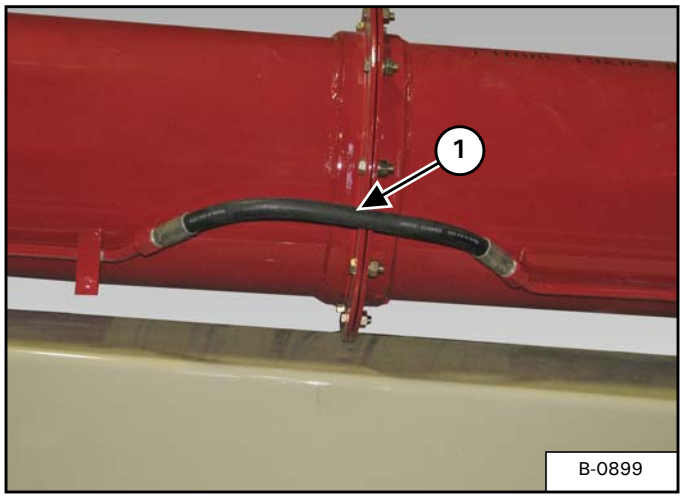
Locate and install the 08 MORB vent plug (Item 1) **[Figure 185]** into the hydraulic cylinder.

Figure 186



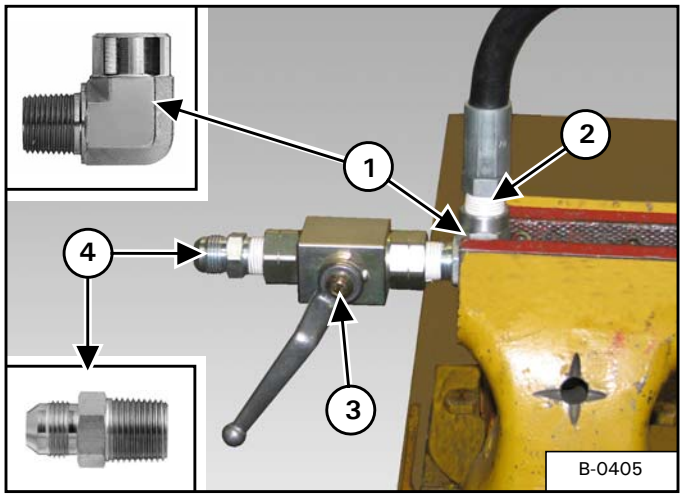
Install and tighten the 08 x 010 MJIC x 08 MNPT hydraulic hose (Item 1) into the tube (Item 2) **[Figure 186]** on the center tube section.

Figure 187



Install and tighten the 08 x 010 MJIC x 08 MNPT hydraulic hose (Item 1) **[Figure 187]** into the tubes on the center and bottom tube sections.

Figure 188



Locate one 90° elbow (Item 1) **[Figure 188]** and place in a vise.

Apply teflon tape to the threads of the hydraulic hose fitting, then install and tighten quick coupler hose (Item 2) **[Figure 188]** assembly into the 90° elbow.

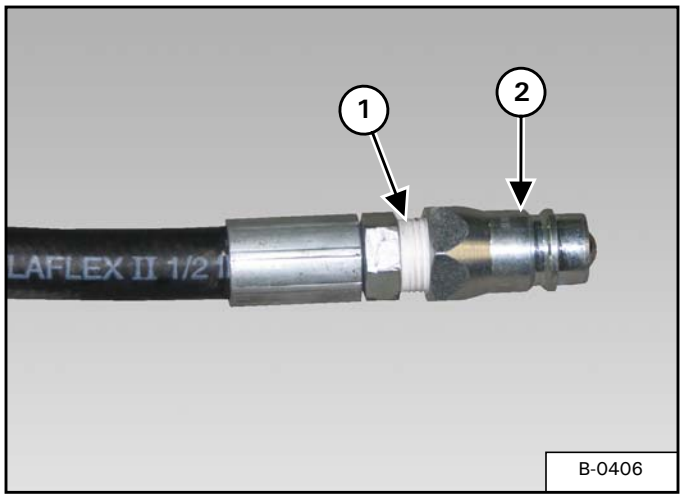
Apply teflon tape to the threads of the 90° elbow.

Locate, install and tighten the 1/2" ball valve (Item 3) onto the 90° elbow.

Locate one adapter fitting (Item 4) **[Figure 188]**.

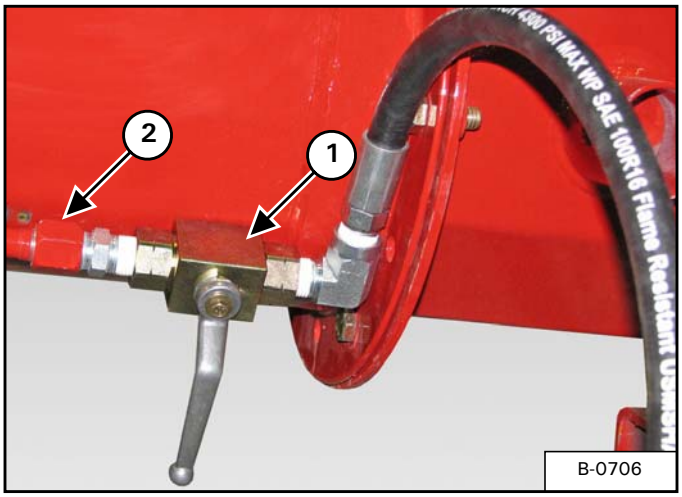
Apply teflon tape to the threads of the adapter fitting, then install and tighten adapter fitting into the 1/2" ball valve (Item 3) **[Figure 188]**.

Figure 189



Apply teflon tape to the threads (Item 1) of the hydraulic hose fitting, then install and tighten the male quick coupler fitting (Item 2) **[Figure 189]**.

Figure 190



Install hose assembly (Item 1) into the hydraulic tube (Item 2) **[Figure 190]** on the bottom tube section. Route the hose towards the hitch and install into the hydraulic hose holder.

16104 HYDRAULIC ASSEMBLY

Hydraulic Cylinder Hose Installation

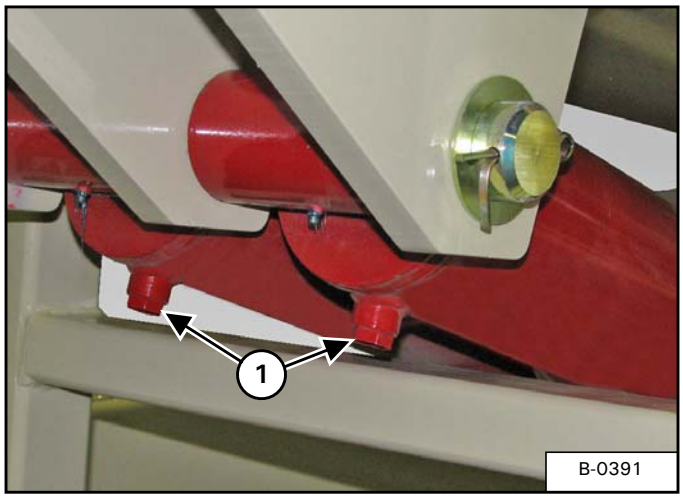
IMPORTANT

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

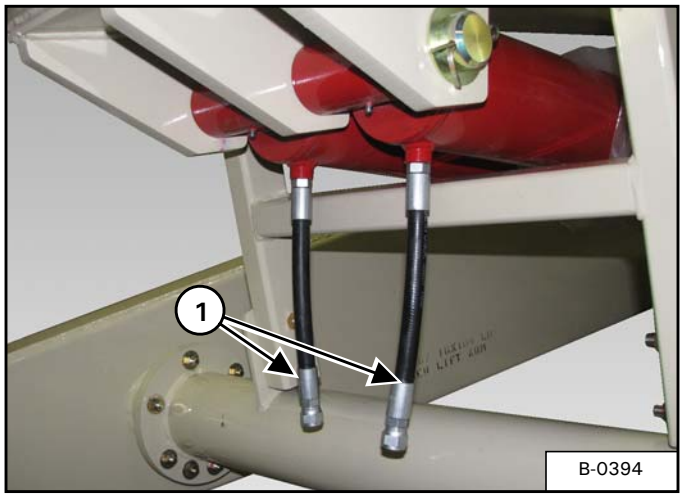
Contain and dispose of any oil leakage in an environmentally safe manner. Some regulations require that certain spills and leaks on the ground must be cleaned in a specific manner. See local, state and federal regulations for the correct disposal.

Figure 191



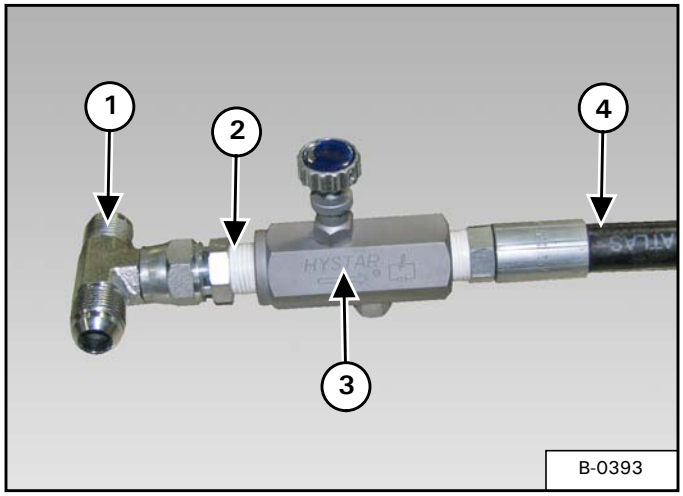
Remove the plugs (Item 1) **[Figure 191]** from the base end of the hydraulic cylinders.

Figure 192



Locate and install the two hydraulic hoses (Item 1) **[Figure 192]**.

Figure 193



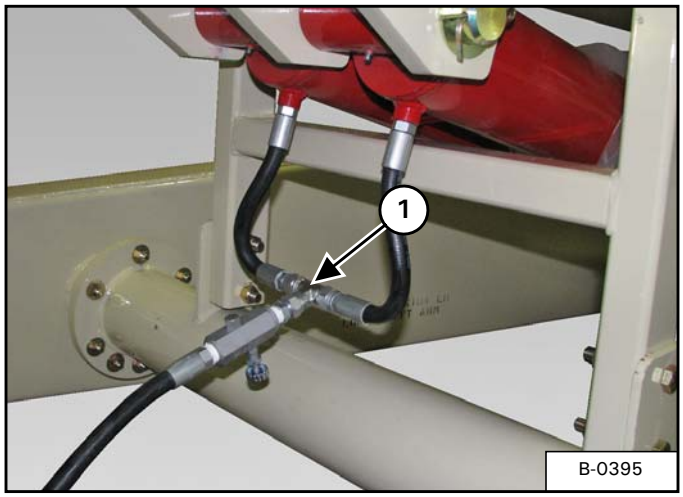
Locate one tee fitting (Item 1), adapter fitting (Item 2), flow control valve (Item 3) and hydraulic hose (Item 4) **[Figure 193]**. Apply teflon tape to the threads of the adapter fitting and hydraulic hose fitting.

Install and tighten the hose into the flow control valve.

Install and tighten the adapter fitting into the flow control valve.

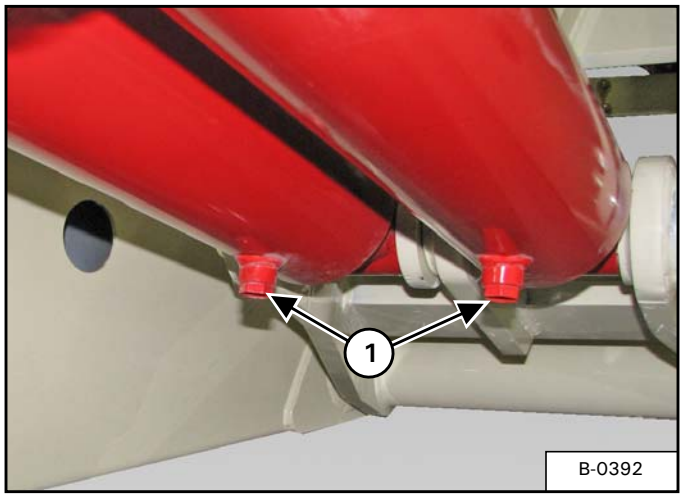
Install and tighten the tee fitting onto the adapter fitting.

Figure 194



Install and tighten the two hoses from the base ends of the cylinders onto the tee fitting (Item 1) **[Figure 194]**.

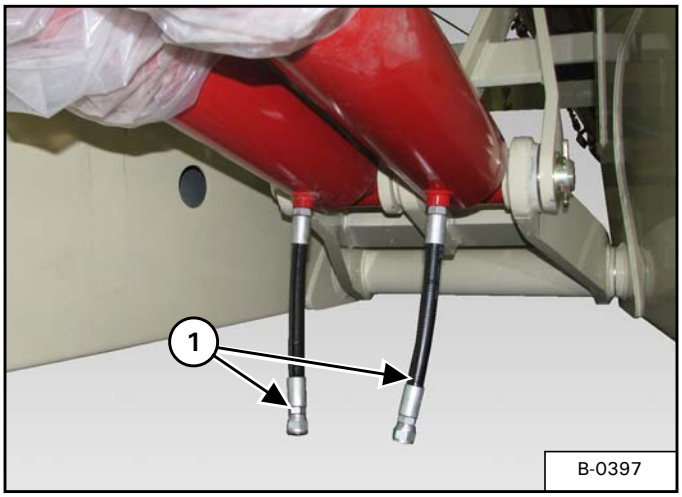
Figure 195



NOTE: Place a collection container under the hydraulic cylinder ports before removing the plugs.

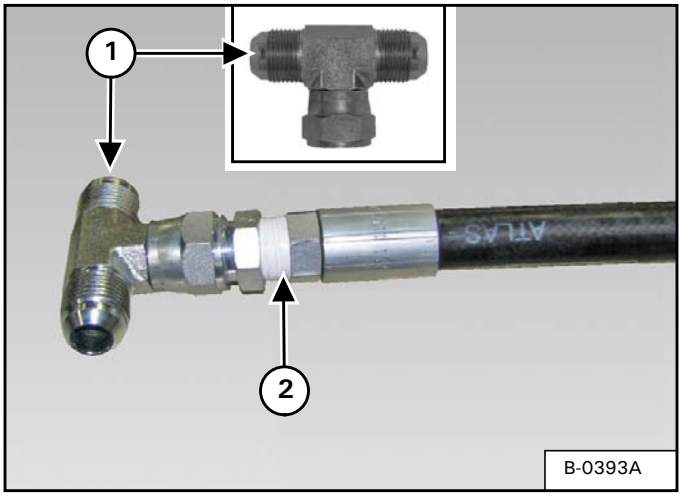
Remove the two plugs (Item 1) **[Figure 195]** from the rod end of the hydraulic cylinders.

Figure 196



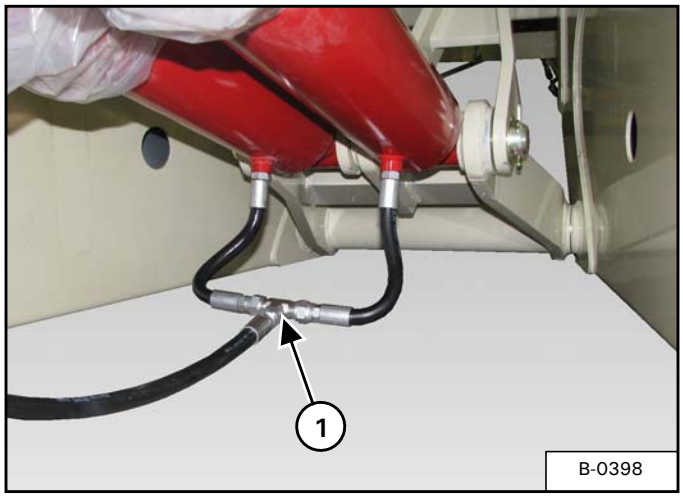
Locate and install the two hydraulic hoses (Item 1) **[Figure 196]**.

Figure 197



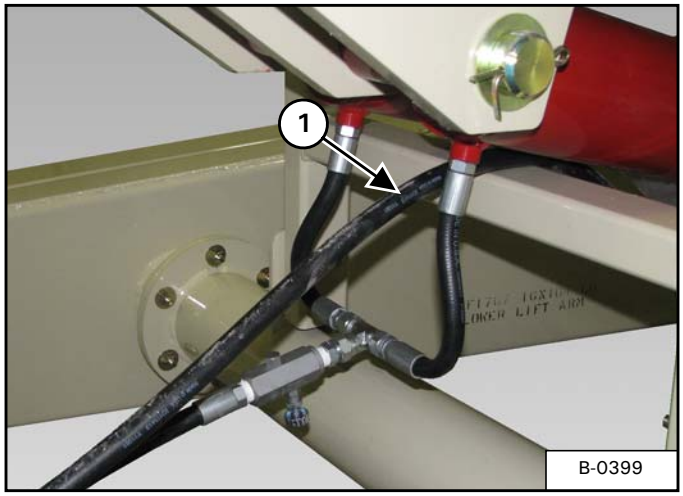
Locate one tee fitting (Item 1) and hydraulic hose (Item 2) **[Figure 197]**. Apply teflon tape to the threads of the hydraulic hose fitting. Install the hose into the tee fitting and tighten.

Figure 198



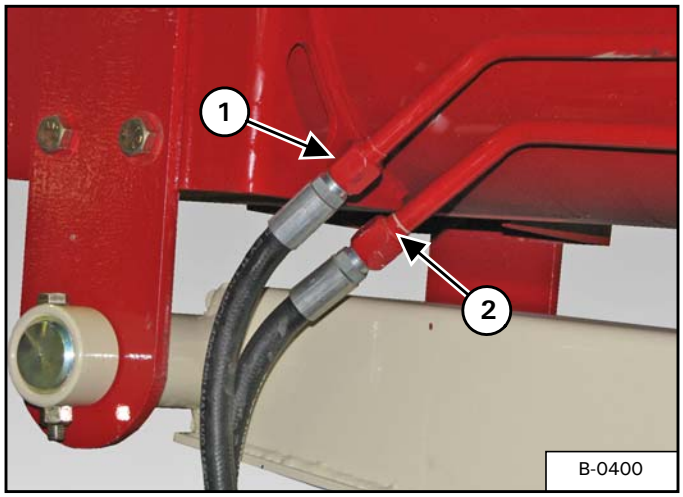
Install and tighten the two hoses from the rod ends of the cylinders onto the tee fitting (Item 1) **[Figure 198]**.

Figure 199



Route the hydraulic hose (Item 1) **[Figure 199]** over the top of one of the cylinders.

Figure 200

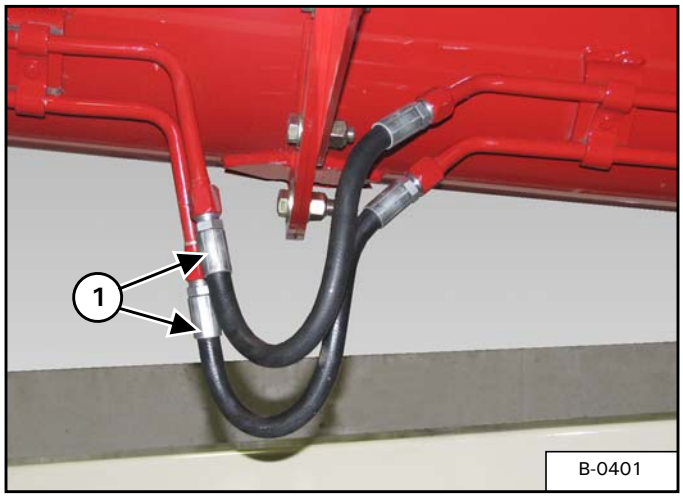


Route the rod end and base end hydraulic hoses up to the hydraulic tube on the #3 tube (on the right side, just in front of the upper lift arm pin).

Install and tighten the based end hydraulic hose to the top hydraulic tube (Item 1) **[Figure 200]**.

Install and tighten the rod end hydraulic hose to the bottom hydraulic tube (Item 2) **[Figure 200]**.

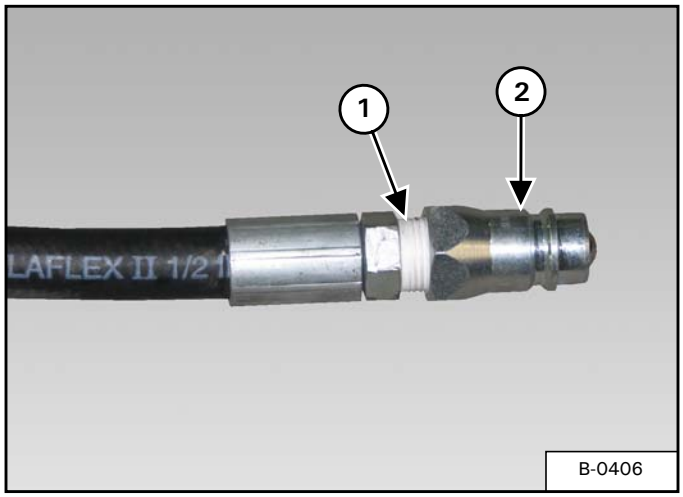
Figure 201



Locate, install and tighten the two hydraulic hoses (Item 1) **[Figure 201]** onto the hydraulic tubes. Connecting the #3 and #2 hydraulic tubes.

Repeat **[Figure 201]** procedure to connect the #2 and #1 hydraulic tubes.

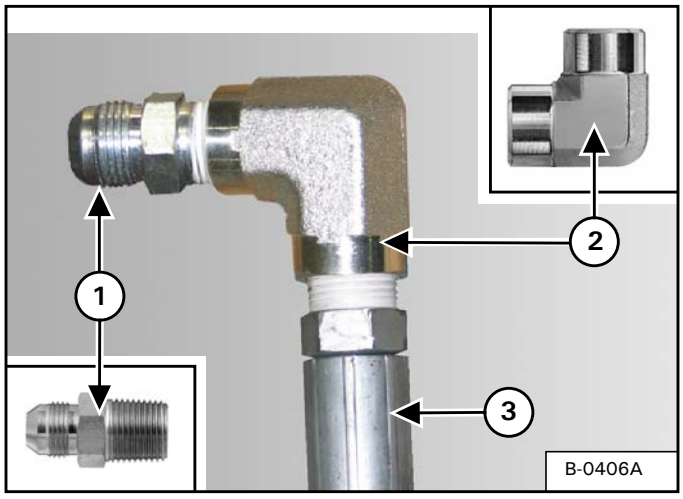
Figure 202



Apply teflon tape to the threads (Item 1) of the hydraulic hose fitting, then install and tighten the male quick coupler fitting (Item 2) **[Figure 202]**.

Repeat for second quick coupler hose.

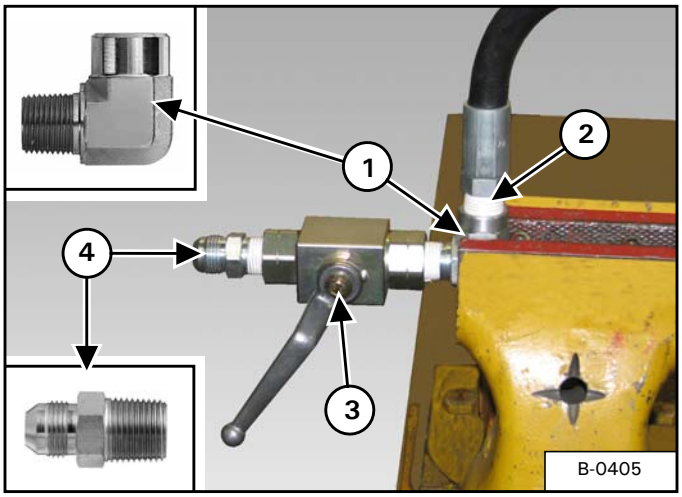
Figure 203



Locate one adapter fitting (Item 1) and 90° elbow fitting (Item 2) **[Figure 203]**.

Install one hydraulic quick coupler hose assembly (Item 3) **[Figure 203]** into the 90° elbow.

Figure 204



Locate one 90° elbow (Item 1) **[Figure 204]** and place in a vise.

Apply teflon tape to the threads (Item 1) of the hydraulic hose fitting, then install and tighten quick coupler hose assembly into the 90° elbow (Item 2) **[Figure 204]**.

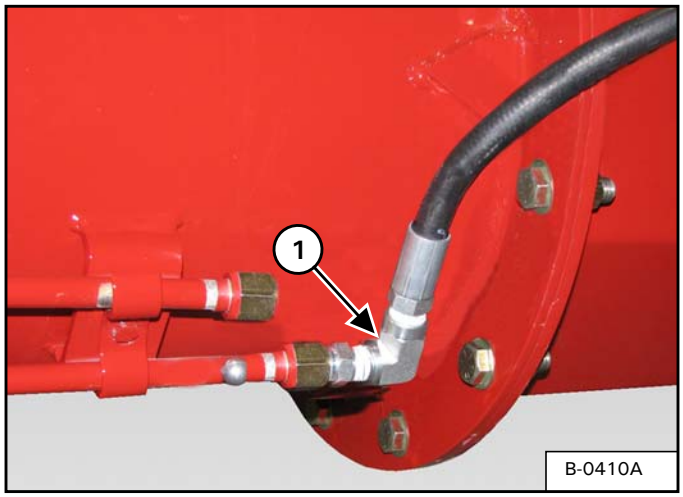
Apply teflon tape to the threads of the 90° elbow.

Locate, install and tighten the 1/2" ball valve (Item 3) onto the 90° elbow.

Locate one adapter fitting (Item 4) **[Figure 204]**.

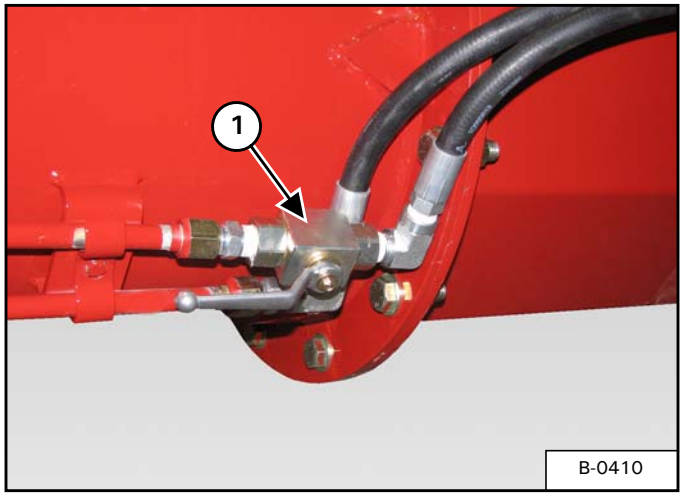
Apply teflon tape to the threads of the adapter fitting, then install and tighten adapter fitting into the 1/2" ball valve (Item 3) **[Figure 204]**.

Figure 205



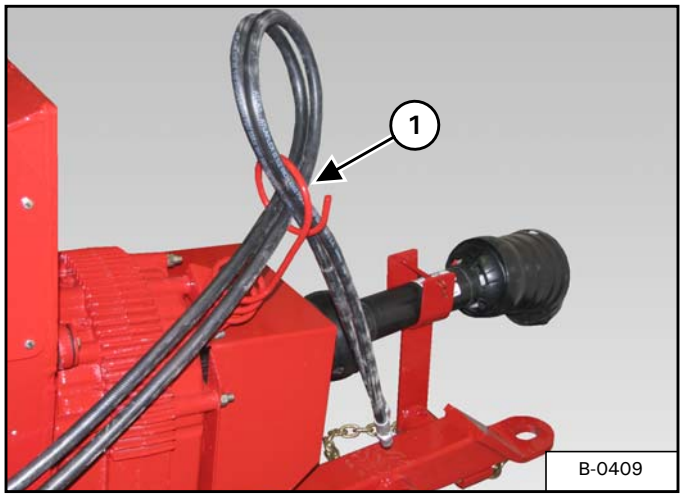
Install hose assembly (Item 1) **[Figure 205]** into the bottom hydraulic tube on the #1 tube.

Figure 206



Install hose / valve assembly (Item 1) **[Figure 206]** into the top hydraulic tube on the #1 tube.

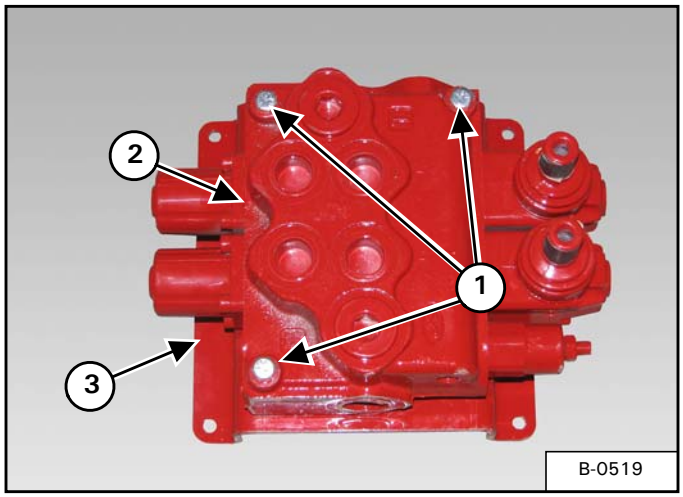
Figure 207



Route the quick coupler hoses along the input box and install into the storage bracket (Item 1) **[Figure 207]**.

Hydraulic Control Valve Assembly And Installation (1684 & 16104)

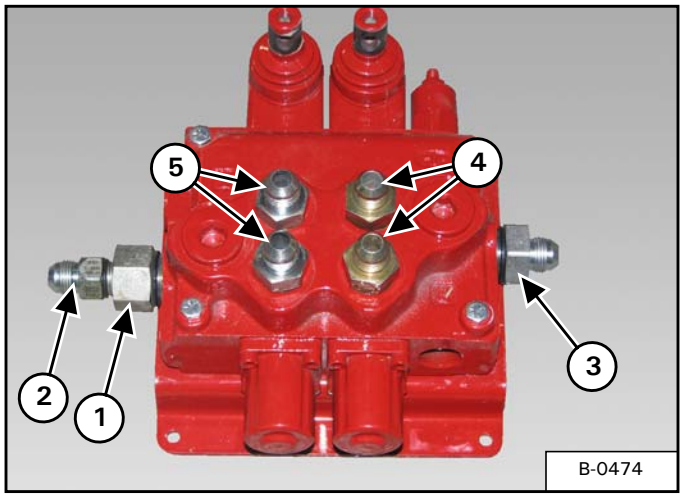
Figure 208



Using three bolts (Item 1) and lock nuts, install the valve block (Item 2) to the mounting bracket (Item 3) **[Figure 208]**. Tighten the three bolts and lock nuts.

Remove plastic plugs from the valve block.

Figure 209



Install fitting (Item 1) into the valve block. Install fitting (Item 2) **[Figure 209]**.

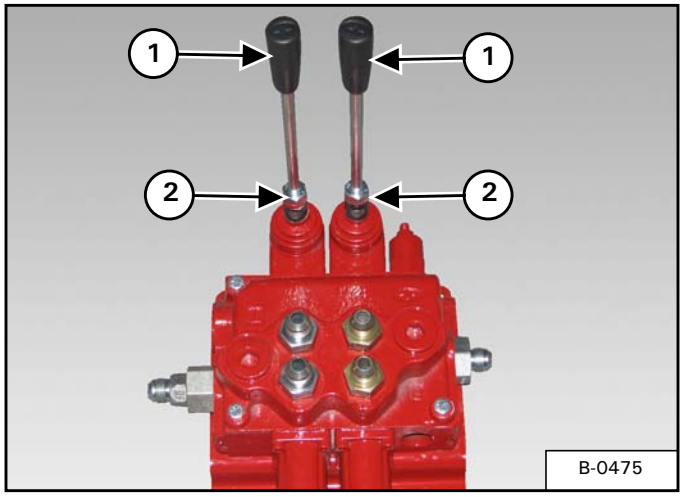
Install fitting (Item 3) **[Figure 209]** into the valve block.

Install the two restrictor fittings (Item 4) **[Figure 209]** into the valve block.

Install the two fittings (Item 5) **[Figure 209]** into the valve block.

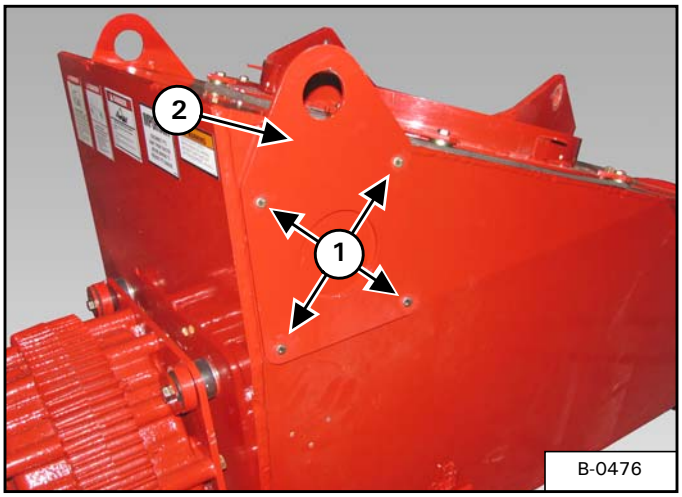
Tighten all fittings.

Figure 210



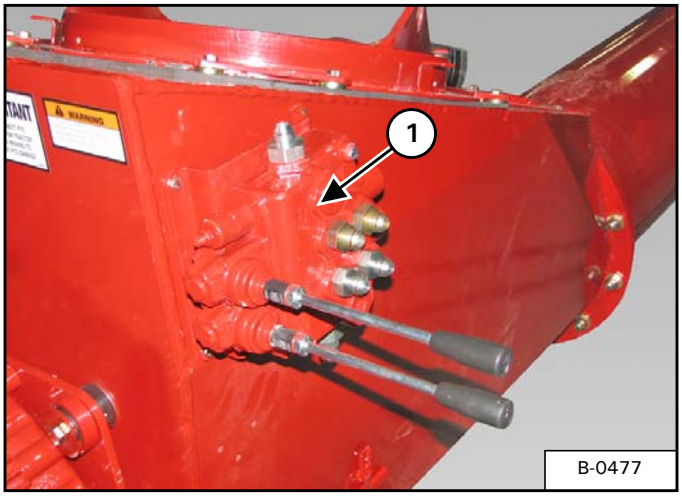
Install the two handles (Item 1) into the control valve. Tighten the two jam nuts (Item 2) **[Figure 210]** to secure the handles to the control valve.

Figure 211



Remove the four bolts (Item 1) and lifting bracket (Item 2) **[Figure 211]** (both sides).

Figure 212



Install the valve block assembly (Item 1) **[Figure 212]** onto the side of the intake auger. Use the four bolts from the lifting bracket.

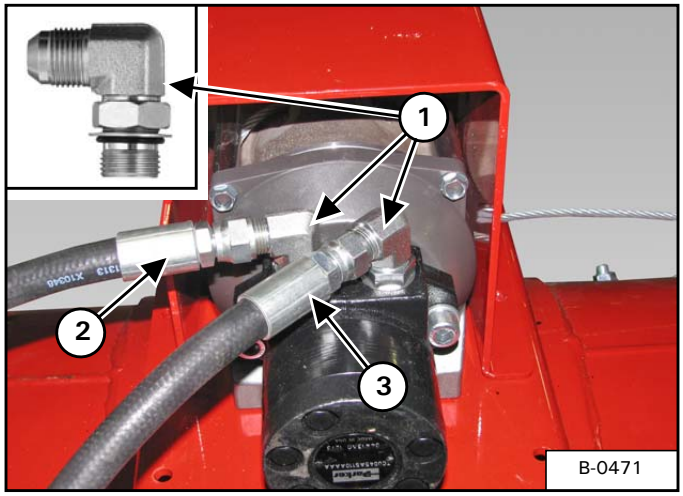
IMPORTANT

The valve block assembly (Item 1) [Figure 212] may be installed on either side of the input box.

