

# Farm King

## OPERATOR AND PARTS MANUAL

### Backsaver Auger

Model 1370, 1385, 1395





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

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# Farm King





## WARRANTY REGISTRATION FORM

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

Customer Name:

Dealer Name:

Customer Address:

Dealer Address:

City:

Prov / State:

City:

Prov / State:

Postal / Zip Code:

Phone:

Postal / Zip Code:

Phone:

Backsaver Auger Model:

Serial Number:

Delivery Date:

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

### Dealer Inspection Report

<input type="checkbox"/>	Bearings Turn Freely
<input type="checkbox"/>	Winch Cable Tension Checked
<input type="checkbox"/>	Bridging Cable Tension Checked
<input type="checkbox"/>	Check Oil Level In Auger Drive Gear Box
<input type="checkbox"/>	Fasteners Tight
<input type="checkbox"/>	Lubricate Machine
<input type="checkbox"/>	Check Tire Pressure
<input type="checkbox"/>	Hopper Raises And Lowers Freely

### Safety

<input type="checkbox"/>	Safety Chain On Hitch (if equipped)
<input type="checkbox"/>	All Decals Installed
<input type="checkbox"/>	Guards And Shields Installed And Secure
<input type="checkbox"/>	Review Operating And Safety Instructions
<input type="checkbox"/>	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.

# Farm King



**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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# Farm King



## 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.

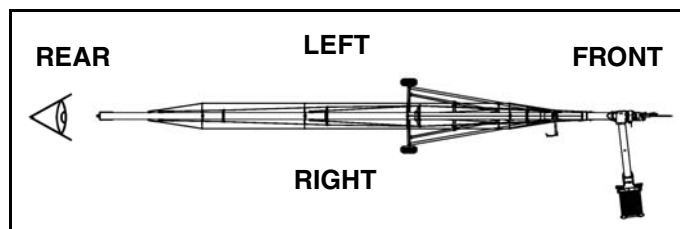
Operate and maintain this equipment in a safe manner and in accordance with all applicable local, state, and federal codes, regulations and / or laws. Follow all on-product labeling and instructions.

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](http://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 bottom tube, just forward of the input box.

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

## Manual Storage

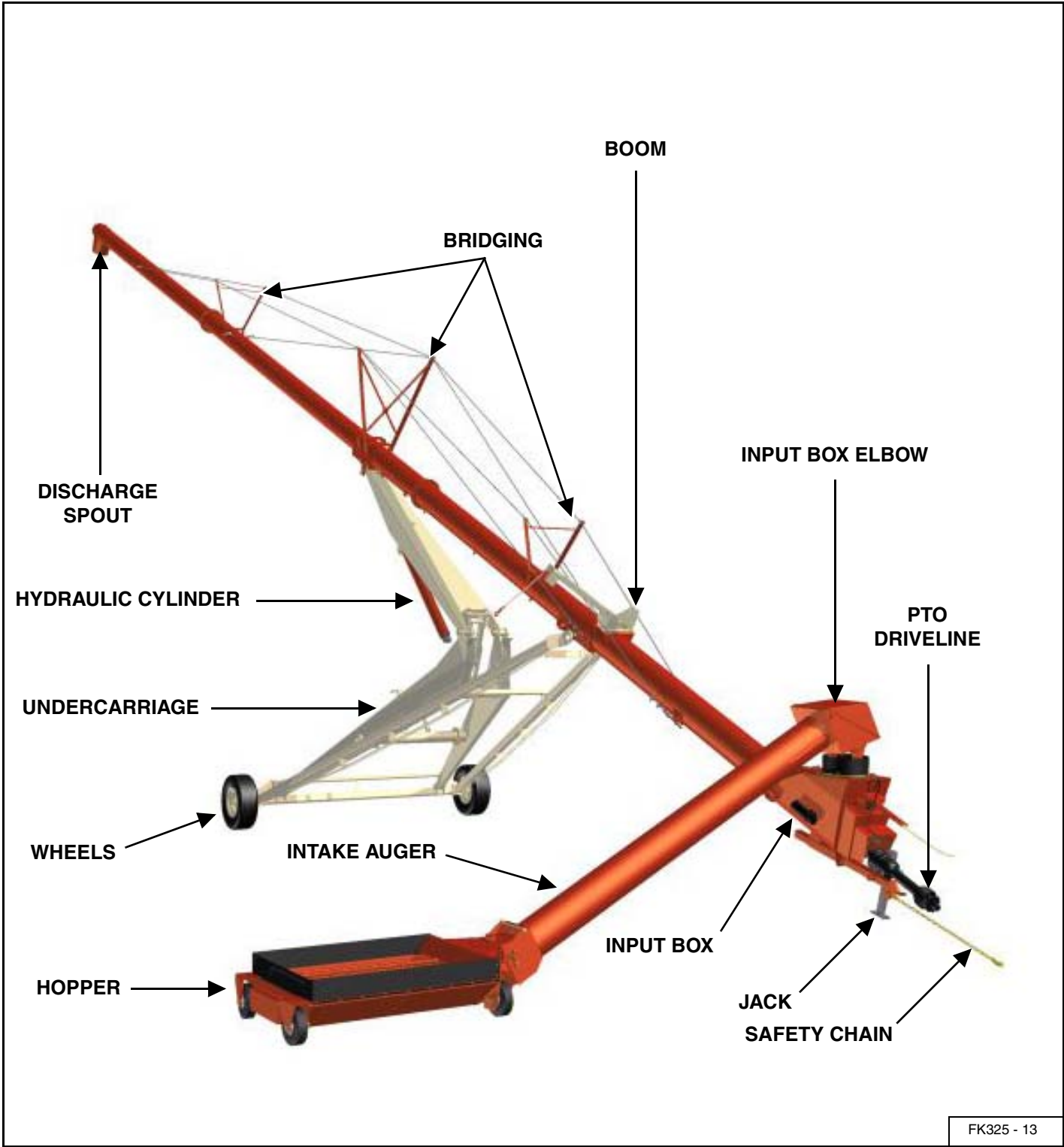
**Figure 2**



The Operator And Parts Manual and other documents can be stored in the canister (Item 1) **[Figure 2]** located on the input box.

**EQUIPMENT IDENTIFICATION**

**Component Location**



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# Farm King





## SAFETY INSTRUCTIONS

### Safe Operation Is The Operator's Responsibility

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



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



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



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



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

### Safe Operation Needs A Qualified Operator



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

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

#### *A Qualified Operator Must Do The Following:*

##### *Understand the Written Instructions, Rules and Regulations*

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

##### *Have Training with Actual Operation*

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

##### *Know the Work Conditions*

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

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

- Read and follow instructions in this manual and the tractor's Operators Manual before operating.
- Under no circumstances should young children be allowed to work with this equipment.
- This equipment is dangerous to children and persons unfamiliar with its operation.
- If the elderly are assisting with work, their physical limitations need to be recognized and accommodated.
- Stay clear of overhead power lines. Electrocuting can occur without direct contact.
- Check for overhead and / or underground lines before operating equipment (if applicable).
- In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.
- Check that the equipment is securely fastened to the tractor / towing vehicle.
- Make sure all the machine controls are in the NEUTRAL position before starting the machine.
- Operate the equipment 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 112.)

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**

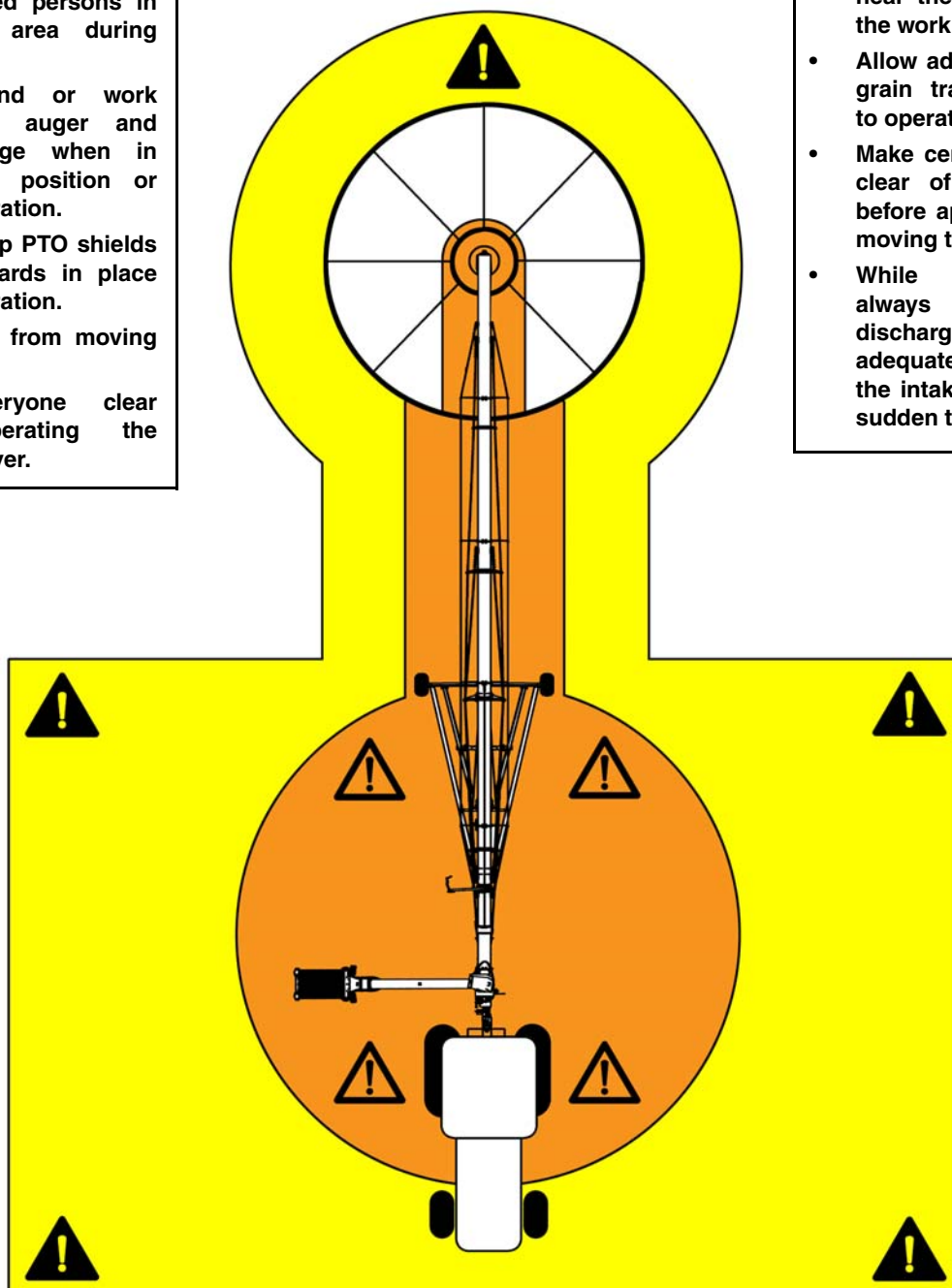
#### ELECTROCUTION HAZARD

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.

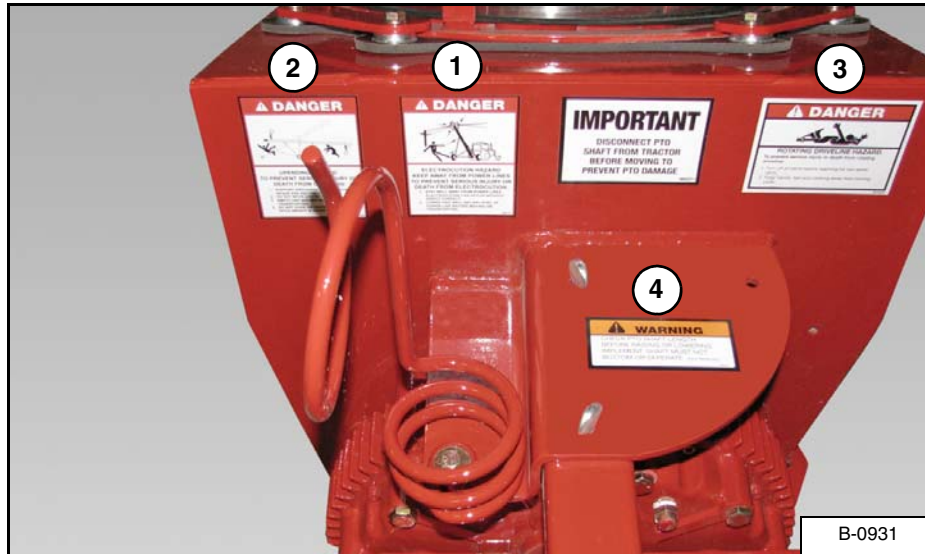




## SAFETY SIGNS (DECALS)

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



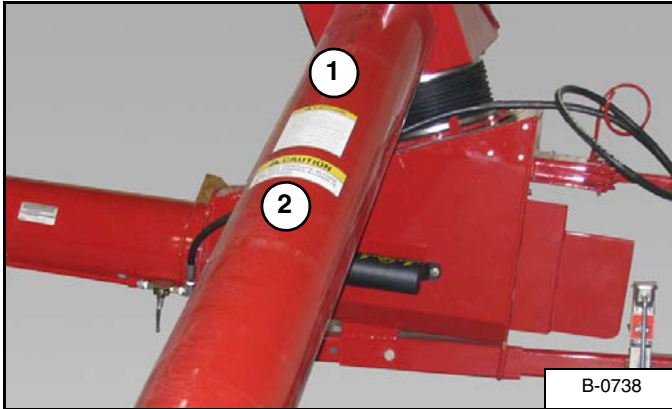
①



p/n 961016

**SAFETY SIGNS (DECALS) (CONT'D)**

Intake Auger



2



p/n 917765

1

CAUTION

1. Do not operate the unit before reading and understanding the Operator's Manual.
2. Keep all safety devices in place.
3. Keep off of the equipment at all times.
4. Keep hands, feet, and clothing away from moving parts while in operation.
5. Make certain everyone is clear of the equipment before applying power or moving the machine.
6. Do not adjust, service, lubricate, clean, unclog or move the mechanism until all power is shut off.
7. While in operation, always support the discharge end or provide adequate anchorage of the intake end to prevent sudden tipping.
8. Disconnect power of electrical driven units before resetting motor over loads.
9. To avoid tipping, make sure unit is empty before attempting to move.
10. Keep wheels of undercarriage level and on firm ground.
11. Lower unit to the recommended transport position before transporting.
12. Do not operate electric motor equipped units until they are properly grounded.
13. Keep children, visitors, and all untrained personnel away from machine while in operation.
14. Lower unit when moving close to overhead power lines.

961017

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 20.)

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

Part Number 910575

# 1370

Part Number 910577

# 1385

Part Number 910578

# 1395

Part Number 910582

# Farm King

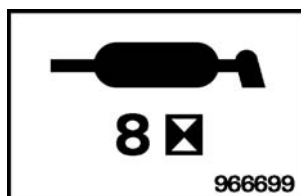
Part Number 52773-000 (Amber)



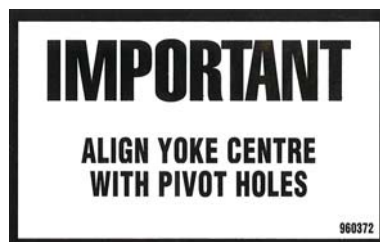
Part Number 52774-000 (Red)



Part Number 966699



Part Number 960372



Part Number 961015



Part Number 967388



Part Number 960371



SAFETY SIGN-OFF FORM



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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## GENERAL ASSEMBLY INFORMATION

### Component Unloading And Identification



#### ELECTROCUTION HAZARD

To prevent serious injury or death from electrocution:

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



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

Unload the crate(s) and components in flat level area of adequate size to assemble the 13" Backsaver Auger.



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 13" Backsaver Auger in the following order:

1. Undercarriage (See "Undercarriage Assembly" on page 28.)

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

2. Tube (See "Tube Assembly" on page 40.)

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.

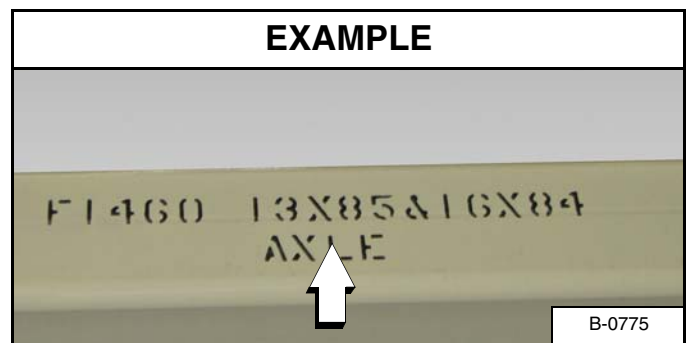
3. Intake Auger (See "Installing The Intake Auger" on page 56.)

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

4. Hydraulic (See "HYDRAULIC ASSEMBLY" on page 65.)

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

**Figure 3**



Larger components are marked for identification [Figure 3].

## BASE GROUP

**NOTE:** The following images throughout the assembly section of this manual may not show your exact auger components as they appear but the procedure is correct for all 13 in. Backsaver Augers.