The manual depicts installation on the side opposite the intake auger.

Hydraulic Winch Hose Installation And Routing (1684 & 16104)

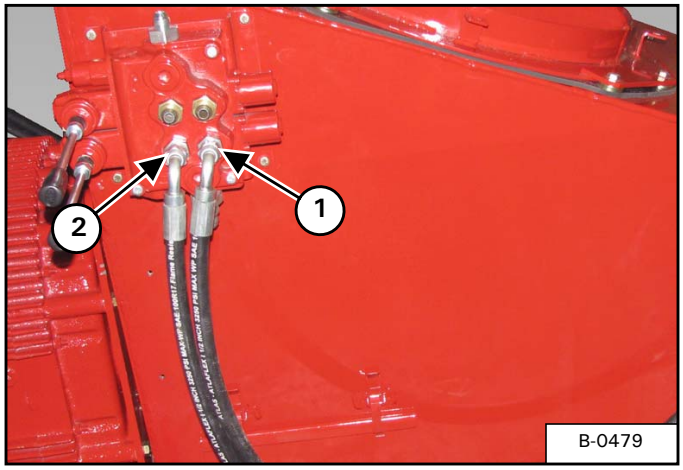
Figure 213



Install and tighten two 90° elbow fittings (Item 1) **[Figure 213]** into the winch.

Install and tighten the hydraulic hoses (Items 2 & 3) **[Figure 213]** onto the 90° elbow fittings.

Figure 214

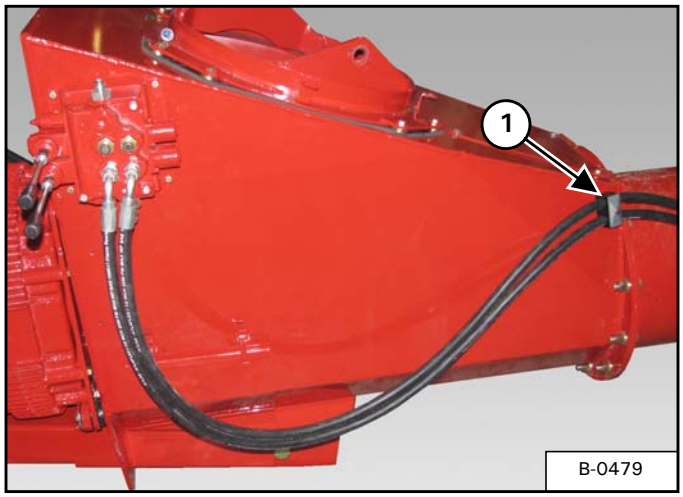


Route the two winch hydraulic hoses towards the input box **[Figure 214]**.

Install and tighten winch hydraulic hose (Item 2) **[Figure 213]** onto the bottom right fitting (Item 1) **[Figure 214]** on the valve block.

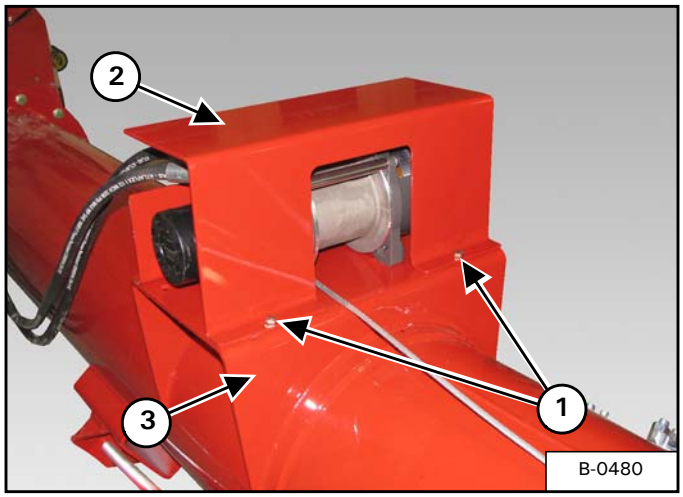
Install and tighten winch hydraulic hose (Item 3) **[Figure 213]** onto the bottom left fitting (Item 2) **[Figure 214]** on the valve block.

Figure 215



Place the two winch hydraulic hoses into a clamp (Item 1) **[Figure 215]** and install the clamp to the side of the input box.

Figure 216

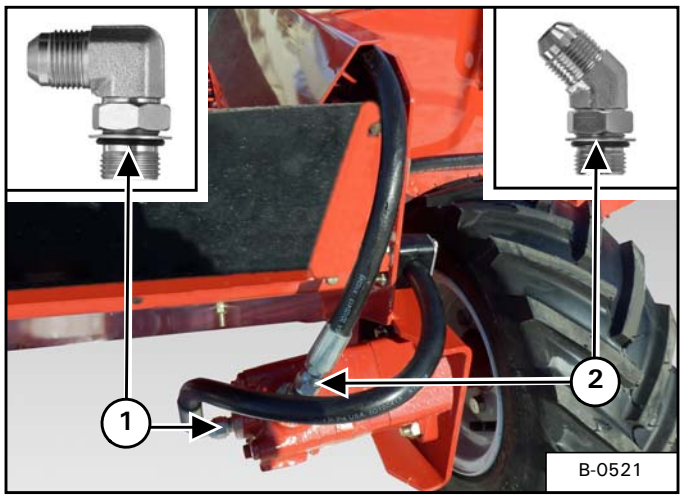


Using four bolts (Item 1) (two each side) and lock nuts, install the winch shield (Item 2) onto the winch mounting plate (Item 3) **[Figure 216]**.

Tighten the four bolts and lock nuts to secure the winch shield to the winch mounting plate.

Hydraulic Motor Hose Installation And Routing (1684 & 16104)

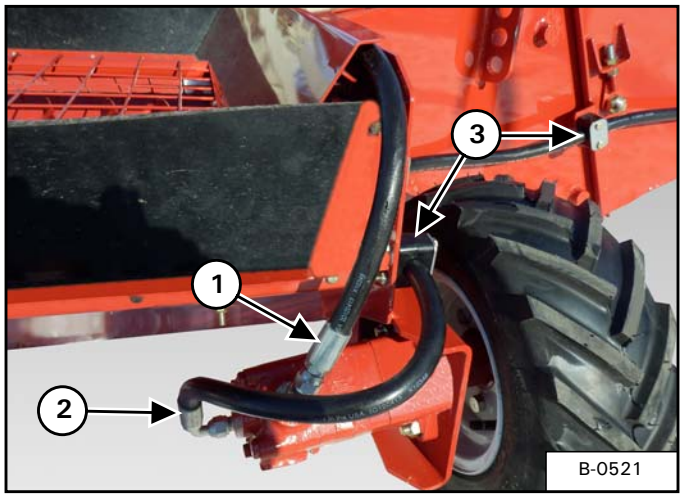
Figure 217



Install one 90° elbow fitting (Item 1) **[Figure 217]** into the bottom port of the wheel hydraulic motor (both sides).

Install one 45° elbow fitting (Item 2) **[Figure 217]** into the top port of the wheel hydraulic motor (both sides).

Figure 218

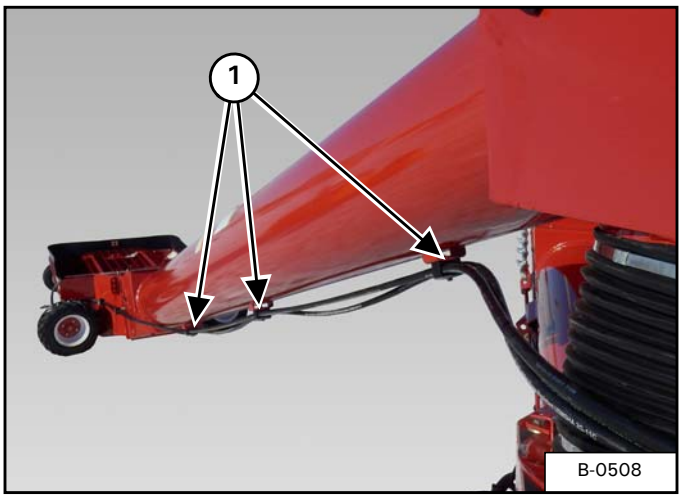


Route hydraulic hose (Item 1) **[Figure 218]** under the shield on the hopper. Install the hose onto the 45° fitting on both wheel hydraulic motors.

Install hydraulic hose (Item 2) **[Figure 218]** onto the 90° fitting on wheel hydraulic motor (both sides).

Place two clamps (Item 3) around hydraulic hose (Item 2) **[Figure 218]**, using 5/16" x 2-1/4" bolts, install the two clamps onto the hopper (both sides) and intake auger.

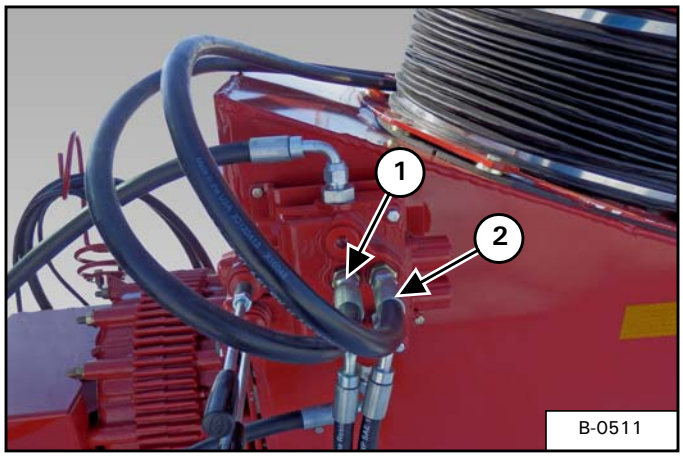
Figure 219



Route wheel hydraulic hoses under the intake auger towards the hitch **[Figure 219]**.

Place three clamps (Item 1) **[Figure 219]** around hydraulic hoses, using 5/16" x 2-1/4" bolts, install the three clamps onto the brackets on the bottom of the intake auger.

Figure 220



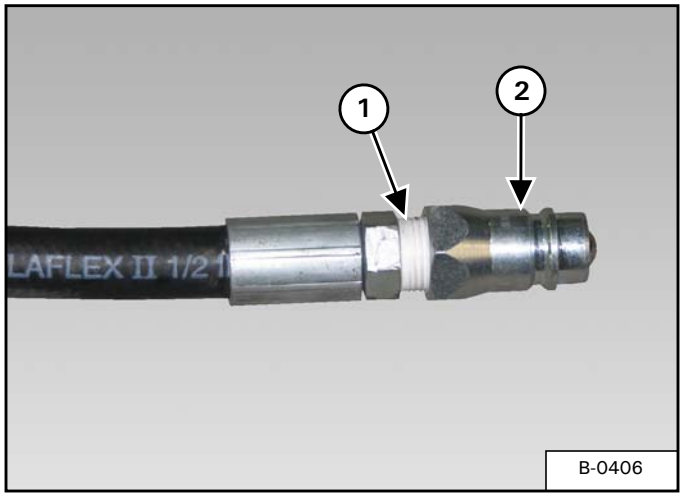
Route the two wheel hydraulic hoses around the base of the intake auger and towards the valve block **[Figure 220]**.

Install the left wheel motor hydraulic hose (Item 1) **[Figure 220]** onto the upper left fitting on the valve block.

Install the right wheel motor hydraulic hose (Item 2) **[Figure 220]** onto the upper right fitting on the valve block.

Control Valve Return And Supply Hose Installation (1684 & 16104)

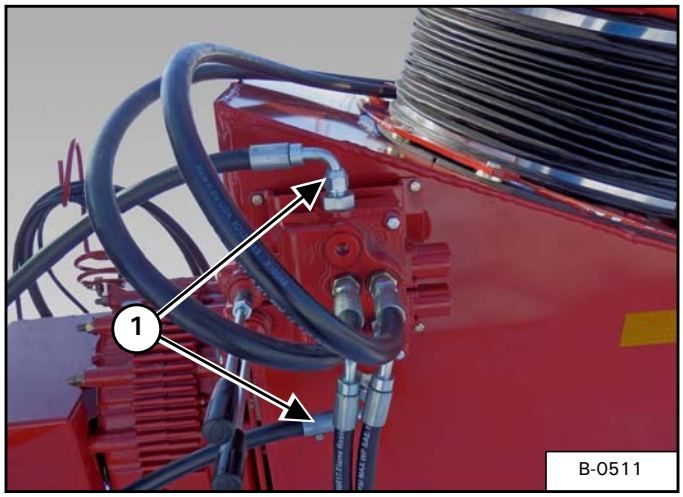
Figure 221



Apply teflon tape to the threads (Item 1) of the hydraulic hose fitting, then install and tighten the male quick coupler fitting (Item 2) **[Figure 221]**.

Repeat for second quick coupler hose.

Figure 222



Install the two quick coupler hoses (Item 1) **[Figure 222]** to the top and bottom fittings on the valve block.

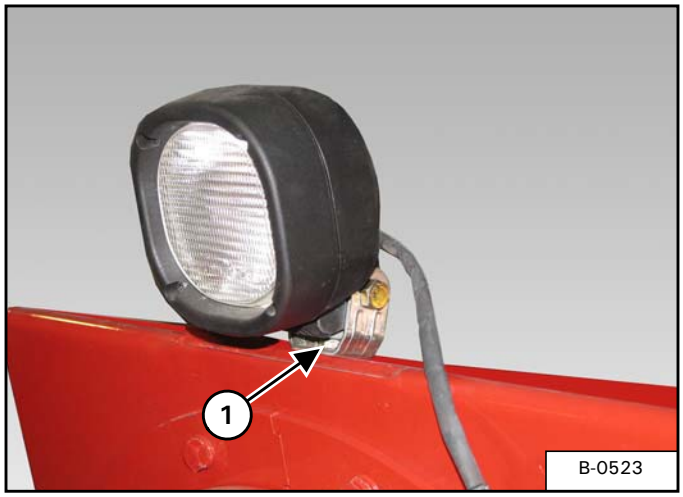
Place the two quick coupler hoses into the storage bracket.

NOTE: After all required components have been installed onto the input box, install bolts into all remaining open holes of the input box.

1684 & 16104 ELECTRICAL ASSEMBLY

Intake Auger Work Light Installation

Figure 223

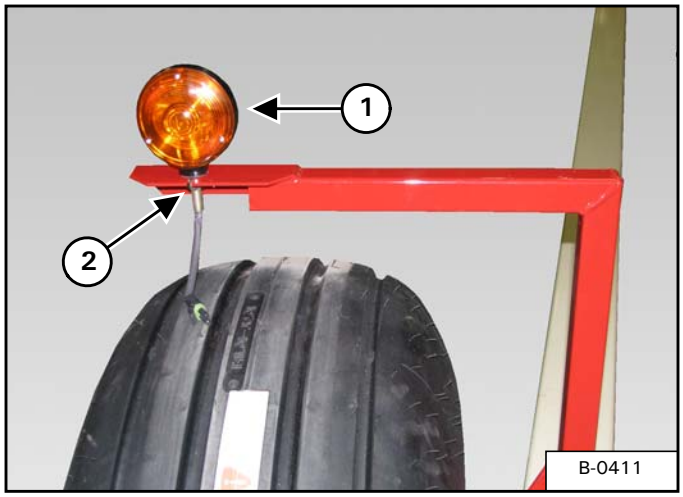


Using one bolt (Item 1) **[Figure 223]** and lock nut (included with light), install the work light on top of the intake auger.

Connect the wire harness to the work light and route down towards the front of the input box.

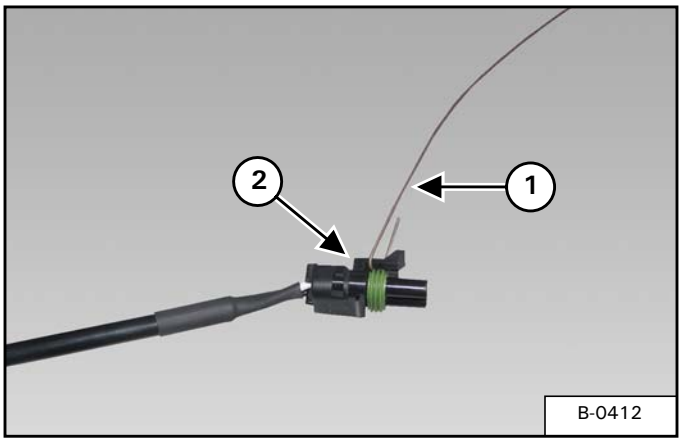
Amber Light Installation And Harness Routing

Figure 224



Install the amber light assembly (Item 1) into the blinker mount. Hold the amber light parallel with the blinker mount and tighten nut (Item 2) **[Figure 224]** (both sides).

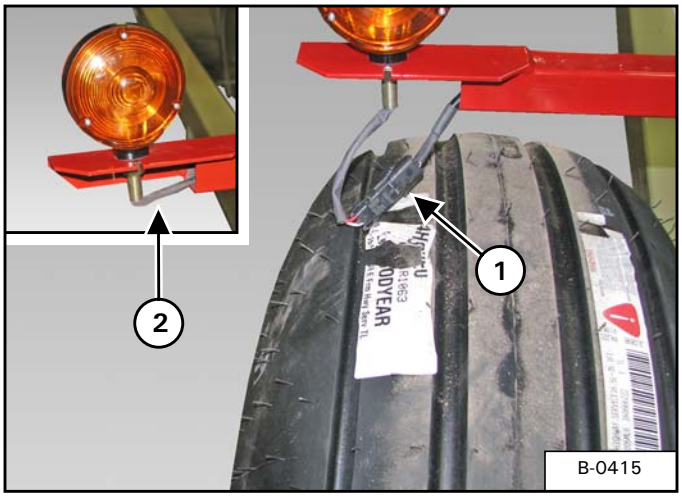
Figure 225



Install a 48 in. (1219 mm) length of wire (Item 1) to the male connector (Item 2) **[Figure 225]** on the extension harness.

Repeat **[Figure 225]** procedure for second amber light extension harness.

Figure 226



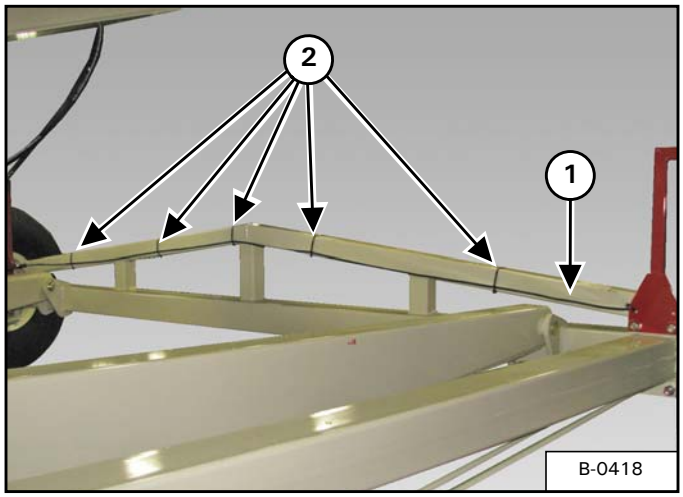
Feed the wire inside the blinker mount until the wire exits the blinker mount by the axle. Pull the wire while carefully feeding the extension harness into the blinker mount.

Connect the extension harness (Item 1) **[Figure 226]** to the amber light. Pull on the extension harness while carefully feeding the harness connection inside the blinker mount.

Leave a small amount of slack (Item 2) **[Figure 226]** where the wire harness enters the blinker mount.

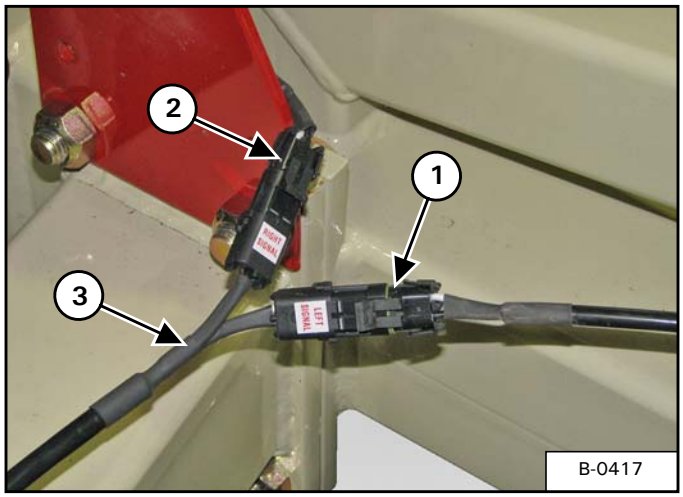
Repeat **[Figure 226]** procedure for second amber light extension harness.

Figure 227



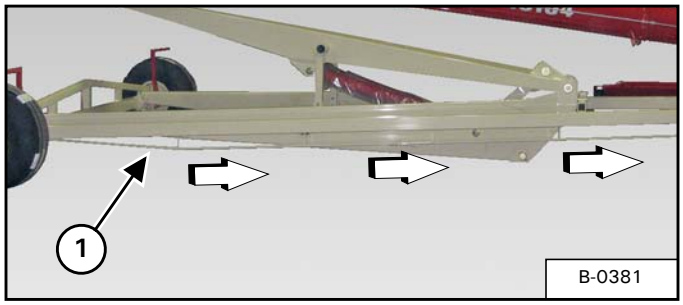
Route the left amber light extension harness (Item 1) along the axle (towards the right side) and secure with cable ties (Item 2) **[Figure 227]**.

Figure 228



Connect the left amber light extension harness (Item 1) and right amber light extension harness (Item 2) to the extension cable (Item 3) **[Figure 228]**.

Figure 229

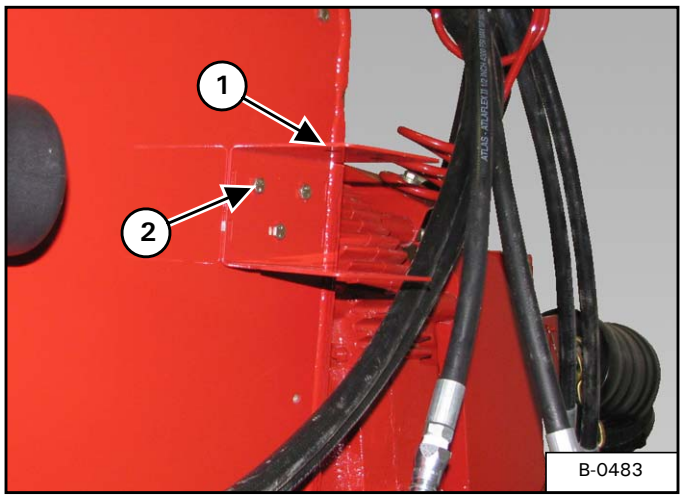


Route the extension harness along the bottom of the right undercarriage arm (Item 1) **[Figure 229]**.

Continue to route the extension harness along the hydraulic tubes of the #1 tube (towards the input box). Secure with cable ties.

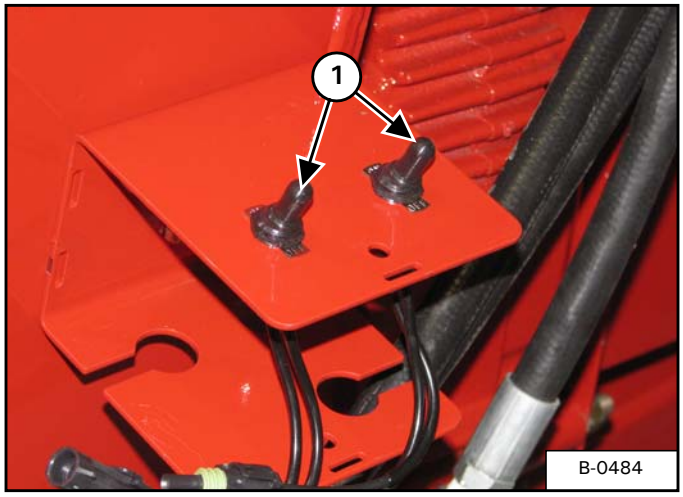
Light Switch Box Installation

Figure 230



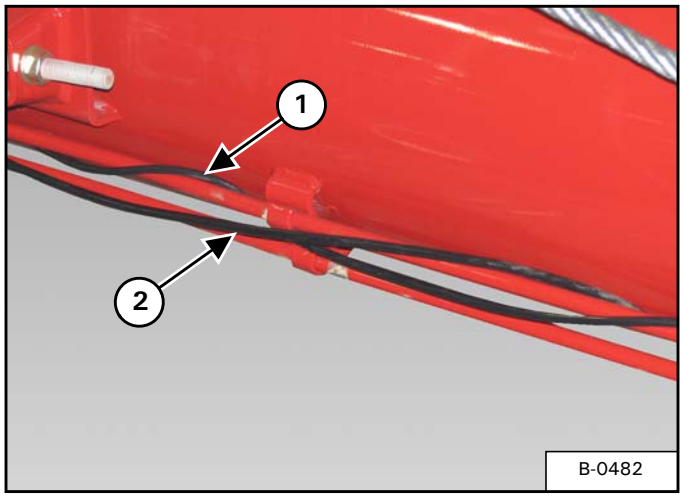
Align the light switch mounting bracket (Item 1) with the holes in the input box. Install three bolts (Item 2) **[Figure 230]** and tighten to secure the light switch mounting bracket to the intake auger.

Figure 231



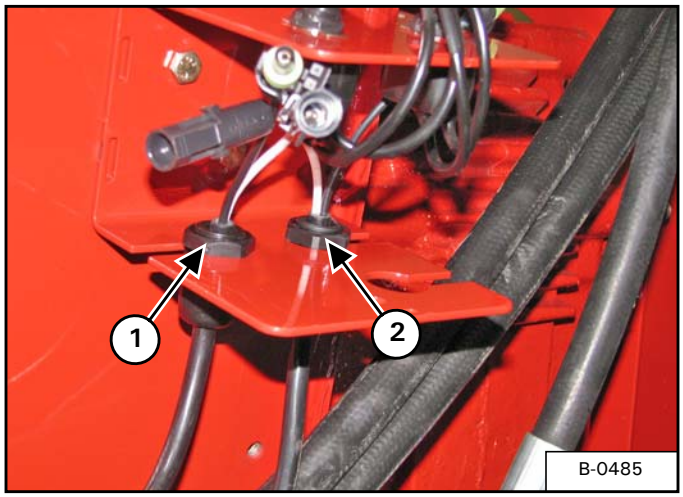
Install the two light switches (Item 1) **[Figure 231]**.

Figure 232



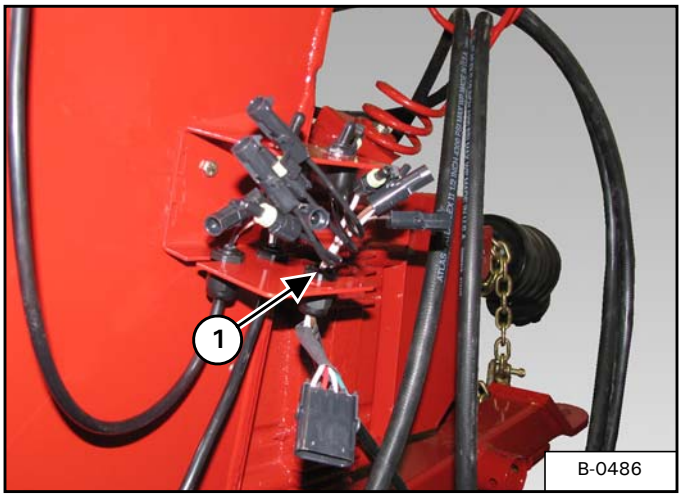
Wrap the discharge spout work light harness (Item 1) and the amber lights extension harness (Item 2) **[Figure 232]** around the hydraulic tubes on the #1 tube. Route the harnesses towards the input box.

Figure 233



Install the discharge spout work light harness (Item 1) and intake auger harness (Item 2) **[Figure 233]** into the light switch mounting bracket.

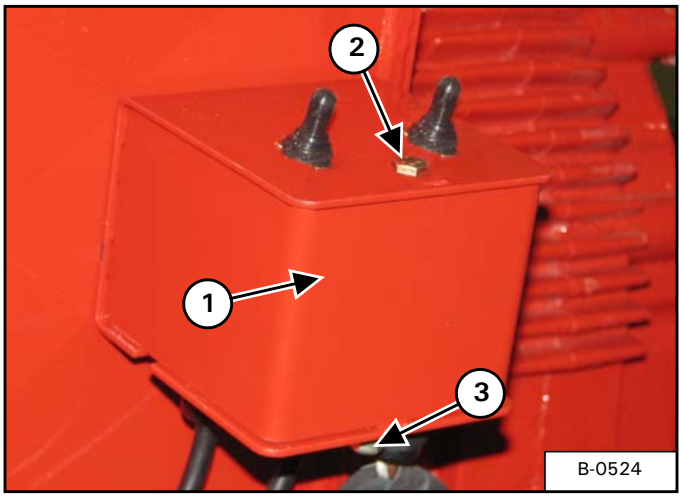
Figure 234



Install the main wire harness (Item 1) **[Figure 234]** into the light switch mounting bracket.

See ELECTRICAL DIAGRAM on page 181 to connect the wire harnesses.

Figure 235



Install the light switch cover (Item 1) **[Figure 235]**.

Install a bolt (Item 2) down through the mounting bracket and install a lock nut (Item 3) **[Figure 235]** on the bolt.

Tighten bolt and lock nut to secure the cover to the bracket.

OPERATION

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:

⚠ 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.**

⚠ WARNING

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.**

4. Lubricate the equipment per the schedule outline in the Maintenance Section. (See "SERVICE SCHEDULE" on page 122.)
5. Check the auger hitch for damaged, loose or missing parts. Repair as needed before operation.
6. Check tire pressure. Inflate per manufacturer's specification.
7. Check wheel bolts for tightness. Torque as required. (See "16104 AXLE" on page 130.)
8. Check the augers. Remove any material build-up or debris that has become entangled.
9. Check that all bearings turn freely. Replace as required.
10. Make sure that all guards and shields are in place, secured and functioning as designed.

⚠ WARNING

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.

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

NOTE: Do not operate with hydraulic leaks.

12. Check gearbox oil level. Fill as required. (See "LUBRICATION" on page 123.)
13. Verify that the tractor's drawbar is adjusted correctly for use with the auger. (See "Drawbar Adjustment" on page 101.)
14. Check that the PTO drivelines telescope easily and turn freely.
15. 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:

⚠ 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.**

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 123.)

8. Check the augers. Remove any debris.

Tractor Requirements

⚠ WARNING

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

1684 Backsaver Auger

The 1684 Backsaver Auger has a total weight of approximately 11,000 lb (4994 kg) and a hitch weight of about 2460 lb (1115 kg). The tractor / tow vehicle must be rated for this amount of weight to transport the auger.

The 1684 Backsaver Auger will require a MFWD (Mechanical Front Wheel Drive) tractor (minimum 150 hp), three auxiliary hydraulic functions, Category IV rated drawbar and a 7-Pin electrical connection.

16104 Backsaver Auger

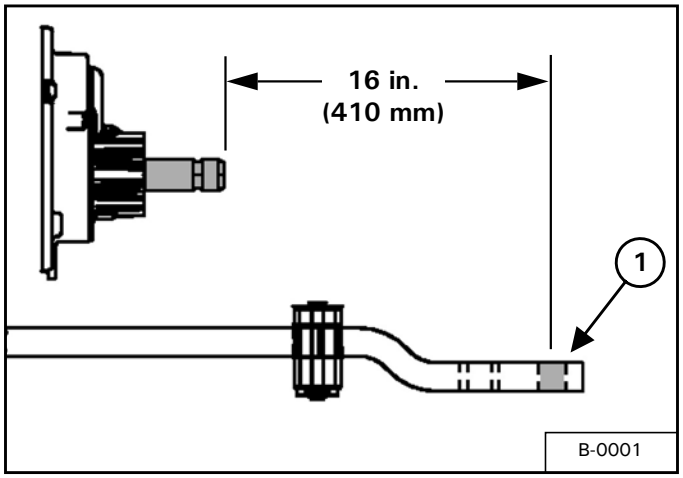
The 16104 Backsaver Auger has a total weight of approximately 13500 lb (6120 kg) and a hitch weight of about 2460 lb (1115 kg). The tractor / tow vehicle must be rated for this amount of weight to transport the auger.

The 16104 Backsaver Auger will require a MFWD (Mechanical Front Wheel Drive) tractor (minimum 275 hp), three auxiliary hydraulic functions, Category IV rated drawbar and a 7-Pin electrical connection.

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

Drawbar Adjustment

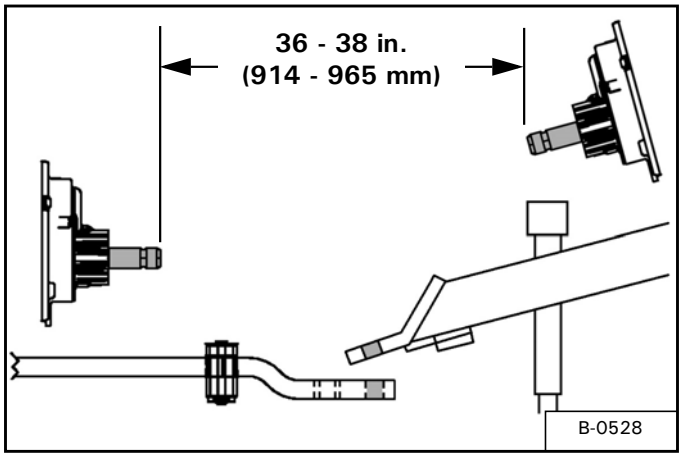
Figure 236



Adjust the tractor's drawbar in / out, until the center of the hitch pin hole (Item 1) **[Figure 236]** 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 237



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 237]**.

For checking PTO driveline see "PTO Driveline" on page 105.

Entering And Leaving The Operator's Position

IMPORTANT

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

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.

NOTE: The engine will need to remain running and the PTO engaged for auger operation.

INITIAL SET-UP

Connecting The Backsaver Auger To The Tractor

Always inspect the tractor's drawbar and auger hitch before connecting. See the tractor's owner's manual.

Verify that the tractor's drawbar is adjusted correctly for use with the auger. (See "Drawbar Adjustment" on page 101.)

Enter the operator's position. (See "Entering The Operator's Position" on page 102.)

Move the tractor into position in front of the 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.

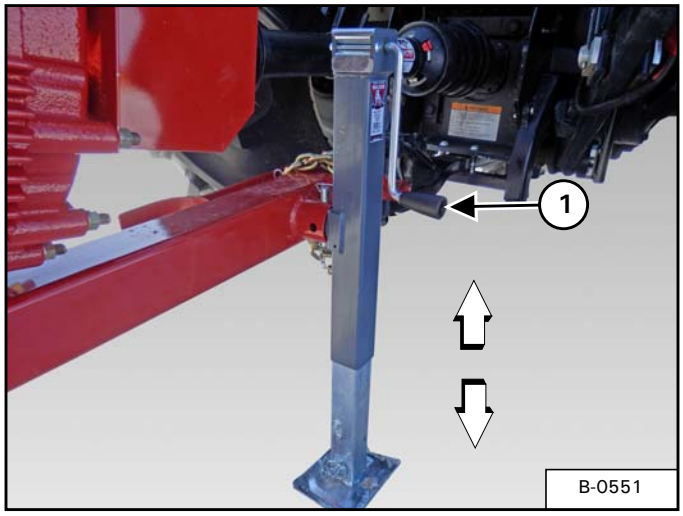
Move the tractor backwards, aligning the drawbar with the auger hitch.