### 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.

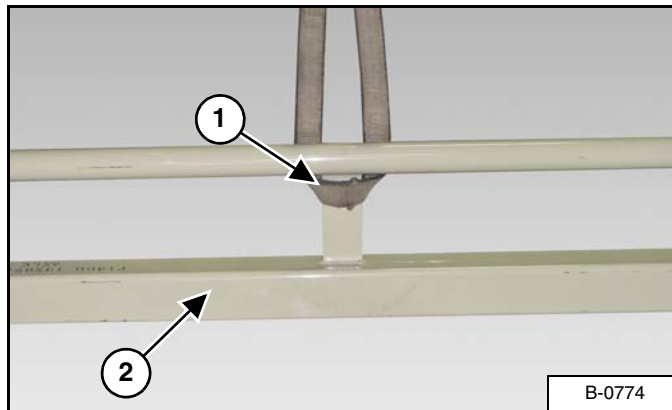
## WARNING



### AVOID INJURY OR DEATH

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

**Figure 4**



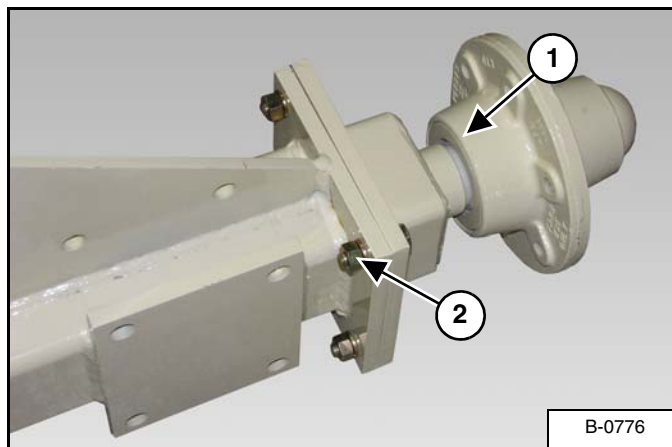
Install a strap (Item 1) around the center of the axle (Item 2) [Figure 4].

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 Sizes

1/2" x 1-3/4" - 1370 Models

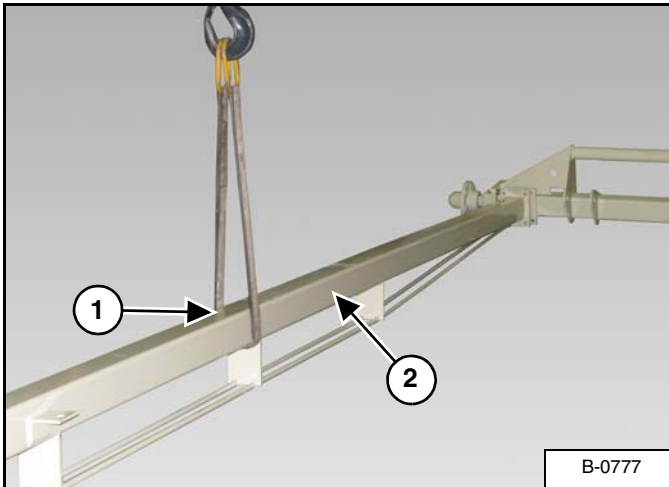
1/2" x 1-3/4" - 1385 & 1395 Models

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**

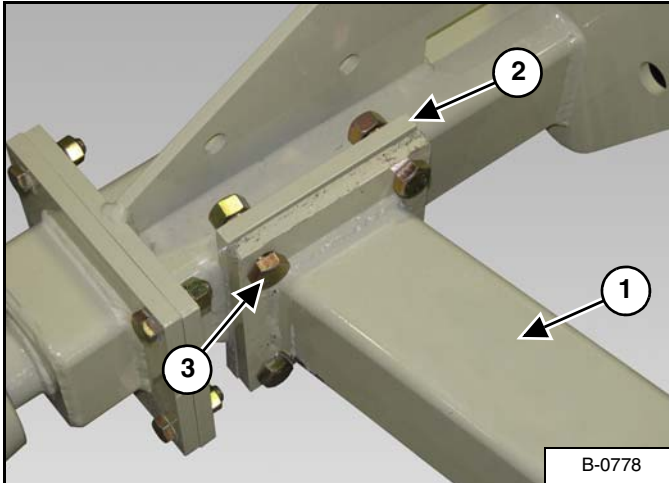


Install a strap (Item 1) around the center of the right undercarriage arm (Item 2) [Figure 6].

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].

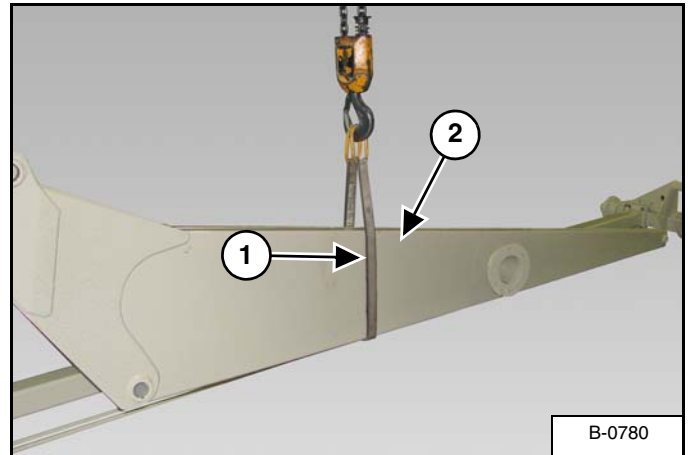
*Undercarriage Arm Mounting Bolt Sizes*

5/8" x 2" - 1370 Models

5/8" x 2" - 1385 & 1395 Models

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

**Figure 8**

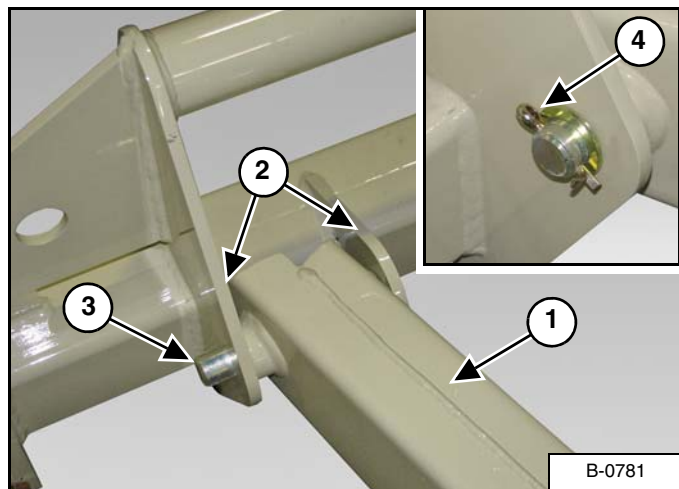


Install a strap (Item 1) around the RH lower lift arm (Item 2) [Figure 8]. Connect the strap to an approved lifting device.

**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 Sizes*

1" x 5.63" - 1370 Models

1" x 6.38" - 1385 & 1395 Models

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.

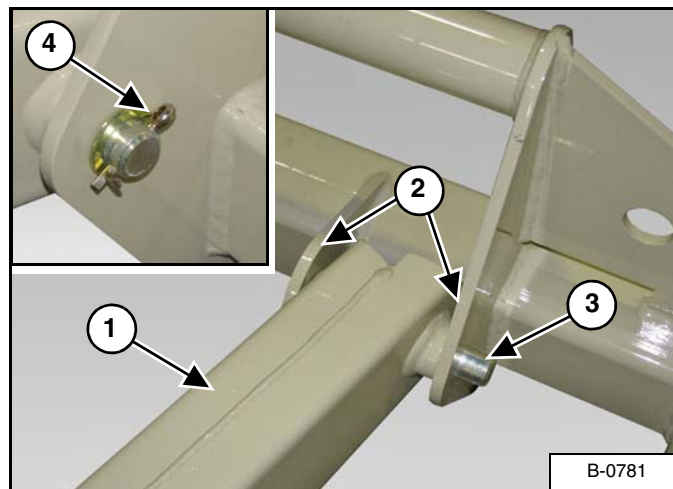
Install one 1-1/4" narrow rim washer and 1/4" x 2" cotter pin (Item 4) **[Figure 9]** onto the axle pin, securing the RH lower lift arm to the axle.

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.

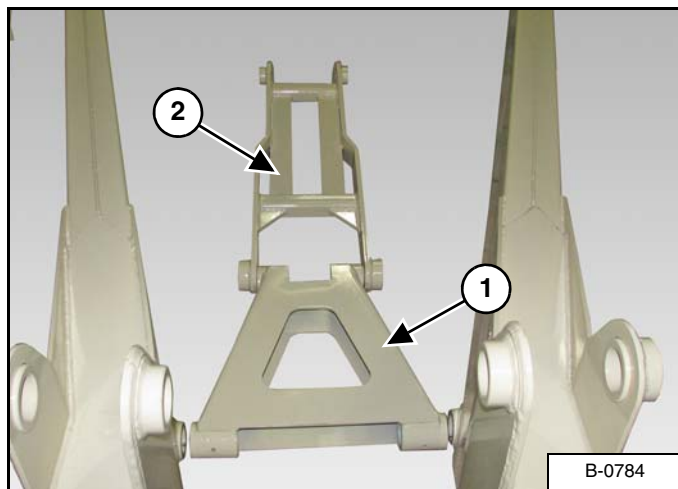
**Figure 10**



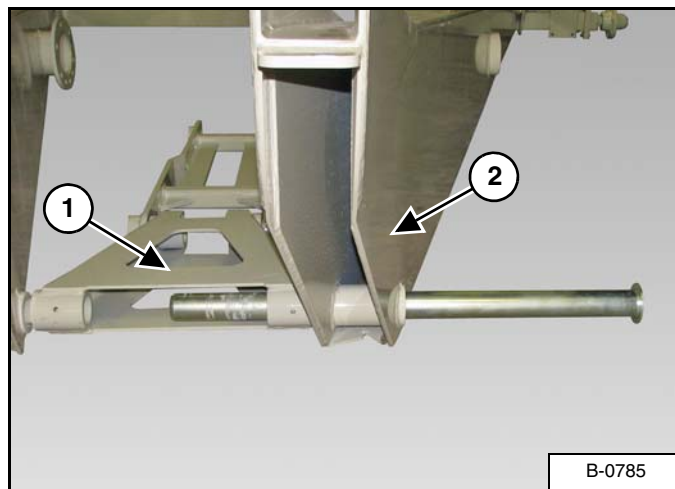
Align the LH lower lift arm (Item 1) with the two mounts (Item 2) **[Figure 10]** on the axle.

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**


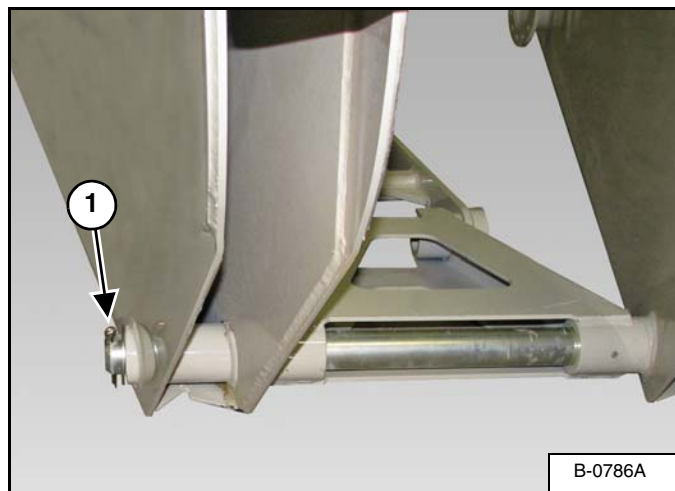
Align the connecting link (Item 1) with LH lower lift arm (Item 2) **[Figure 12]**.

#### *Connecting Link Pin Sizes*

2" x 27 - 15/16" - 1370 Models

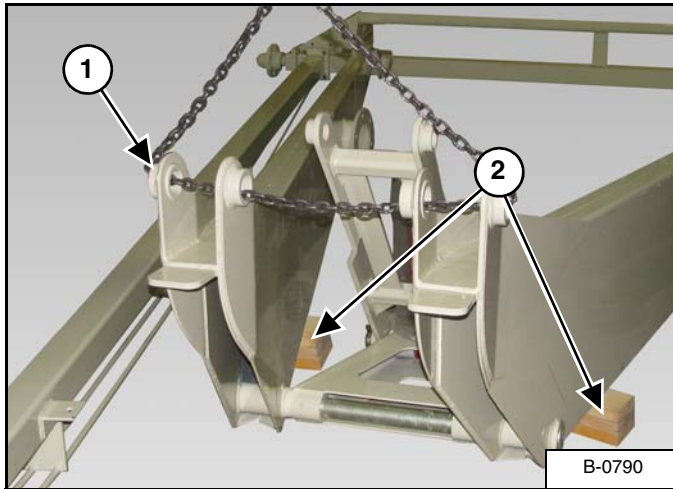
2" x 34 - 3/16" - 1385 & 1395 Models

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**


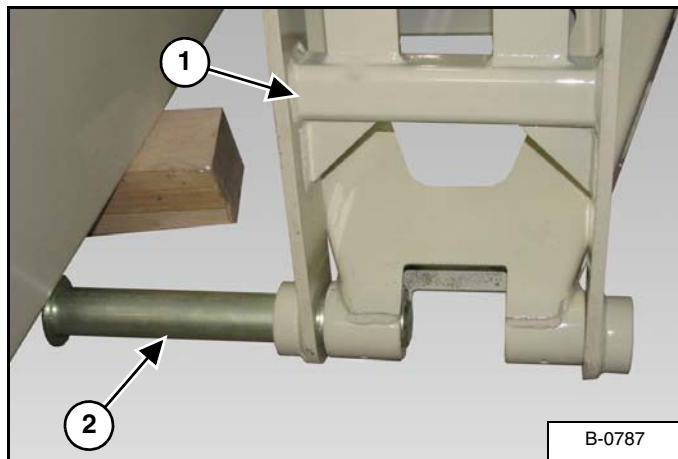
Install a chain (Item 1) **[Figure 14]** through the upper LH & RH lower lift arm mounts. Connect the chain to an approved lifting device.

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.

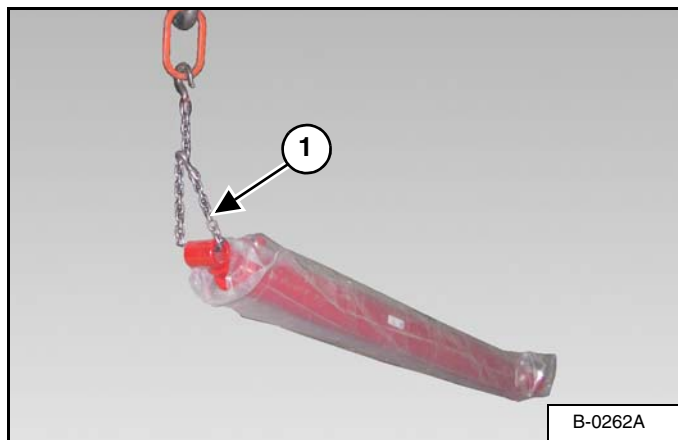
*Bottom Cylinder Pin Sizes*

1-1/2" x 12-3/8" - 1370 Models

2" x 14-13/16" - 1385 & 1395 Models

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**

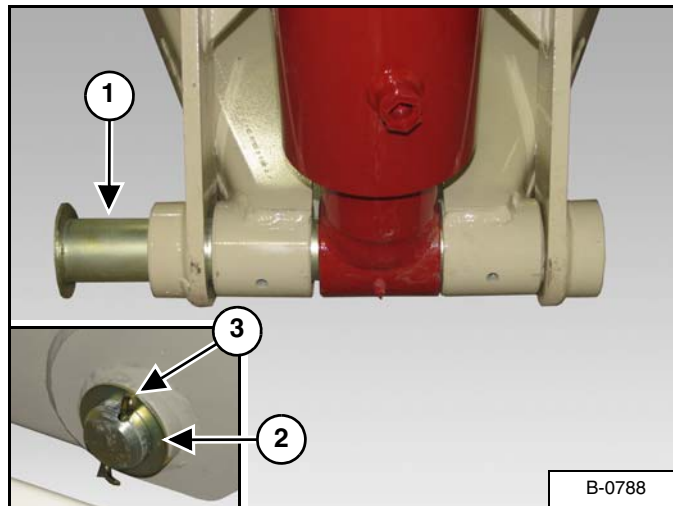


**NOTE:** It is recommended to leave the plastic on the hydraulic cylinders during assembly. This will help to prevent damage to the paint and minimize touch-up painting.

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 Sizes*

1-1/2" x 10 Ga. - 1370 Models

2" x 10 Ga. - 1385 & 1395 Models

*Cotter Pin Sizes*

1/4" x 2" - 1370 Models

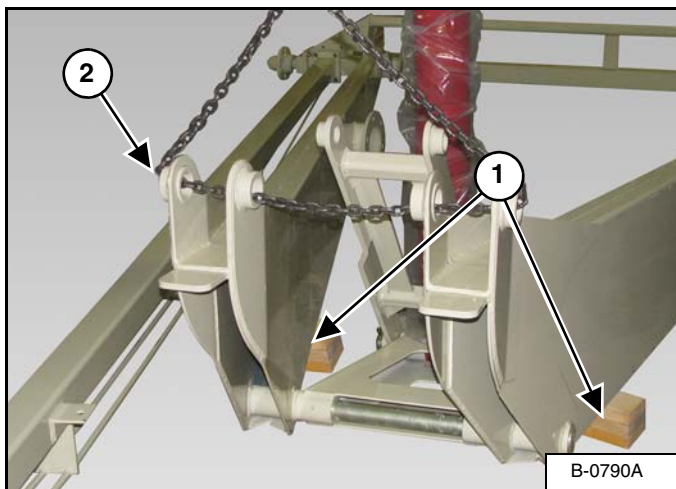
5/16" x 3" - 1385 & 1395 Models

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.



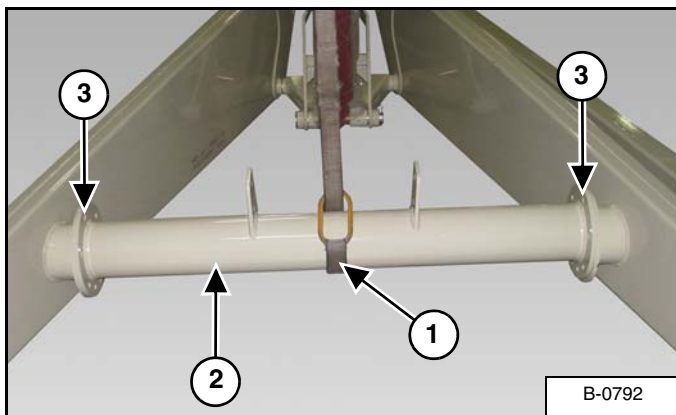
**Figure 18**



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**

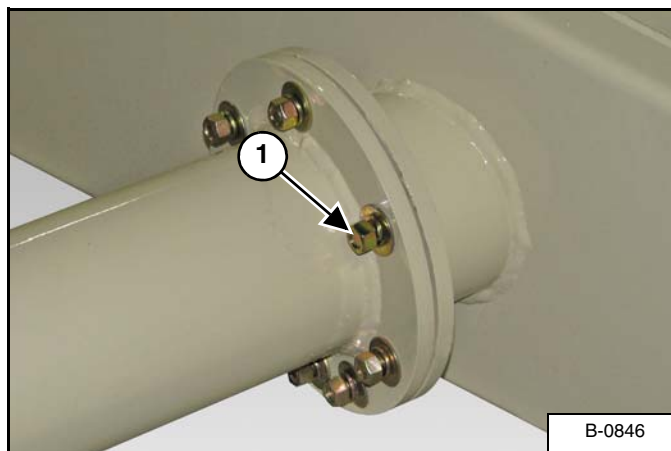


Install a strap (Item 1) around the lift arm torque tube (Item 2) **[Figure 19]**. Connect the strap to a second approved lifting device.

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.

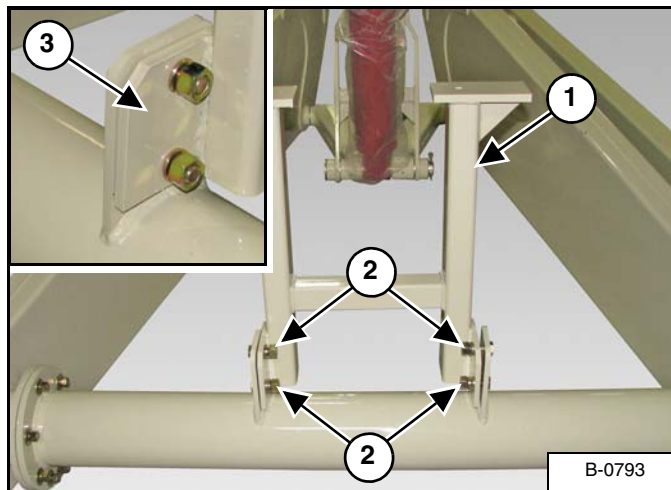
**Figure 20**



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**

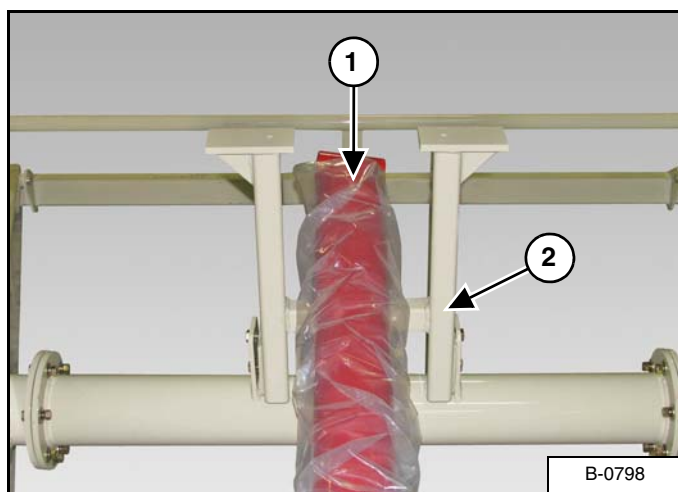


Align the cradle rest (Item 1) **[Figure 21]** with the two mounting plates on the lift arm torque tube.

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.**

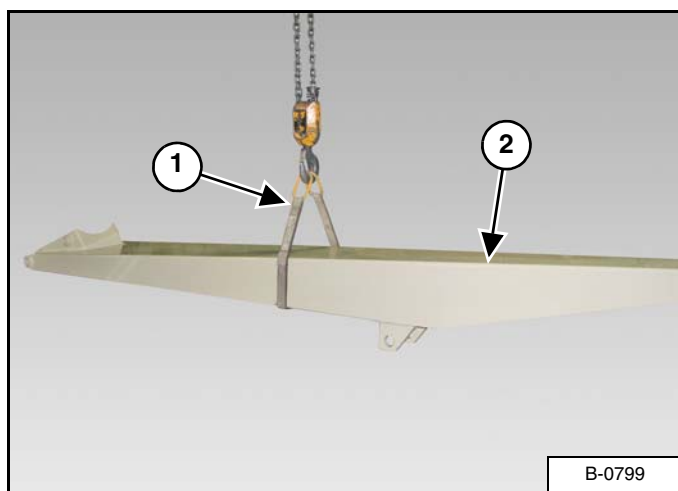
**Figure 22**



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.

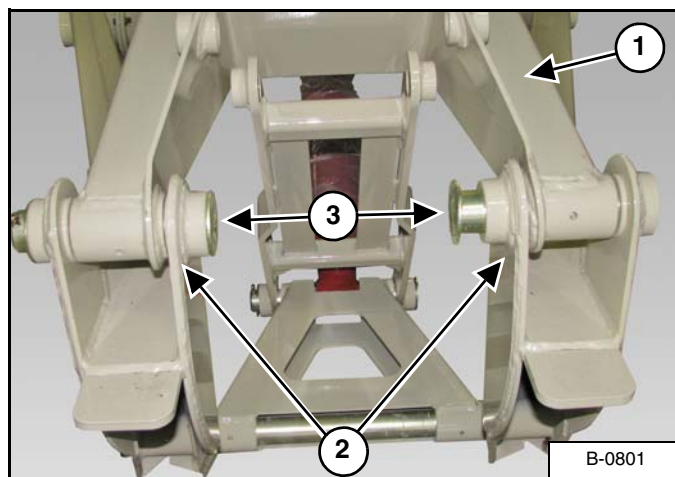
**Figure 23**



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 Sizes*

1-1/2" x 7-1/8" - 1370 Models

2" x 9-1/16" - 1385 & 1395 Models

*Narrow Rim Washer Sizes*

1-1/2" x 10 Ga. - 1370 Models

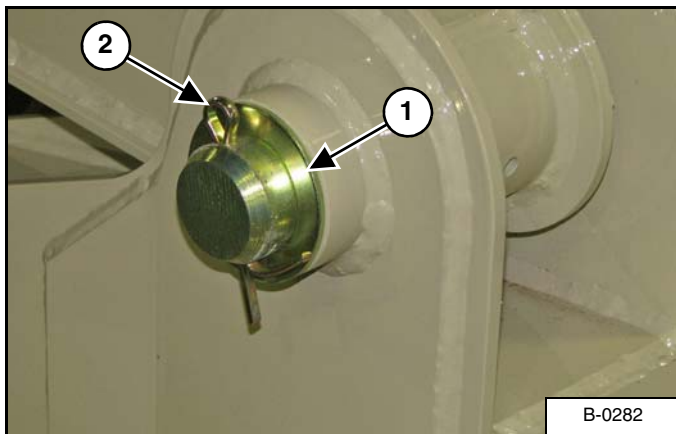
2" x 10 Ga. - 1385 & 1395 Models

*Cotter Pin Sizes*

1/4" x 2" - 1370 Models

5/16" - 3" 1385 & 1395 Models

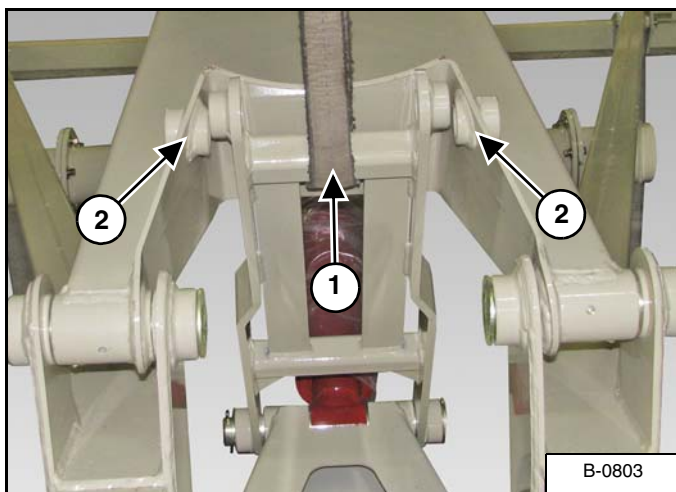
Install the two lift arm pins (Item 3) **[Figure 24]** (from the inside).

**Figure 25**


B-0282

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

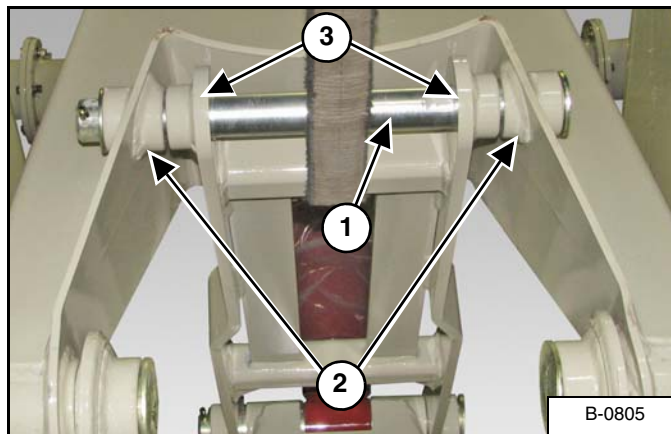
Lower the upper lift arm onto the cradle rest.

**Figure 26**


B-0803

Install a strap (Item 1) 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**


B-0805

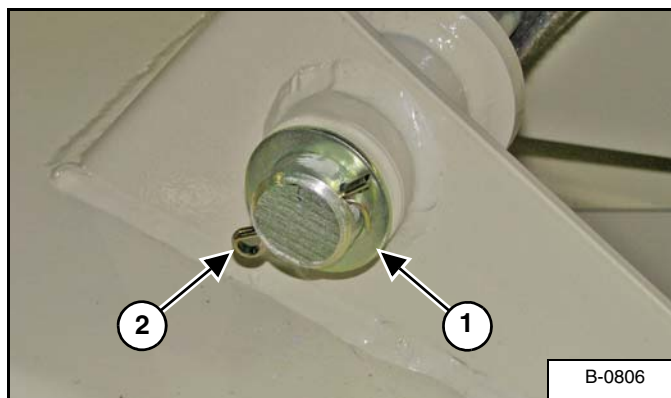
Install the top yoke pin (Item 1) through the upper lift arm mounting holes (Item 2) and pivot yoke mounting holes (Item 3) [Figure 27].

#### *Top Yoke Pin Sizes*

1-1/2" x 13-11/16" - 1370 Models

1-1/2" x 16-11/16" - 1385 & 1395 Models

Remove the strap from the pivot yoke.

**Figure 28**


B-0806

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

#### *Narrow Rim Washer Sizes*

1-1/2" x 10 Ga. - 1370 Models

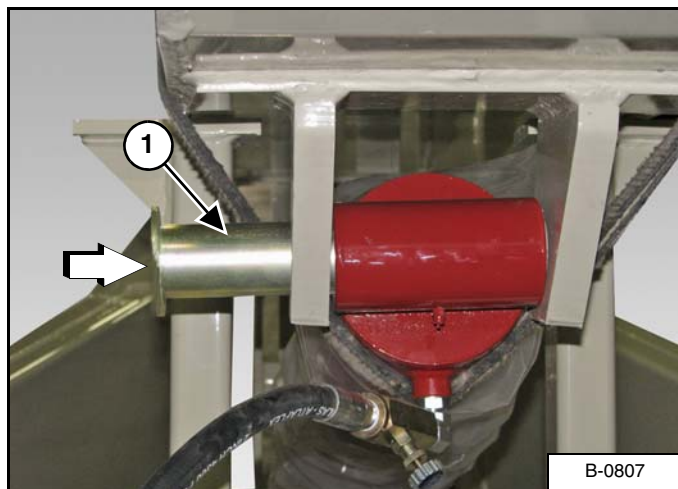
1-1/2" x 10 Ga. - 1385 & 1395 Models

#### *Cotter Pin Sizes*

1/4" x 2" - 1370 Models

1/4" x 2" 1385 & 1395 Models



**Figure 29**


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

#### *Top Cylinder Pin Sizes*

1-1/2" x 8-11/16" - 1370 Models

2" x 9" - 1385 & 1395 Models

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

#### *Narrow Rim Washer Sizes*

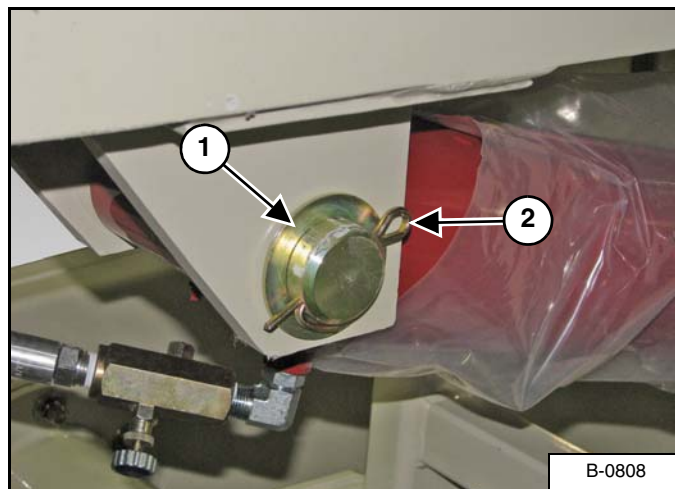
1-1/2" x 10 Ga. - 1370 Models

2" x 10 Ga. - 1385 & 1395 Models

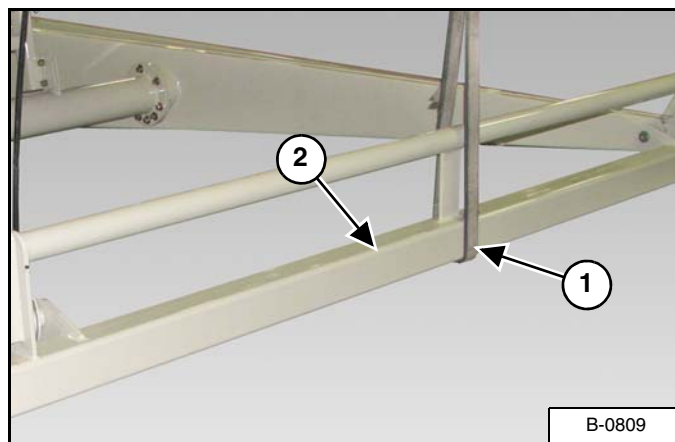
#### *Cotter Pin Sizes*

1/4" x 2" - 1370 Models

5/16" x 3" 1385 & 1395 Models

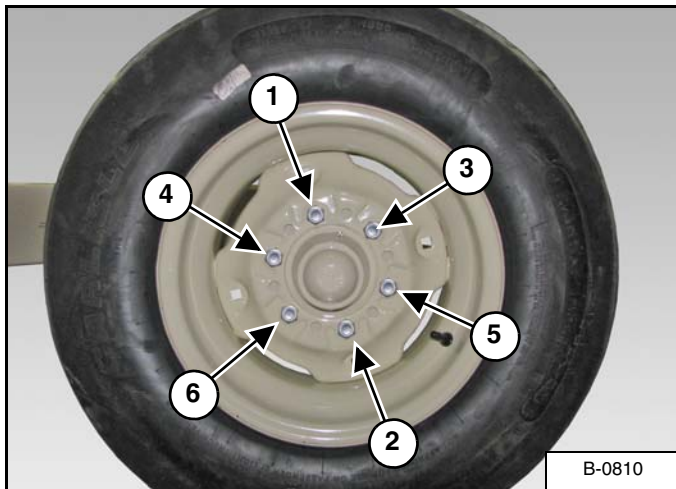
**Figure 30**


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]**.

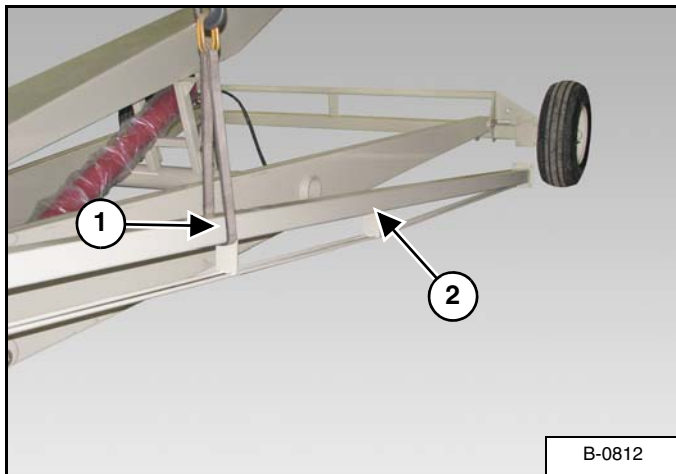
Tighten wheel nuts in a criss-cross pattern **[Figure 32]**. Tighten wheel nuts to 120 lb. / ft. (162 N•m) of torque.

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

Check tire pressure.

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

**Figure 33**

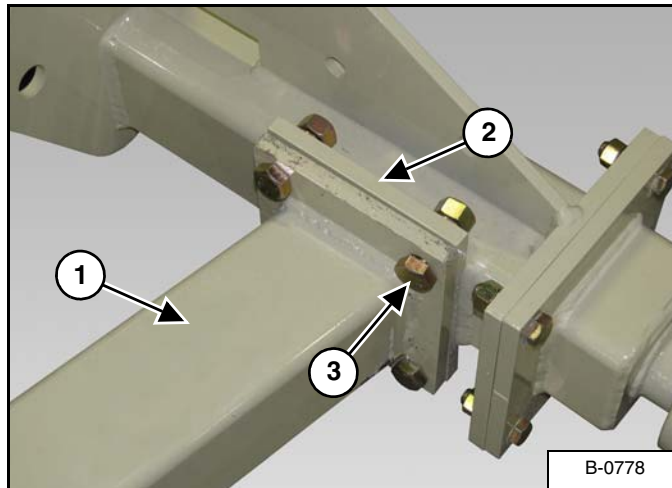


Install a strap (Item 1) around the center of the left undercarriage arm (Item 2) **[Figure 33]**.