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

If the auger hitch needs to be adjusted, stop the tractor when drawbar is just in front of the auger hitch.

Leave the operator's position. (See "Leaving The Operator's Position" on page 102.)

Figure 238



Turn the handle (Item 1) **[Figure 238]** 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 auger hitch pin hole(s).

Stop the tractor and leave operator's position.

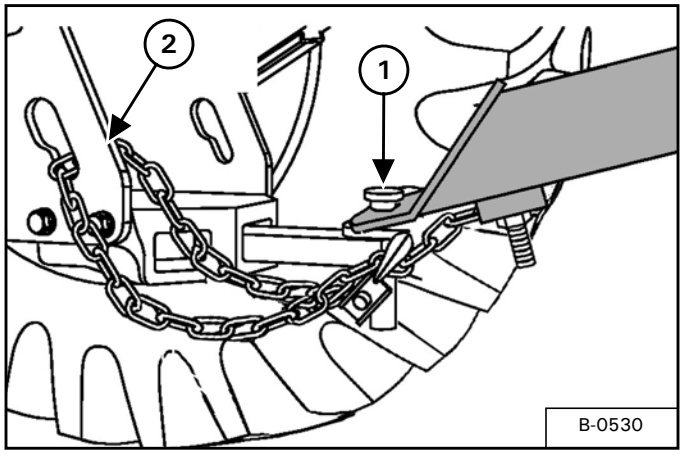
⚠ WARNING

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 239



Install the hitch pin (Item 1) **[Figure 239]** and retaining pin to securely fasten the auger hitch to the tractor drawbar.

Attach the safety chain (Item 2) **[Figure 239]** around the frame of the tractor.

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 102.)

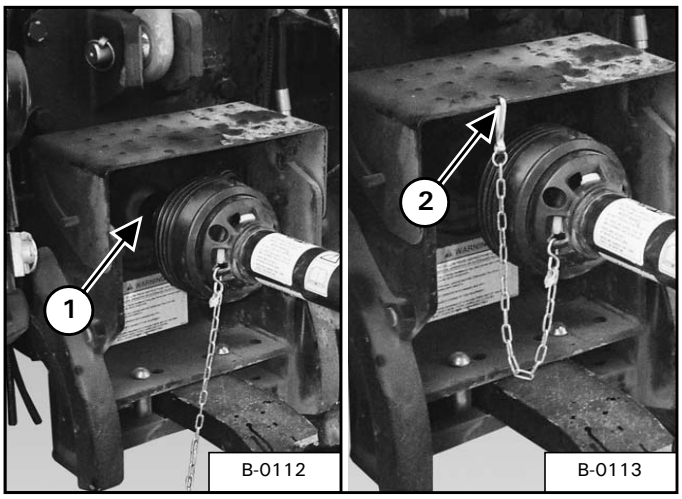
! IMPORTANT

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 240



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 240]**.

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

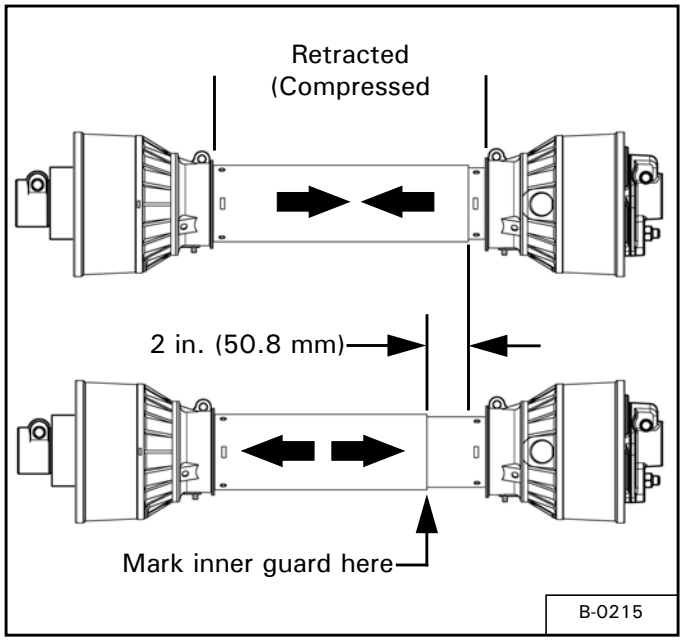
- **Do NOT exceed the rated implement PTO speed.**
- **Stay clear of rotating driveline.**
- **Keep bystanders away.**
- **Keep hands, feet, clothing and long hair away.**
- **Keep PTO shields and all guards in place.**
- **Disengage PTO, move the tractor controls to the Neutral position, stop the engine 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 102.)

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

Figure 241



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 241**].
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 241**].
4. Reattach the PTO driveline to the tractor PTO shaft.
5. Enter the operator's position. (See "Entering The Operator's Position" on page 102.) 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 102.)

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

⚠ 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.**

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

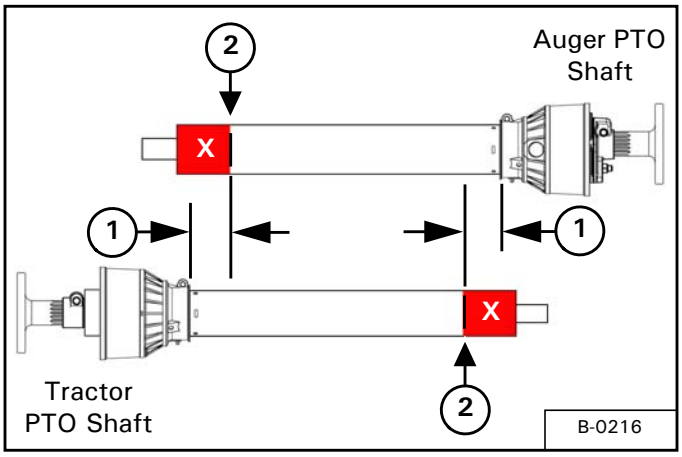
Enter the operator's position. (See "Entering The Operator's Position" on page 102.) Start the engine.

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 102.)

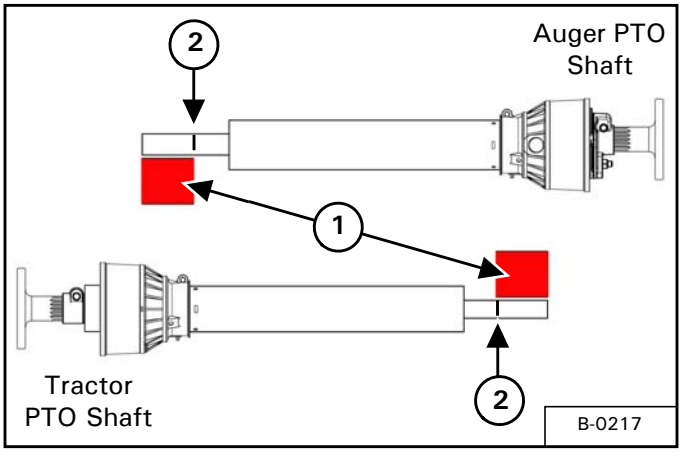
Pull the PTO driveline apart and reinstall each individual section; one half to the tractor PTO shaft and one half to the implement gearbox PTO shaft.

Figure 242



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 242]**.

Figure 243



2. Using the plastic guard lengths that were cut off in **[Figure 242]**, align the cut off lengths (Item 1) with the end of the inner & outer shafts. Place a mark (Item 2) **[Figure 243]** 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 102.)

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

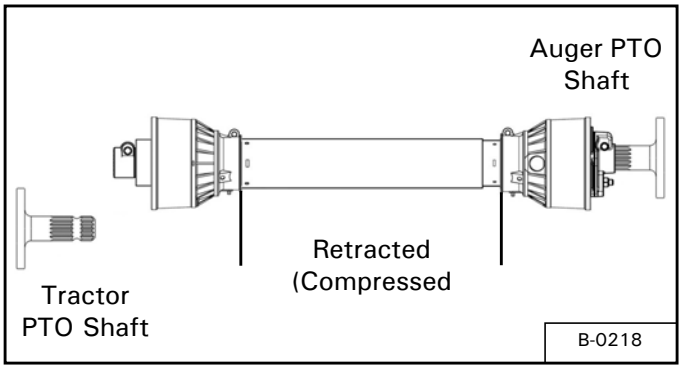
⚠ WARNING

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.**

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

Figure 244



2. Measure the retracted (compressed) length of the PTO driveline between the bases of the plastic guards **[Figure 244]**.

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).

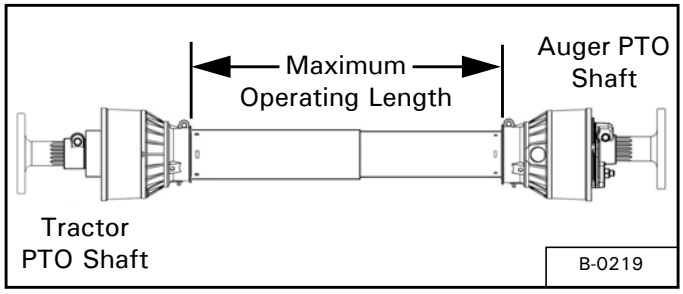
4. Attach the PTO driveline to the tractor PTO output shaft.

5. Enter the operator's position. (See "Entering The Operator's Position" on page 102.)

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

Figure 245



8. Measure the length of the PTO driveline between the bases of the plastic shields **[Figure 245]** 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.**

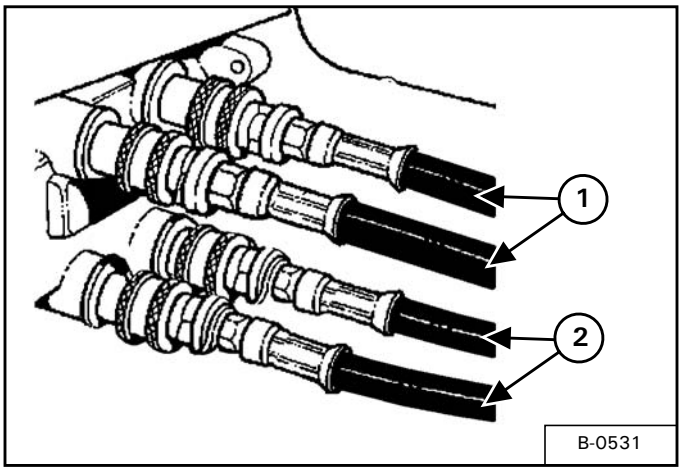
IMPORTANT

- **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 246



Pull back on the collar of the female coupler, push couplers together, release the collar when the couplers are fully engaged and locked **[Figure 246]**.

Install the two lift cylinder quick coupler hoses (Item 1) **[Figure 246]**.

Install the two valve block quick coupler hoses (Item 2) **[Figure 246]**.

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.

Connecting Electrical Harness

Connect the auger's electrical harness to the tractor's electrical system.

Lower jack until weight of equipment is resting on tractor drawbar. Pull lock pin on jack and remove. Mount jack to storage bracket and secure with lock pin.

AUGER OPERATION

Operating The Hopper Mover And Winch

CAUTION

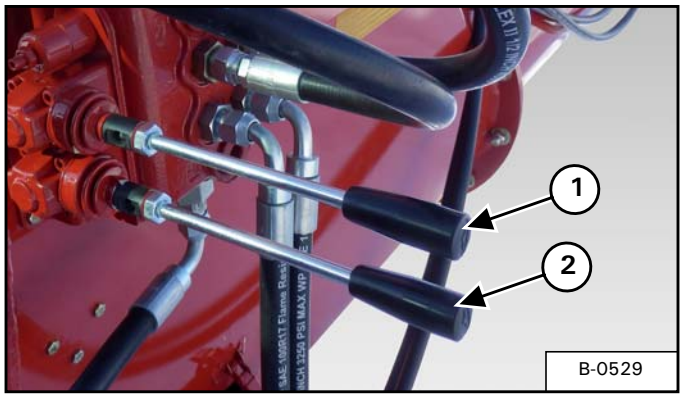
Never operate the winch or hopper mover when the PTO is engaged.

Enter the tractor and start the engine.

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

Hopper Mover Operation

Figure 247



Move the lever (Item 1) **[Figure 247]** to the right (away from the hitch) to move the hopper to the right. Move the lever to the left (towards the hitch) to move the hopper to the left.

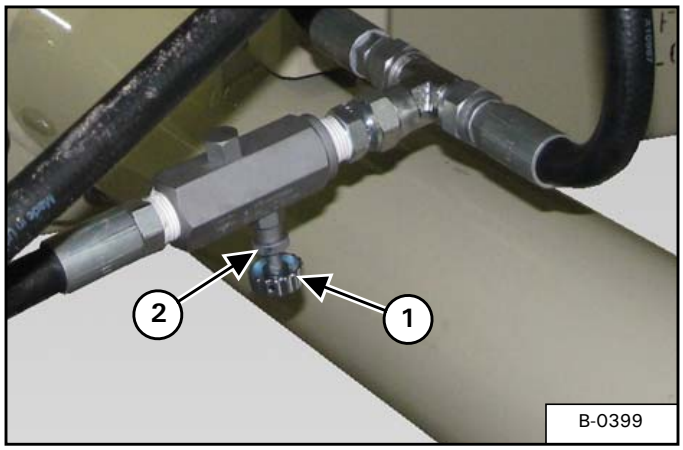
Winch Operation

Move the lever (Item 2) **[Figure 247]** to the left (towards the hitch) to raise the boom cable (wind cable). Move the lever to the right (away from the hitch) to lower the boom cable (unwind cable).

NOTE: Never have less than three wraps of cable on the drum of the winch.

Adjusting Flow Control Valve

Figure 248



Turn the knob (Item 1) **[Figure 248]** on the flow control valve "IN" to decrease the speed the auger lowers. Turn the knob "OUT" to increase the speed the auger lowers.

Loosen the nut (Item 2) **[Figure 248]** and turn the knob all the way in (tight). The approximate initial setting should be 3-1/2 turns out from the tight position. When set, re-tighten nut to set position.

NOTE: Be sure that the valve is slightly open before raising the first time or auger will not lower.

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.

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

- Operate the auger at a 35° angle. Do not exceed a 42° angle.
- Angles above 35°, decreases auger capacity.

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.

With the 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.

CAUTION

Never 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 249

Using the tractor controls, slowly raise the main auger to the desired height (do not exceed a 42° angle).

CAUTION

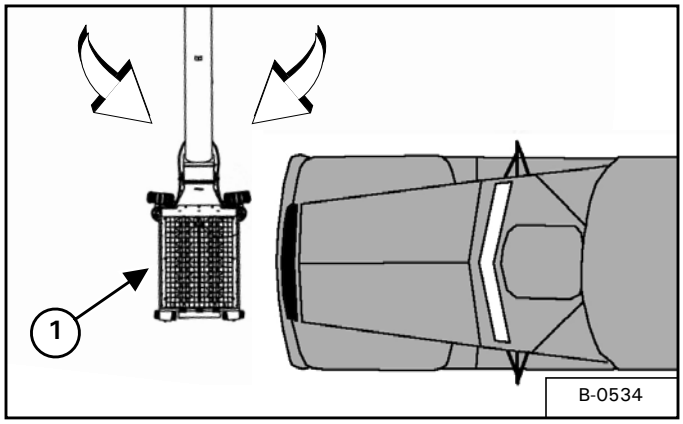
Keep wheels of undercarriage level and on firm ground. Raise the auger to the desired height and back the auger into position. Do not support the auger on the bin. As the auger becomes full, the weight may cause damage to the underside of the auger or to the bin.

Back the auger into position above the bin. Lower the auger until the downspout (Item 1) **[Figure 249]** enters the bin.

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

Unloading Belly Dump Units

Figure 250



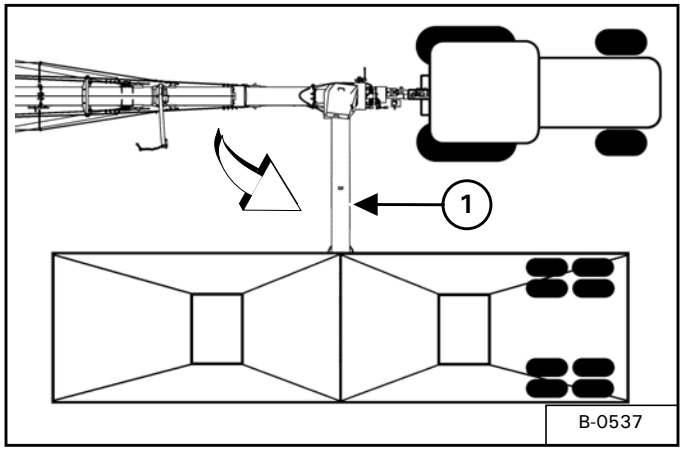
Move the hopper (Item 1) **[Figure 250]** out at a 90° angle from the auger.

Move the belly dump unit into position, centered on the hopper **[Figure 250]**.

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.

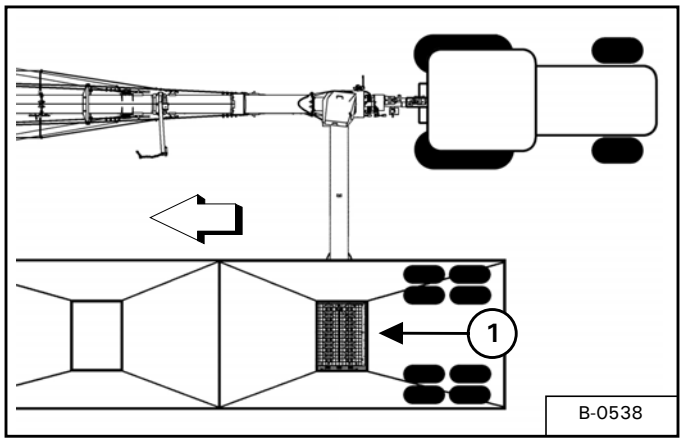
Figure 251



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 251]** under the belly dump unit.

Figure 252



Move the belly dump unit forward until the rear compartment is directly over the hopper (Item 1) **[Figure 252]**.

⚠ WARNING

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

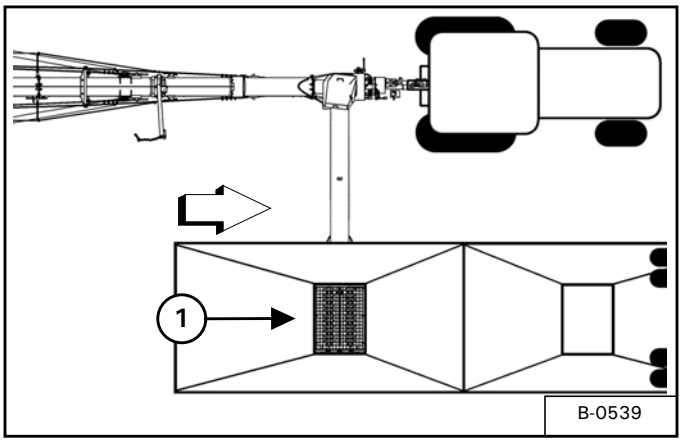
With tractor running at a low idle, engage the tractor PTO slowly to start the auger. Increase engine RPM (do not exceed 1000 RPM PTO speed).

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 253



Move the belly dump unit back until the front compartment is directly over the hopper (Item 1) **[Figure 253]**.

⚠ 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.

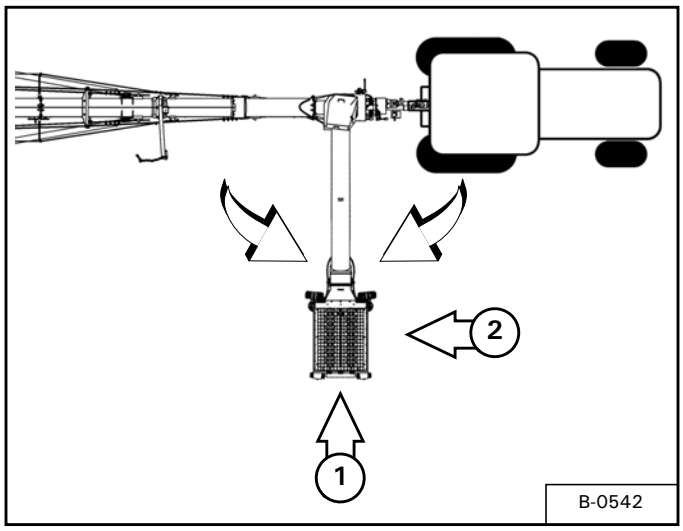
Move the hopper in the desired position away from vehicle traffic.

Disengage the tractor hydraulics and exit the tractor.

Unloading Rear And Side Dump Units

Rear Dump Units

Figure 254



Move the hopper out at a 90° angle from the auger **[Figure 254]**.

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 254]**.

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.

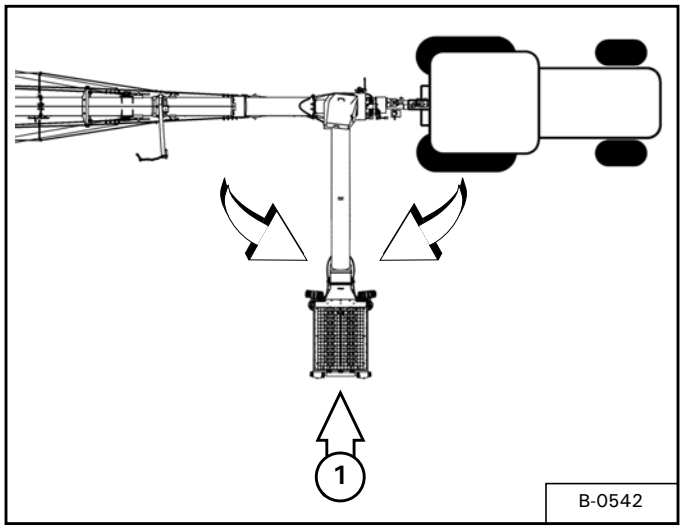
Adjust gate until the hopper augers and intake auger can move grain to the main auger without overflowing the hopper.

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 255



Move the hopper out at a 90° angle from the auger **[Figure 255]**.

Move the side dump unit into the unloading position at the end of the hopper (Item 1) **[Figure 255]**.

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

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.**

WARNING

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.

CAUTION

- **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.**

IMPORTANT

Never exceed 20 mph (32 kph).

IMPORTANT

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 pubic 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

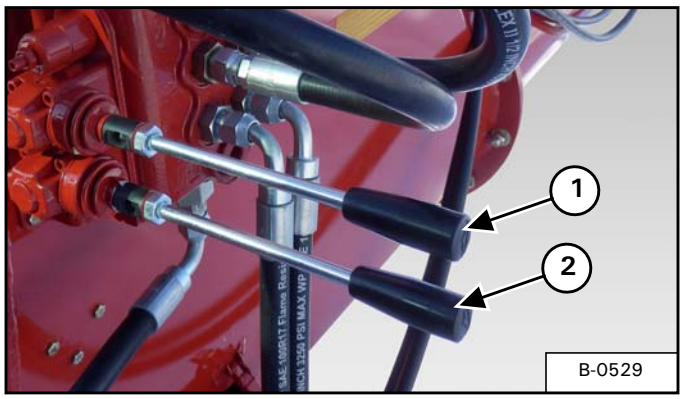
Transporting Procedure

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

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.

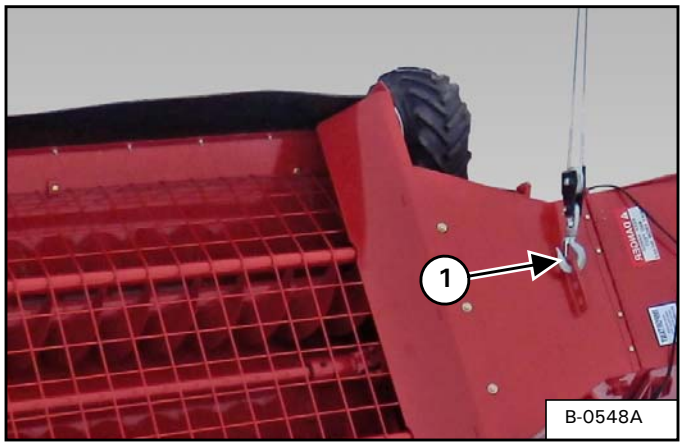
Figure 256



Move the lever (Item 1) **[Figure 256]** to the right (away from the hitch) to move the hopper to the right (toward the auger) until the boom cable can be installed.

Move the lever (Item 2) **[Figure 256]** to the right (away from the hitch) to lower the boom cable (unwind cable).

Figure 257



Install the boom cable (Item 1) **[Figure 257]** onto the hopper.

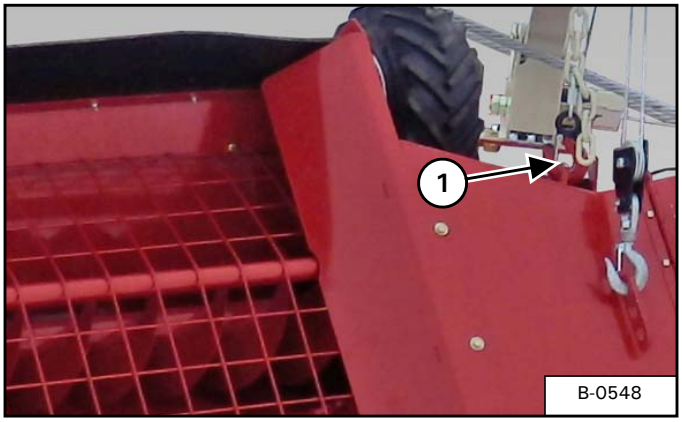
Move the lever (Item 2) **[Figure 256]** to the left (towards the hitch) to raise the boom cable (wind cable).

Raise the hopper until the transport chain can be installed.

⚠ WARNING

The weight of the hopper and intake auger assembly must be supported by the transport chain, whenever the auger is moved. If the weight of the intake auger is on the winch, the winch may be damaged during transport.

Figure 258



Install the transport chain (Item 1) **[Figure 258]** onto the hopper.

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

Enter the tractor, using the tractor controls, slowly raise the main auger until the discharge spout is clear from the bin.

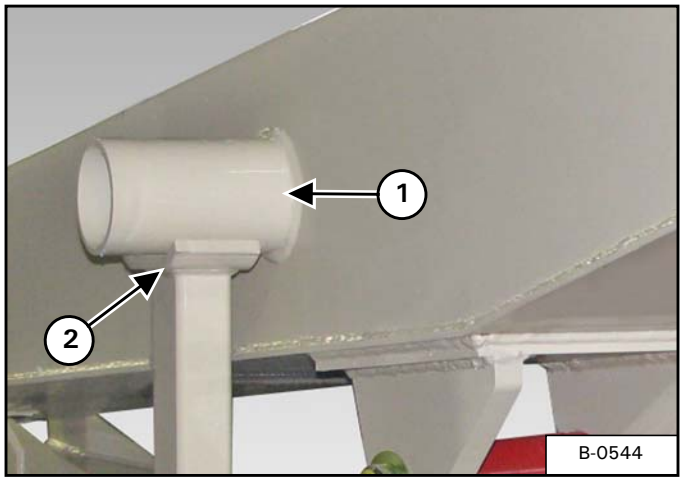
Release the parking brake and move the tractor and auger forward (away from the bin) until there is adequate space for the auger to be lowered into the transport position.

Stop the tractor and engage the parking brake.

IMPORTANT

Always lower the auger before transporting and allow the weight of the auger to rest on the undercarriage and not the hydraulic cylinders.

Figure 259



Fully lower the auger until the upper lift arm (Item 1) contacts the cradle rest (Item 2) **[Figure 259]** (both sides).

WARNING

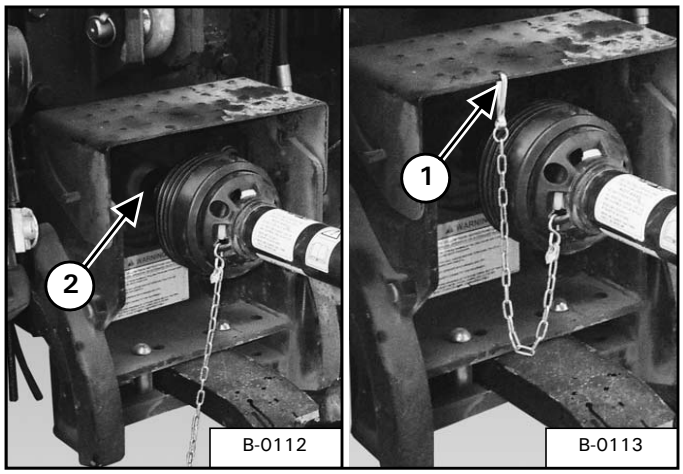
AVOID INJURY OR DEATH

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.**

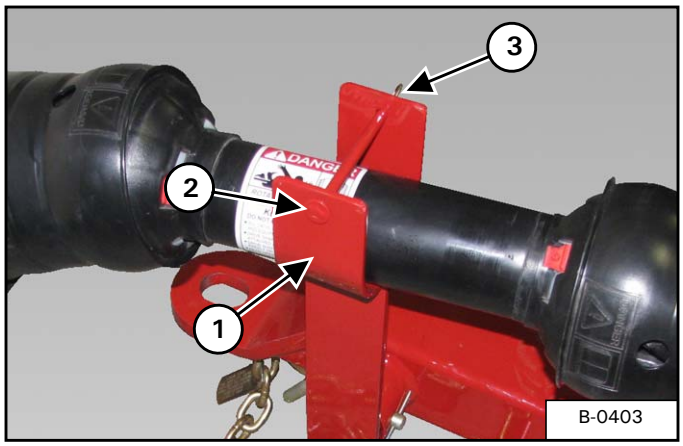
Engage the tractor's parking brake, stop the engine and exit the tractor.

Figure 260



Remove the PTO driveline safety chain (Item 1). Retract the collar (Item 2) **[Figure 260]** and slide the PTO driveline off the tractor PTO shaft.

Figure 261



Place the PTO driveline into the PTO holder (Item 1). Install the clevis pin (Item 2) and hairpin clip (Item 3) **[Figure 261]**.

Verify that the auger is securely fastened to the tractor / tow vehicle and that the hitch safety chain is properly attached to the auger and tractor / tow vehicle.

Verify that the SMV (Slow Moving Vehicle) sign is attached and visible.

Verify that the amber lights are clean and operating correctly.

Farm King

MAINTENANCE

Farm King

TROUBLESHOOTING

Chart

⚠ 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.

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
Cannot start augers.	Plugged auger or obstruction.	Shutoff tractor and disconnect the PTO. Remove obstruction.
	Bearing failure.	Check bearings and replace if required.
Grain flow is too fast.	Discharge gate(s) open too far.	Close the gate(s) to allow a slower grain flow to the hopper / intake auger.
Grain flow is too slow.	Discharge gate(s) not open enough.	Open the gate(s) to allow a faster grain flow to the hopper intake auger.
	Tractor RPM set to low.	Raise tractor RPM to proper setting.
Lights do not function.	Loose connection.	Check electrical connection at tractor.
	Faulty harness or wire.	Check for broken wires.
	Faulty tractor circuit.	Check tractor light circuit.

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 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 8 hours)								
1	CV Joints, U-Joints and Bearings			•				
2	PTO Driveline			•				
3	Universal Joint (Front)			•				
4	Lower & Upper Lift Arm Pivots			•				
5	Hopper Drive Shaft & U-Joints			•				
6	Intake Auger Shaft & U-Joints			•				
7	Dual Auger Hopper Drive Chains			•				
Weekly (or every 50 hours)								
8	Lower Intake Auger Gearbox Oil Level	•						
9	Upper Intake Auger Gearbox Oil Level	•						
10	Main Gearbox	•						
11	Wheel Lug Nut Torque	•						
12	Winch Cable	•						
13	Bridging Cable Tension	•						
Semi-Annually (or every 250 hours)								
14	Bridging Cables	•	•			•		
15	Backsaver Auger		•					
Annually (or every 500 hours)								
16	Lower Intake Auger Gearbox Oil				•			
17	Upper Intake Auger Gearbox Oil				•			
18	Main Gearbox				•			
19	Main Tubes	•						

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.

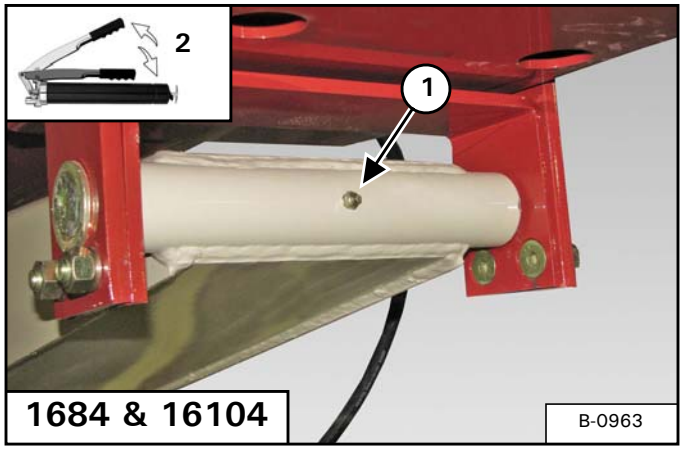
Locations

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.

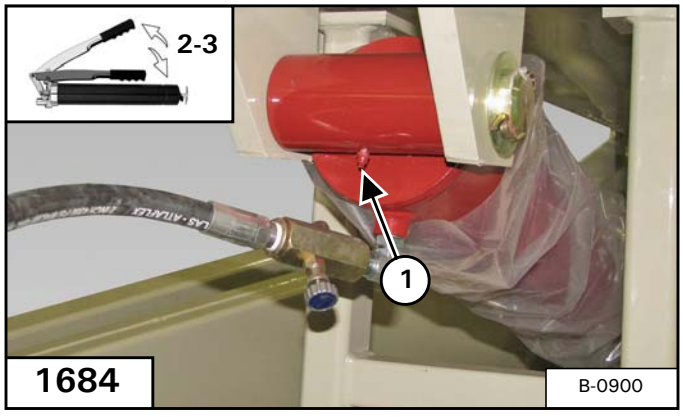
Lubricate the following grease locations EVERY 8 HOURS:

Figure 262



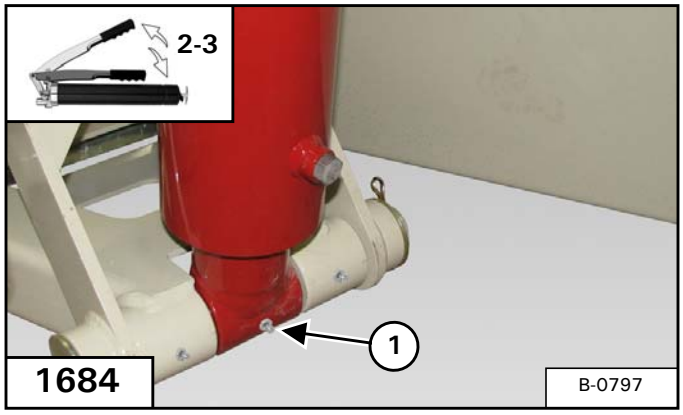
Apply two pumps of grease to the upper undercarriage pivot (Item 1) **[Figure 262]**.