Connect the strap to an approved lifting device.

Raise and move the left undercarriage arm towards the axle.

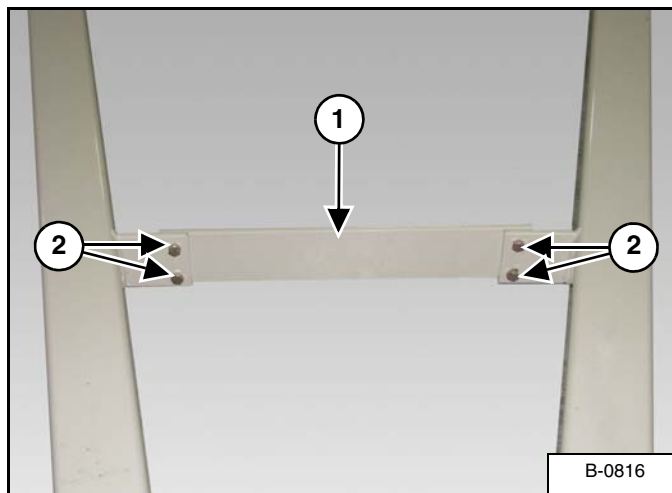
**Figure 34**



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.

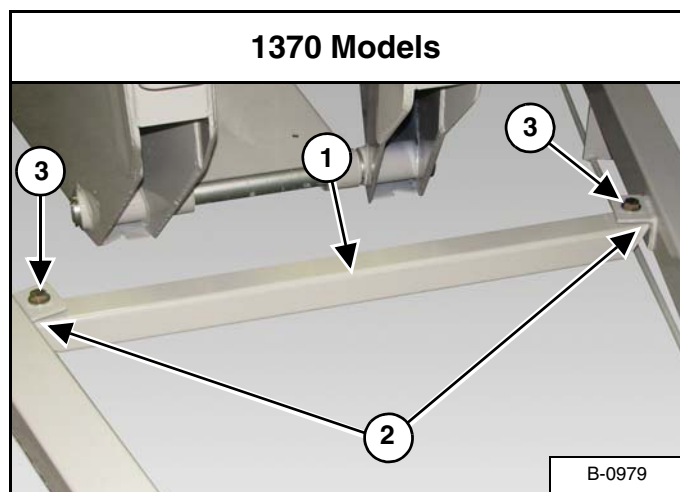
**Figure 35**



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**

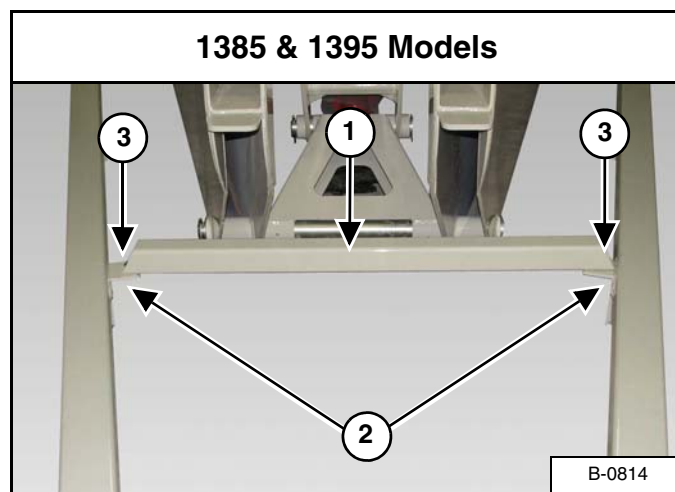


**NOTE:** 1370 lift arm rest tube mounts under the tabs on the LH & RH undercarriage arms.

Place the lift arm rest tube (Item 1) under the tabs (Item 2) [Figure 36] on the LH & RH undercarriage arms.

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

**Figure 37**

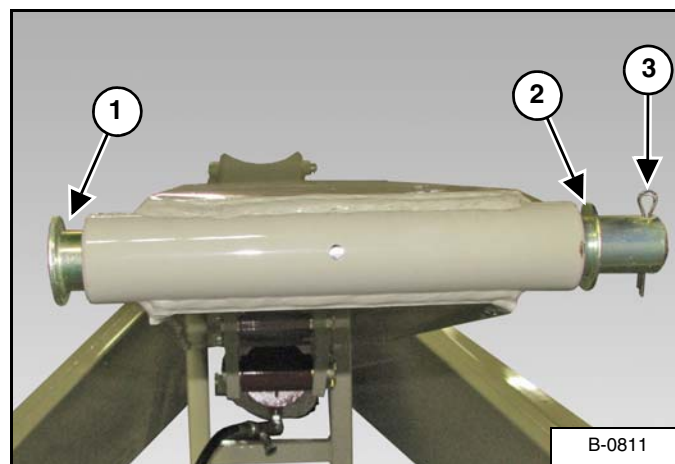


**NOTE:** 1385 & 1395 lift arm rest tube mounts on top of the tabs on the LH & RH undercarriage arms.

Place the lift arm rest tube (Item 1) on top of the mounts (Item 2) [Figure 37] on the LH & RH undercarriage arms.

Install one 5/8" x 1-3/4" bolt (Item 3) [Figure 37] 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 38**



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 38].

**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.

**BASE GROUP (CONT'D)**

**Tube Assembly**

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.**

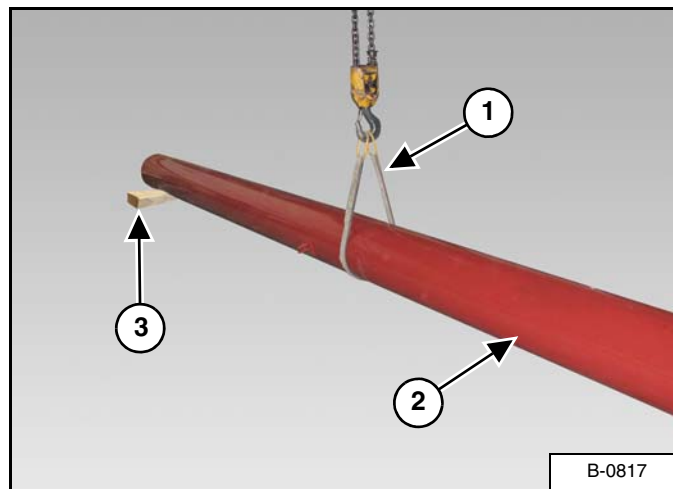
**WARNING**



**AVOID INJURY OR DEATH**

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

**Figure 39**

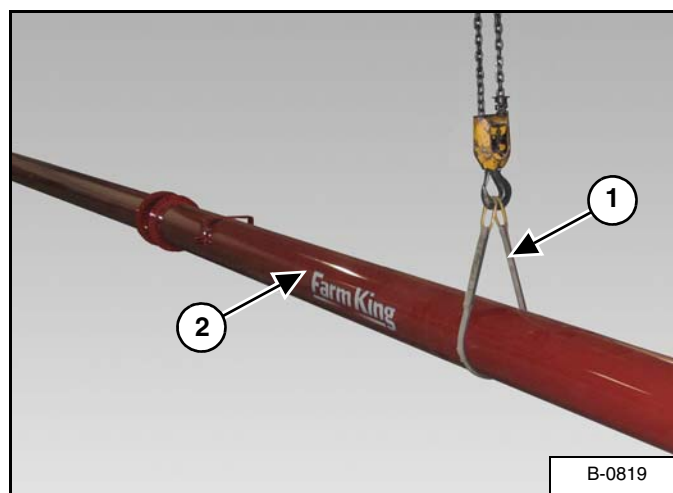


Install a strap (Item 1) around the top tube (Item 2) [Figure 39].

Raise and move the top tube to the assembly area.

Place a block (Item 3) [Figure 39] under the discharge spout end of the tube. Lower the tube onto the block. Remove strap.

**Figure 40**



Install a strap (Item 1) around the center tube (Item 2) [Figure 40].

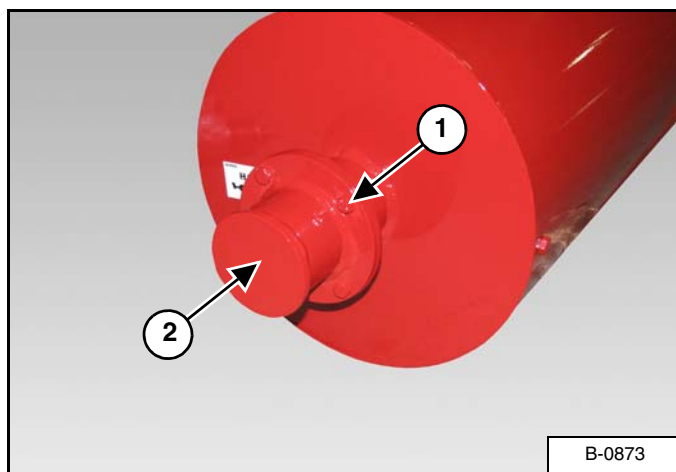
Raise and move the center tube to the assembly area.



## ! IMPORTANT

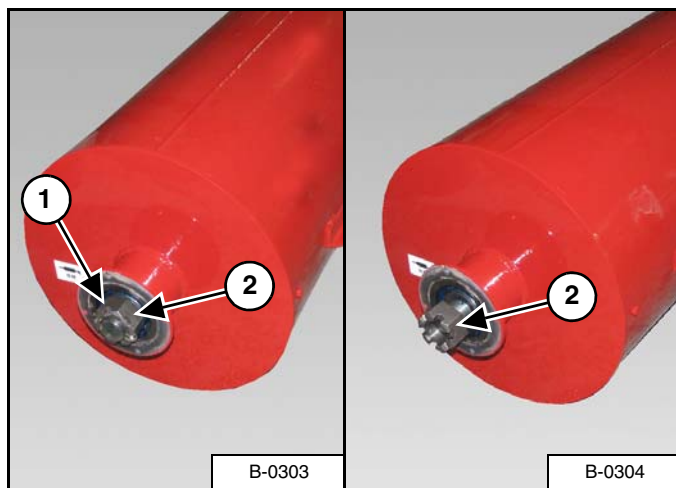
When assembling the Model 1395 tube, install the 10 ft. extension tube between the top and center tubes.

Figure 41



Remove four bolts (Item 1) and remove dust cap (Item 2) [Figure 41] from the end of the top tube.

Figure 42

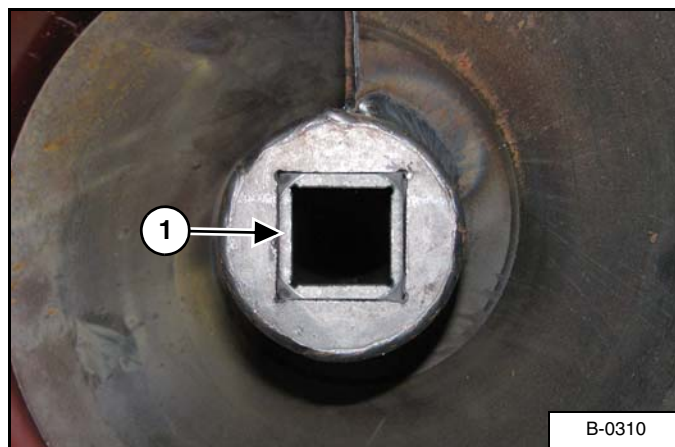


Remove the cotter pin (Item 1) and loosen the castle nut (Item 2) [Figure 42]. Do not remove the castle nut.

**NOTE: Loosening the castle nut will allow the flighting to move in the tube for connecting bottom tube and input box.**

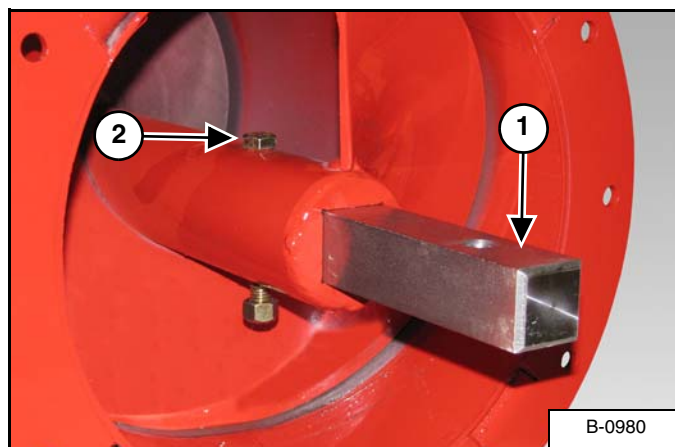
## ! IMPORTANT

Figure 43



When installing the connecting shaft, the shaft will need to be aligned with and inserted into the inner collar (Item 1) [Figure 43] of flighting tube.

Figure 44

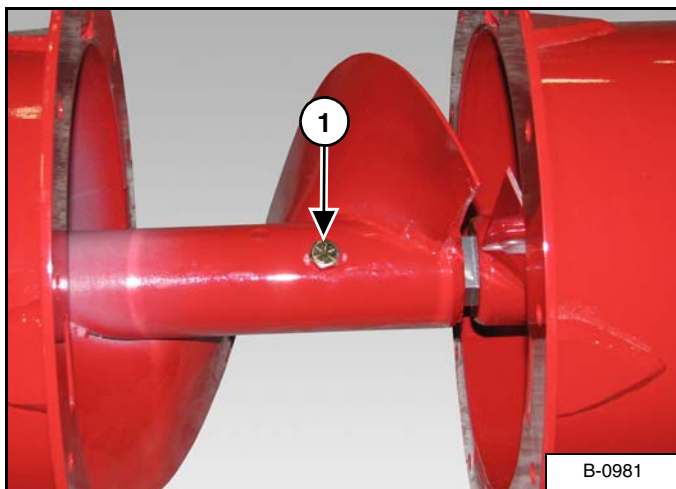


Slide the flighting out of the top tube until the bolt hole in the end of the flighting is clear of the mounting flange.

Align the bolt holes and install the connecting shaft (Item 1) [Figure 44].

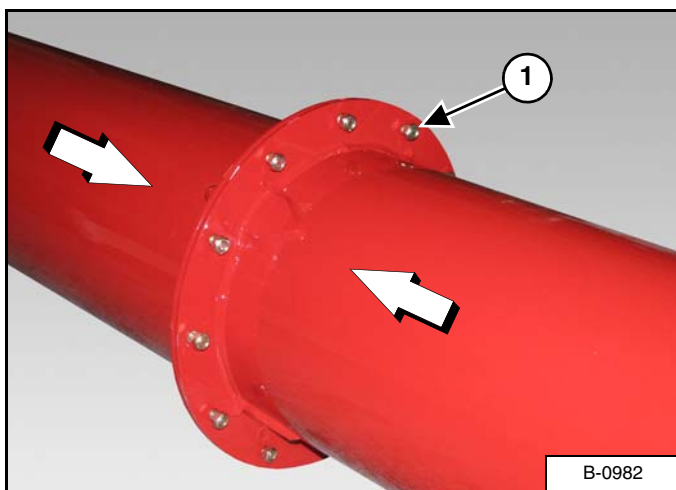
Apply thread locker to the bolt threads, install and tighten one 1/2" x 4" Gr. 8 bolt (Item 2) [Figure 44] and 1/2" lock nut.

**Figure 45**



Slide the flighting from the center tube forward onto the connecting shaft. Apply thread locker to the bolt threads, install one 1/2" x 4" Gr. 8 bolt (Item 1) [Figure 45] and 1/2" lock nut. Tighten bolt and lock nut.

**Figure 46**



Slide the top and center tubes together until the mounting flanges contact each other [Figure 46].

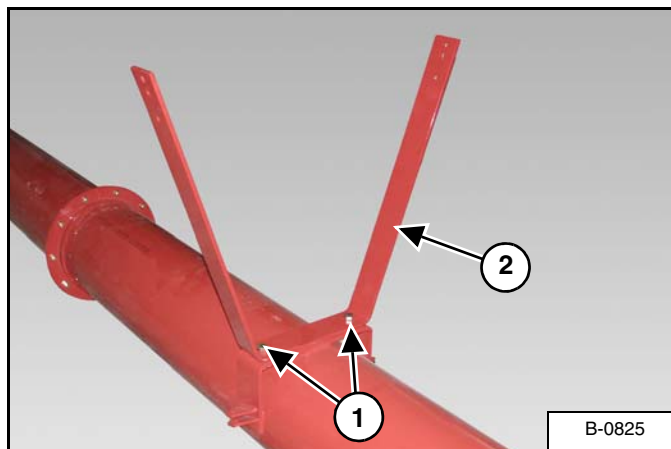
Install 7/16" x 1-1/4" bolts (Item 1) [Figure 46] through the tube flanges. Install one 7/16" lock nut on each bolt. Tighten bolts and lock nuts (top bolt first, then bottom bolt).

Repeat the procedure for connecting remaining tube sections.

Locate and uncoil the four 1/2" cables.

Place one long and one short 1/2" cable on each side of the tube assembly (longest 1/2" cable towards the outside).

**Figure 47**



Using two 5/8" x 2" bolts (Item 1) and 5/8" lock nuts, align and install the upper bridging yoke (Item 2) [Figure 47] (onto the center tube or 10 ft. extension). Tighten bolts and lock nuts.