Figure 263



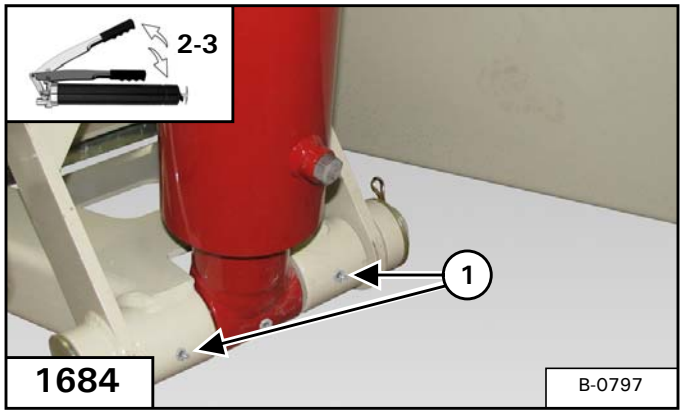
Apply two - three pumps of grease to the base end of the lift cylinder (Item 1) **[Figure 263]**.

Figure 264



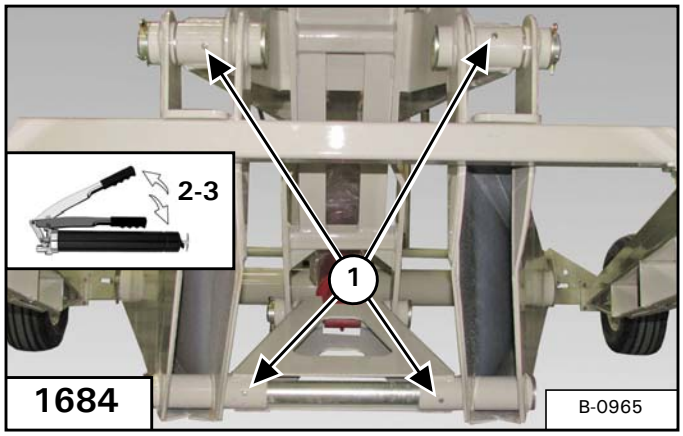
Apply two - three pumps of grease to the rod end of the lift cylinder (Item 1) **[Figure 264]**.

Figure 265



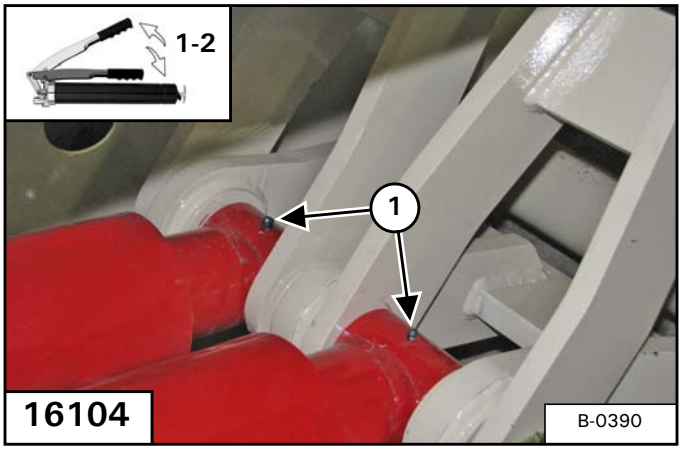
Apply two - three pumps of grease to the connecting link (Item 1) **[Figure 265]**.

Figure 266



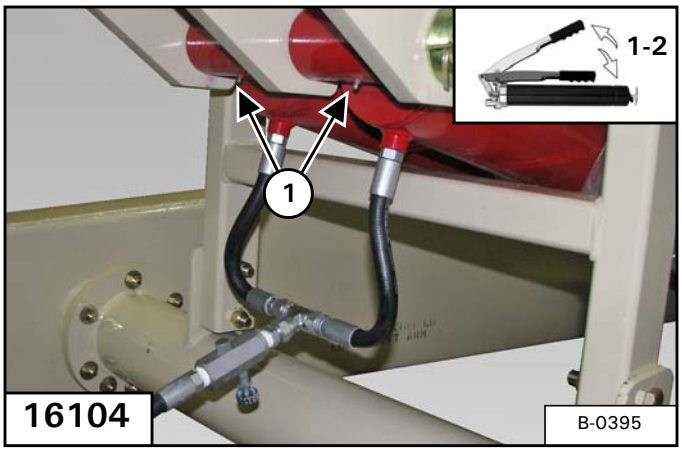
Apply two - three pumps of grease to the LH & RH lower lift arms (Item 1) **[Figure 266]**.

Figure 267



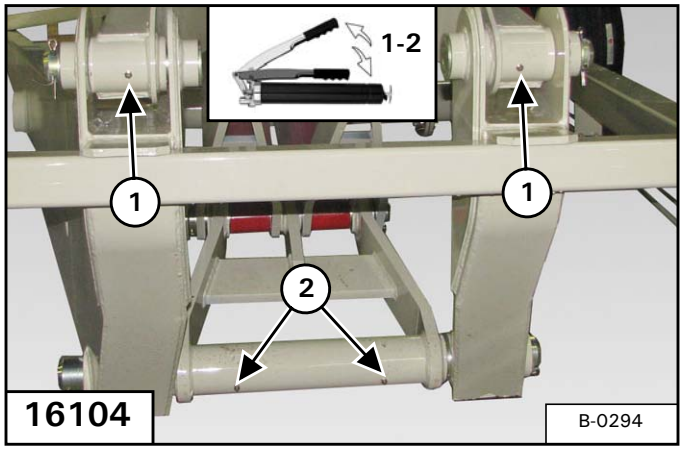
Apply 1-2 pumps of grease to the rod end of each lift cylinder (Item 1) **[Figure 267]**.

Figure 268



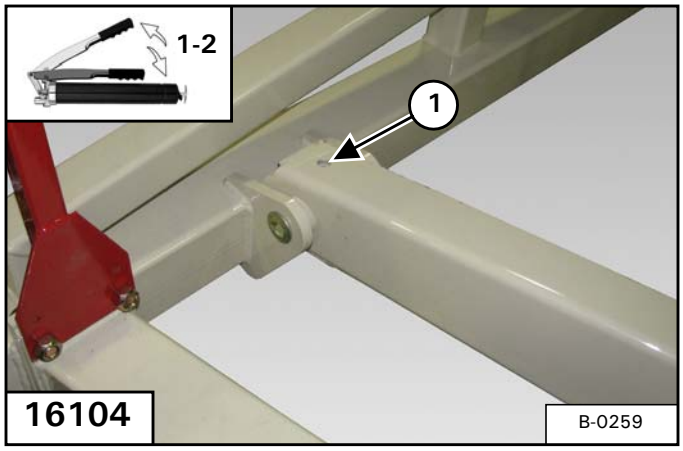
Apply 1-2 pumps of grease to the cylinder base ends (Item 1) **[Figure 268]**.

Figure 269



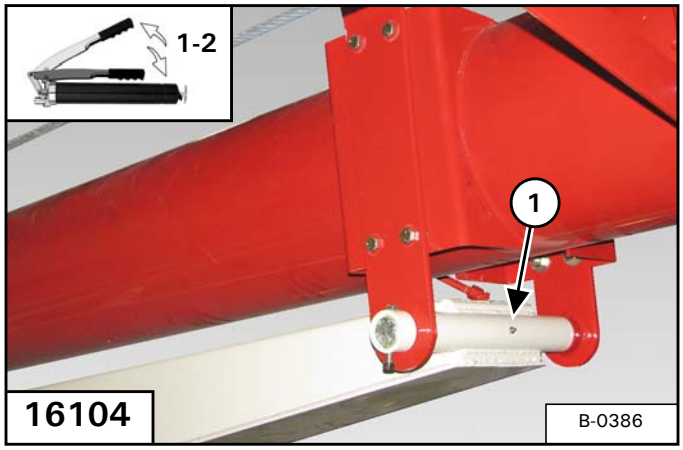
Apply 1-2 pumps of grease to the two front upper lift arm pivots (Item 1) and lower link pivot (Item 2) **[Figure 269]**.

Figure 270



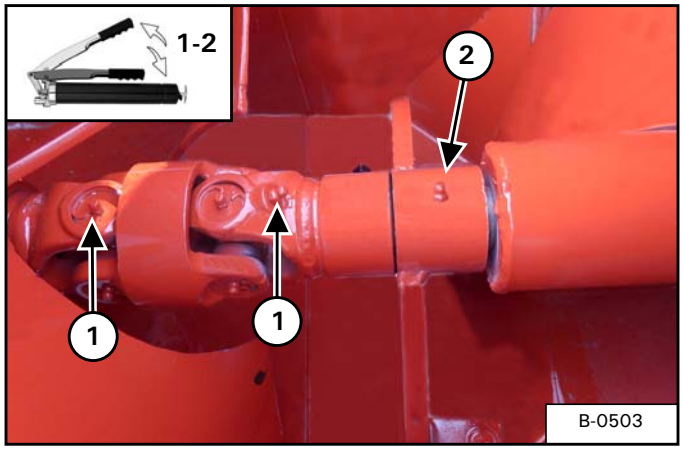
Apply 1-2 pumps of grease to the RH lower lift arm pivot (Item 1) **[Figure 270]**. Repeat procedure on the LH lower lift arm pivot.

Figure 271



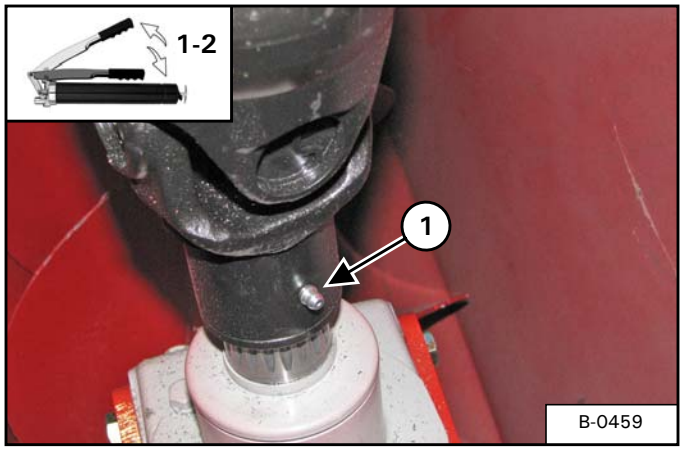
Apply 1-2 pumps of grease to the rear upper lift arm pivot (Item 1) **[Figure 271]**.

Figure 272



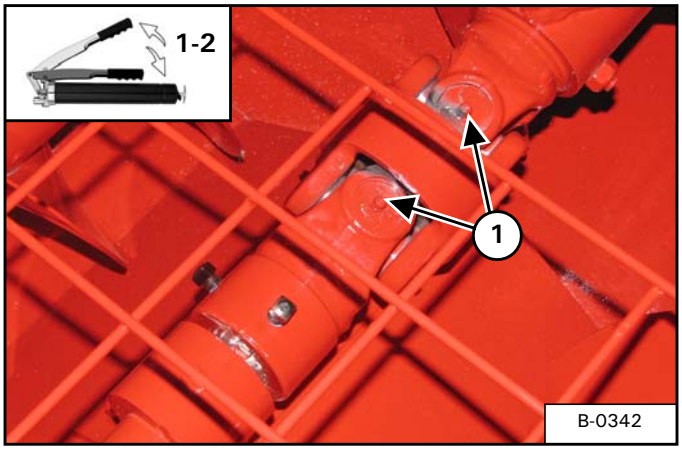
Apply 1-2 pumps of grease to the universal joints (Item 1) on the hopper auger drive shaft and to intake auger hanger mount (Item 2) **[Figure 272]**.

Figure 273



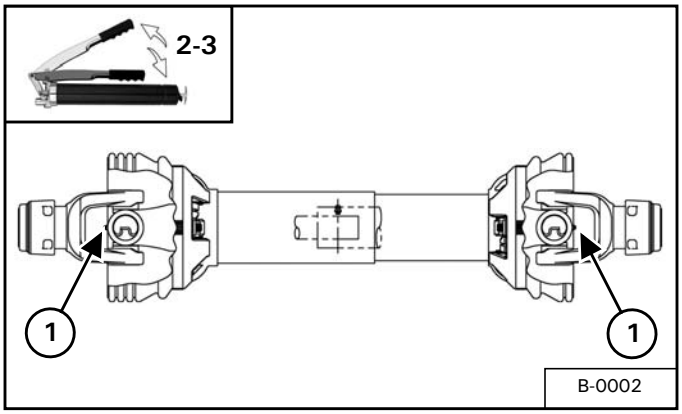
Apply 1-2 pumps of grease to the intake drive shaft slide (Item 1) **[Figure 273]**.

Figure 274



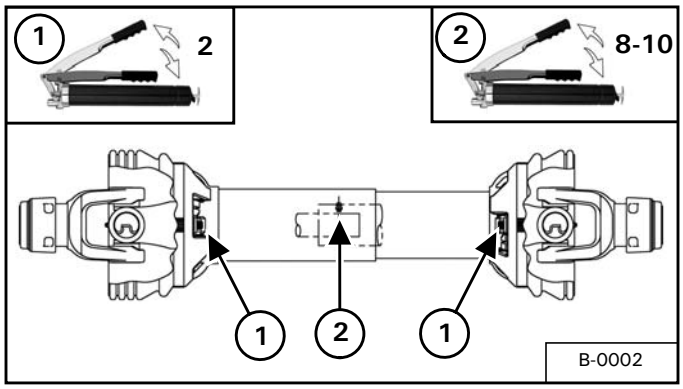
Apply 1-2 pumps of grease to the intake hopper drive shaft (Item 1) **[Figure 274]**.

Figure 275



Apply two - three pumps of grease to the cross and bearings (Item 1) **[Figure 275]** on the PTO driveline.

Figure 276

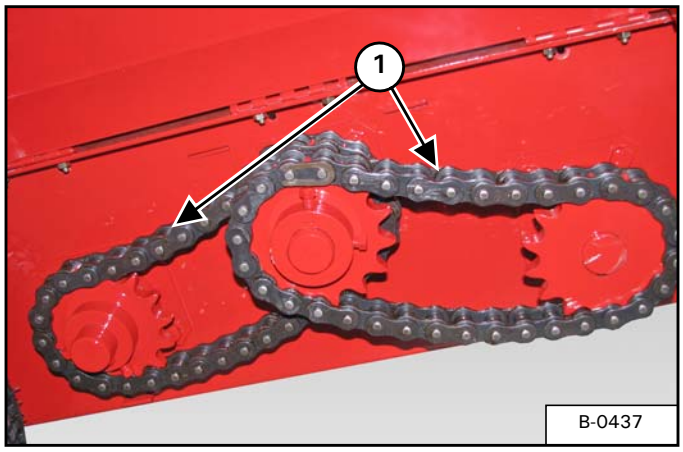


Apply two pumps of grease to the guard bushings (Item 1) **[Figure 276]**.

Apply eight - ten pumps of grease to the telescoping member (Item 2) **[Figure 276]**.

Hopper Dual Auger Drive Chains

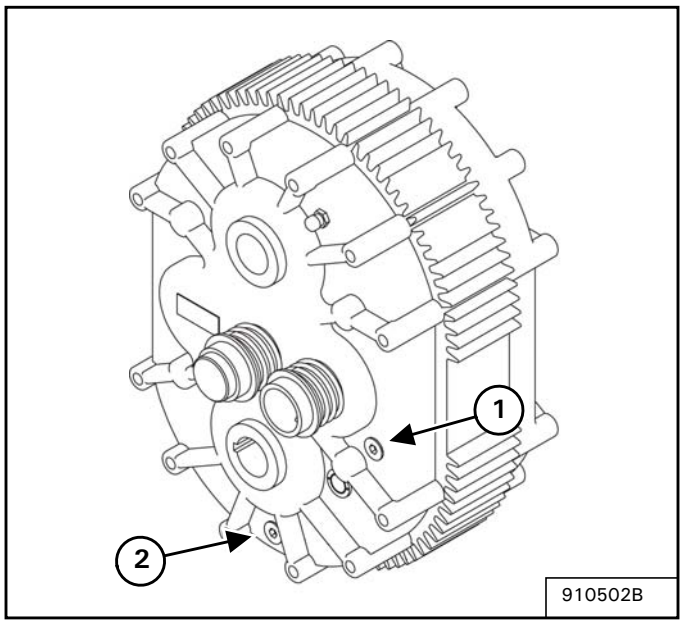
Figure 277



Apply oil to the dual auger drive chains (Item 1) **[Figure 277]** daily or every eight hours.

M2000 Helical Gearbox (If Equipped)

Figure 278



Check the gearbox oil level every 50 hours or weekly.

Remove the fill plug (Item 1) **[Figure 278]** 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.

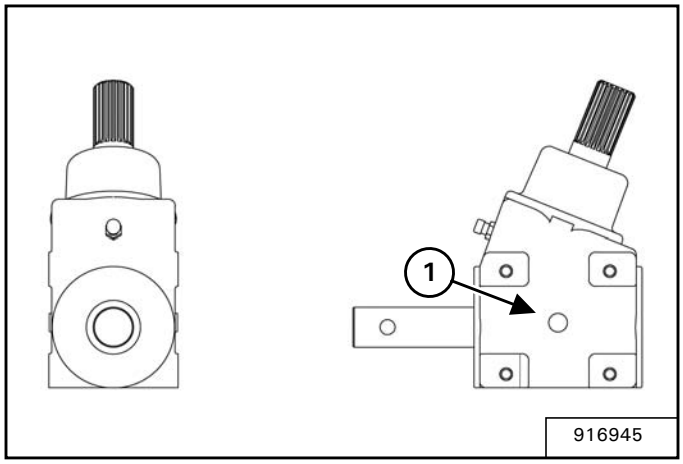
Changing Gear Oil

Remove the drain plug (Item 2) **[Figure 278]** and allow all the gear oil to be drained. Install drain plug.

Remove the side plug (Item 1) **[Figure 278]** from the gearbox. Fill with SAE 75W-90 synthetic gear oil to the bottom of the plug hole. Install fill / side plug.

4168 Lower Gearbox

Figure 279



Check the gearbox oil level every 50 hours or weekly.

Remove the fill / drain plug (Item 1) **[Figure 279]** 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.

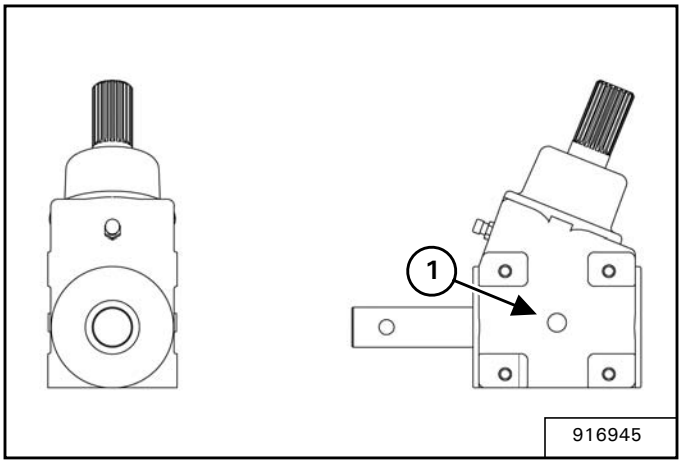
Changing Gear Oil

Remove the fill / drain plug (Item 1) **[Figure 279]** and siphon all the gear oil from the gearbox.

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

4168 Upper Gearbox

Figure 280



Check the gearbox oil level every 50 hours or weekly.

Remove the fill / drain plug (Item 1) **[Figure 280]** 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 280]** and siphon all the gear oil from the gearbox.

Fill with SAE 75W-90 synthetic gear oil 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.

1684 AXLE

Wheel Lug Nut Torque

Check the torque on wheel lug nuts daily. Tighten lug nuts to 133 lb ft (180 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

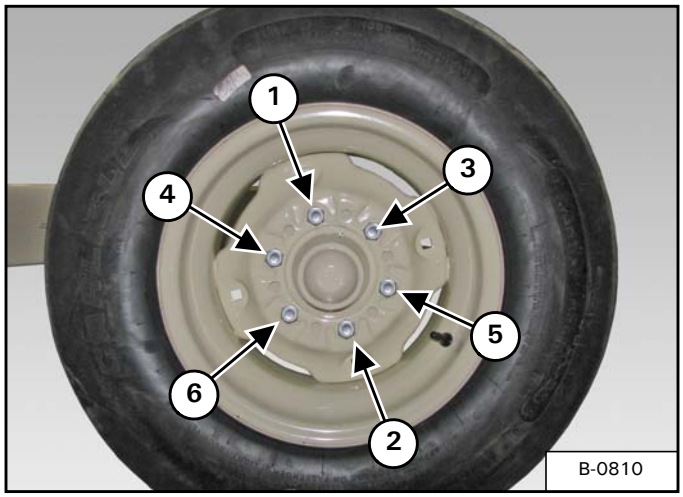
- **The parking brake must be engaged before leaving the operator's position. Rollaway can occur because the transmission may not prevent machine movement.**
- **Always chock tires before performing any maintenance or service.**

Place chock blocks behind and in front the auger tire.

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 281



Install the tire with the valve stem facing out (both sides). Install the six wheel bolts (both sides) **[Figure 282]**.

Tighten wheel nuts in a criss-cross pattern **[Figure 282]**. Tighten wheel nuts to 120 lb. / ft. (162 N•m) of torque.

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

Check tire pressure.

NOTE: Recommended tire pressure is 90 PSI (620 kpa).

16104 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

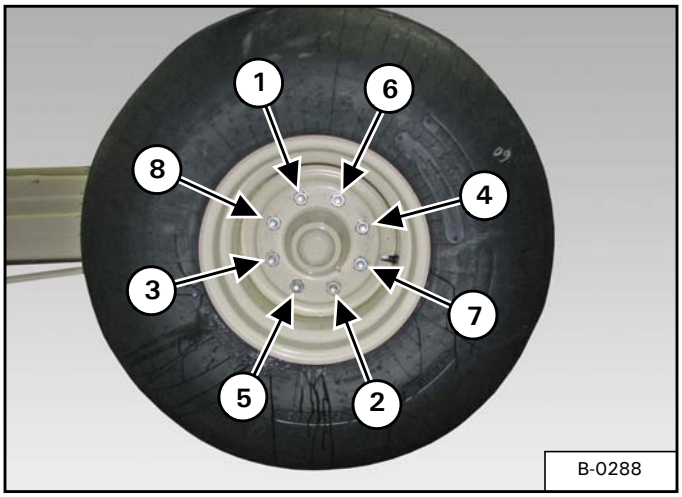
- **The parking brake must be engaged before leaving the operator's position. Rollaway can occur because the transmission may not prevent machine movement.**
- **Always chock tires before performing any maintenance or service.**

Place chock blocks behind and in front the auger tire.

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 282



Remove the wheel nuts and tire from the hub.

Install the new tire with the valve stem facing out (both sides). Install the eight wheel nuts (both sides) **[Figure 282]**.

Tighten wheel nuts in a criss-cross pattern **[Figure 282]**. Tighten wheel nuts to 110 - 125 lb ft (149 - 169 N•m) of torque.

BRIDGING CABLES

NOTE: The following images may not show your bridging cable assemblies exactly as they appear but, the procedures are correct.

Cable Inspection

IMPORTANT

Always wear the proper hand and eye protection when serving the equipment.

Regularly check the tightness of all cable clamps to avoid slipping. Inspect cables regularly for damage, wear or corrosion.

Cable inspections should be done at the beginning of operation and directly after the auger has been towed or transported.

Use a piece of cloth or rag to slide across the cables to locate broken or frayed wires. Replace cables as needed.

Lubricating

To prevent damage by corrosion, the cables should be kept well lubricated.

Cleaning

Periodic cleaning of cables by using a stiff brush and kerosene or with compressed air or live steam and re-lubricating will help to lengthen cable life and reduce abrasion and wear on sheaves and drums.

Lower And Upper Bridging Cables

WARNING

AVOID INJURY OR DEATH

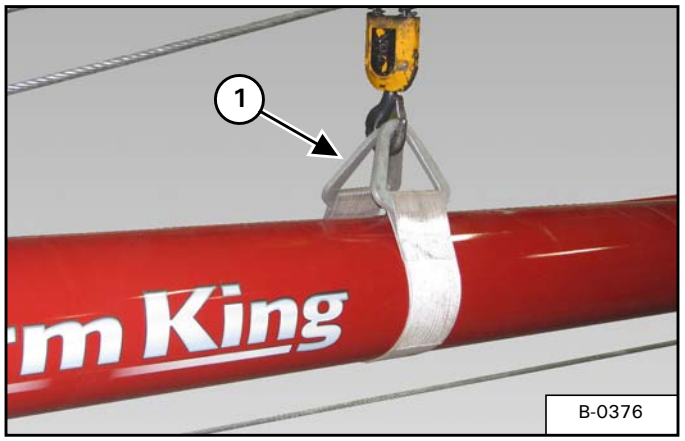
Before servicing bridging cables:

- **Always park on a flat level surface.**
- **Fully lower the main auger into the transport position.**
- **Disconnect the PTO driveline.**
- **Support the main auger tube with an approved lifting device.**
- **Chock tires.**

IMPORTANT

Completely unload auger before adjusting bridging cables.

Figure 283

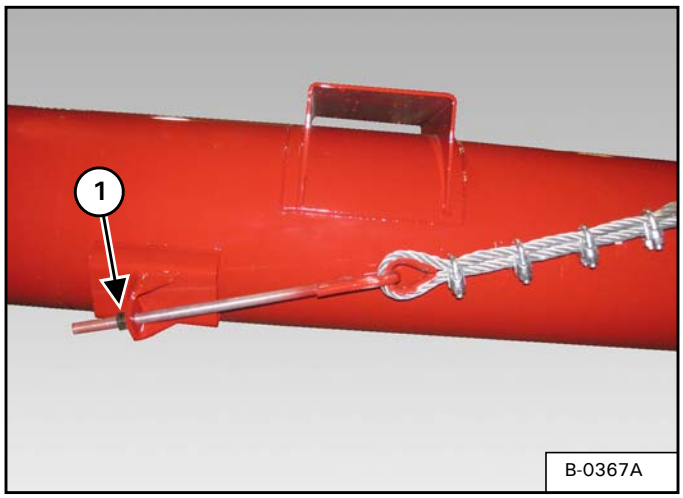


Install a strap (Item 1) **[Figure 283]** around the #3 tube.

Connect the strap to an approved lifting device.

Raise the lifting device, until tight, to support the auger tube(s).

Figure 284



Loosen all cable clamps along the cable being tightened.

Tighten the nut (Item 1) **[Figure 284]** of the lower / upper bridging cable on tube #1.

Tighten both left and right (lower & upper) cables evenly.

Tighten the upper bridging cable until the discharge end of the tube bows up slightly.

Tighten the lower bridging cable to hold the tube in the slightly raised position.

After tightening the lower and upper cables, check the auger tube is straight. No bend right or left.

To remove the side to side bend tighten side bridging cables. (See “Side Bridging Cables” on page 133.)

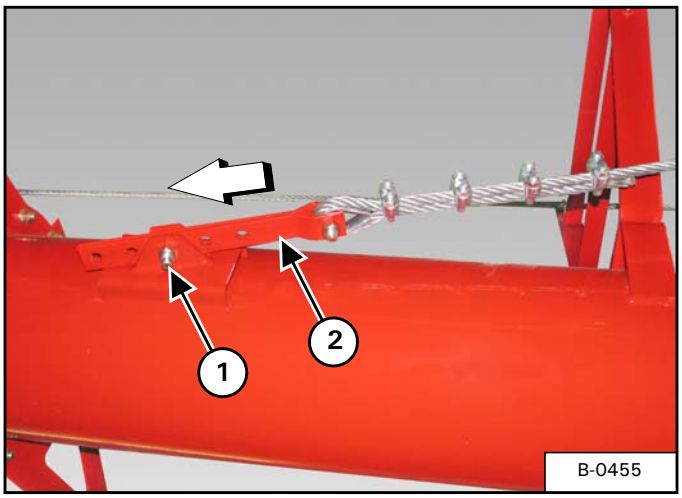
NOTE: If the nut is fully tightened and bottoms out against the eye of the adjustment bolt, the cable will need to be loosened and additional adjustments will be made on the opposite end of the cable.

If the nut bottoms out against the eye of the adjustment bolt, loosen the nut (Item 1) **[Figure 284]**.

NOTE: Do not remove the nut from the adjustment bolt.

After adjusting the cable(s), tighten all cable clamps along the cable(s).

Figure 285



Remove bolt (Item 1) **[Figure 285]** and lock nut (from mounting bracket (angled up) on the #5 tube), move the yoke (Item 2) back, one hole. Re-install the bolt and lock nut. Tighten until the yoke is securely fastened to the tube mount.

Repeat for adjusting remaining lower and upper bridging cables.

Side Bridging Cables

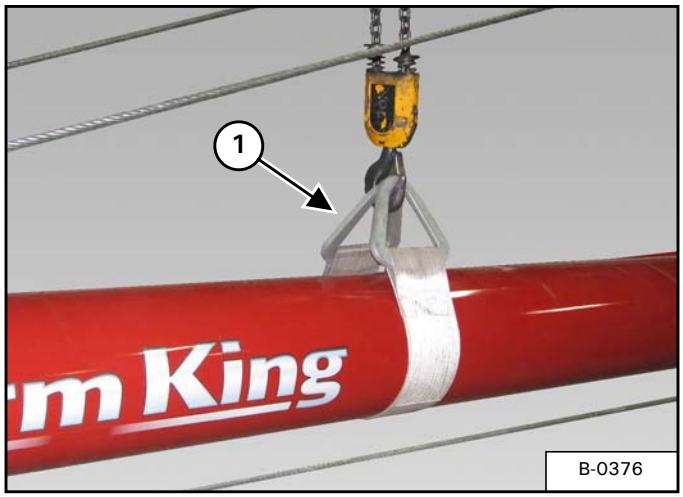
⚠ WARNING

AVOID INJURY OR DEATH

Before servicing bridging cables:

- **Always park on a flat level surface.**
- **Fully lower the main auger into the transport position.**
- **Disconnect the PTO driveline.**
- **Support the main auger tube with an approved lifting device.**
- **Chock tires.**

Figure 286



Install a strap (Item 1) **[Figure 286]** around the #3 tube.

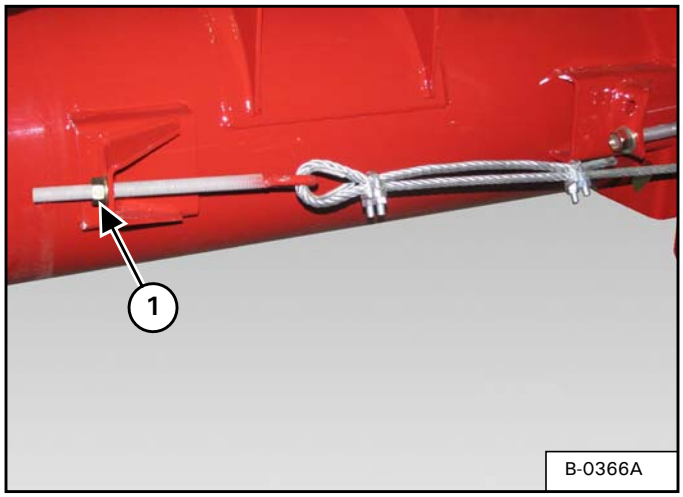
Connect the strap to an approved lifting device.

Raise the lifting device, until tight, to support the auger tube(s).

Loosen all cable clamps on the cable being tightened.

NOTE: Do not remove nuts from cable clamps, leave loose to allow the cable to feed through when tightening.

Figure 287



Loosen all cable clamps along the cable being tightened.

Tighten the nut (Item 1) **[Figure 287]** of the left / right bridging cable on tube #1.

Tighten both left and right side bridging cables evenly.

Sight down the length of the auger tube(s), if the tube bends left or right, loosen the opposite adjustment bolt slightly, then tighten the opposite nut until the tube is straight. Snug opposite adjustment nut securely against the mount.

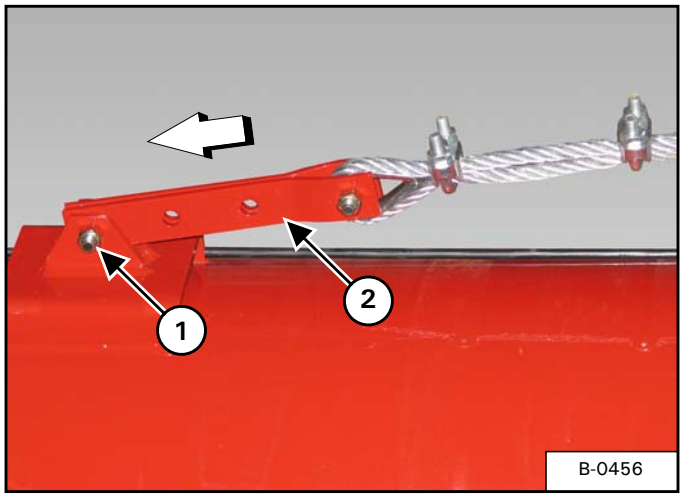
NOTE: If the nut is fully tightened and bottoms out against the eye of the adjustment bolt, the cable will need to be loosened and additional adjustments will be made on the opposite end of the cable.

If the nut bottoms out against the eye of the adjustment bolt, loosen the nut (Item 1) **[Figure 287]**.

NOTE: Do not remove the nut from the adjustment bolt.

After adjusting the cable(s), tighten all cable clamps along the cable(s).

Figure 288



Remove bolt (Item 1) and lock nut (from mounting bracket (parallel with tube) on the #5 tube), move the yoke (Item 2) **[Figure 288]** back, one hole. Re-install the bolt and lock nut. Tighten until the yoke is securely fastened to the tube mount.

Repeat for adjusting remaining bridging cables.

SAFETY SIGN (DECAL) INSTALLATION

Procedure

IMPORTANT

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.

IMPORTANT

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

- 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.

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.

Farm King

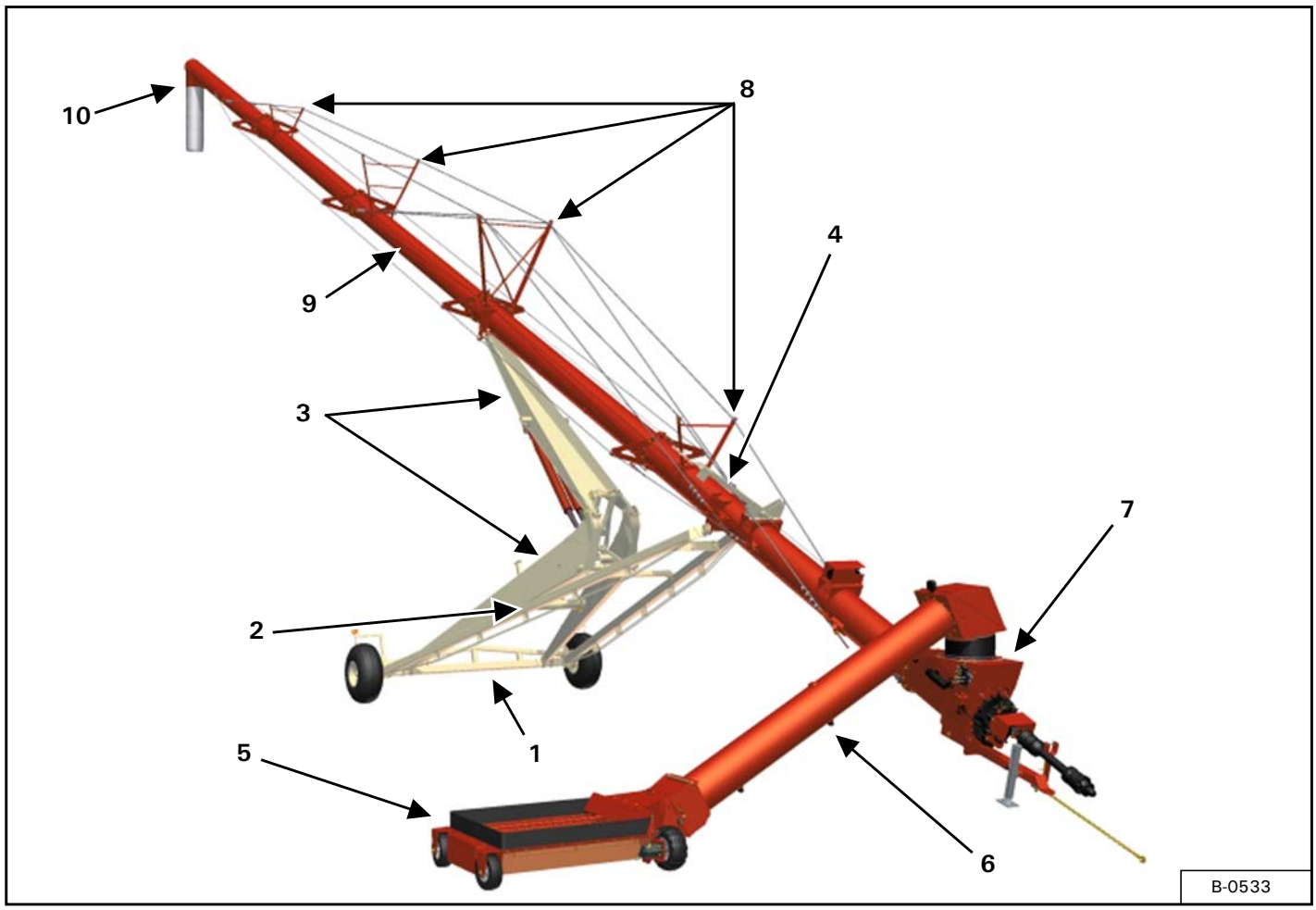
PARTS IDENTIFICATION

GENERAL PARTS INFORMATION

The parts identification section list descriptions, part numbers and quantities for models 1684 & 16104 Backsaver Augers. Contact your Farm King dealer for additional Backsaver Auger parts information.

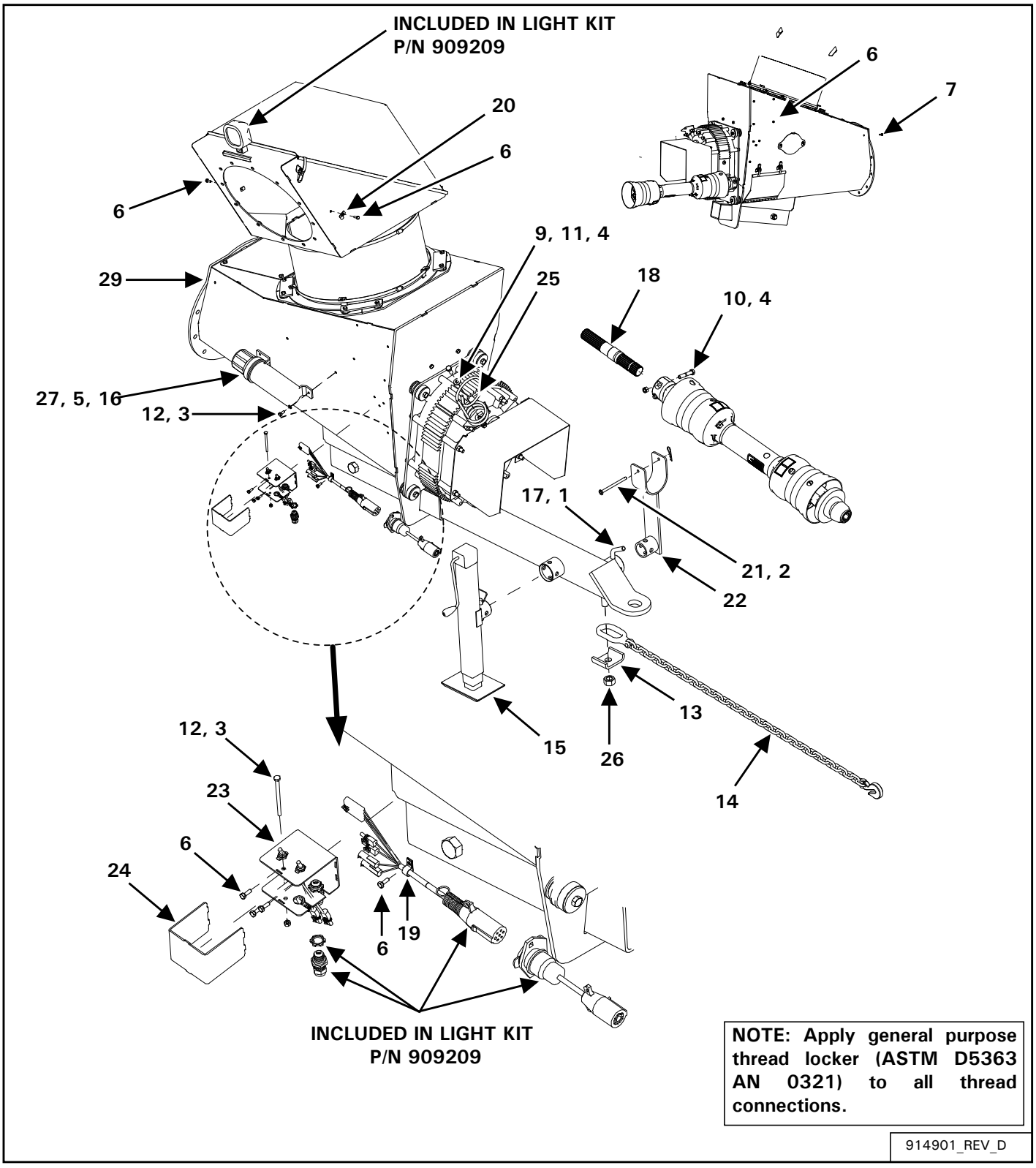
16" BACKSAVER AUGER

Component Location



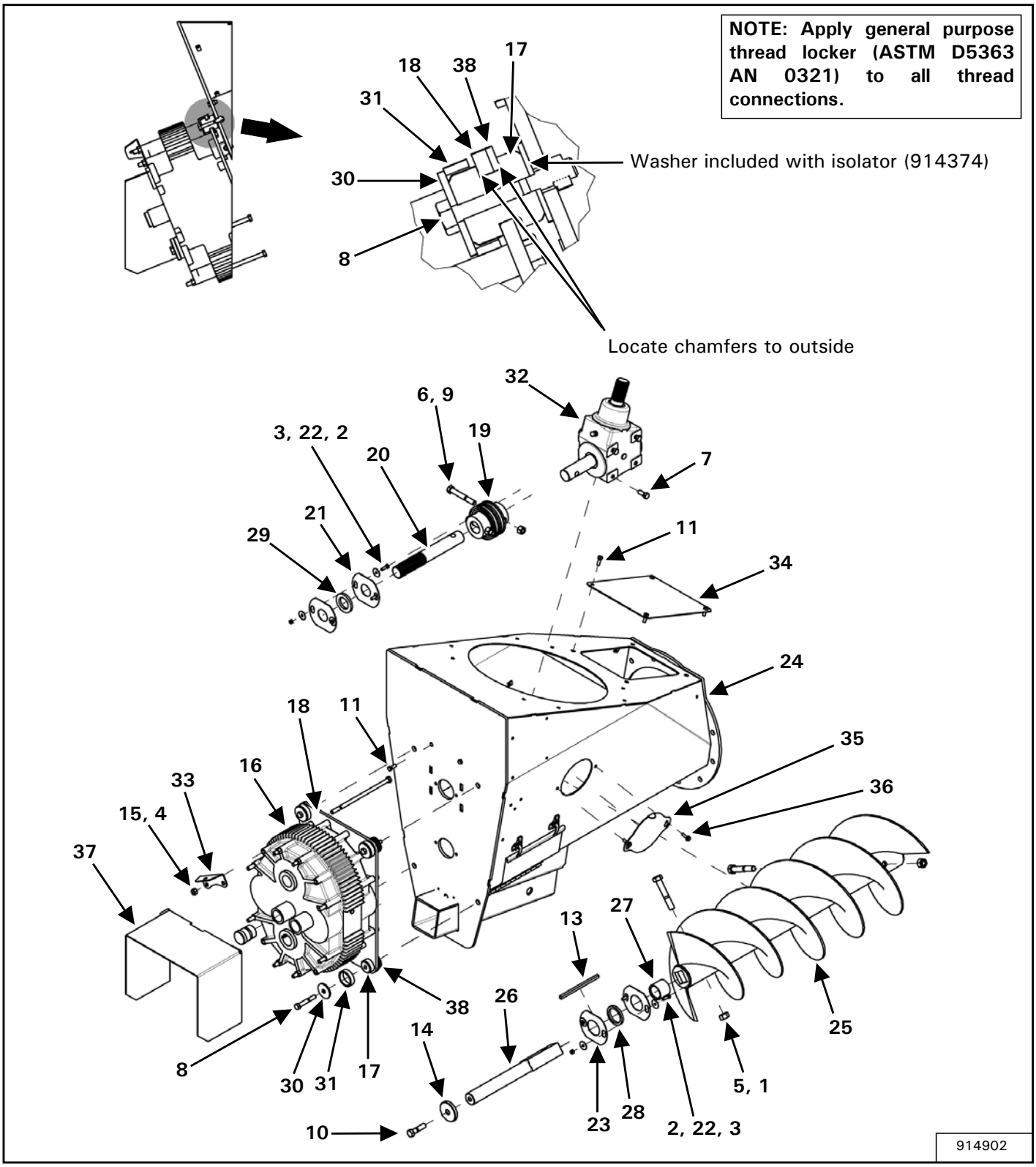
ITEM	DESCRIPTION
1	AXLE
2	UNDERCARRIAGE
3	LIFT ARM
4	BOOM
5	HOPPER
6	INTAKE AUGER
7	INPUT BOX
8	BRIDGING
9	MAIN AUGER
10	DISCHARGE SPOUT

INPUT BOX ASSEMBLY



ITEM	PART NUMBER	DESCRIPTION	QTY
1	12779	#9 HAIR PIN CLIP (PL)	1
2	12780	#7 HAIR PIN CLIP	1
3	812025	BOLT, 1/4" NC x 4.00" HEX GR5 (PL)	1
4	812364	LOCK NUT, 1/2" (PL)	3
5	814433	WARRANTY REGISTRATION MANUAL	1
6	81525	BOLT, 1/4" x 3/4" HEX (PL)	14
7	81549	BOLT, 5/16" x 3/4" HEX (PL)	3
8	81569	LOCK WASHER, 5/16" (PL)	2
9	81620	BOLT, 1/2" x 1-1/4" HEX PL	1
10	81626	BOLT, 1/2" x 2 3/4" HEX (PL)	2
11	84048	FLAT WASHER, 1/2" SAE (PL)	1
12	84498	LOCK NUT, 1/4" (PL)	1
13	904580	SAFETY CHAIN PLATE	1
14	906284	HOOK & SAFETY CHAIN ASSEMBLY	1
15	909195	JACK	1
16	909277	MANUAL HOLDER, 3 1/2" x 12"	1
17	910288	LOCKING PIN	1
18	910503	M2000 SPLINED STUB SHAFT	1
19	912831	CABLE CLIP, 5/8"	1
20	912832	CABLE CLIP, 7/16"	1
21	913029	CLEVIS PIN WELDMENT	1
22	914566	PTO HOLDER WELDMENT	1
23	916910	ELECTRIC SWITCHES BRACKET	1
24	916913	ELECTRIC SWITCHES COVER	1
25	966314	HYDRAULIC HOSE HOLDER	1
26	967148	LOCK NUT, 1" (PL)	1
27	967458	ADMA PTO SAFETY MANUAL	1
28	F1813	PTO DRIVELINE, 1 3/8" x 21 CV - 1 3/4" x 20 CV	1
29	F1828	INPUT BOX ASSEMBLY	1
-	INCLUDED IN LIGHT KIT P/N #909209 (See "ELECTRICAL DIAGRAM" on page 181.)		

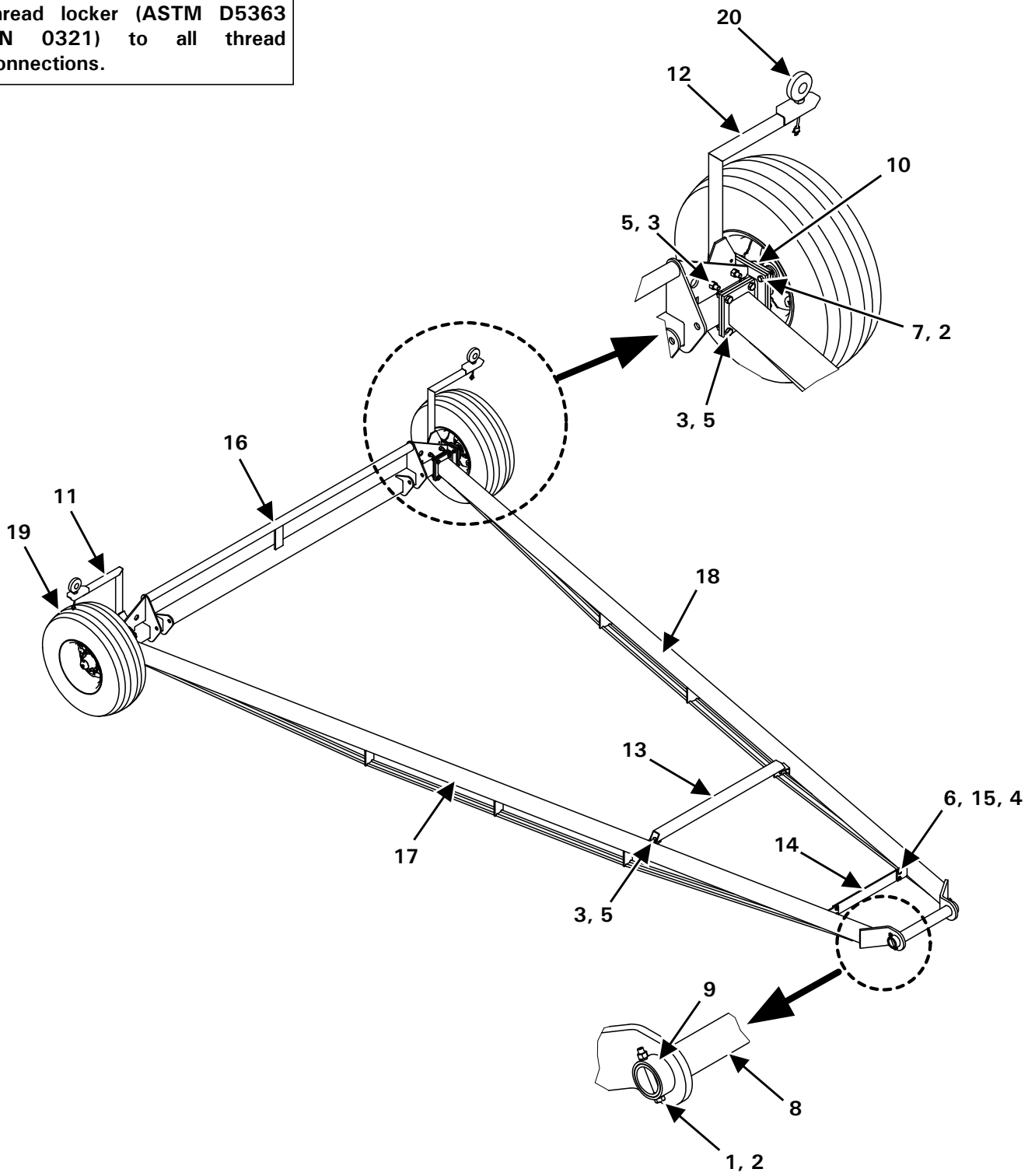
INPUT BOX


NOTE: Apply general purpose thread locker (ASTM D5363 AN 0321) to all thread connections.
Washer included with isolator (914374)
Locate chamfers to outside
914902

ITEM	PART NUMBER	DESCRIPTION	QTY
1	811790	BOLT, 3/4" x 4 1/2" HEX GR5 (PL)	2
2	812026	BOLT, 5/16" X 1" HEX (PL)	4
3	812362	LOCK NUT, 5/16" (PL)	4
4	812364	LOCK NUT, 1/2" (PL)	9
5	812365	LOCK NUT, 3/4" (PL)	2
6	812482	LOCK NUT, 5/8" (PL)	2
7	81620	BOLT, 1/2" x 1 1/4" HEX (PL)	6
8	81628	BOLT, 1/2" x 3 1/4" HEX (PL)	4
9	81672	BOLT, 5/8" x 4 1/2" HEX (PL)	2
10	84335	BOLT, 5/8" x 2 1/2" HEX (PL)	1
11	86170	BOLT, 3/8" x 1" HEX GR5 (PL)	6
12	904578	GEAR OIL, SAE 75W-90 SYNTHETIC	3.95 L
13	906061	INPUT BOX DRIVE KEY, 3/8" x 3/8" x 7 3/8"	1
14	906073	INPUT BOX SHAFT WASHER, 21/32" ID x 3" OD x 1/2"	1
15	910458	BOLT, 1/2" x 11" HEX (PL)	9
16	910502	GEARBOX, M2000 HELICAL	1
17	914374	ISOLATOR, TWO PIECE, 240 LB MAX	4
18	914375	GEARBOX MOUNT PLATE, M2000	1
19	914444	COUPLING ASSEMBLY, H6018	1
20	914476	SHAFT, 1 3/4" DIA 20 SPLINE	1
21	914523L	INPUT BOX SEAL PLATE	2
22	914526	FLAT WASHER, 1 1/4" x 5/16" x 0.05" (PL)	8
23	914543L	INPUT BOX SEAL PLATE	2
24	914822	INPUT BOX WELDMENT BS16	1
25	916645	INPUT FLIGHTING WELDMENT	1
26	916647	INPUT DRIVE SHAFT	1
27	916871	INPUT BOX SHAFT SPACER	1
28	916880L	INPUT SHAFT SEAL PLATE	1
29	916881L	INPUT SHAFT SEAL PLATE	1
30	916914L	ISOLATOR TOP WASHER	4
31	916922	ISOLATOR LIMIT TUBE	4
32	916945	LOWER 4168 GEARBOX	1
33	916956	HYDRAULIC HOSE HOLDER BRACKET	1
34	916995L	INPUT BOX COVER	1
35	917446	GEARBOX ACCESS COVER	1
36	917483	BOLT, 5/16" NC x 1.00" FL GR5 (PL)	2
37	917753	PTO GUARD	1
38	917754	ISOLATOR SPACER PLATE	4

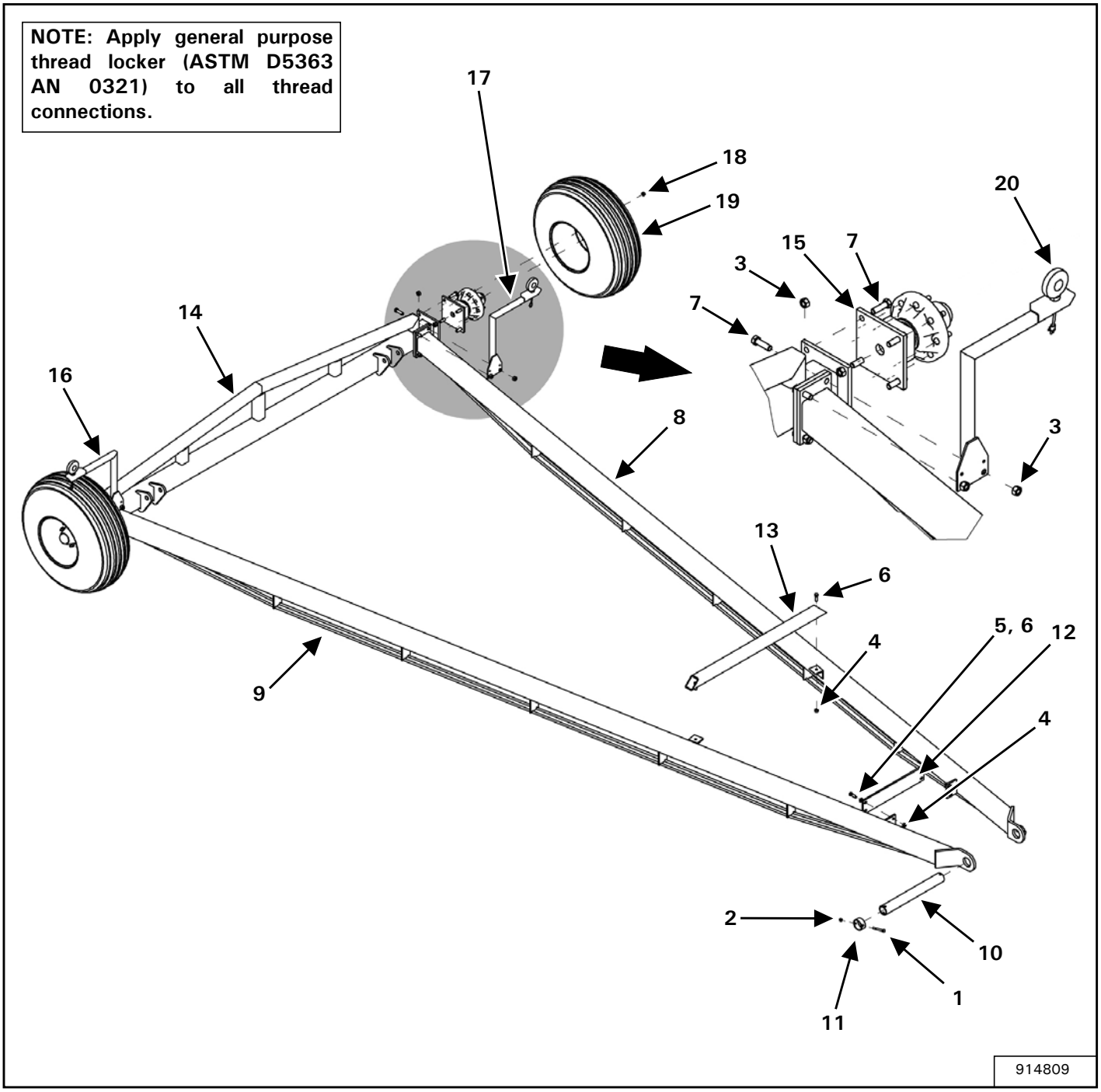
1684 UNDERCARRIAGE

NOTE: Apply general purpose thread locker (ASTM D5363 AN 0321) to all thread connections.



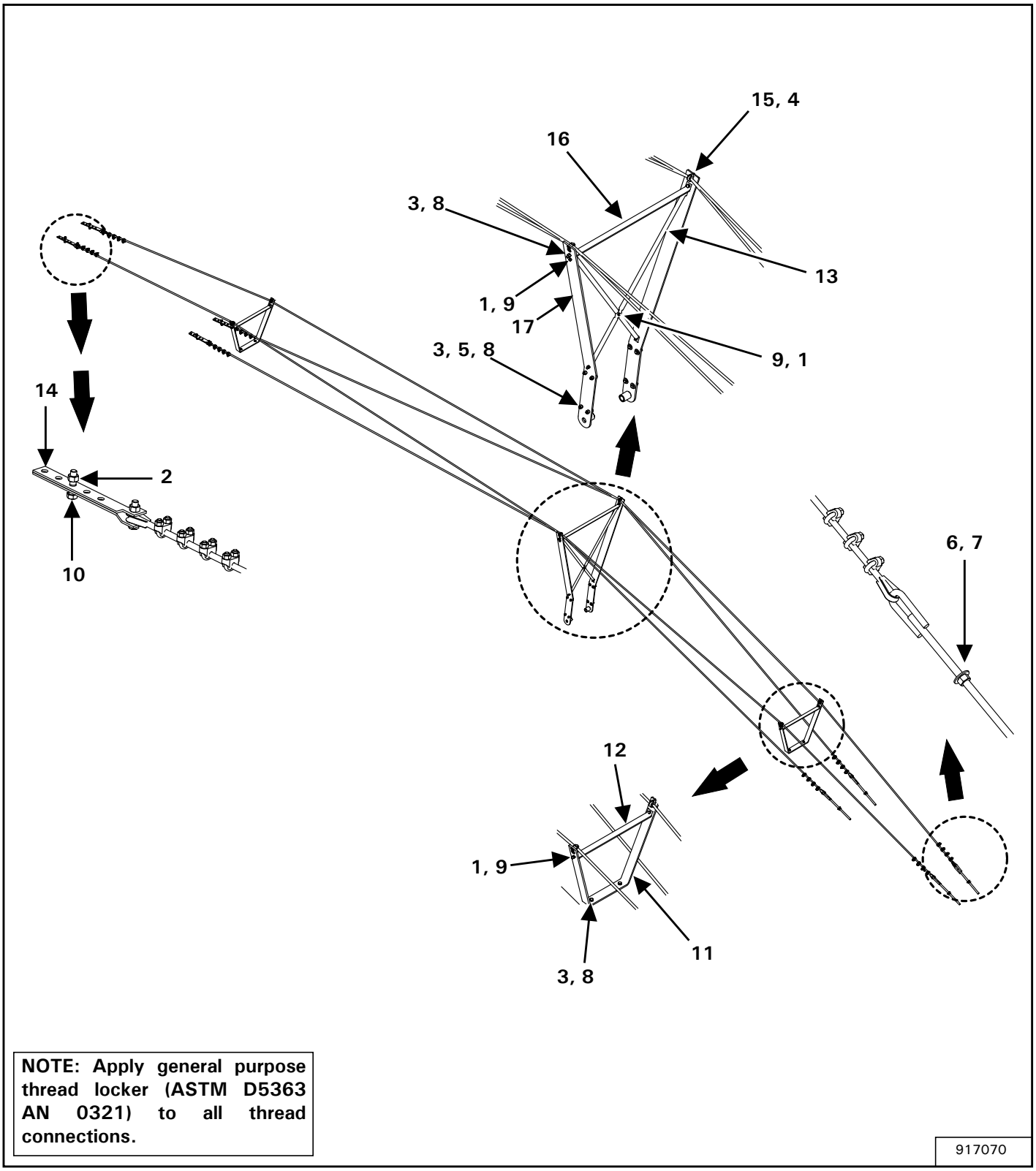
ITEM	PART NUMBER	DESCRIPTION	QTY
1	811691	BOLT, 1/2" x 4-1/2" HEX (PL)	2
2	812364	LOCK NUT, 1/2" (PL)	10
3	812482	LOCK NUT, 5/8" (PL)	14
4	81599	BOLT, 7/16" x 1-1/2" HEX (PL)	4
5	84299	BOLT, 5/8" x 2" HEX GR 5 (PL)	14
6	86273	LOCK NUT, 7/16" (PL)	4
7	87553	BOLT, 1/2" x 1-3/4" HEX UNC GR 5 (PL)	8
8	905735	UNDERCARRIAGE PIN	1
9	905736	UNDERCARRIAGE PIN SLEEVE, 3-1/6" ID x 3-1/2" OD x 1-1/2"	2
10	906573	STUB AXLE ASSEMBLY	2
11	909226	BLINKER MOUNT WELDMENT - RH	1
12	909227	BLINKER MOUNT WELDMENT - LH	1
13	912793	LIFT ARM REST TUBE	1
14	912794L	BRACE PLATE	1
15	964001	FLAT WASHER, 1" x 7/16" x 10 GA (PL)	4
16	F1460	AXLE TUBE WELDT (134 1/2" LG)	1
17	F1480	RIGHT UNDERCARRIAGE ARM	1
18	F1481	LEFT UNDERCARRIAGE ARM	1
19	F1808	IMPLEMENT TIRE & RIM MTD W / VALVE, 12.5L - 15FL (TL)	2
20	INCLUDED IN LIGHT KIT P/N #913051 (See "ELECTRICAL DIAGRAM" on page 181.)		

16104 UNDERCARRIAGE



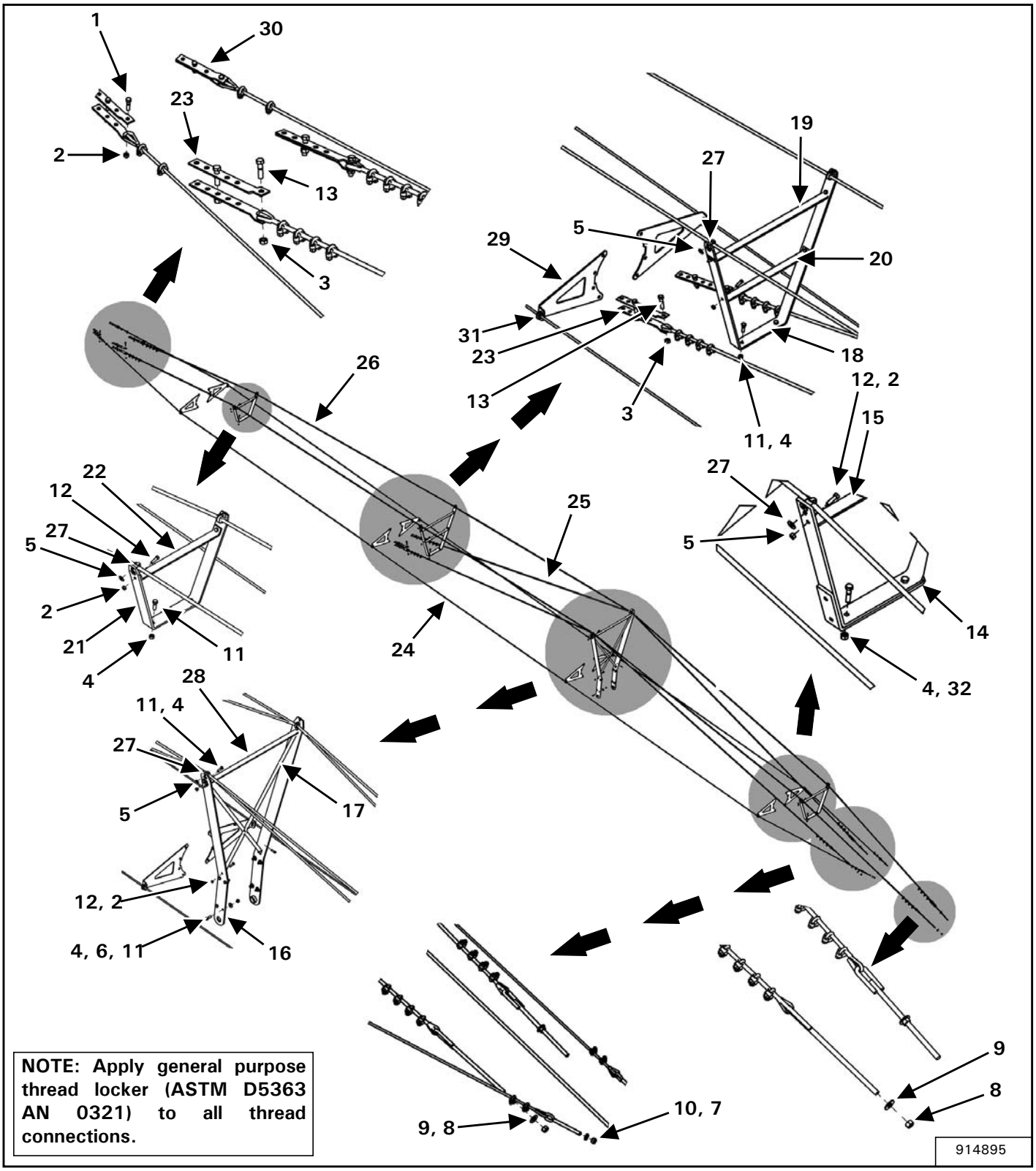
ITEM	PART NUMBER	DESCRIPTION	QTY
1	811691	BOLT, 1/2" x 4 1/2" HEX (PL)	2
2	812364	LOCK NUT, 1/2" (PL)	2
3	812365	LOCK NUT, 3/4" (PL)	16
4	812482	LOCK NUT, 5/8" (PL)	6
5	812639	FLAT WASHER, 5/8" SAE (PL)	4
6	84299	BOLT, 5/8" x 2" HEX GR5 (PL)	6
7	84346	BOLT, 3/4" x 2 1/2" HEX (PL)	16
8	905732	LEFT UNDERCARRIAGE ARM, WELDMENT	1
9	905733	RIGHT UNDERCARRIAGE ARM, WELDMENT	1
10	905735	UNDERCARRIAGE PIN	1
11	905736	UNDERCARRIAGE PIN SLEEVE, 3 1/6" ID x 3 1/2" OD x 1 1/2"	2
12	905737L	BRACE PLATE, 1/2" x 5" x 25 3/4"	1
13	905738	LIFT ARM REST, 1/4" W x 3" x 3" x 57 1/2"	1
14	905745	AXLE WELDMENT (16" BS)	1
15	909191	STUB SHAFT AND HUB ASSEMBLY, BS16104	2
16	909226	RH BLINKER MOUNT WELDMENT	1
17	909227	LH BLINKER MOUNT WELDMENT	1
18	909779	WHEEL NUT, 5/8" NF	16
19	F0679	WHEEL, TIRE, & VALVE ASSEMBLY	2
20	INCLUDED IN LIGHT KIT P/N #909209 (See "ELECTRICAL DIAGRAM" on page 181.)		