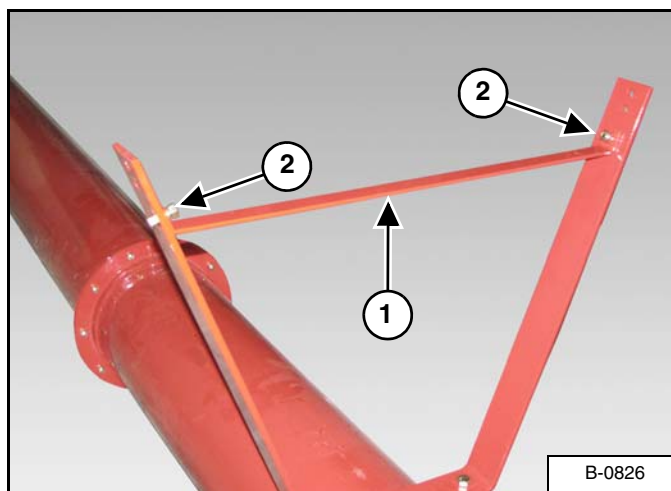
*1370 Model Upper Bridging Brace Size*

1/4" x 1-1/4" x 31-1/2"

*1385 & 1395 Model Upper Bridging Brace Size*

1/4" x 1-1/4" x 34"

**Figure 48**



Align and install the upper bridging brace (Item 1) on the upper bridging yoke. Install two 7/16" x 1-1/4" bolts (Item 2) [Figure 48] through the upper bridging yoke and bridging brace. Install 7/16" lock nuts onto the bolts. Tighten bolts and lock nuts.

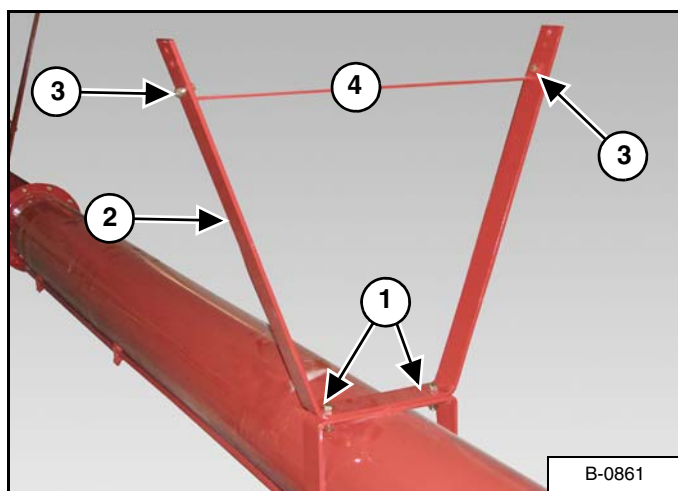
*1370 Model Lower Bridging Brace Size*

1/4" x 1-1/4" x 31-1/2"

*1385 & 1395 Model Lower Bridging Brace Size*

1/4" x 1-1/4" x 31-1/2"

**Figure 49**

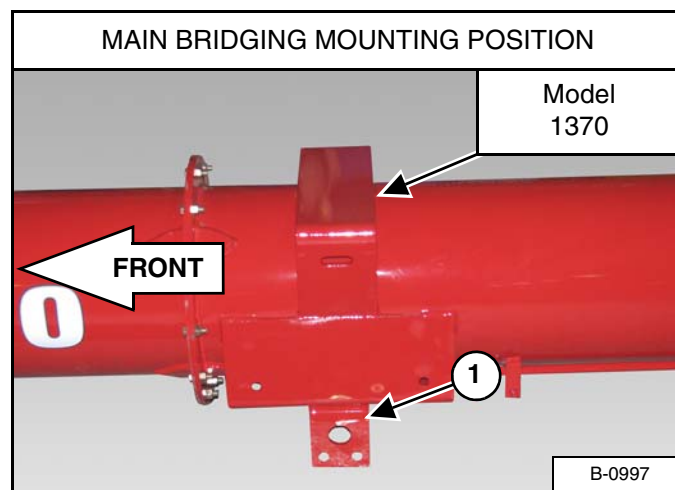


Using two 5/8" x 2" bolts (Item 1) and 5/8" lock nuts, align and install the lower bridging yoke (Item 2) **[Figure 49]** (onto the bottom tube). Tighten bolts and lock nuts.

Using two 7/16" x 1-1/4" bolts (Item 3) and 7/16" lock nuts, install the 1/4" x 1-1/4" x 31-1/2" lower bridging brace (Item 4) **[Figure 49]** (onto the lower bridging yoke). Tighten bolts and lock nuts.

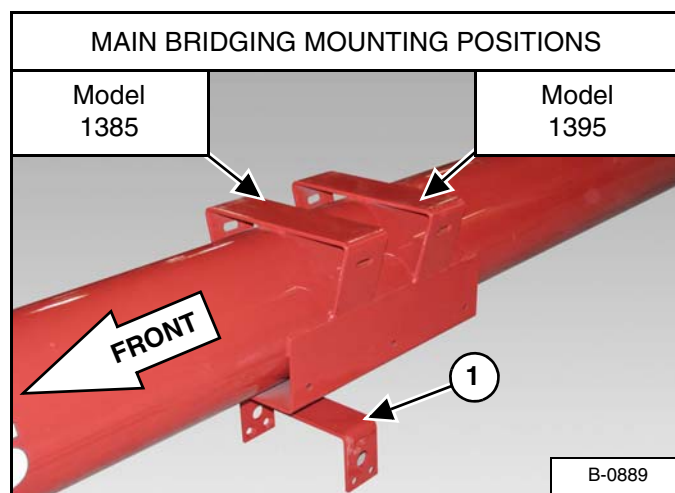
Install a strap around the intake end of the tube assembly. Connect the strap to an approved lifting device. Raise the tube assembly to allow adequate space for the bridging mount under the main bridging mount.

**Figure 50**



Position the main bridging yoke mount (Item 1) **[Figure 50]** below bridging mount.

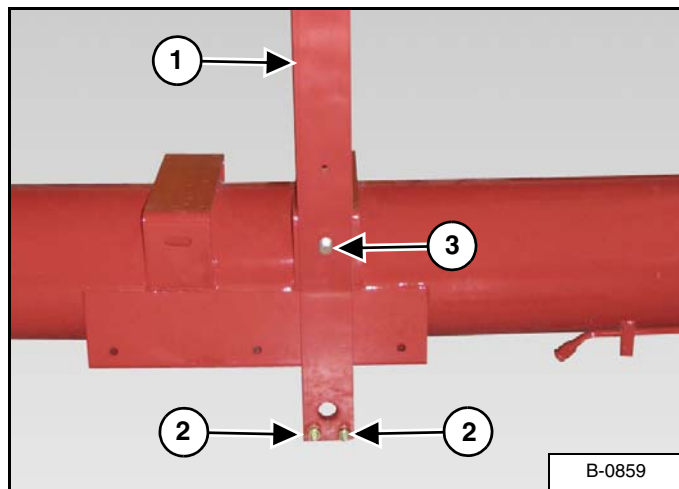
**Figure 51**



Position the main bridging yoke mount (Item 1) **[Figure 51]** below desired bridging mount.



**Figure 52**



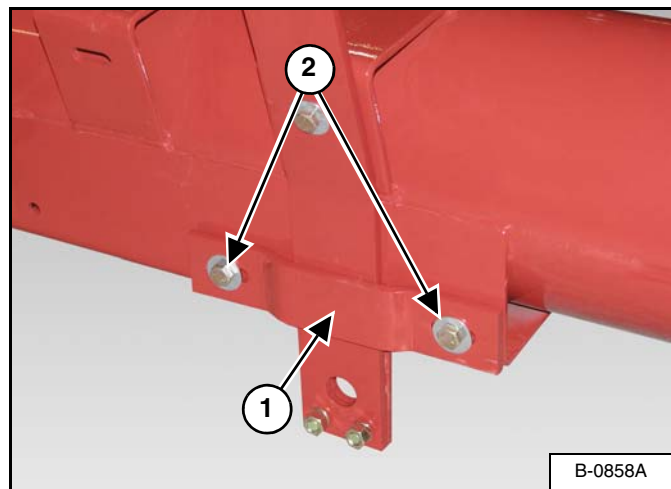
**NOTE: Figure 50 shows the 1385 & 1395 center tube main bridging yoke mounting. The procedure is the same for the 1370 model augers.**

Align one 1/2" x 4" x 59-5/8" main bridging yoke (Item 1) [Figure 52] with the desired main bridging mount (both sides).

Install two 5/8" x 1-3/4" flat head socket bolts (Item 2) [Figure 52] through the bridging yoke mount and bridging yoke (both sides). Install one 5/8" lock nut on each bolt.

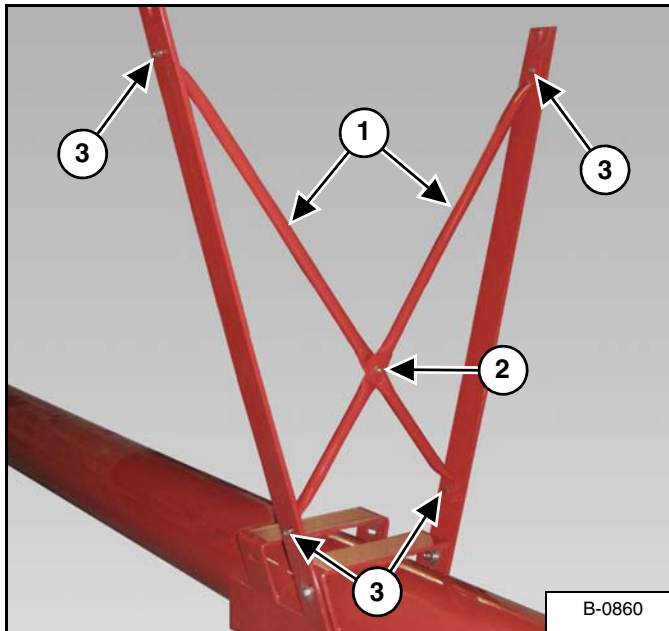
Install one 5/8" flat washer on one 5/8" x 2" bolt (Item 3) [Figure 52], install the bolt through the main bridging yoke and slot of the main bridging mount on the tube. Install one 5/8" flat washer and 5/8" lock nut onto the bolt (both sides). Do not tighten the bolts at this time.

**Figure 53**



Install one main bridging yoke clamp (Item 1) over the main bridging yoke, install two 5/8" x 1-3/4" bolts (Item 2) [Figure 53] with 5/8" flat washers through the bridging yoke clamp and mount (both sides). Install one 5/8" lock washer and 5/8" hex nut on each bolt. Tighten bolts and nuts.

**Figure 54**



**NOTE:** Figure 52 shows the 1385 & 1395 center tube main bridging brace mounting. The procedure is the same for the 1370 model augers.

Locate the two main bridging braces (Item 1) [Figure 54].

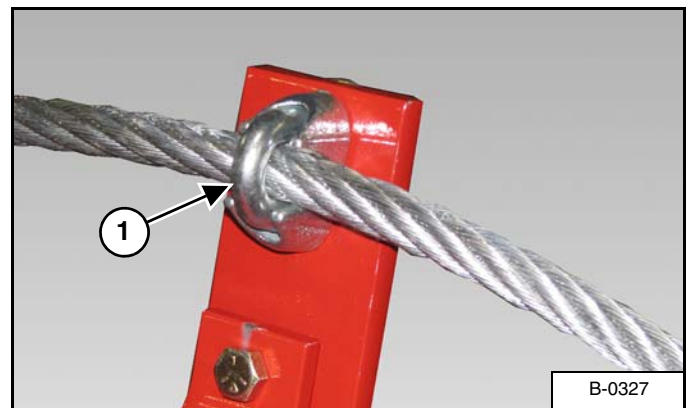
Install one 7/16" x 1-1/4" bolt (Item 2) [Figure 54] through the two braces. Install one 7/16" lock nut onto the bolt. Do not tighten at this time.

Align and install the two braces onto the main bridging yokes using four 7/16" x 1-1/4" bolts (Item 3) [Figure 54] and four 7/16" lock nuts.

Tighten center cross brace bolt (Item 2) [Figure 54] and lock nut first.

Tighten the bottom cross brace bolts (Item 3) and lock nuts, then tighten upper cross brace bolts (Item 3) [Figure 54] and lock nuts.

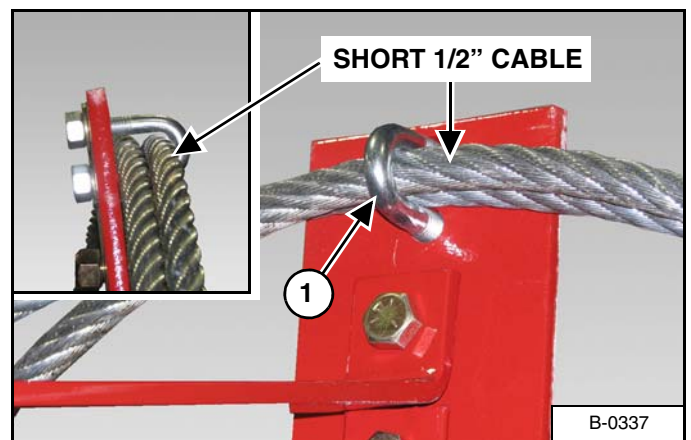
**Figure 55**



Install one 1/2" cable clamp (Item 1) [Figure 55] around the long 1/2" cable, then install through the upper bridging yoke (on the center tube or 10 ft. extension tube) (both sides). Install one 1" x 7/16" x 10 ga. flat washer and nut onto the clamp u-bolt. Do not tighten cable clamp at this time.

Install one 1/2" cable clamp on lower bridging yoke (on the bottom tube) (both sides). Install one 1" x 7/16" x 10 ga. flat washer and nut onto the clamp u-bolt. Do not tighten the 1/2" cable clamps at this time.

**Figure 56**

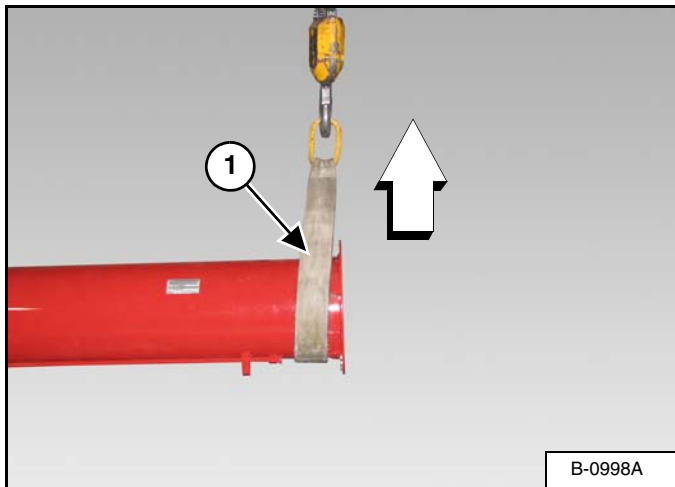


**NOTE:** Remove clamp section of two 1/2" cable clamps. Use only the u-bolts and nuts.

**NOTE:** When installing the u-bolt around the two 1/2" cables, place the short 1/2" cable into the u-bolt first (both sides).

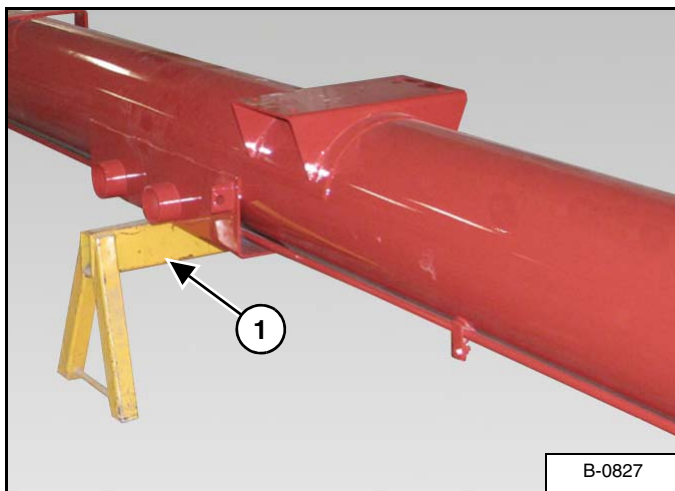
Install one 1/2" cable clamp (Item 1) [Figure 56] around both the long and short 1/2" cables, then install into the main bridging yoke (on the center tube) (both sides). Install one 1" x 7/16" x 10 ga. flat washer and nut onto the clamp u-bolt. Do not tighten the 1/2" cable clamps at this time.

**Figure 57**



Install a strap (Item 1) [Figure 57] around the end of the bottom tube.

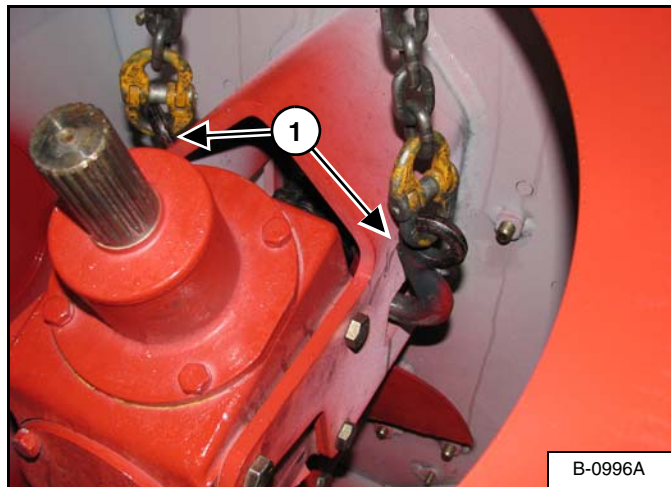
**Figure 58**



Raise the tube assembly and place a support stand (Item 1) [Figure 58] under the tube, lower the tube onto the support stand.

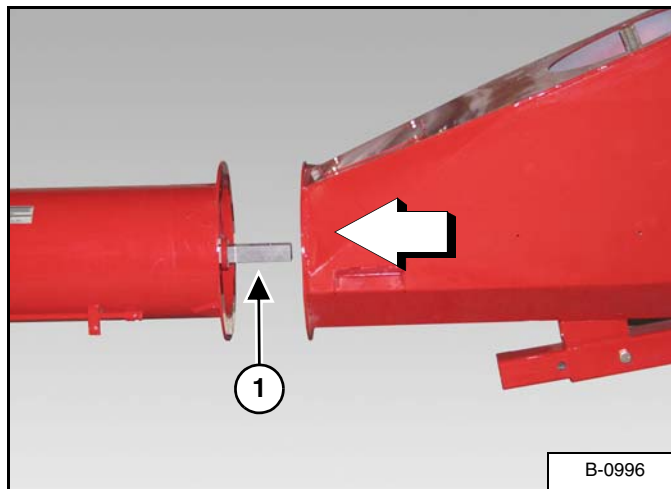
Remove strap.

**Figure 59**



Install the chains (Item 1) [Figure 59] onto the input box gearbox mounting bracket. Raise and move the input box to the end of the bottom tube.

**Figure 60**

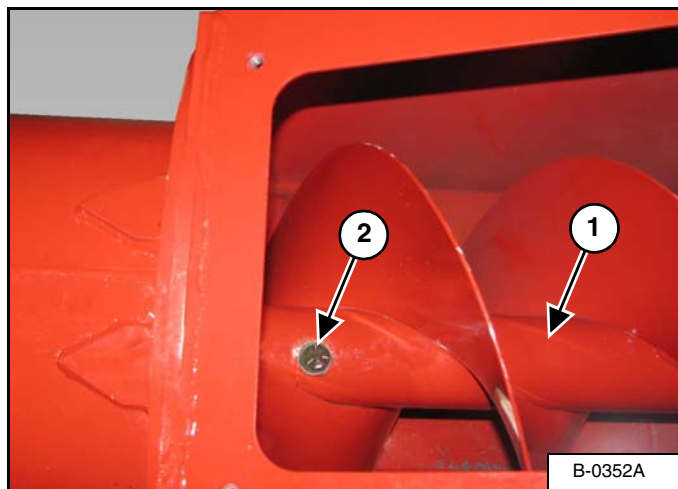


Align the bolt holes and install the connecting shaft (Item 1) [Figure 60].

Apply thread locker to the bolt threads, install and tighten one 1/2" x 4" Gr. 8 bolt and 1/2" lock nut.

Align the input box flighting with the flighting shaft (Item 1) [Figure 60] of the bottom tube.

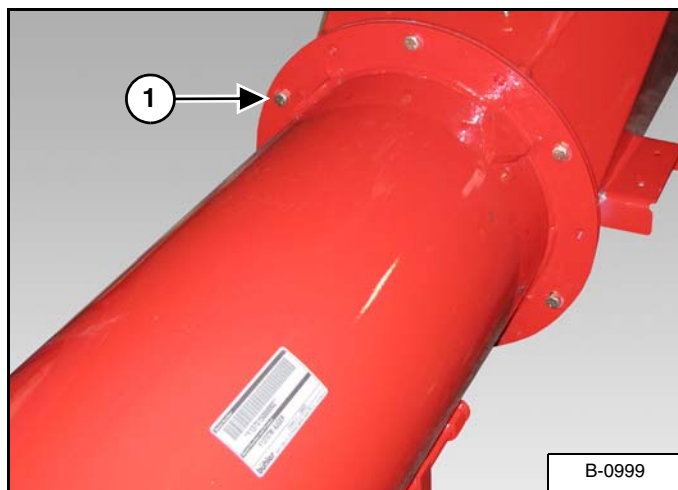
**Figure 61**



Align the input box flanging (Item 1) with the hole in the bottom tube flanging.

Apply thread locker to the bolt threads, install and tighten one 1/2" x 4" Gr. 8 bolt (Item 2) [Figure 61] and 1/2" lock nut. Tighten bolt and lock nut.

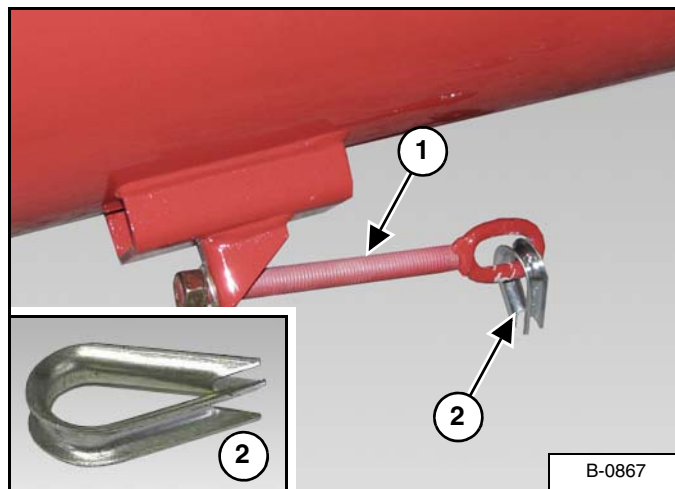
**Figure 62**



Move the input box towards the bottom tube until the two mounting flanges make contact.

Align the mounting holes and install the eight 7/16" x 1-1/4 bolts (Item 1) [Figure 62] and 7/16" lock nuts around the mounting flanges of the bottom tube and input box. Tighten bolts and lock nuts.

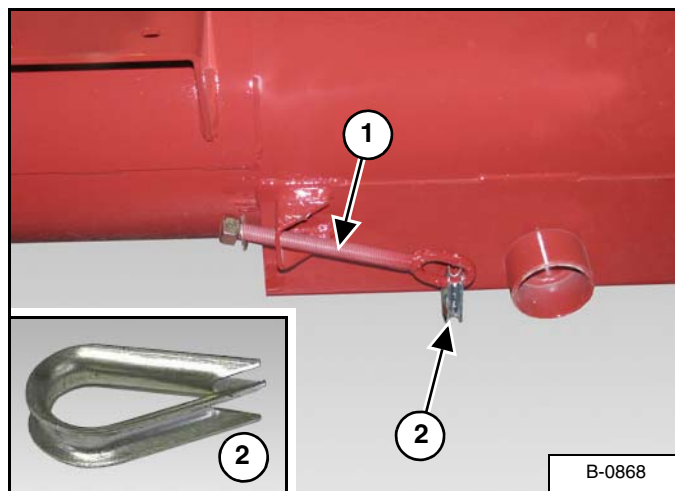
**Figure 63**



Install one eyebolt (Item 1) [Figure 63] (with eye towards discharge spout) into the hole of the mounting bracket (closest to the intake end) on the bottom tube (both sides). Install one 3/4" flat washer and 3/4" nut onto the eyebolt (both sides).

Install one 1/2" cable thimble (Item 2) [Figure 63] onto the eyebolt (both sides).

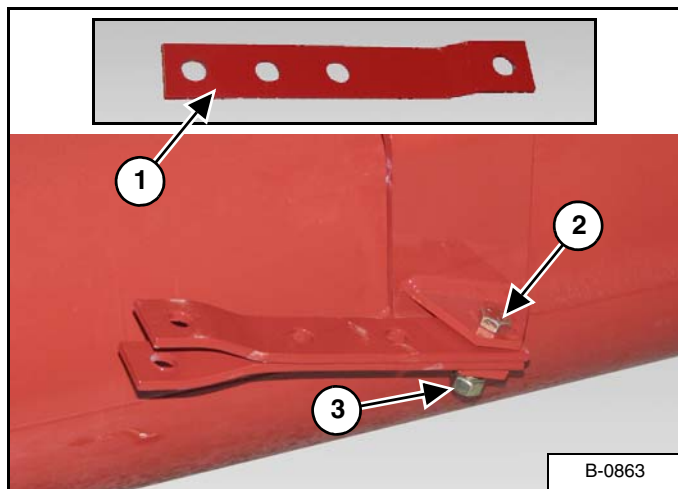
**Figure 64**



Install one eyebolt (Item 1) [Figure 64] (with eye towards discharge spout) into the hole of the mounting bracket (farthest from the intake end) on the bottom tube (both sides). Install one 3/4" flat washer and 3/4" nut onto the eyebolt (both sides).

Install one 1/2" cable thimble (Item 2) [Figure 64] onto the eyebolt (both sides).

**Figure 65**

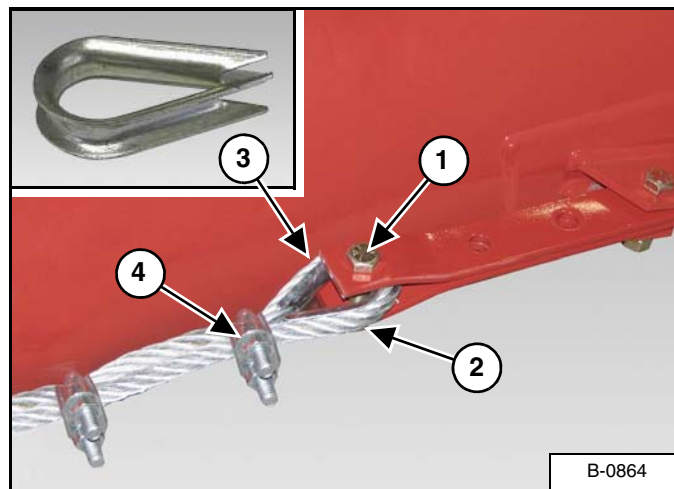


Locate two cable yoke brackets (Item 1) [Figure 65].

Install one 1/2" x 2" bolt (Item 2) through the mounting bracket and cable yoke bracket. Install one 1/2" lock nut (Item 4) [Figure 65] on the bolt. Do not tighten at this time.

Repeat above procedure for three remaining locations.

**Figure 66**



Install one 1/2" x 2" bolt (Item 1) through the mounting bracket and cable yoke bracket. Install one 1/2" lock nut (Item 2) [Figure 66] on the bolt. Do not tighten at this time.

Install one 1/2" cable thimble (Item 3) [Figure 66] onto the bolt.

Thread the cable through the cable yoke bracket and around the thimble.

## ! IMPORTANT

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

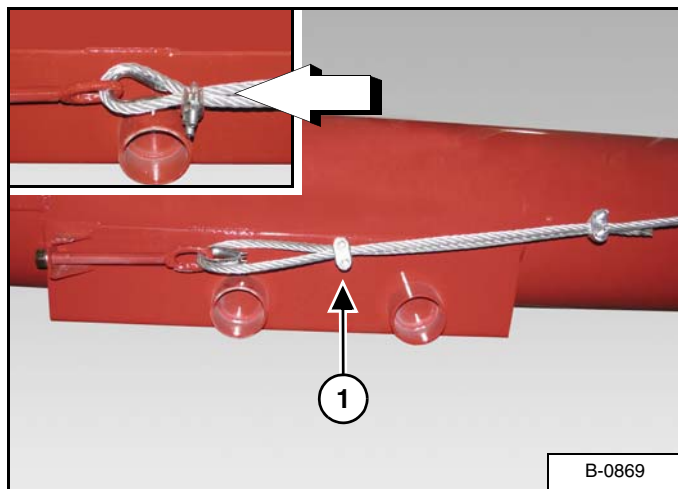
Loop the cable around the thimble, using a clamping device, clamp the cable and install one cable clamp (Item 4) [Figure 66] around the cable. Slide the cable clamp as close to the thimble as possible and tighten.

Install and slide the second cable clamp approximately 4 inches (102 mm) from the end of the tail and tighten (both sides).

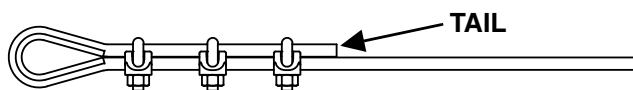
Repeat the above procedure for the three remaining locations.



Figure 67



Thread the cable through the eyebolt and around the thimble (both sides). Pull cable as tight as possible.

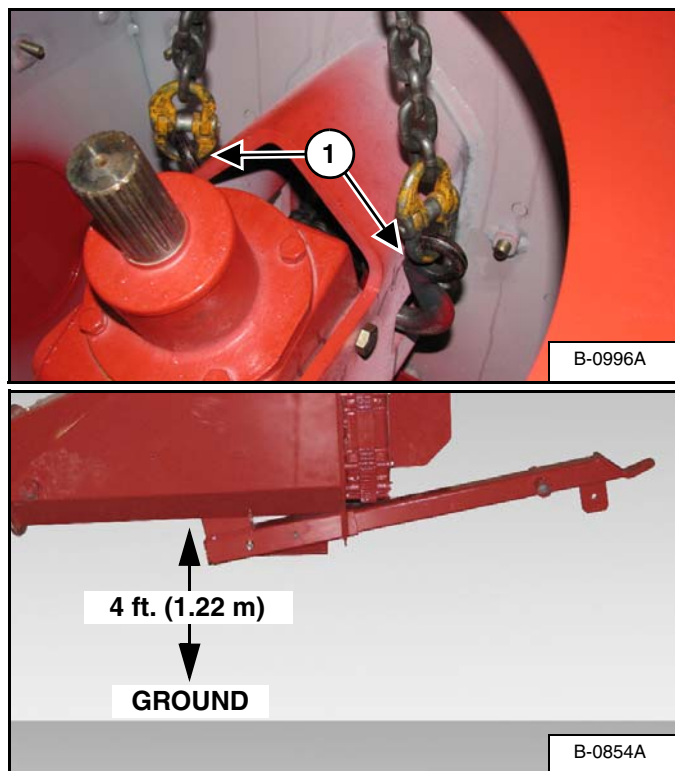


**Always insert the tail of the cable into the clamp first when forming a loop in a cable.**

Loop the cable around the thimble, using a clamping device, clamp the cable. Install one cable clamp (Item 1) [Figure 67] around the cable. Slide the cable clamp as close to the thimble as possible and tighten.

Install and slide the second cable clamp approximately 4 inches (102 mm) from the end of the tail and tighten (both sides).

Figure 68



Install chains (Item 1) [Figure 68] onto the input box gearbox mounting bracket.

Raise the intake auger / tube assembly approximately 4 ft. (1.22 m) off the ground [Figure 68].

Remove support stand from under the tube assembly.

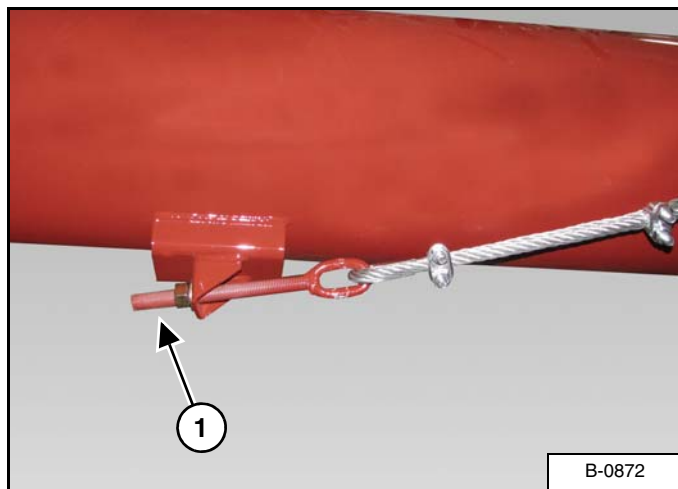
Figure 69



Place a mark (Item 1) [Figure 69] on the cable tightening tool. This will help to tighten the cables evenly.

Count the revolutions as the tool is turning while tightening.

**Figure 70**



**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 cable until there is approximately 3 - 4 inches (76 - 102 mm) of exposed threads (Item 1) [Figure 70] on the eyebolt.

Repeat tightening procedure for the remaining cables.

**NOTE:** Tighten short cables less than the longer cables.

Lower the input box / tube assembly to the ground.

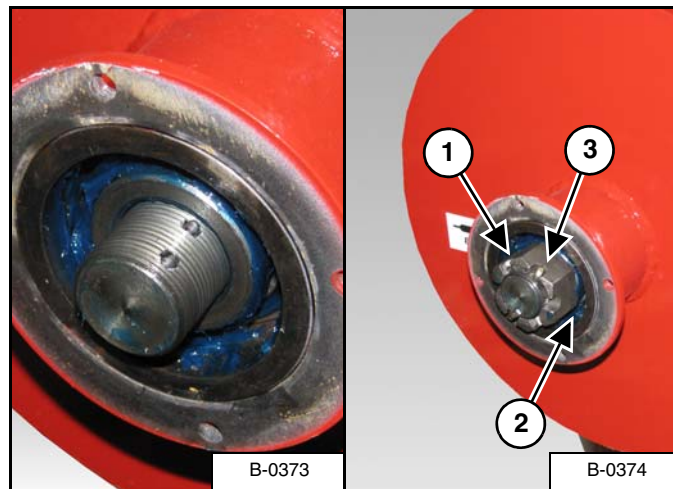
With the input box / tube assembly on the ground, the discharge spout end of the tube assembly should be bowed up (enough to install the discharge spout).

Stand behind the intake end and look down the full length of the tube assembly to verify the tube is straight. Adjust short 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.

**NOTE:** The following images may not show your exact bearing assembly as it appears but the procedure is correct.

**Figure 71**



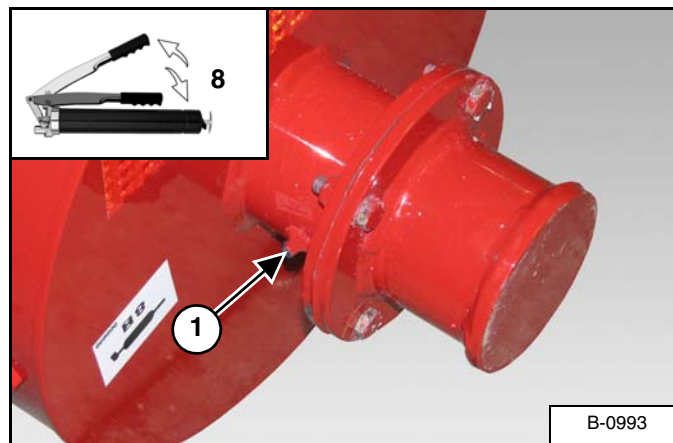
**NOTE:** The castle nut has been removed in the left picture to show cotter pin hole options.

With the tube assembly complete, tighten the castle nut (Item 1) until the castle nut contacts the washer / flighting shaft (Item 2) [Figure 71].

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 71].