1684 BRIDGING ASSEMBLY



ITEM	PART NUMBER	DESCRIPTION	QTY
1	812364	LOCK NUT, 1/2" (PL)	9
2	812365	LOCK NUT, 3/4" (PL)	8
3	812482	LOCK NUT, 5/8" (PL)	14
4	81638	FLAT WASHER, 1/2" BS (PL)	12
5	81678	FLAT WASHER, 11/16" STD (PL)	8
6	81722	NUT, 7/8 HEX (PL)	4
7	81972	WASHER, 7/8" SAE	4
8	84299	BOLT, 5/8" x 2" HEX GR 5 (PL)	14
9	87553	BOLT, 1/2" x 1-3/4" HEX UNC GR5 (PL)	9
10	88742	BOLT, 3/4" x 3" HEX GR 5 (PL)	8
11	905816	BRIDGING YOKE PLATE	2
12	905817	BRIDGING BRACE PL	2
13	905827	BRIDGING BRACE	2
14	905853	CABLE YOKE PLATE	8
15	909194	CABLE CLAMP, 3/4" (PL)	6
16	909783	BRIDGING CROSS BRACE, 3/8" x 2" x 53-1/4"	1
17	912797	BRIDGING PLATE WELDMENT	2
18	912840	UPPER CABLE ASSEMBLY	2
19	912841	LOWER CABLE ASSEMBLY	2

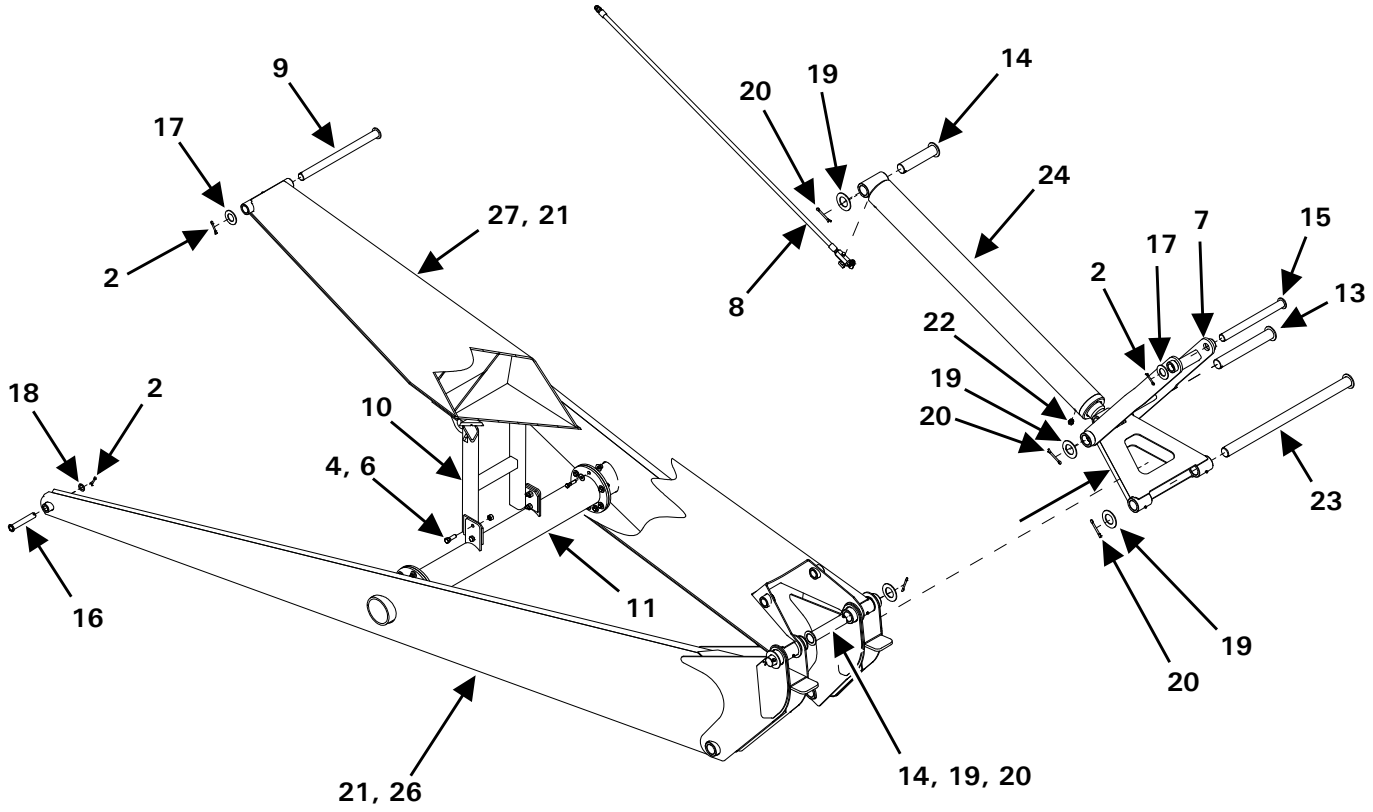
16104 BRIDGING ASSEMBLY



ITEM	PART NUMBER	DESCRIPTION	QTY
1	811791	BOLT, 1/2" x 2" HEX (PL)	4
2	812364	LOCK NUT, 1/2" (PL)	17
3	812365	LOCK NUT, 3/4" (PL)	8
4	812482	LOCK NUT, 5/8" (PL)	16
5	81638	FLAT WASHER, 1/2" BS (PL)	16
6	81678	FLAT WASHER, 11/16" STD (PL)	8
7	81700	NUT, 3/4" HEX (PL)	2
8	81722	NUT, 7/8" HEX (PL)	4
9	81972	WASHER, 7/8" SAE	4
10	84050	FLAT WASHER, 3/4" SAE (PL)	2
11	84299	BOLT, 5/8" x 2" HEX GR5 (PL)	14
12	87553	BOLT, 1/2" x 1.75" HEX UNC GR5 (PL)	13
13	88742	BOLT, 3/4" x 3" HEX GR5 (PL)	8
14	917934	LOWER BRIDGING YOKE	1
15	905817	BRIDGING BRACE PLATE	1
16	905826	BRIDGING PLATE WELDMENT (TUBE #2)	2
17	905827	BRIDGING BRACE	2
18	905828	BRIDGING PLATE, TUBE #3 (1/2" x 3" x 103")	1
19	905829	BRIDGING BRACE, TUBE #3 (3/8" x 2" x 43")	1
20	905830	BRIDGING BRACE, TUBE #3 (3/8" x 2" x 31 5/8")	1
21	905831	BRIDGING PLATE, TUBE #4 (1/2" x 3" x 60")	1
22	905832	BRIDGING BRACE, TUBE #4 (3/8" x 2" x 27 3/4")	1
23	905853	CABLE YOKE PLATE	8
24	906045	SIDE BRIDGING CABLE ASSEMBLY BS16104	2
25	906057	LOWER BRIDGING CABLE ASSEMBLY BS16104	2
26	906059	UPPER BRIDGING CABLE ASSEMBLY BS16104	2
27	909194	CABLE CLAMP, 3/4" (PL)	8
28	909783	BRIDGING CROSS BRACE, 3/8" x 2" x 53 1/4"	1
29	914769	SIDE BRIDGING BRACKET	8
30	960244	CABLE YOKE	4
31	964565	CABLE CLAMP, 1/2" (PL)	8
32	84335	BOLT, 5/8" x 2-1/2" HEX (PL)	2

1684 LIFT ARM ASSEMBLY

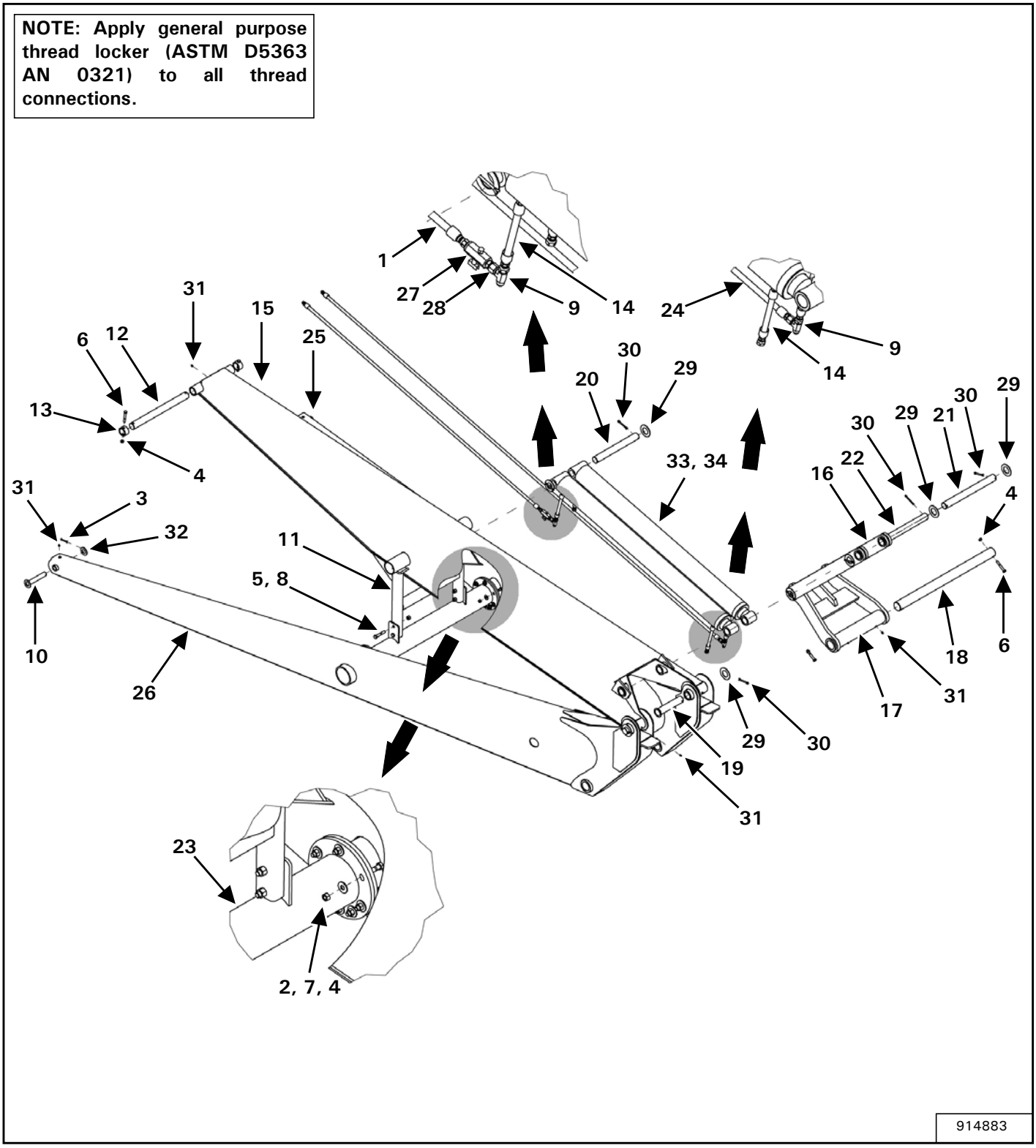
NOTE: Apply general purpose thread locker (ASTM D5363 AN 0321) to all thread connections.



ITEM	PART NUMBER	DESCRIPTION	QTY
1	811791	BOLT, 1/2" x 2" HEX (PL)	16
2	81210	COTTER PIN, 1/4" x 2 (PL)	4
3	812364	LOCK NUT, 1/2" (PL)	16
4	812482	LOCK NUT, 5/8" (PL)	4
5	81638	FLAT WASHER, 1/2" BS (PL)	32
6	84299	BOLT, 5/8" x 2' HEX GR 5 (PL)	4
7	907342	YOKE WELDMENT (13" BS)	1
8	912751	HYDRAULIC ROUTING	1
9	912800	TOP YOKE PIN WELDT 1.500" DIA	1
10	913053	UPPER LIFT ARM CRADLE ASSEMBLY	1
11	914956	LIFT ARM TORQUE TUBE WELDMENT	1
12	960688	13" LINK WELDMENT	1
13	960690	BOTTOM CYLINDER PIN WELDMENT, 2" DIA	1
14	960692	TOP CYLINDER PIN WELDMENT, 2" DIA	3
15	960694	TOP YOKE PIN WELDMENT, 1-1/2" DIA	1
16	960695	LIFT ARM CLEVIS PIN, 1" DIA	2
17	967135	RIM WASHER, 1-1/2" x 10 GA (PL)	2
18	967140	NARROW RIM WASHER, 1" x 10 GA (PL)	2
19	967153	NARROW RIM WASHER, 2" x 10 GA (PL)	5
20	967162	COTTER PIN, 5/16" x 3" (PL)	5
21	967164	DRIVE-IN GREASE ZERK	9
22	967908	PLUG, 8 ORB VENT	1
23	F0035	CONNECTING LINK PIN WELDMENT, 2" DIA	1
24	F0445M	CYLINDER, 5.0" x 51.351"	1
25	F1769	LOWER LIFT ARM - LEFT HAND	1
26	F1770	RIGHT HAND LOWER LIFT ARM	1
27	F1943	UPPER LIFT ARM WELDMENT	1

16104 LOWER LIFT ARM ASSEMBLY

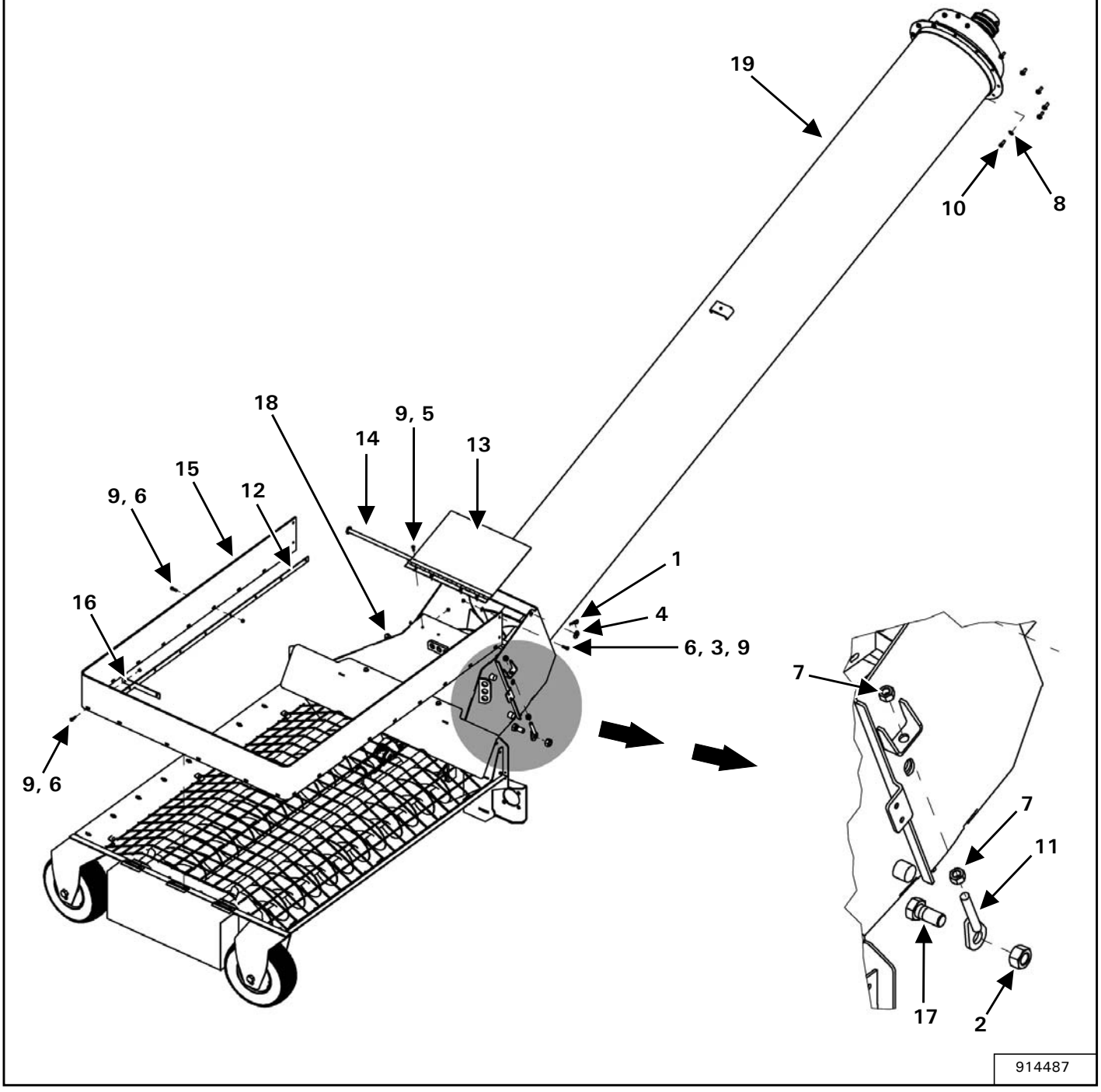
NOTE: Apply general purpose thread locker (ASTM D5363 AN 0321) to all thread connections.



ITEM	PART NUMBER	DESCRIPTION	QTY
1	116938	HOSE, #8 x #10 MJIC x #8 MPT	1
2	811791	BOLT, 1/2" x 2" HEX (PL)	16
3	81210	COTTER PIN, 1/4" x 2" (PL)	2
4	812364	LOCK NUT, 1/2" (PL)	20
5	812482	LOCK NUT, 5/8" (PL)	4
6	81629	BOLT, 1/2" x 3 1/2" HEX (PL)	4
7	81638	FLAT WASHER, 1/2" BS (PL)	32
8	81669	BOLT, 5/8" x 3 1/2" HEX (PL)	4
9	865341	TEE, #10 MJIC x #10 MJIC x #10 FJIC	2
10	905779	AXLE PIN WELDMENT, 1 1/4" x 7 1/8"	2
11	905786	CRADLE REST WELDMENT (16" BS)	1
12	905806	UPPR LIFT ARM PIN	1
13	905807	UPPER LIFT ARM PIN COLLAR	2
14	906103	HOSE, #8 x #8 MORB x #10 JIC	4
15	908445	UPPER LIFT ARM WELDMENT (16104)	1
16	908464	YOKE ARM WELDMENT (16104 BS)	2
17	908472	LINK WELDT	1
18	908474	CONNECTING YOKE PIN, 2 3/4" x 39"	1
19	908476	LIFT ARM PIN WELDMENT	2
20	908478	CYL PIN ROD	1
21	908480	UPPER LIFT ARM PIN ROD	1
22	908490	LIFT PIN ROD	1
23	914760	LIFT ARM TORQUE TUBE WELDMENT (1305 mm LG)	1
24	914926	HOSE, #8 x #10 MJIC x #10 MJIC	1
25	F1767	LEFT LOWER LIFT ARM WELDMENT	1
26	F1768	RIGHT LOWER LIFT ARM WELDMENT	1
27	960118	FLOW CONTROL VALVE, #8 FNPT (ONE WAY) (STEEL)	1
28	960152	ADAPTOR, STRAIGHT #10 MJIC x #8 MNPT	1
29	967153	NARROW RIM WASHER, 2" x 10 GA (PL)	8
30	967162	COTTER PIN, 5/16" x 3" (PL)	8
31	967164	GREASE ZERK, DRIVE-IN	7
32	9812487	NARROW RIM WASHER, 1 1/4" x 10 GA (PL)	2
33	F0664	CYLINDER, 5.00" x 55.35" W / 3-1/2" SHAFT	2
34	X2909	SEAL KIT CYL 5.0" x 3.5"	1

INTAKE TUBE AND HOPPER ASSEMBLY

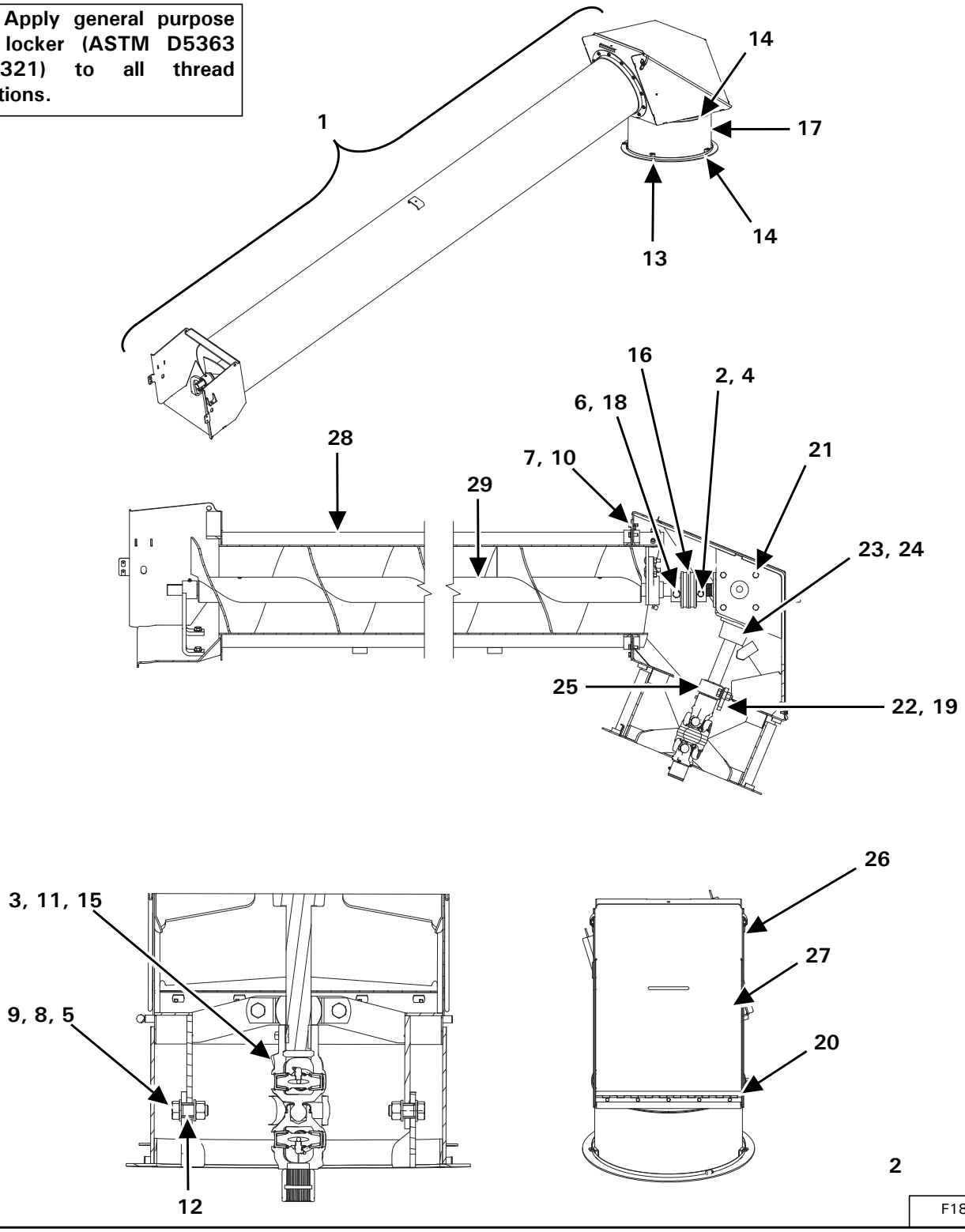
NOTE: Apply general purpose thread locker (ASTM D5363 AN 0321) to all thread connections.



ITEM	PART NUMBER	DESCRIPTION	QTY
1	12780	#7 HAIR PIN CLIP	1
2	812365	LOCK NUT, 3/4" (PL)	2
3	812624	FLAT WASHER, 1/4" (PL)	4
4	812639	FLAT WASHER, 5/8" SAE (PL)	1
5	81525	BOLT, 1/4" x 3/4" HEX (PL)	4
6	81527	BOLT, 1/4" x 1" HEX (PL)	28
7	81636	NUT, 1/2" HEX (PL)	4
8	84039	FLAT WASHER, 3/8" (PL)	12
9	84498	LOCK NUT, 1/4" (PL)	32
10	86170	BOLT, 3/8" x 1" HEX GR5 (PL)	12
11	914449	HOPPER ADJUSTMENT WELDMENT	2
12	914768L	RUBBER REINFORCEMENT	2
13	916887	HINGED COVER WELDMENT	1
14	916997	PIVOT COVER PIN WELDMENT	1
15	917748	RUBBER HOPPER EDGING	1
16	917749L	RUBBER REINFORCEMENT PLATE	3
17	967437	BOLT, 3/4" x 1 5/8" HEX (PL)	2
18	F1825*	16" MULTI FLIGHTING HOPPER ASSEMBLY	1
19	F1888*	ASSY-BS16 INTAKE AUGER	1
*See the following pages for individual part break downs.			

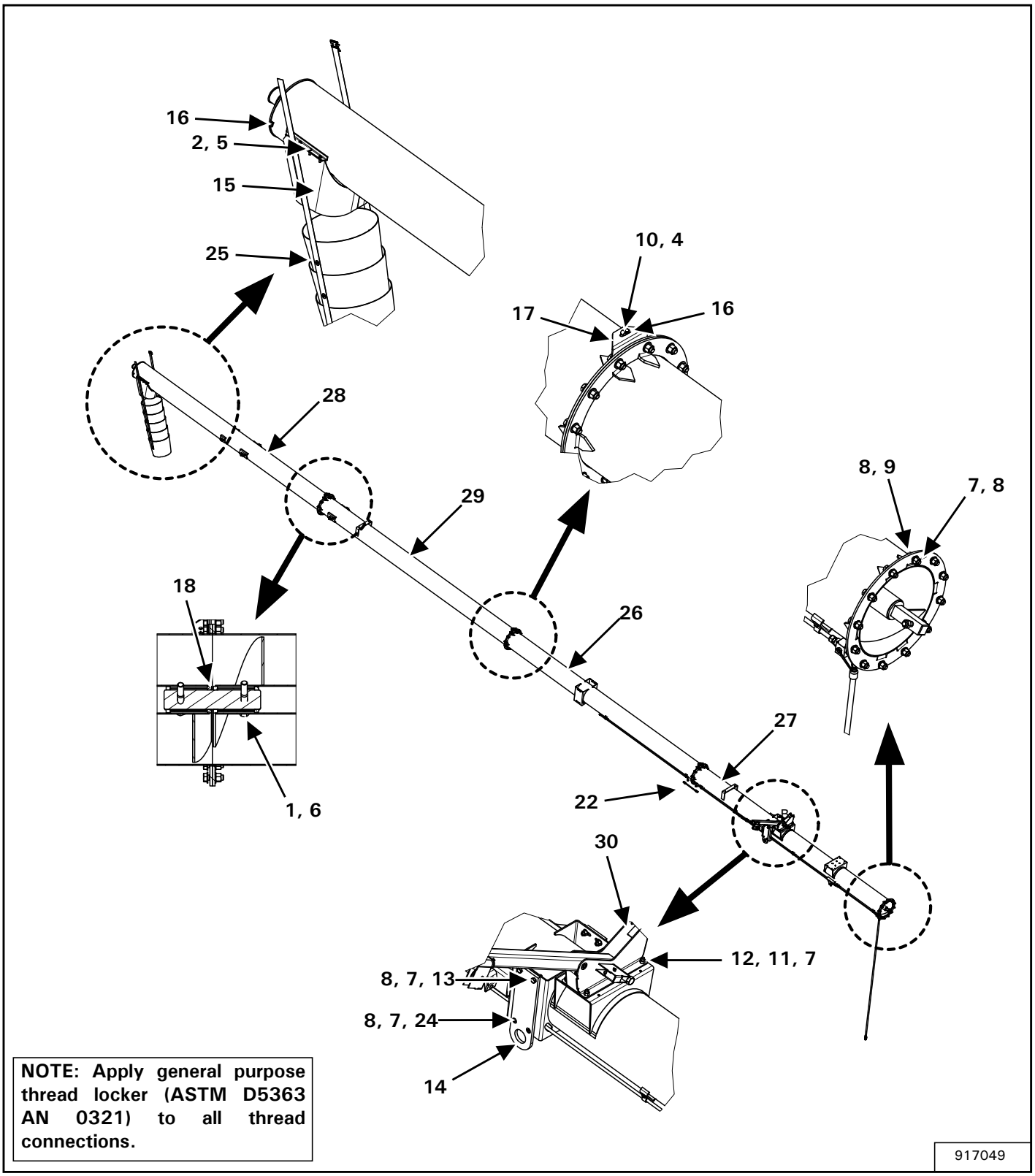
INTAKE AUGER

NOTE: Apply general purpose thread locker (ASTM D5363 AN 0321) to all thread connections.



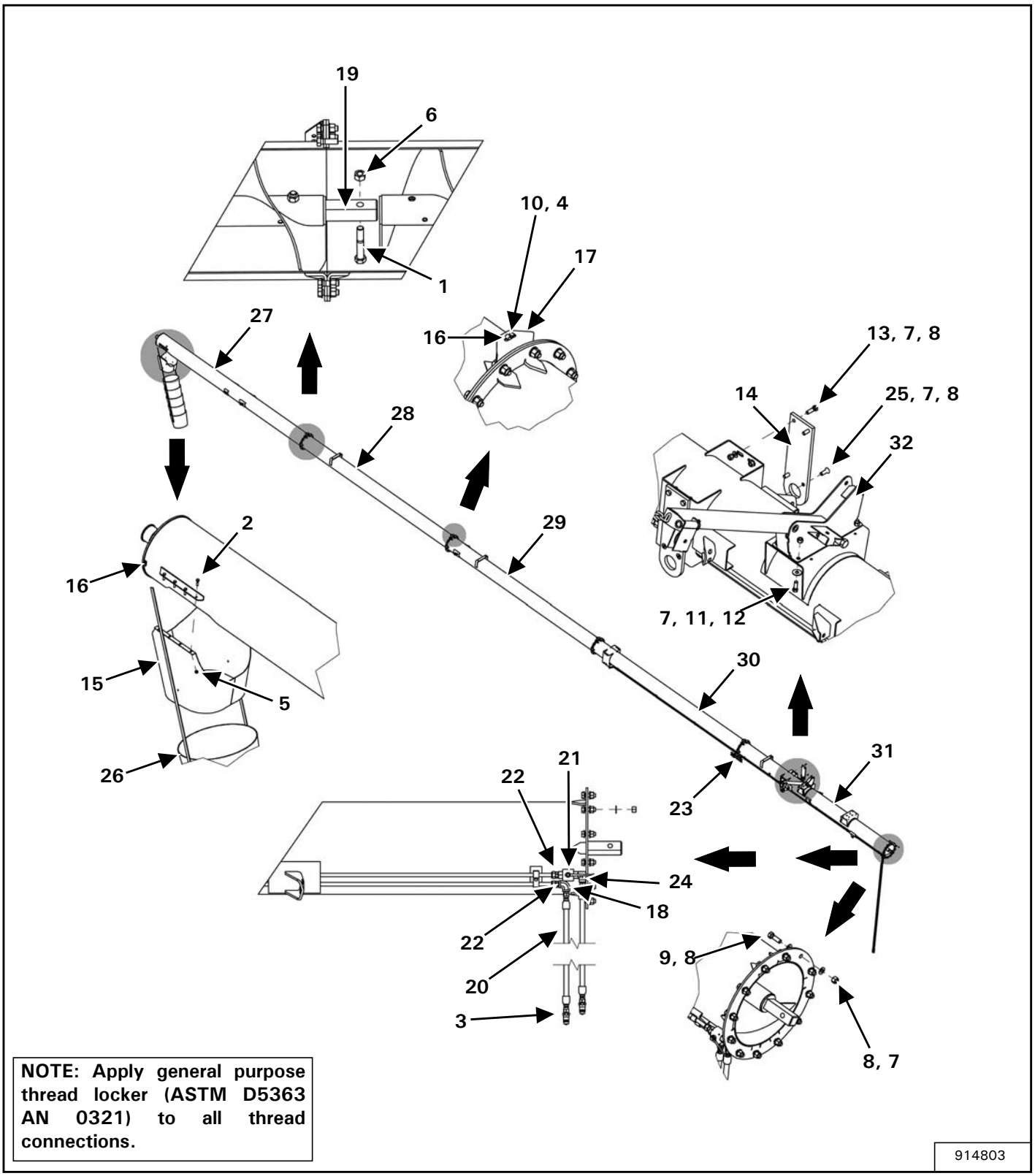
ITEM	PART NUMBER	DESCRIPTION	QTY
1	F1888	ASSY-BS16 INTAKE AUGER	1
2	811752	1/2" x 4" HEX BOLT (PL)	1
3	812037	03 8" x 3/4" SQHDCUP SETSCREW (PL)	2
4	812364	1/2" LOCK NUT (PL)	1
5	812365	3/4" LOCK NUT (PL)	2
6	812482	5/8' LOCK NUT (PL)	1
7	84039	3/8" FLAT WASHER (PL)	12
8	84050	3/4" S.A.E. FLAT WASHER (PL)	4
9	84467	3/4" x 2" HEX BOLT (PL)	2
10	86170	3/8" x 1" HEX BOLT GR.5 (PL)	12
11	909294	KEY - INT AUG TO MAIN AUG 3 8" x 3/8" x 1-1/4"	1
12	912503	UNDERCARRIAGE SPACER	2
13	914405	WELDT-INPUT BOX PIVOT	1
14	914429	CLAMP HOSE-2.06 TO 21.25	2
15	914455	CV JOINT-50 DEGREE CAT 4	1
16	916994	ASSY-COUPLING H6018 W SPLINE	1
17	917038	COVER-INPUT BOX PIVOT	1
18	917936	5/8" x 4-1/2" HEX BOLT (PL) GR8	1
19	812482	LOCK NUT, 5/8" (PL)	2
20	81525	BOLT, 1/4" x 3/4" HEX (PL)	5
21	81620	BOLT, 1/2" x 1 1/4" HEX (PL)	6
22	84270	BOLT, 5/8" x 1 3/4" HEX (PL)	2
23	905881	UPPER GEARBOX 4168	1
24	904578	SYNTHETIC GEAR OIL, SAE 75W-90	1.0L
25	905951	WOODEN BEARING & FLANGE SET, 1 3/4"	1
26	916877	INPUT BOX ELBOW WELDMENT	1
27	916894	ACCESS DOOR ELBOW WELDMENT	1
28	914503	INT AUG TUBE WELDT	1
29	915954	WELDT - INTAKE FLTG	1

1684 MAIN TUBE ASSEMBLY



ITEM	PART NUMBER	DESCRIPTION	QTY
1	811790	BOLT, 3/4" x 4-1/2" HEX GR 5 (PL)	8
2	811792	BOLT, 3/8" x 1-1/2" HEX GR.5 (PL)	8
3	812208	QUICK CONNECT NIPPLE, 1/2" BODY 1/2"-14 NPTF	1
4	812362	LOCK NUT, 5/16" (PL)	3
5	812363	LOCK NUT, 3/8" (PL)	8
6	812365	LOCK NUT, 3/4" (PL)	8
7	812482	LOCK NUT, 5/8" (PL)	60
8	812639	FLAT WASHER, 0.625 SAE BS (PL)	104
9	812946	BOLT, 0.625 UNC x 2.00 HEX GR 8 (PL)	48
10	81549	BOLT, 5/16" x 3/4" HEX (PL)	3
11	81678	FLAT WASHER, 5/8" STD (PL)	4
12	84270	BOLT, 5/8" x 1-3/4" HEX (PL)	4
13	84299	BOLT, 5/8" x 2" HEX GR 5 (PL)	4
14	904736	UNDRCARRIAGE CONNECTOR PLATE, 5/8" x 6" x 20-1/2"	2
15	906130	SPOUT	1
16	912832	CABLE CLIP, 7/16"	4
17	914882	CABLE MOUNT BRACKET, BS16104	3
18	915939	SQUARE FLIGHTING SHAFT	4
19	917746	HOSE, 08 x 08 MNPT x 08 MNPT	1
20	960057	2 WAY BALL VALVE, 08 FNPT	1
21	960152	STRAIGHT ADAPTOR, 10 MJIC x 08 MNPT	1
22	960162	HOSE, 08 x 10 MJIC x 10 MJIC	1
23	960585	90 DEGREE STREET ELBOW, 1/2" (STEEL)	1
24	967284	BOLT, 5/8" x 1-3/4" FLAT HEAD SOCKET (PL)	4
25	F0678	16" DOWNSPOUT ASSEMBLY	1
26	F1471*	#2 TUBE ASSEMBLY	1
27	F1472*	#1 TUBE ASSEMBLY	1
28	F1626*	#5 TUBE ASSEMBLY	1
29	F1628*	#3 TUBE ASSEMBLY	1
30	F1632*	BOOM LIFT ASSEMBLY	1
*See the following pages for individual part break downs.			