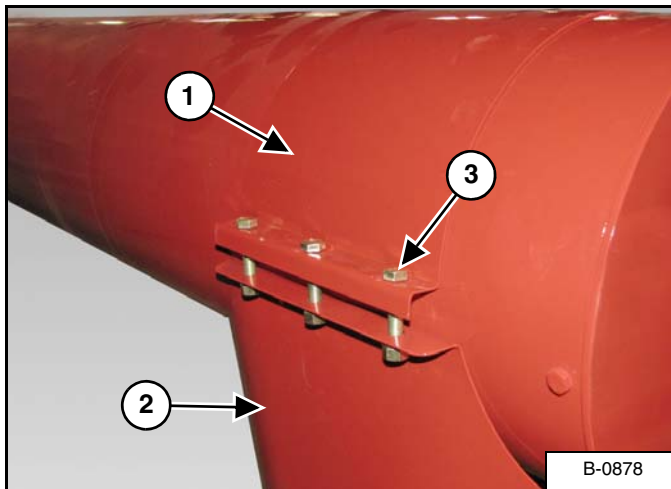
**Figure 72**



Apply eight pumps of grease to the flighting bearing assembly (Item 1) [Figure 72].



Figure 73



Align the spout clamp (Item 1) and discharge spout (Item 2) **[Figure 73]** with discharge opening in the top tube.

Install the six 3/8" x 2" bolts (Item 3) **[Figure 73]** and 3/8" lock nuts. Tighten bolts and lock nuts evenly until the discharge spout contacts the top tube.

### Installing Tube On Undercarriage

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



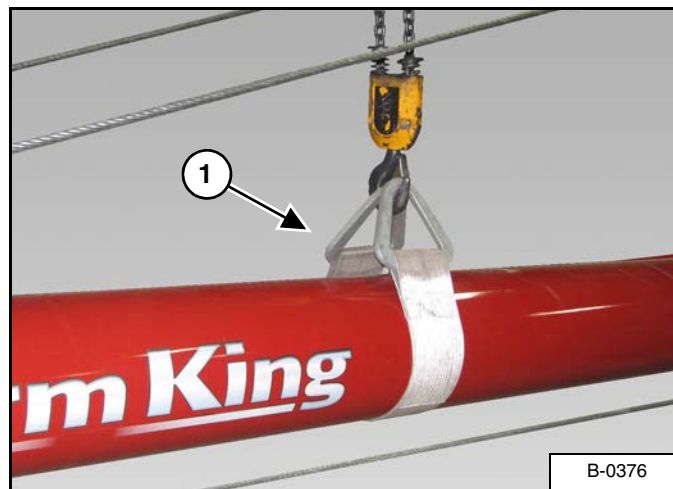
### AVOID INJURY OR DEATH

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 74**



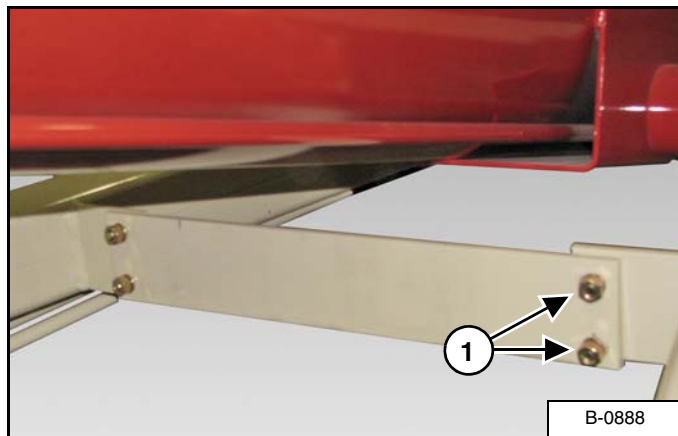
With the strap (Item 1) [Figure 74] installed around the center tube and connected to an approved lifting device, raise the tube assembly high enough to allow the undercarriage to be moved under the tube assembly.

**Figure 75**



Move the undercarriage into position below the tube assembly [Figure 75].

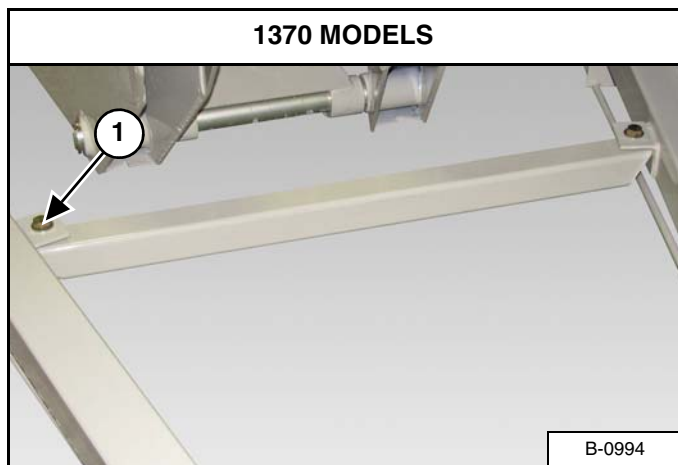
**Figure 76**



Remove the two 7/16" x 1-1/2" bolts (Item 1) [Figure 76], 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.

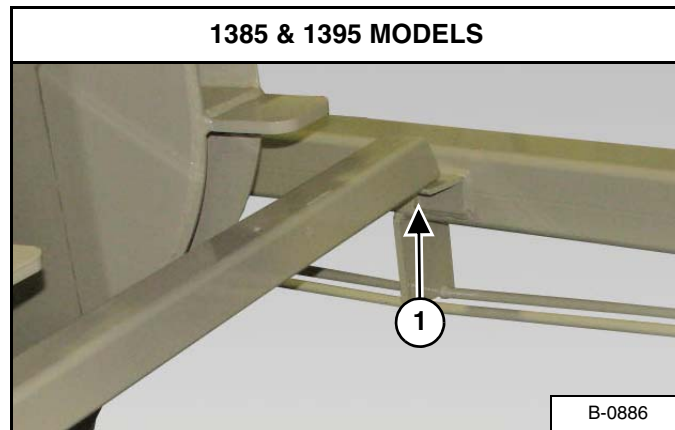
**Figure 77**



Remove the 5/8" x 1-3/4" bolt (Item 1) [Figure 77], 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.

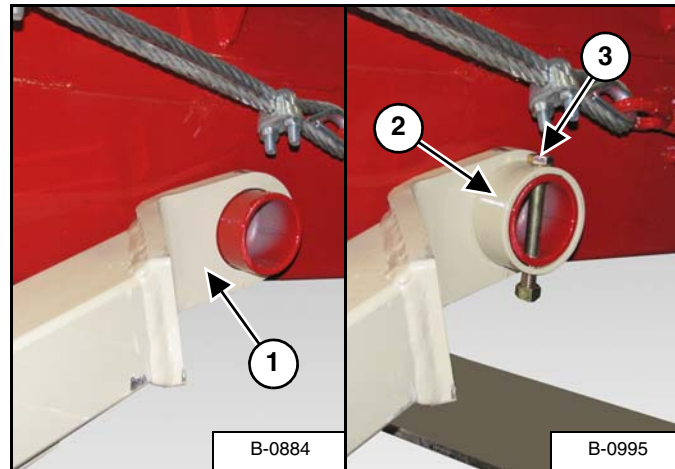
**Figure 78**



Remove the 5/8" x 1-3/4" bolt (Item 1) [Figure 78], 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 79**

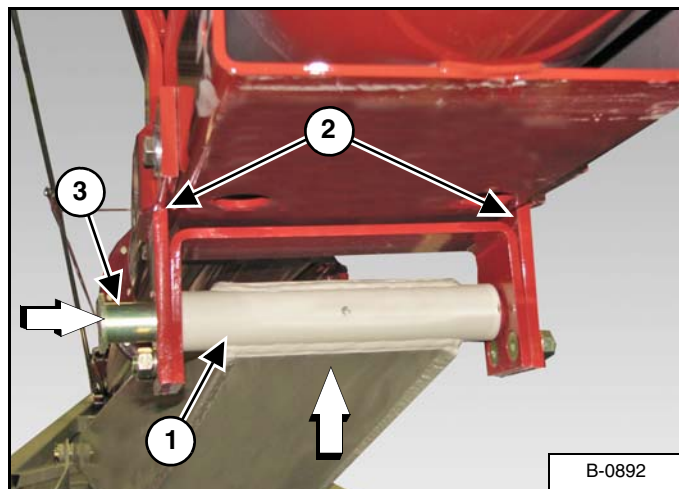


Fully install the RH & LH undercarriage arms (Item 1) [Figure 79] onto the mounts of the bottom tube section.

Install the undercarriage pin sleeve (Item 2), align holes and install one 1/2" X 4-1/2" bolt (Item 3) [Figure 79] 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 76], 7/16" lock nuts and 7/16" flat washers. Do not tighten bolts and lock nuts at this time.

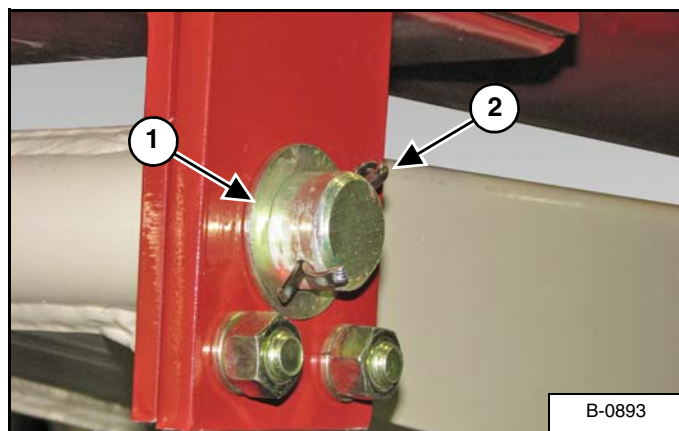
**Figure 80**



Align upper lift arm (Item 1) with the main bridging yoke (Item 2) [Figure 80] on the center tube section.

Install the lift arm pivot pin (Item 3) [Figure 80] through the main bridging yoke and upper lift arm.

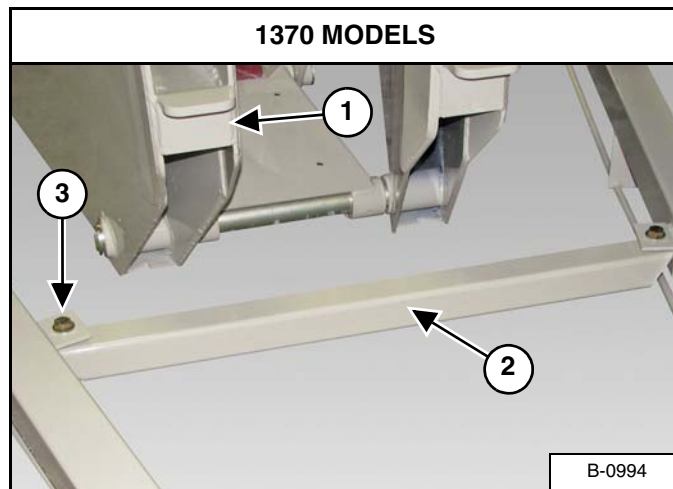
**Figure 81**



Install one 1-1/2" x 10 ga. narrow rim washer (Item 1) and one 1/4" x 2" cotter pin (Item 2) [Figure 81] 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 82**

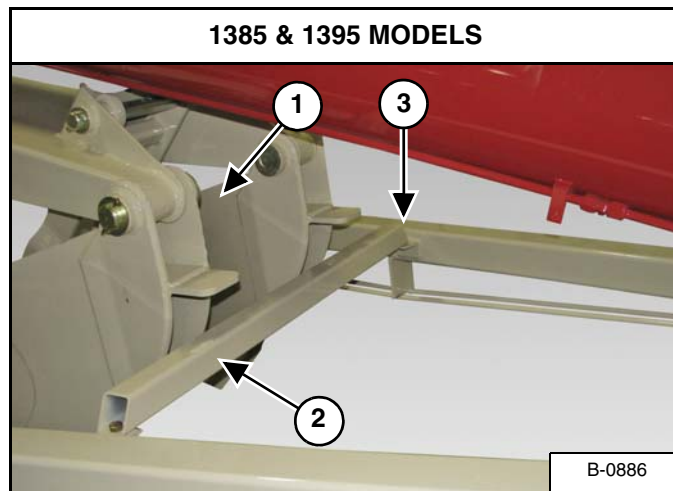


Install a strap around the LH or RH lower lift arm. Connect the strap to an approved lifting device and raise the lower lift arm assembly (Item 1) above the lift arm cradle (Item 2) [Figure 82].

Position the lift arm cradle under the undercarriage arm mount. Install bolt (Item 3) [Figure 82] and lock nut.

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

**Figure 83**

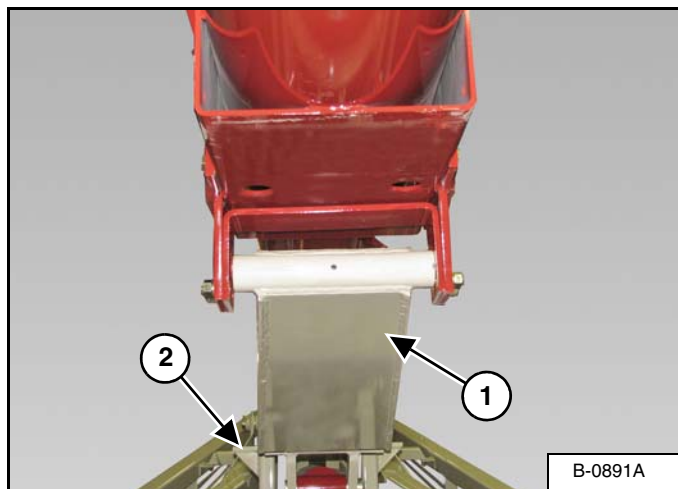


Install a strap around the LH or RH lower lift arm. Connect the strap to an approved lifting device and raise the lower lift arm assembly (Item 1) above the lift arm cradle (Item 2) [Figure 83].

Position the lift arm cradle on top of the undercarriage arm mount. Install bolt (Item 3) [Figure 83] and lock nut.

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

**Figure 84**



With the upper lift arm (Item 1) resting on the lift arm rest (Item 2) [Figure 84] 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.

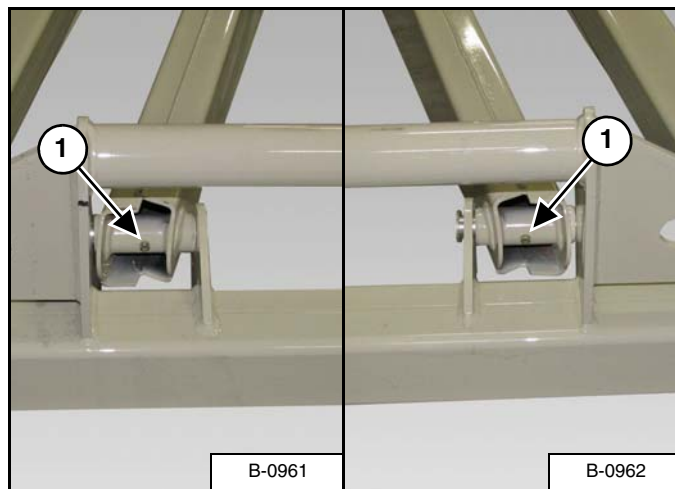
Tighten all remaining undercarriage bolts.

## ! IMPORTANT

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

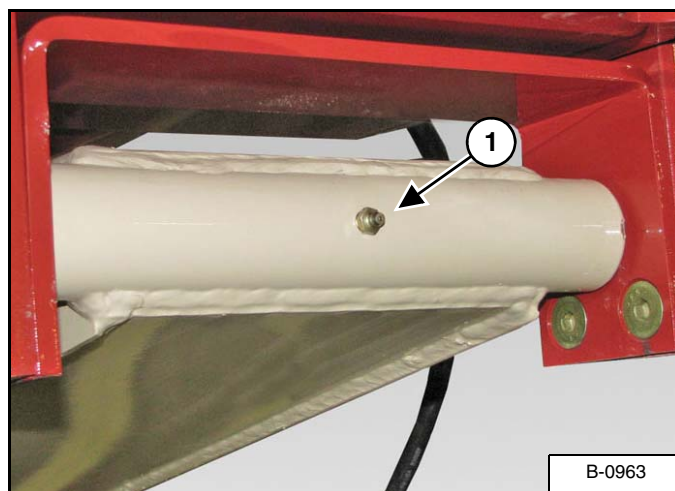
Lower tube assembly onto the undercarriage and remove the strap from tube assembly.

**Figure 85**



Install grease zerks (Item 1) [Figure 85] in the axle end of the LH & RH lower lift arms.

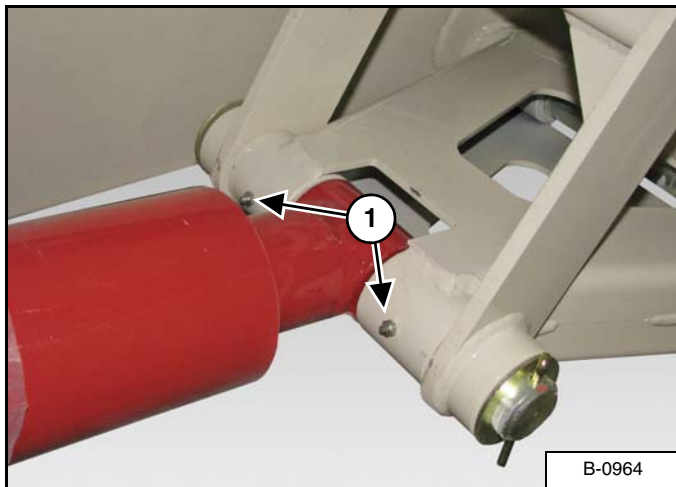
**Figure 86**



Install one grease zerk (Item 1) [Figure 86] into the upper lift arm.