16104 MAIN TUBE ASSEMBLY

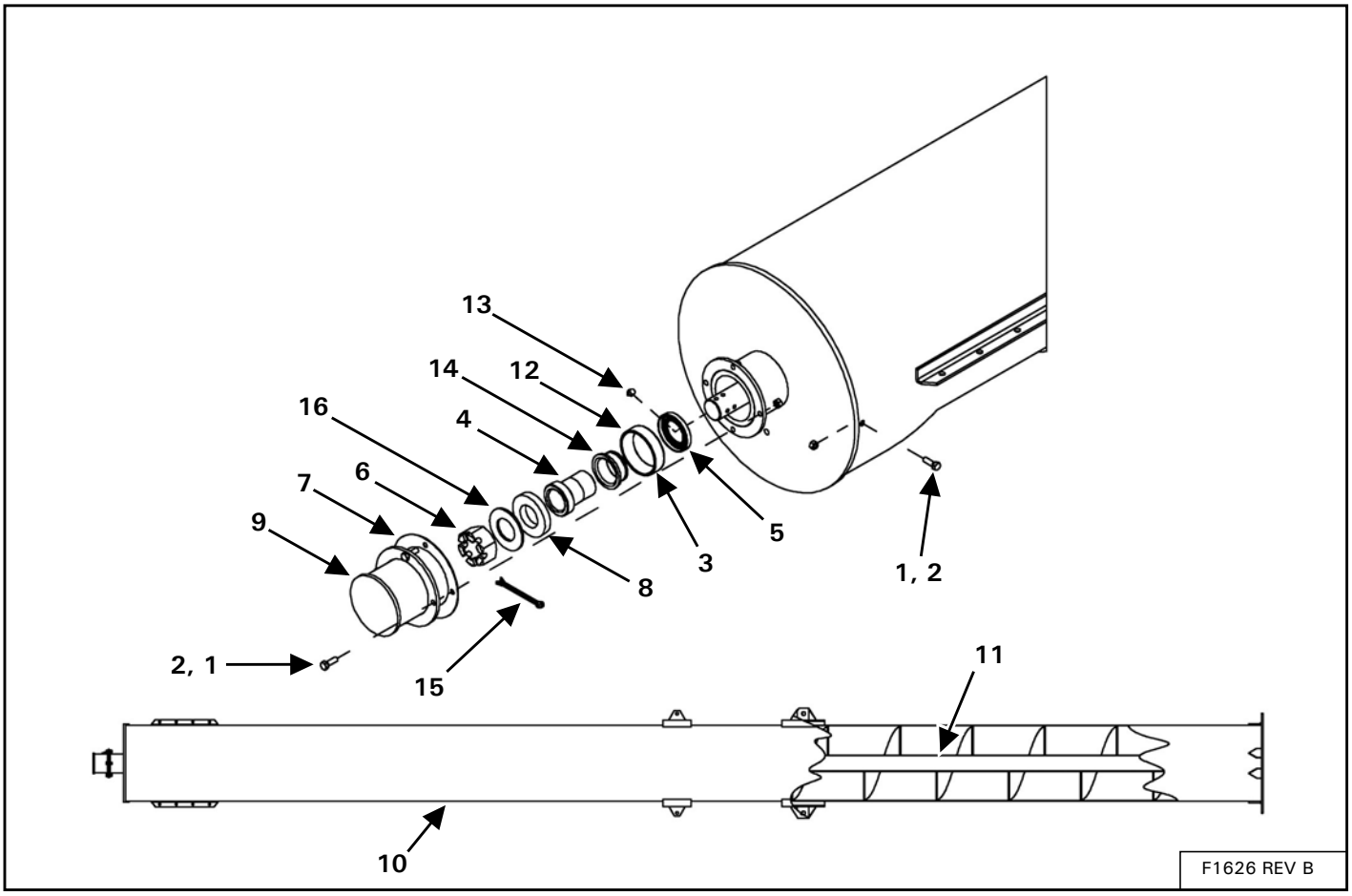


NOTE: Apply general purpose thread locker (ASTM D5363 AN 0321) to all thread connections.

ITEM	PART NUMBER	DESCRIPTION	QTY
1	811790	BOLT, 3/4" x 4 1/2" HEX GR5 (PL)	9
2	811792	BOLT, 3/8" x 1 1/2" HEX GR5 (PL)	8
3	812208	QUICK CONNECT NIPPLE, 1/2" BODY 1/2"-14 NPTF	2
4	812362	LOCK NUT, 5/16" (PL)	4
5	812363	LOCK NUT, 3/8" (PL)	8
6	812365	LOCK NUT, 3/4" (PL)	9
7	812482	LOCK NUT, 5/8" (PL)	72
8	812639	FLAT WASHER, 5/8" SAE (PL)	128
9	812946	BOLT, 5/8" UNC x 2.00" HEX GR8 (PL)	60
10	81549	BOLT, 5/16" x 3/4" HEX (PL)	4
11	81678	FLAT WASHER, 5/8" STD (PL)	4
12	84270	BOLT, 5/8" x1 3/4" HEX (PL)	4
13	84299	BOLT, 5/8" x 2" HEX GR5 (PL)	4
14	904736	UNDERCARRIAGE CONNECTOR PLATE, 5/8" x 6" x 20 1/2"	2
15	906130	SPOUT	1
16	912832	CABLE CLIP, 7/16"	5
17	914882	CABLE MOUNT BRACKET, BS16104	4
18	914930	ELBOW, #8 FPT x #8 FPT	1
19	915939	SHAFT, FLIGHTING SQUARE	5
20	917746	HOSE, #8 x #8 MNPT x #8 MNPT	2
21	960057	2 WAY BALL VALVE, #8 FNPT	1
22	960152	ADAPTOR, STRAIGHT #10 MJIC x #8 MNPT	2
23	960162	HOSE, #8 x #10 MJIC x #10 MJIC	2
24	960585	1/2" x 90 DEGREE STREET ELBOW (STEEL)	1
25	967284	BOLT, FLAT HEAD SOCKET 5/8" x 1 3/4" (PL)	4
26	F0678	16" DOWNSPOUT ASSEMBLY	1
27	F1626*	TUBE #5 ASSEMBLY	1
28	F1627*	TUBE #4 ASSEMBLY	1
29	F1628*	TUBE #3 ASSEMBLY	1
30	F1629*	TUBE #2 ASSEMBLY	1
31	F1633*	TUBE #1 ASSEMBLY	1
32	F1632*	BOOM LIFT ASSEMBLY	1

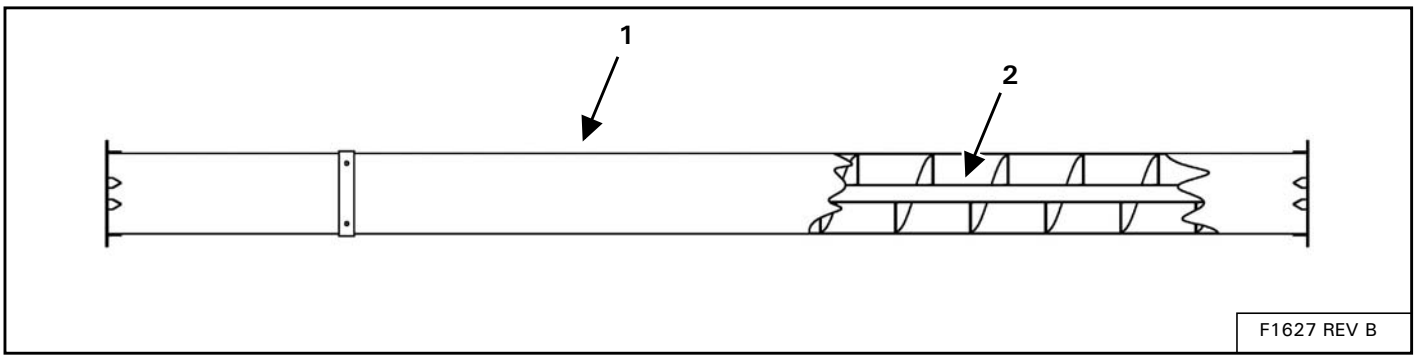
*See the following pages for individual part break downs.

TUBE #5 ASSEMBLY



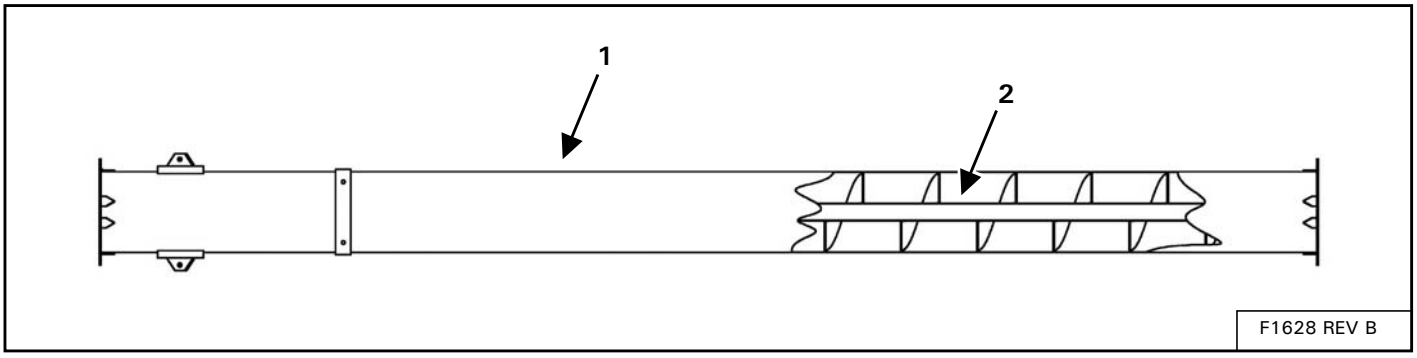
ITEM	PART NUMBER	DESCRIPTION	QTY
1	812026	5/16" x 1" HEX BOLT (PL)	6
2	812362	5/16" LOCK NUT (PL)	6
3	904902	GREASE GRADE 2	10 g
4	905906	END BEARING SLEEVE 1.515" ID x 2-1/4" OD x 2.88"	1
5	907052	OIL SEAL (CR17617)	1
6	907053	NUT, 1-1/2" SLOTTED HEX NF GR 2 (BR)	1
7	907642	RUBBER GASKET (CTD SE49)	1
8	914550L	PLATE - SPACER	1
9	914556	TOP FLANGE CAP WELDMENT	1
10	914637	TUBE WELDMENT 5	1
11	915934	FLIGHTING WELDMENT 5	1
12	965252	INNER BEARING CUP (25520)	1
13	967164	DRIVE-IN GREASE ZERK	1
14	967205	INNER BEARING CONE (25580)	1
15	9812436	COTTER PIN, 1/4" x 1-1/2" (PL)	1
16	9812445	NARROW RIM WASHER, 1-1/2" x 10 GA (BR)	1

16104 TUBE #4 ASSEMBLY



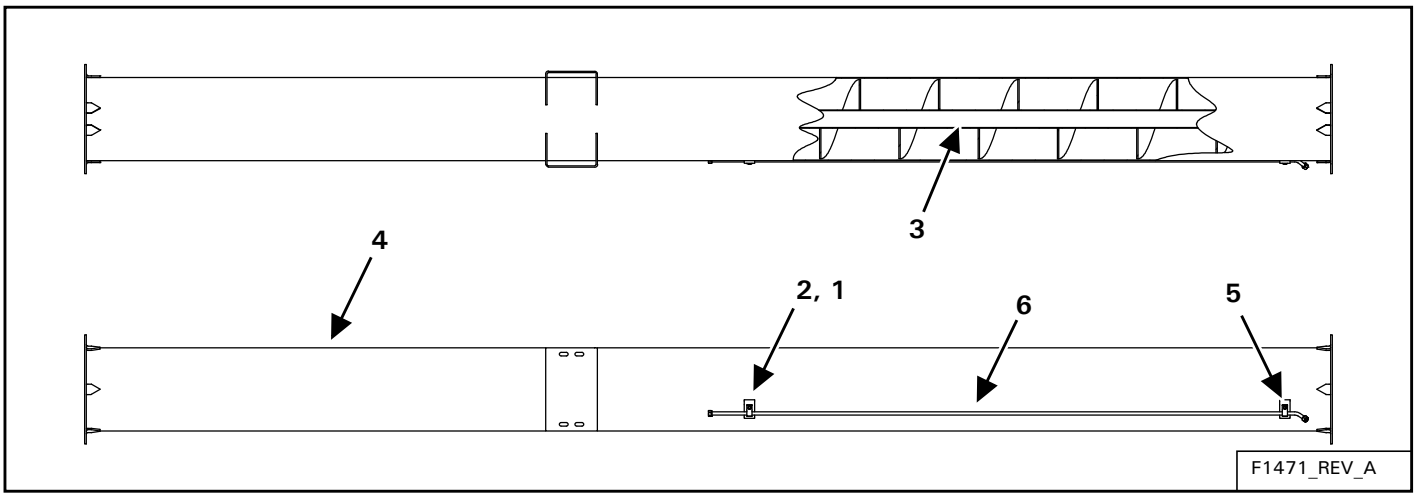
ITEM	PART NUMBER	DESCRIPTION	QTY
1	914636	TUBE #4 WELDMENT	1
2	915930	FLIGHTING WELDMENT	1

TUBE #3 ASSEMBLY



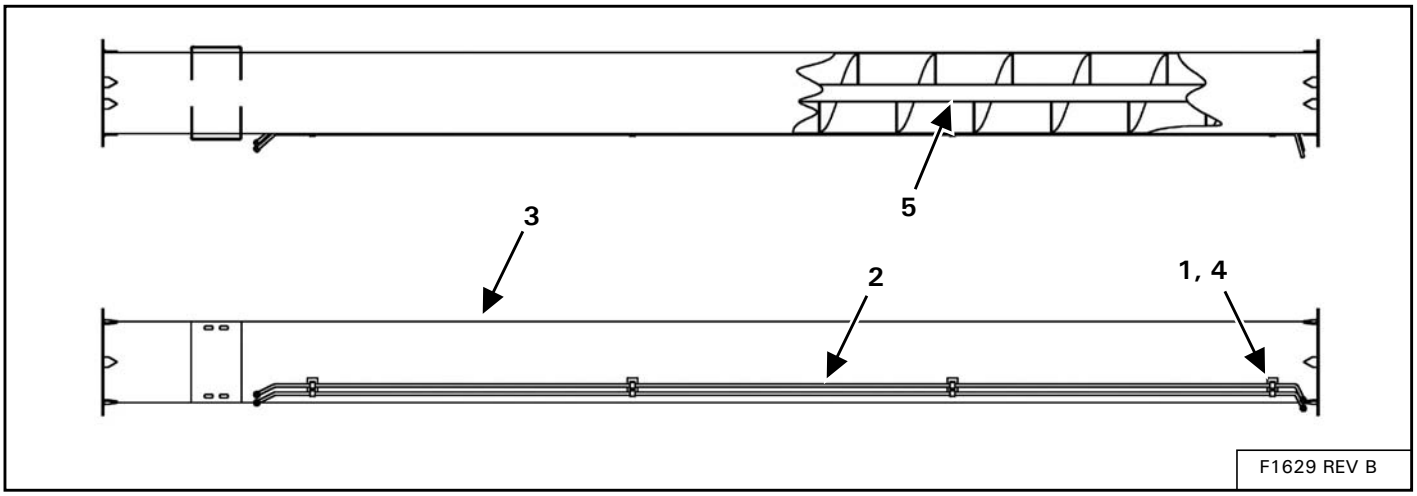
ITEM	PART NUMBER	DESCRIPTION	QTY
1	914635	TUBE #3 WELDMENT	1
2	915930	FLIGHTING WELDMENT	1

1684 TUBE #2 ASSEMBLY



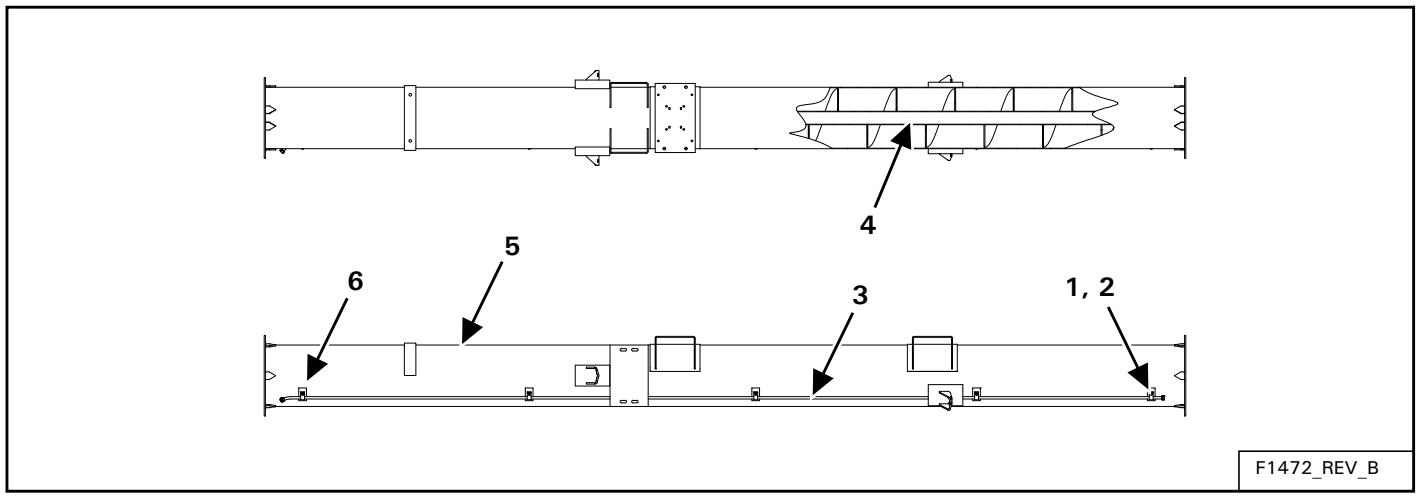
ITEM	PART NUMBER	DESCRIPTION	QTY
1	812363	LOCK NUT, 3/8" (PL)	2
2	86170	BOLT, 3/8" x 1" HEX GR 5 (PL)	2
3	915930	FLIGHTING WELDMENT	1
4	917066	TUBE WELDMENT #2	2
5	960140	HYDRAULIC LINE CLAMP	2
6	960200	HYDRAULIC LINE, 5/8" OD x 9'-7"	1

16104 TUBE #2 ASSEMBLY



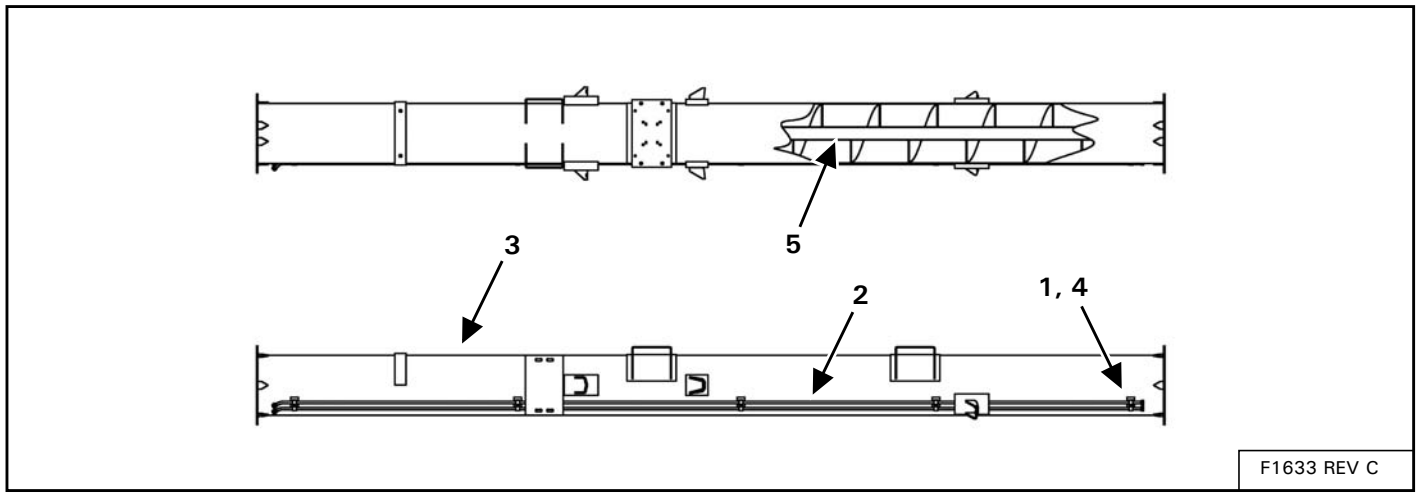
ITEM	PART NUMBER	DESCRIPTION	QTY
1	81549	BOLT, 5 16" x 3/4" HEX (PL)	4
2	906105	HYDRAULIC LINE, 5 8" OD x 19'-2"	2
3	914634	TUBE WELDMENT #2	1
4	914818	BRACKET, HYDRAULIC HOSE CLAMP	4
5	915930	FLIGHTING WELDMENT	1

1684 TUBE #1 ASSEMBLY



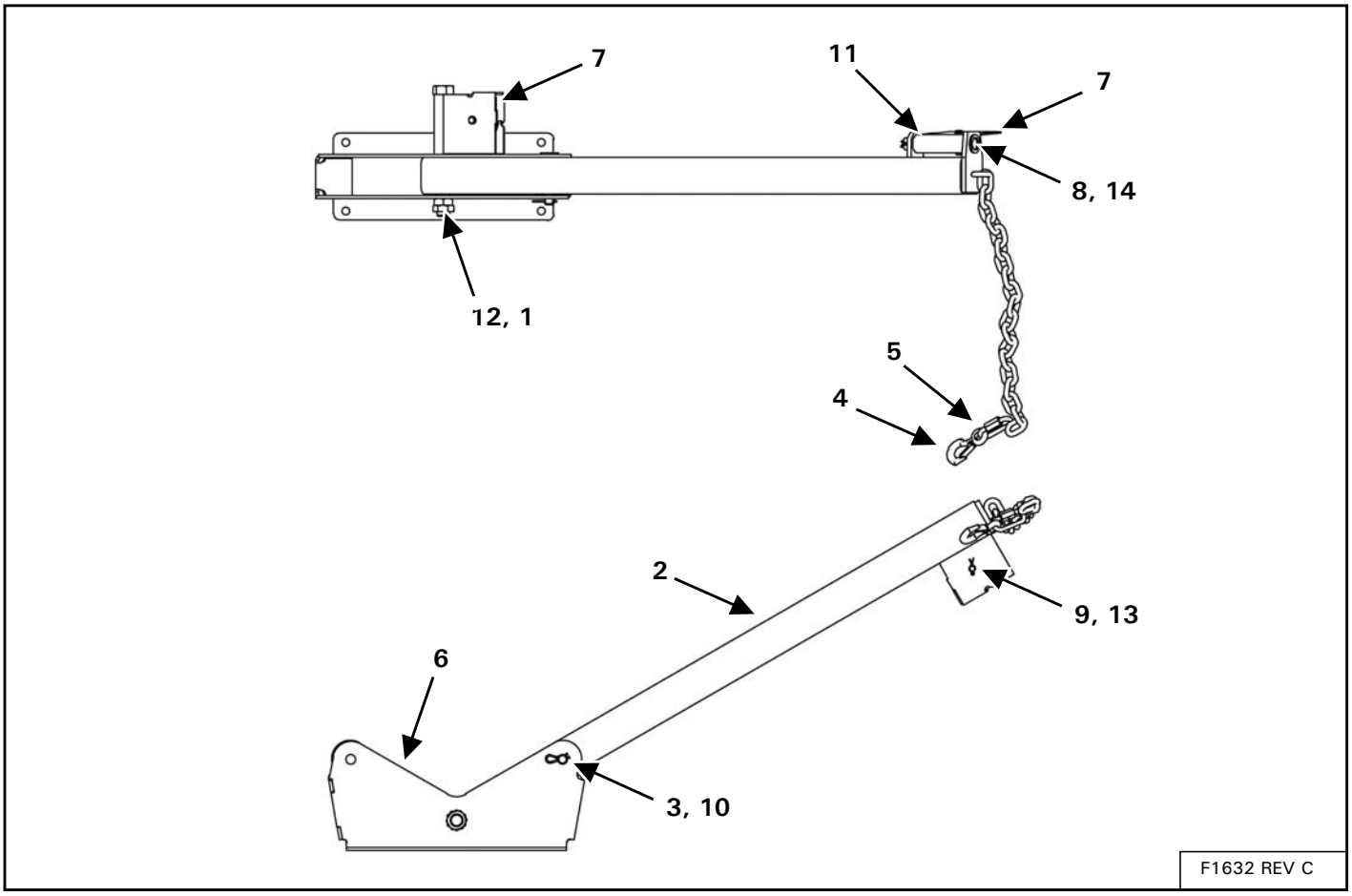
ITEM	PART NUMBER	DESCRIPTION	QTY
1	81549	BOLT, 5 16" x 3/4" HEX (PL)	5
2	86170	BOLT, 3/8" x 1" HEX GR 5 (PL)	5
3	906104	HYDRAULIC LINE, 5/8" OD x 19'-2"	1
4	915930	FLIGHTING WELDMENT	1
5	917068	TUBE WELDMENT #1	1
6	960140	HYDRAULIC LINE CLAMP	5

16104 TUBE #1 ASSEMBLY



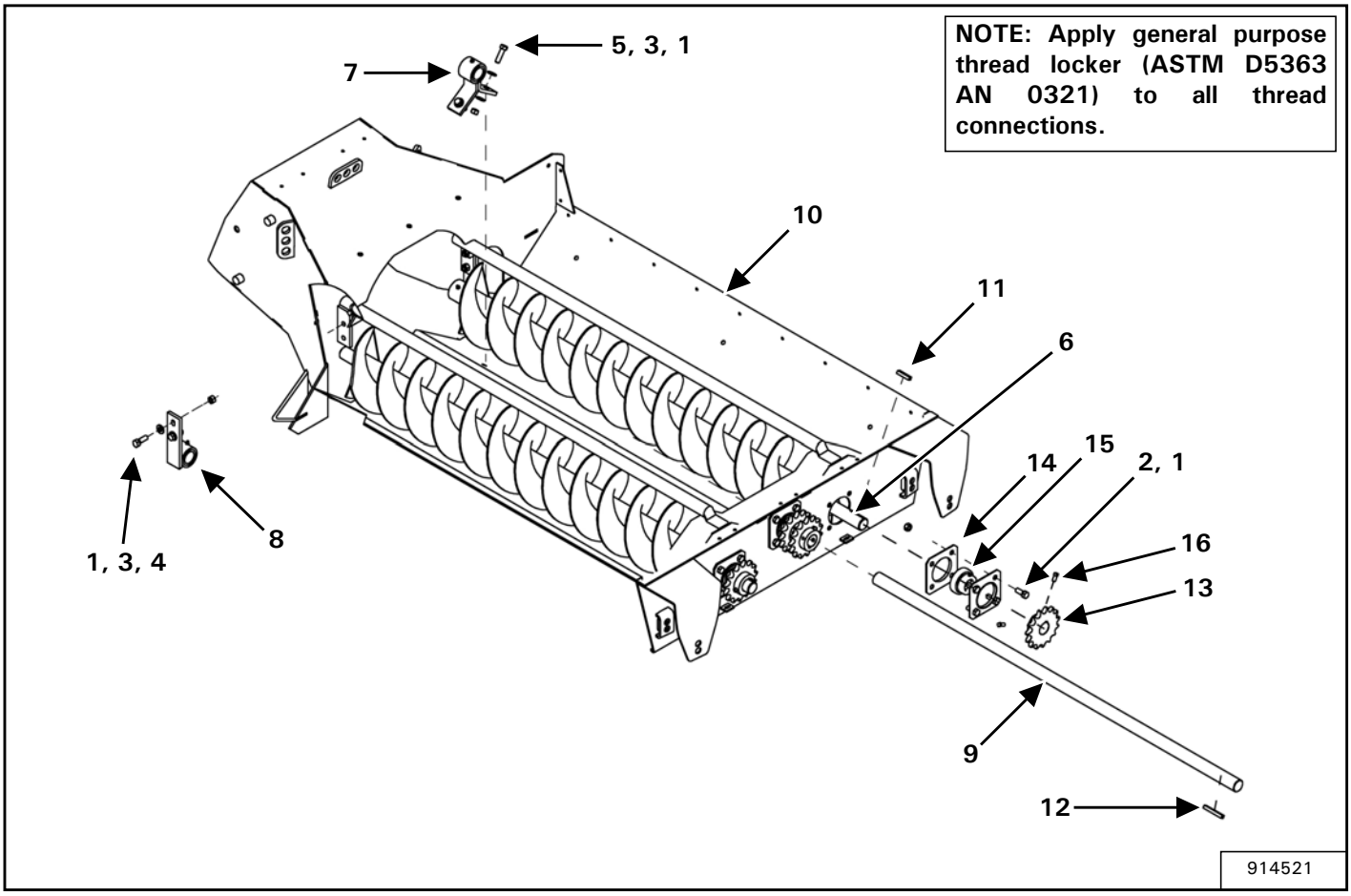
ITEM	PART NUMBER	DESCRIPTION	QTY
1	81549	BOLT, 5 16" x 3/4" HEX (PL)	5
2	906105	HYDRAULIC LINE, 5 8" OD x 19'-2"	2
3	914629	TUBE WELDMENT #1	1
4	914818	BRACKET, HYDRAULIC HOSE CLAMP	5
5	915930	FLIGHTING WELDMENT	1

BOOM LIFT ASSEMBLY



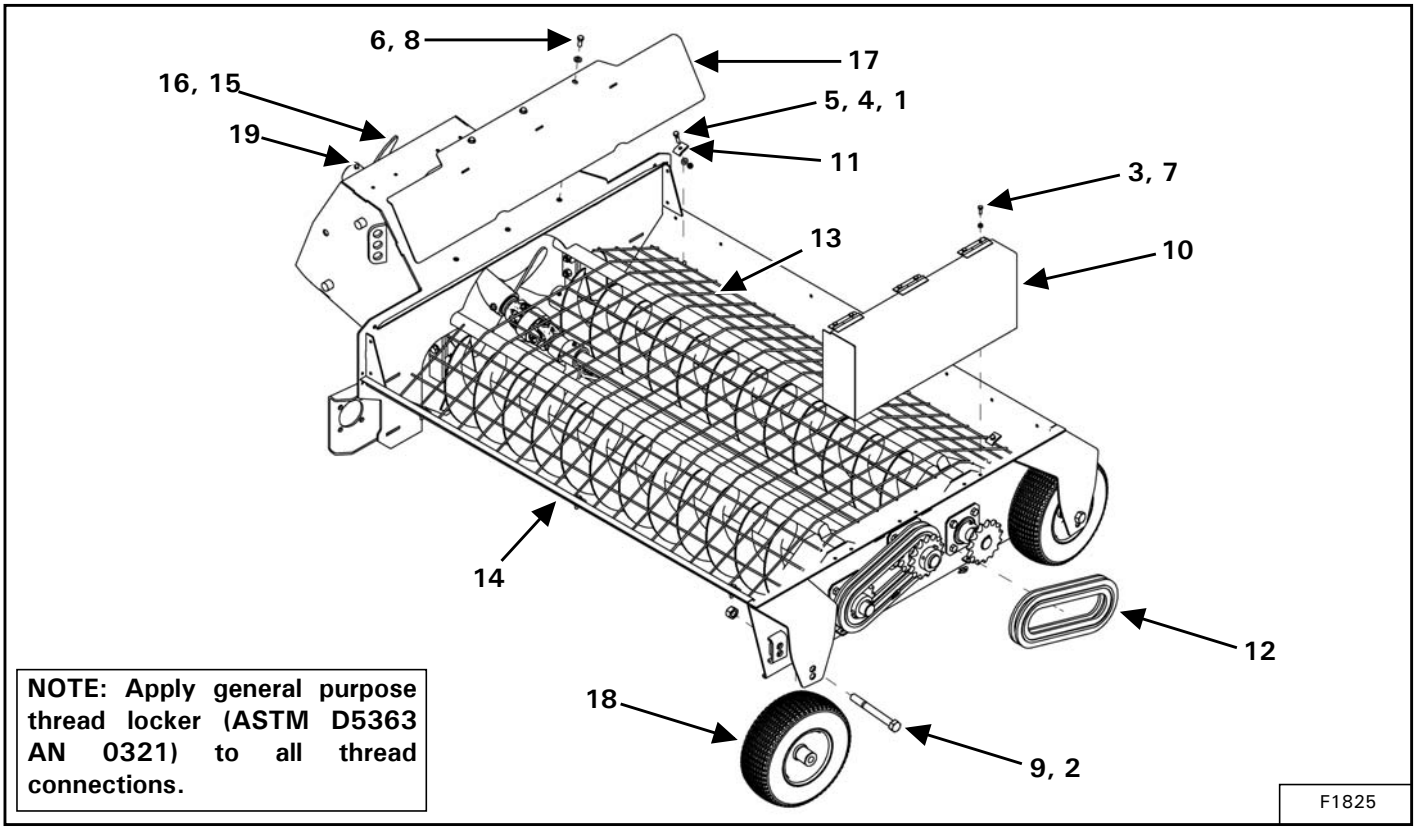
ITEM	PART NUMBER	DESCRIPTION	QTY
1	84051	JAM NUT, 1" HEX GR	2
2	905815	ARM WELDMENT	1
3	905821	PIN ROD WELDMENT	1
4	909171	CABLE HOOK ASSEMBLY (1 TON)	1
5	909172	3/8" QUICK LINK	1
6	914597	HOPPER LIFT ARM MOUNT WELDMENT	1
7	914619	PULLEY HOLDERWELDMENT	2
8	960111	CYLINDER PIN WELDMENT	1
9	960913	CLEV PIN, 1/2" x 1-13/16" (PL)	2
10	961012	HAIR PIN CLIP, 16	1
11	961846	CABLE PULLEY, 1/2" ID x 3-1/2" OD x 1-1/8"	2
12	967233	BOLT, 1" x 10" HEX (PL)	1
13	9812430	COTTER PIN, 3/16" x 1" (PL)	2
14	9812433	COTTER PIN, 3/16" x 1-1/2"	1

MULTI-FLIGHTING HOPPER ASSEMBLY



ITEM	PART NUMBER	DESCRIPTION	QTY
1	812364	LOCK NUT, 1/2" (PL)	18
2	81620	BOLT, 1/2" x 1 1/4" HEX (PL)	12
3	84048	FLAT WASHER, 1/2" SAE (PL)	8
4	84277	BOLT, 1/2" x 1 1/2" HEX (PL)	4
5	87553	BOLT, 1/2" x 1 3/4" HEX UNC GR5 (PL)	2
6	905980	OUTER FLIGHTING WELDMENT	2
7	906003	CENTER SHAFT HOLDER	1
8	906007	OUTER FLIGHTING HOLDER	2
9	914479	CENTER DRIVE SHAFT, 1 1/2" x 59 7/8"	1
10	914520	HOPPER WELDMENT	1
11	914643	KEY, 3/8" x 3/8" x 2"	2
12	914739	KEY, 3/8" x 3/8" x 3"	1
13	960719	SPROCKET, H80B15 (1.5" BORE)	4
14	967260	1 1/2" BRG FLG	6
15	968627	1 1/2" BRG W/ COLLAR	3
16	9812378	SET SCREW, 3/8" x 3/4" SQ HD SER	8

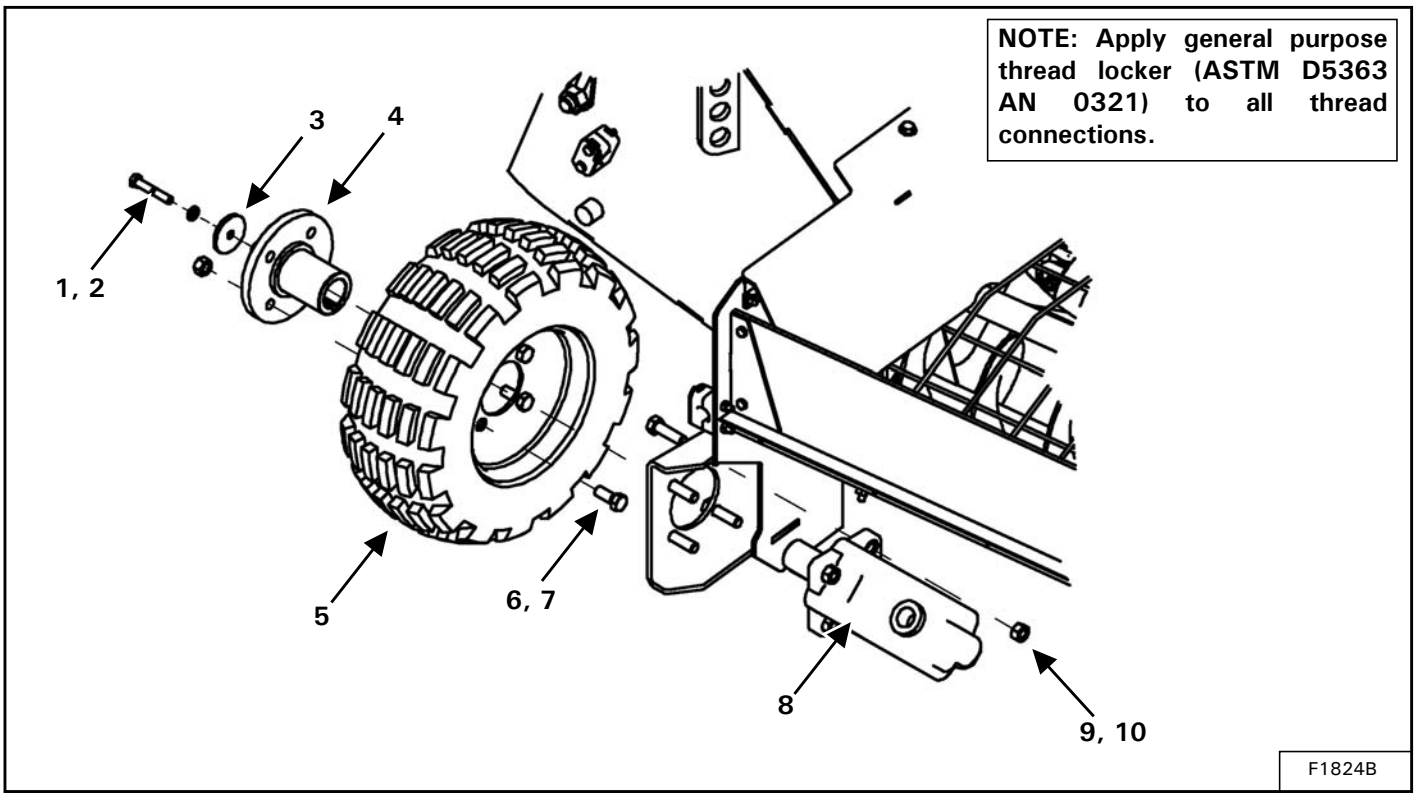
MULTI-FLIGHTING HOPPER ASSEMBLY (CONT'D)



NOTE: Apply general purpose thread locker (ASTM D5363 AN 0321) to all thread connections.

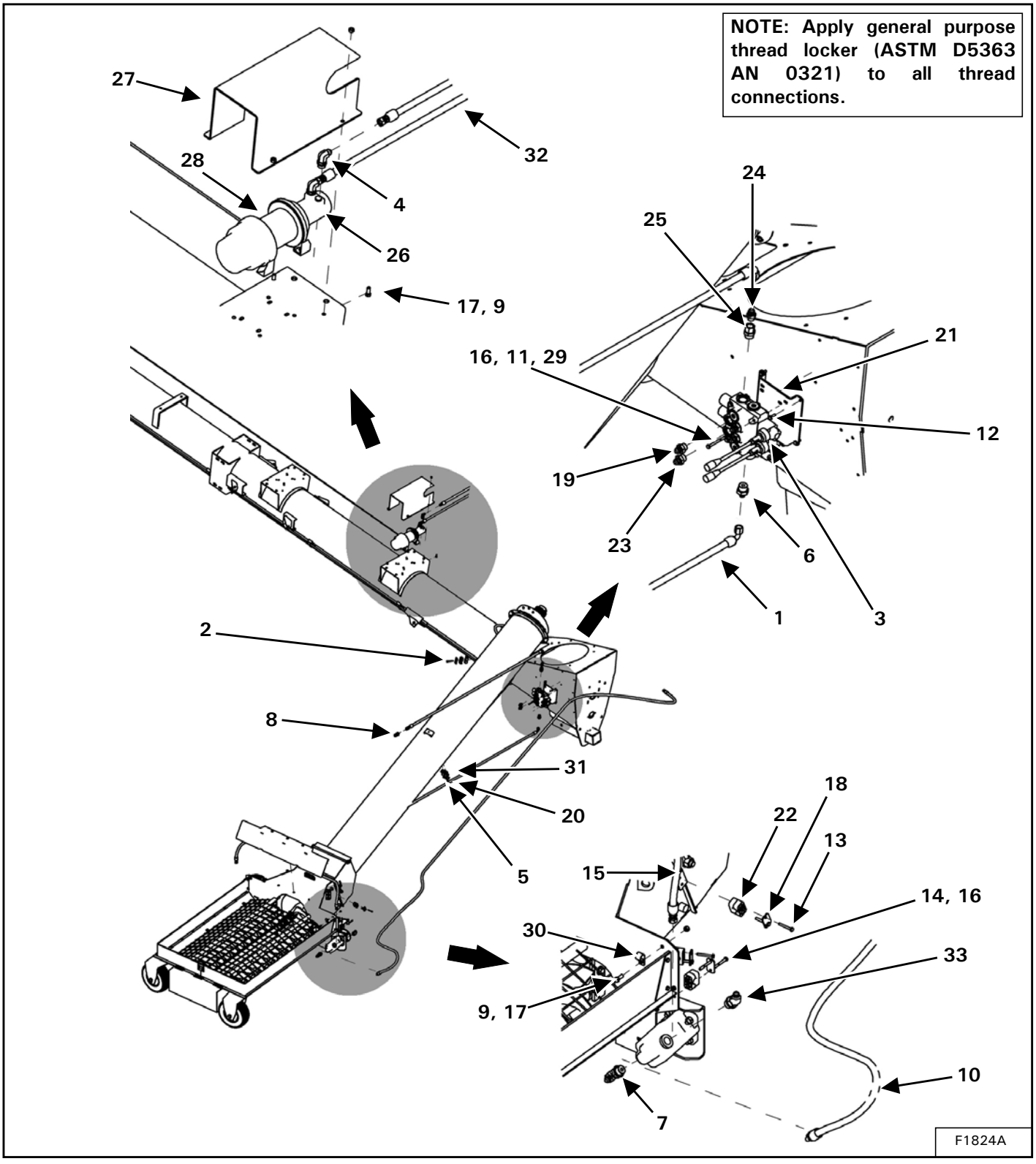
ITEM	PART NUMBER	DESCRIPTION	QTY
1	812362	LOCK NUT, 5/16" (PL)	6
2	812365	LOCK NUT, 3/4" (PL)	2
3	81525	BOLT, 1/4" x 3/4" HEX (PL)	6
4	81546	FLAT WASHER, 5/16" (PL)	6
5	81552	BOLT, 5/16" x 1 1/4" HEX (PL)	6
6	84039	FLAT WASHER, 3/8" (PL)	3
7	84498	LOCK NUT, 1/4" (PL)	6
8	86170	BOLT, 3/8" x 1" HEX GR5 (PL)	3
9	902615	BOLT, 3/4" x 7" HEX (PL)	2
10	906011	CHAIN GUARD COVER WELDMENT	1
11	910898	CAGE MOUNTING PLATE	6
12	914372	ROLLER CHAIN - 80H	2
13	914506	HOPPER FLIGHTING GUARD	1
14	914521	16" MULTI FLIGHTING HOPPER ASSEMBLY	1
15	914569	PIVOT FLIGHTING ASSEMBLY	1
16	914643	KEY, 3/8" x 3/8" x 2"	2
17	916936	HYDRAULIC HOSE SHIELD WELDMENT	1
18	966851	TIRE, W / WHEEL 13 / 500 x 6	2
19	9812378	SET SCREW, 3/8" x 3/4" SQ HD SER	4

HOPPER DRIVE WHEEL



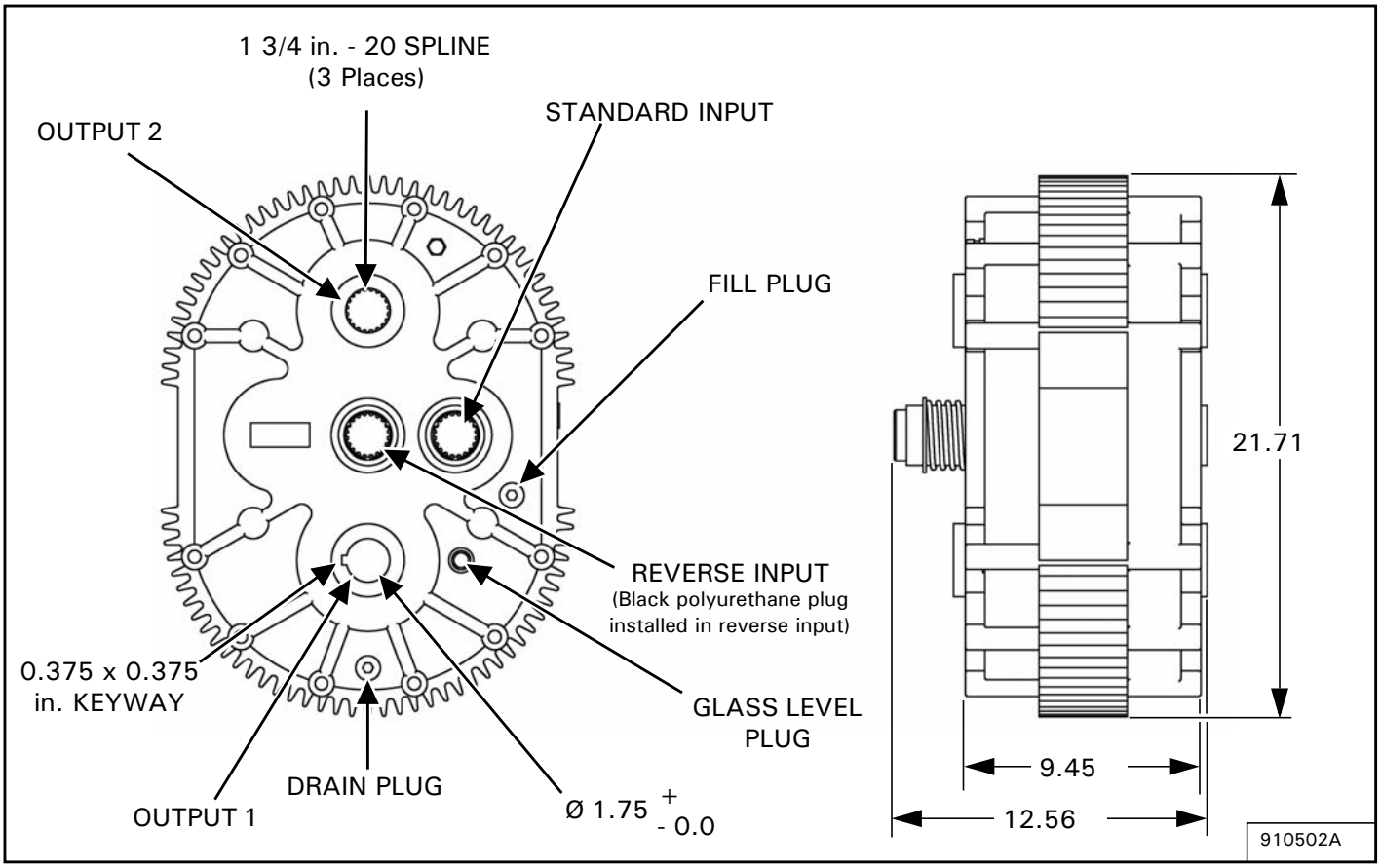
ITEM	PART NUMBER	DESCRIPTION	QTY
1	81593	LOCK WASHER, 3/8" (PL)	2
2	810958	BOLT, 3/8" x 2 1/4" HEX (PL)	2
3	909180L	FLAT WASHER, 7GA x 13/32" ID x 2" OD	2
4	909179	HUB WELDMENT	2
5	960800	TIRE W/WHEEL 16/650X8	2
6	967105	WHEEL NUT, 1/2" (STEEL)	8
7	968404	WHEEL BOLT, 1/2" x 1 1/4" (PL)	8
8	909193	HYDRAULIC MOTOR 169-0093-001	2
9	812364	LOCK NUT, 1/2" (PL)	8
10	87553	BOLT, 1/2" x 1.75" HEX UNC GR5 (PL)	8

HYDRAULIC KIT ASSEMBLY

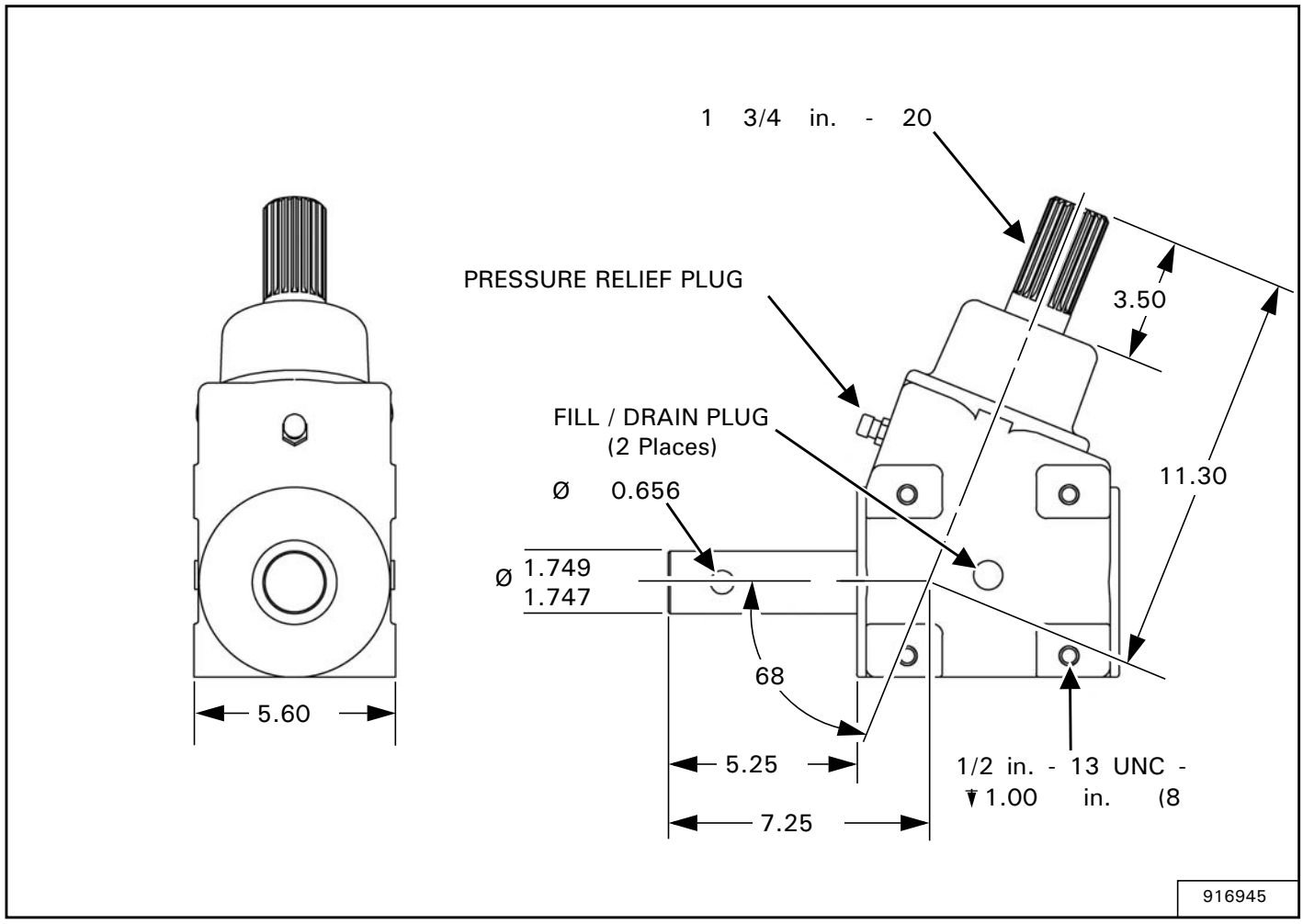


ITEM	PART NUMBER	DESCRIPTION	QTY
1	912250	HOSE, 1/2 X 138 1/2MNPT X 3/4 -90SWF	2
2	810761	BOLT, 5/16" x 2 1/2" HEX (PL)	1
3	917223	VALVE ASSEMBLY, W / HAND LEVERS	1
4	811416	90 DEG ELBOW, #10 MORB x #8 MJIC	2
5	811688	BOLT, 5/16" x 2 1/4" (PL) GR.5	3
6	811748	ADAPTOR, #12 MORB x #8 MJIC	1
7	811960	90 DEG ELBOW, #12 MORB x #8 MJIC	2
8	812208	QUICK CONNECT NIPPLE, 1/2" BODY 1/2"-14 NPTF	2
9	812363	LOCK NUT, 3/8" (PL)	6
10	917022	HOSE, #8 x #8 SWFJIC x #8 SWFJIC 90	2
11	812624	FLAT WASHER,1/4" PL	3
12	81525	BOLT, 1/4" x 3/4" HEX PL	4
13	81531	BOLT, 0.25" NC x 2.00" HEX GR5 PL	8
14	81532	BOLT, 1/4" x 2 1/4" HEX GR5 PL	4
15	917021	HOSE, #8 x #8 SWFJIC x 08 SWFJIC	1
16	84498	LOCK NUT, 1/4" (PL)	7
17	86170	BOLT, 3/8" x 1" HEX GR.5 (PL)	6
18	917015	COVER, SINGLE CLAMP 3	6
19	886897	ADAPTOR, STR 7/8" MORB x 3/4" MJIC S	2
20	916917	CLAMP, SINGLE 0.79	6
21	916959	VALVE MOUNT BRACKET	1
22	917014	COVER, TWIN CLAMP 3D	4
23	909460	ADAPTOR, STR 7/8" MORB x 3/4" MJIC R 0.0625	2
24	909935	ADAPTOR, CHECK VALVE #8 MORB x #8 MJIC	1
25	909936	ADAPTOR, STR #12 MORB x #8 FORB	1
26	910483	WINCH, WARN HYDRAULIC	1
27	910490	SHIELD, HYD. WINCH 7GA	1
28	910508	WINCH CABLE ASSEMBLY, 1/4"	1
29	910523	BOLT, 1/4" x 2 3/4" HEX (PL)	3
30	913193	P-CLIP, 0.75"	2
31	914640	HOSE CLAMP, TWIN 0.787" DIA	4
32	914931	HOSE, #8 x #8 FJIC x #8 FJIC 90 DEG	2
33	916912	ADAPTOR, #8 MJIC x #12 MORB 45 DEG	2

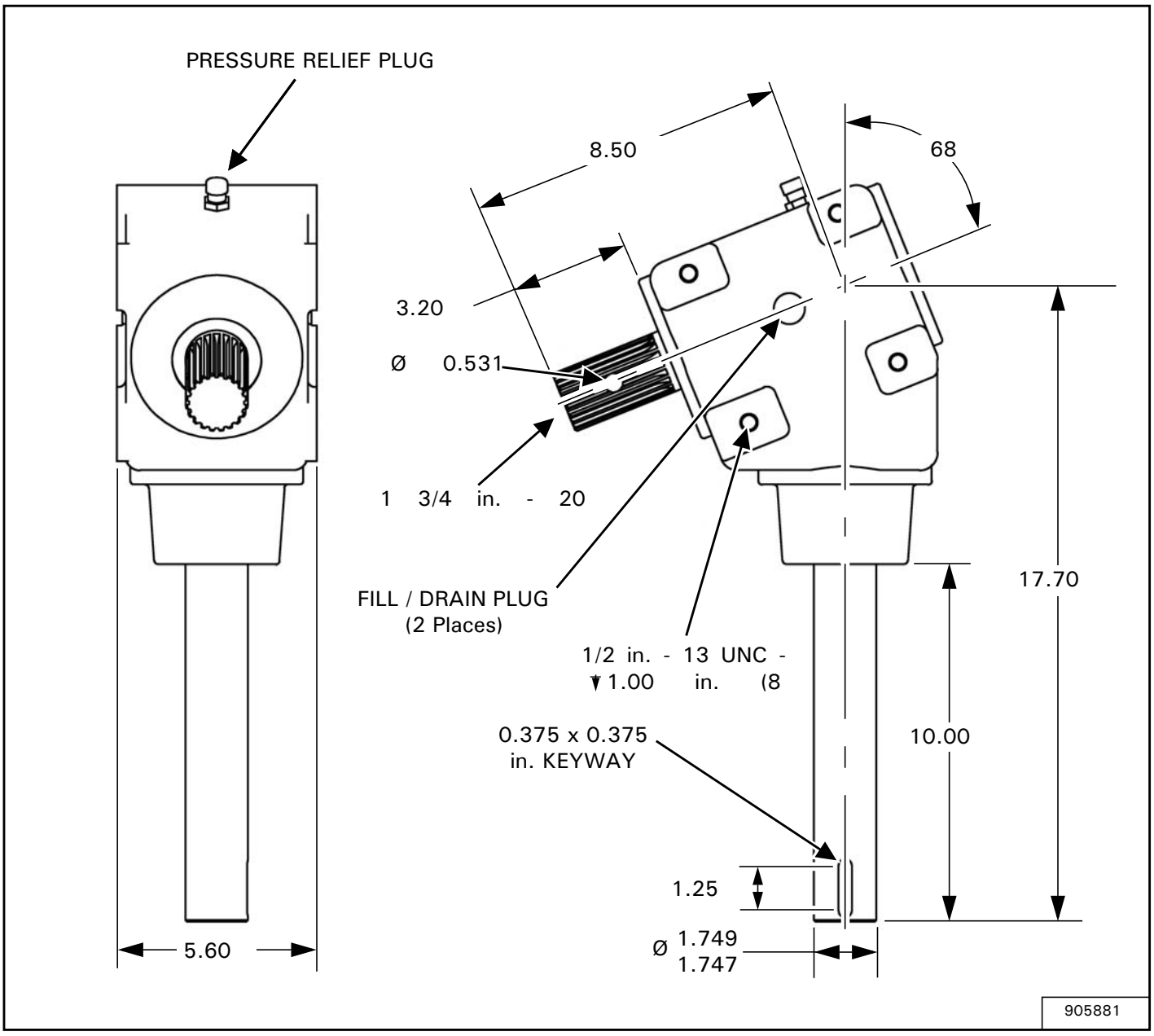
M2000 HELICAL GEARBOX 910502



4168 LOWER GEARBOX 916945



4168 UPPER GEARBOX 905881

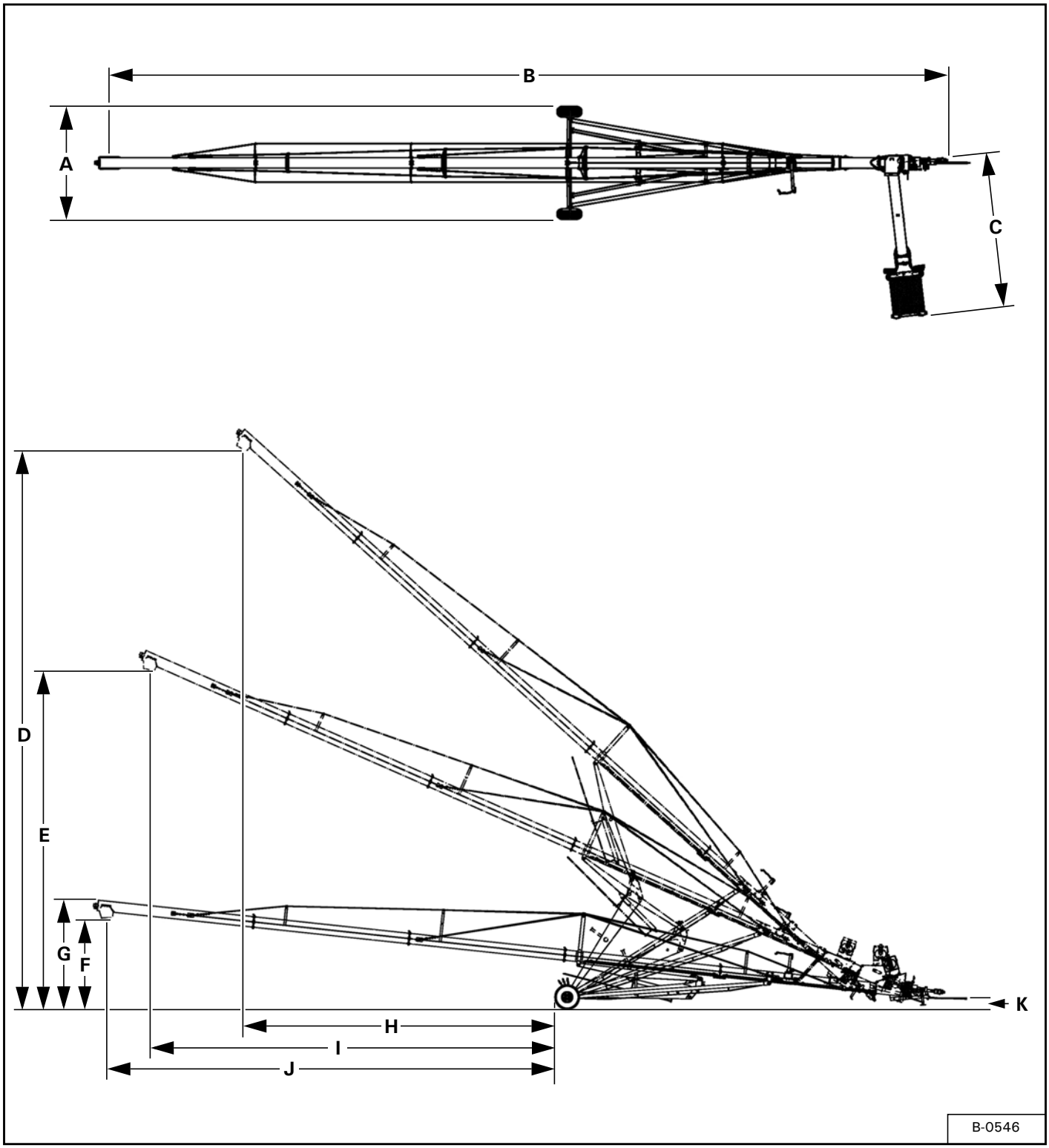


SPECIFICATIONS

Farm King

SPECIFICATIONS

Dimensions

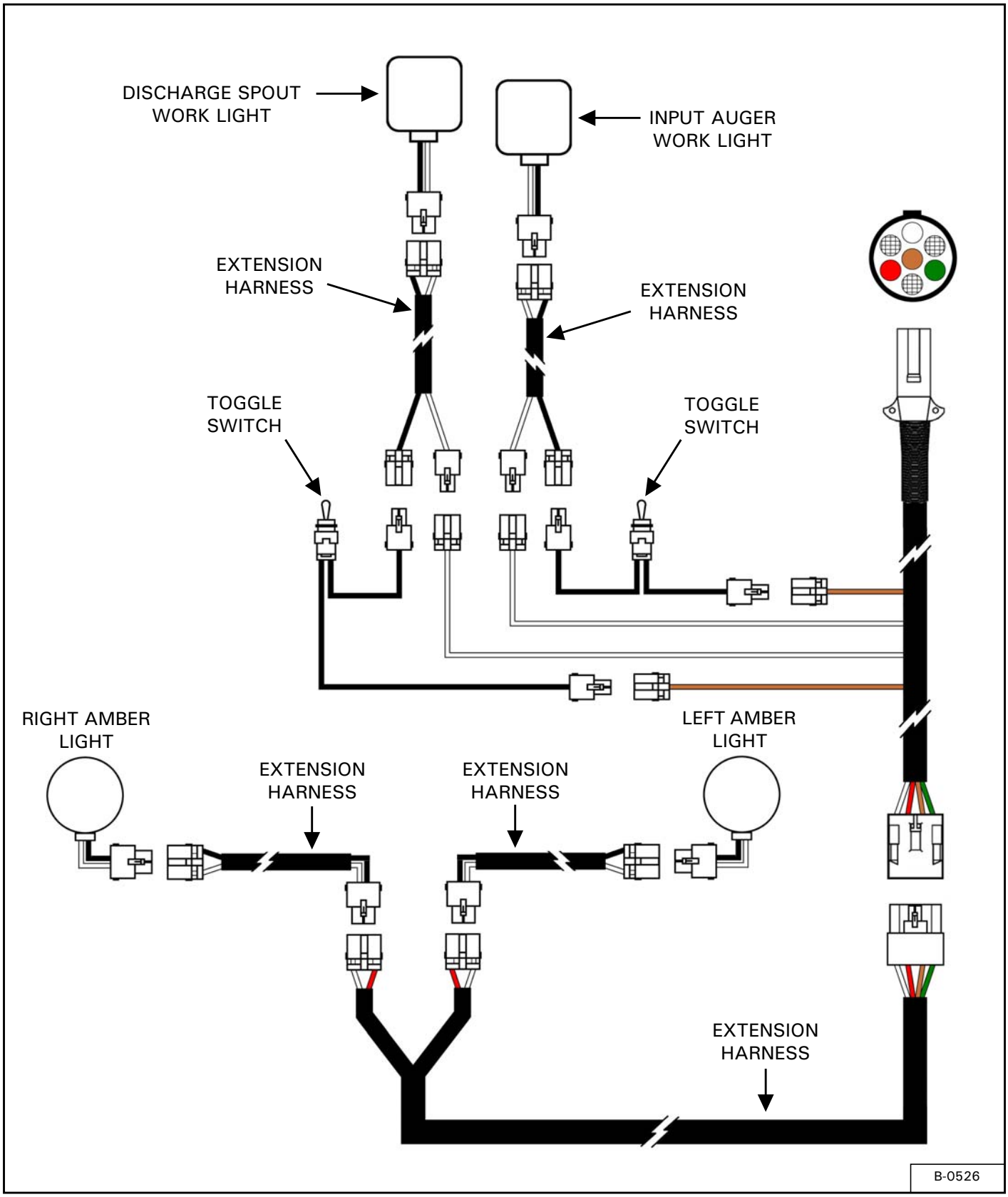


DESCRIPTION	BACKSAVER AUGER 1684	BACKSAVER AUGER 16104
Overall Width (A)	163 in.	173 in.
Overall Length (B)	1019 in.	1266 in.
Input Auger / Hopper Length (C)	235 in.	235 in.
Discharge Spout Height @ 42° Angle (D)	679 in.	857 in.
Discharge Spout Height @ 24° Angle (E)	424 in.	520 in.
Discharge Spout Height @ 6° Angle (F)	135 in.	141 in.
Transport Height (G)	163 in.	168 in.
Discharge Spout To Wheels @ 42° Angle (H)	390 in.	481 in.
Discharge Spout To Wheels @ 24° Angle (I)	481 in.	623 in.
Discharge Spout To Wheels @ 6° Angle (J)	525 in.	687 in.
Hitch Height (K)	18 in.	18 in.

Performance

DESCRIPTION	BACKSAVER AUGER 1684	BACKSAVER AUGER 16104
Maximum PTO Speed	1000 RPM	1000 RPM
Main Auger Tubes	16 in. Dia.	16 in. Dia.
Main Auger Size	15.25 in. OD	15.25 in. OD
Hopper	16 in. Multi Flighting	16 in. Multi Flighting
Hopper Intake Size	55.17 in. x 45.85 in.	55.17 in. x 45.85 in.
Hopper Drive Chain	80H Roller Chain	80H Roller Chain
Hitch Tongue Weight (Down Position)	2,300 lb.	2,460 lb.
Total Weight	11,000 lb.	13,500 lb.
Hubs And Wheels	6 Bolt Hubs / 12.5 L-15 FI	8 Bolt Hubs / 16.5 L x 16.1 x 10 Ply
Winch	Hydraulic / Optional Electrical Winch	
M2000 Helical Gearbox	75W - 90 Synthetic Gear Oil	
4168 Lower Gearbox	75W - 90 Synthetic Gear Oil	
4168 Upper Gearbox	75W - 90 Synthetic Gear Oil	

ELECTRICAL DIAGRAM



HARDWARE TORQUE VALUES

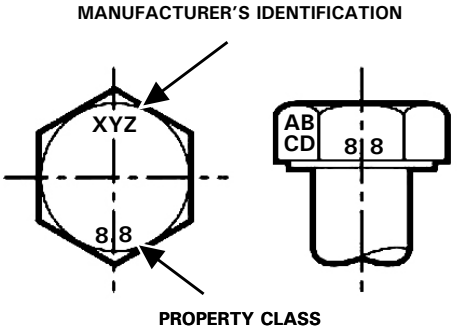
Metric Chart

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.

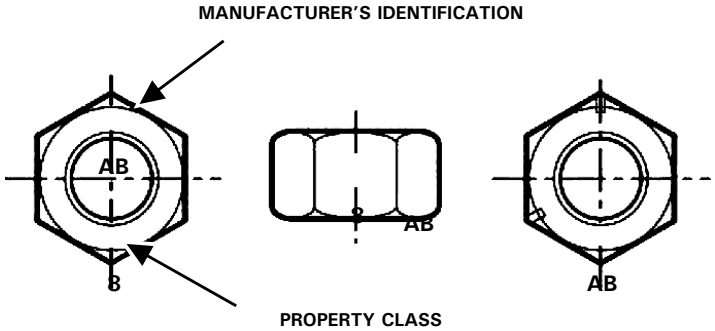
Use the following charts to determine the correct torque when checking, adjusting or replacing hardware. **Torque values are listed in newton-meters (inch* or foot pounds) for normal assembly applications.**

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)

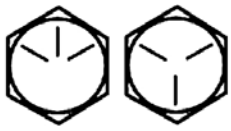
Imperial Chart

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.**

Identification of Hex Cap Screws and Carriage Bolts

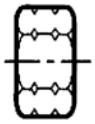
SAE GRADE 2 BOLTS



SAE GRADE 5 BOLTS

SAE GRADE 8 BOLTS

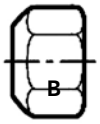
Identification of Hex Nuts and Lock Nuts



Grade A - No Notches

Grade B - One Circumferential Notch

Grade C - Two 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)

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.								

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 289

O-ring Face Seal Tightening Torque		
Tube 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 290

Flare Fitting Tightening Torque		
Tube 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 290]** to find the correct tightness needed.

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

O-ring Boss Fitting

Figure 291

O-ring Boss Tightening Torque		
Tube 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″ -1 6	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)

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.

Hydraulic Tubes And Hoses

Replace any hydraulic tubes 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 hydraulic tubes fittings.

WARRANTY

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. Payment of labor costs will only be considered on repairs made to manufactured parts and components that have been found defective during a period of one (1) year following delivery to the original retail purchaser.

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 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.

ALPHABETICAL INDEX

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