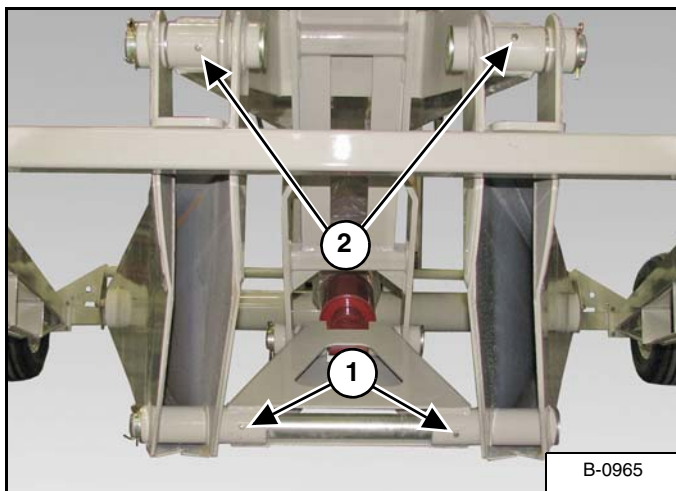


**Figure 87**



Install two grease zerks (Item 1) [Figure 87] into the connecting link.

**Figure 88**



Install two grease zerks (Item 1) [Figure 88] into the connecting link.

Install two grease zerks (Item 2) [Figure 88] into the upper lift arm.

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

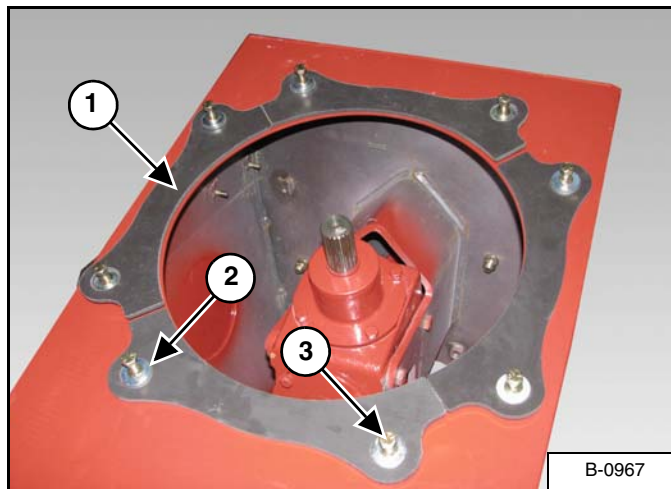


## IMPORTANT

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

### Installing The Intake Auger

**Figure 89**

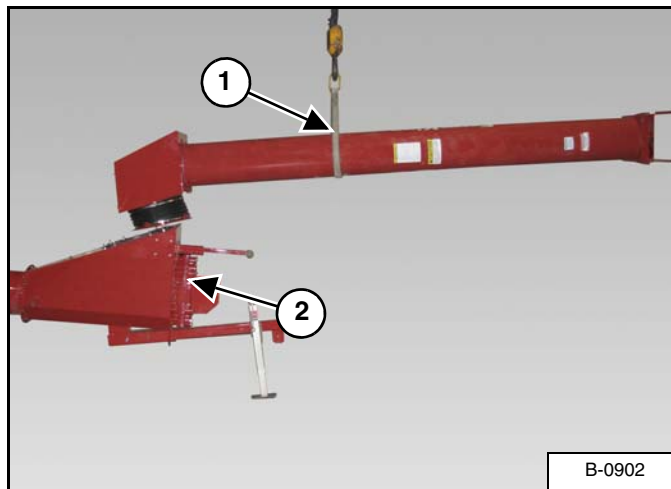


Install the intake spacers (Item 1) [Figure 89] on the top of the input box.

Install two 1/4" x 13/32" ID x 1-1/4" OD washer (Item 2) in each end of the intake spacers (Item 1) [Figure 89].

Install one 3/8" x 1-1/2" bolt (Item 3) [Figure 89] through the washers and into the intake box.

**Figure 90**

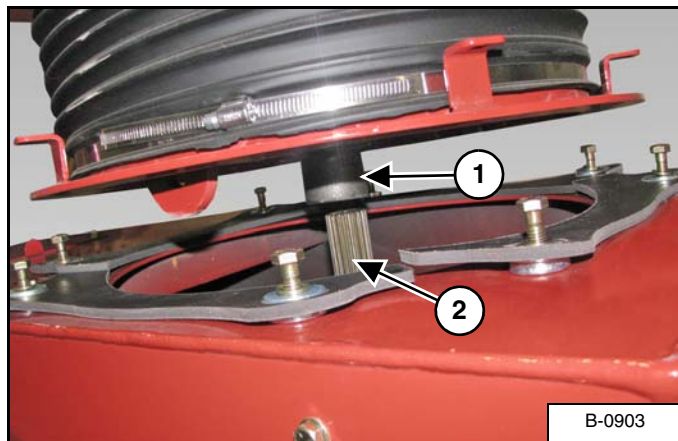


Install a strap (Item 1) [Figure 90] around the intake auger.

Connect the strap to an approved lifting device.

Raise the intake auger and position over the input box (Item 2) [Figure 90].

**Figure 91**

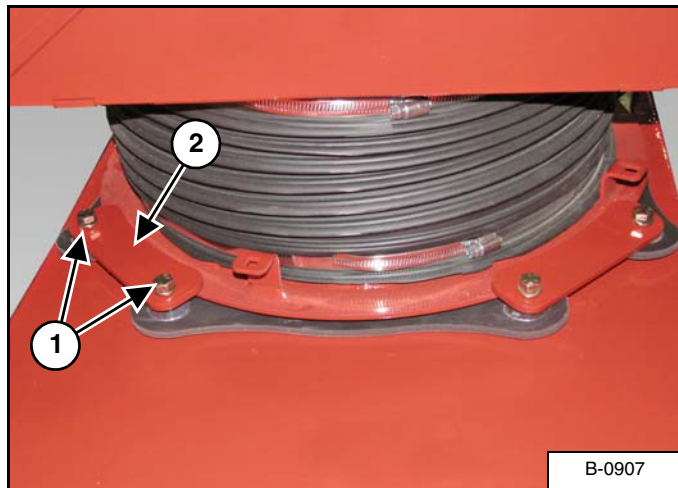


Lower the intake auger, align the u-joint (Item 1) with the top gearbox shaft (Item 2) [Figure 91] of the input box.

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

Lower the intake auger onto the shaft.

**Figure 92**



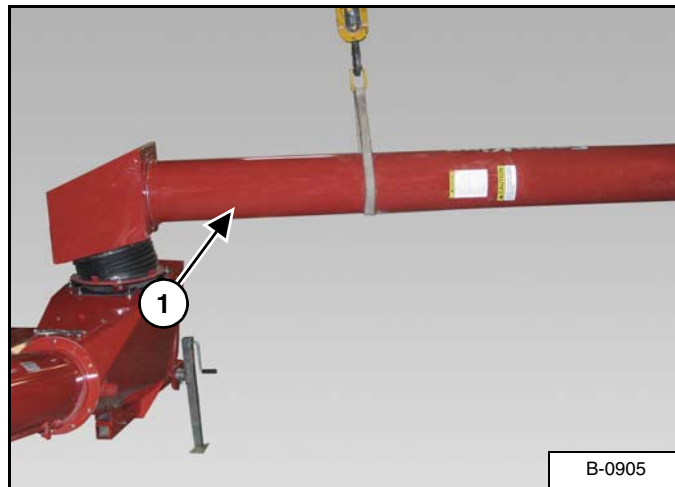
Position the intake auger mounting plate inside the eight 3/8" x 1-1/2" bolts [Figure 92].

Remove the two bolts (Item 1). Align one ring clamp (Item 2) [Figure 92] with the bolt holes and reinstall the two bolts. Repeat to install the three remaining ring clamps.

Tighten the eight bolts.

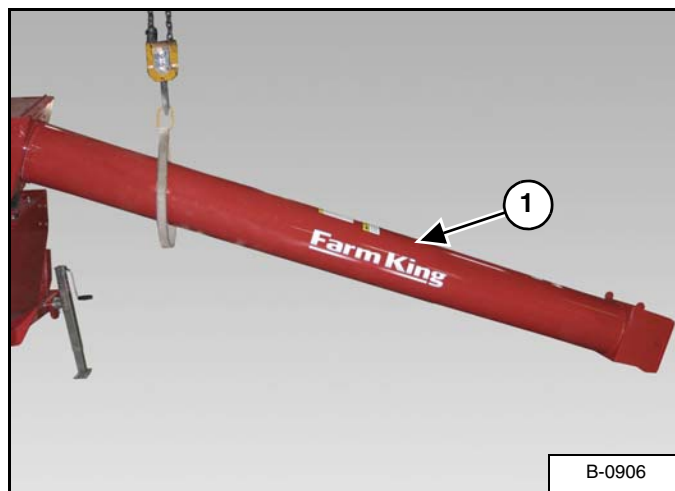
**NOTE: The intake auger should rotate freely.**

**Figure 93**



Rotate the intake auger (Item 1) [Figure 93] 90° towards the right side of the auger.

**Figure 94**

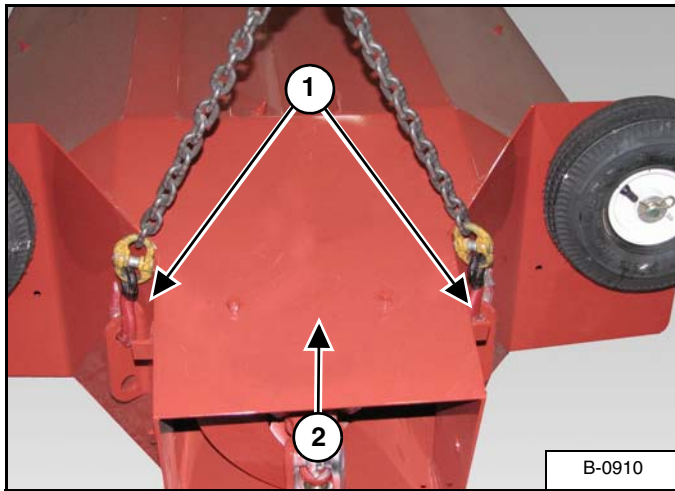


Lower the intake auger (Item 1) [Figure 94].



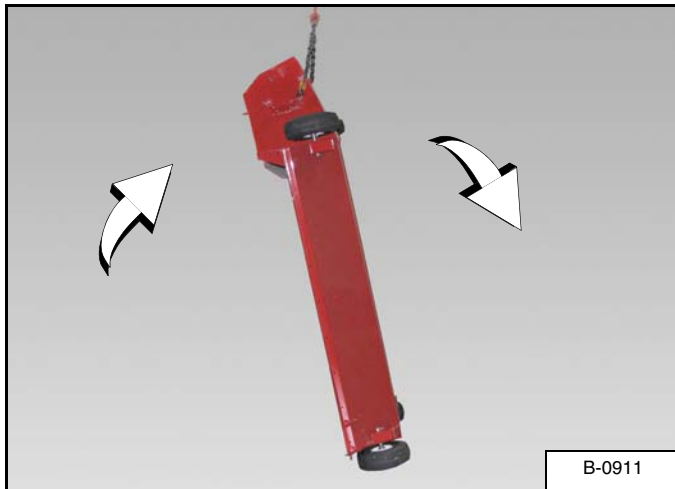
## Hopper Assembly And Installation

**Figure 95**



Install chains (Item 1) onto the hopper (Item 2) [Figure 95].

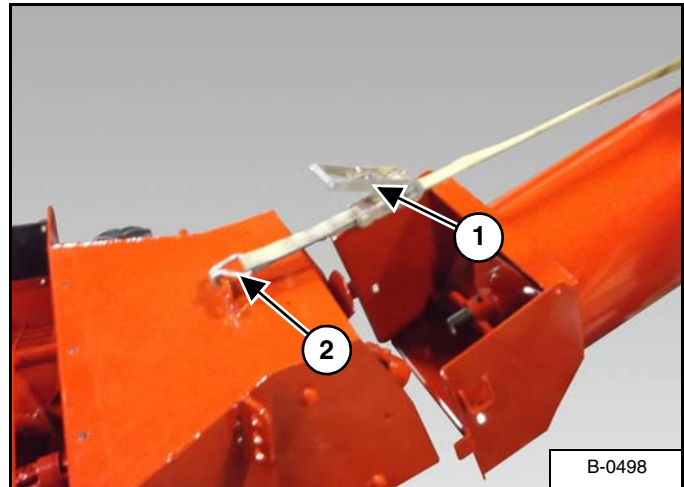
**Figure 96**



Raise the hopper until vertical, then lower the hopper until the lower wheels contact the ground. Continue lowering, while guiding the hopper to the ground With all four wheels on the ground) [Figure 96].

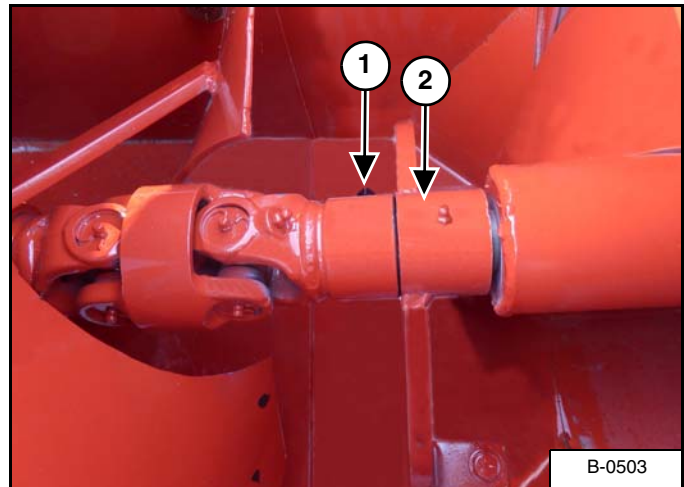
Adjust chains and move the hopper in front of the intake auger.

**Figure 97**



Install a ratchet strap (Item 1) onto the bracket (Item 2) [Figure 97] 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 98**



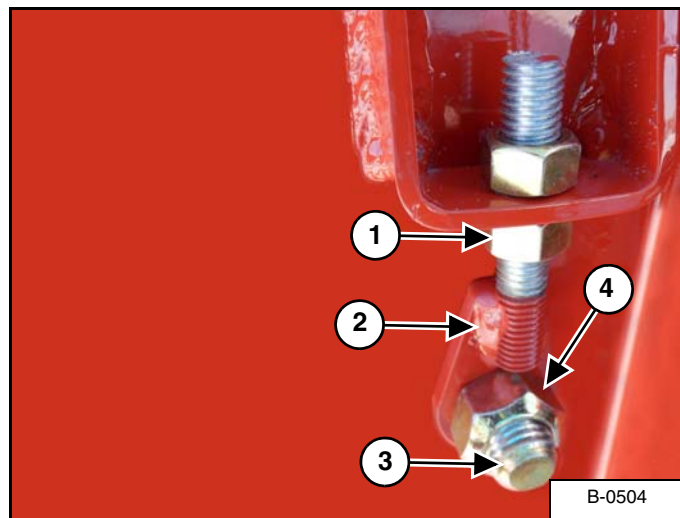
Install 0.313" square x 1.375" key onto the intake auger shaft.

Remove the two 3/8" x 3/4" set screws on hopper u-joint.

Tighten the ratchet strap, align the hopper u-joint (Item 1) with the shaft (Item 2) [Figure 98] on the intake auger. Tighten the ratchet strap until the u-joint is all the way on the shaft.

Apply thread locker to the two set screws, install and tighten against the key.

**Figure 99**



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 99]**, 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.

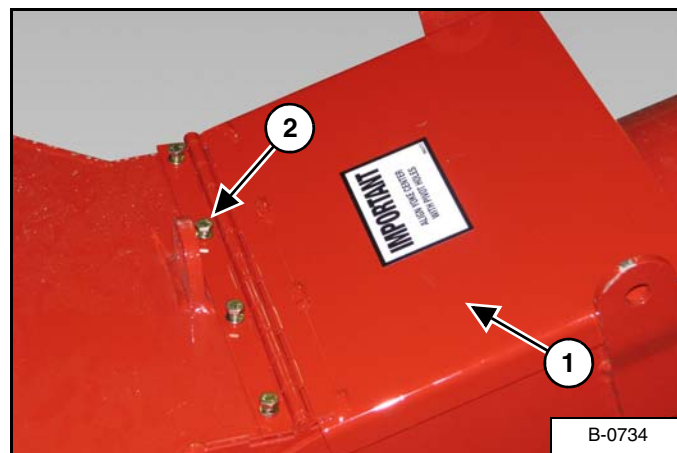
Install one 3/4" x 1-5/8" bolt (Item 3) (from inside) through the hopper, adjustment bolt and intake auger. Install one 3/4" lock nut (Item 4) **[Figure 99]** onto the bolt.

Repeat the **[Figure 99]** procedure on the opposite side of the hopper and intake auger.

Tighten the bolt (Item 3) **[Figure 99]** and lock nut first (both sides).

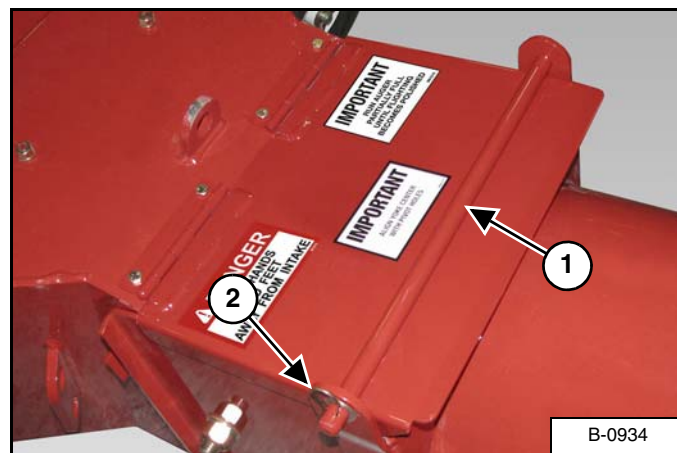
Tighten both adjustment bolts (Item 2) **[Figure 99]** evenly.

**Figure 100**



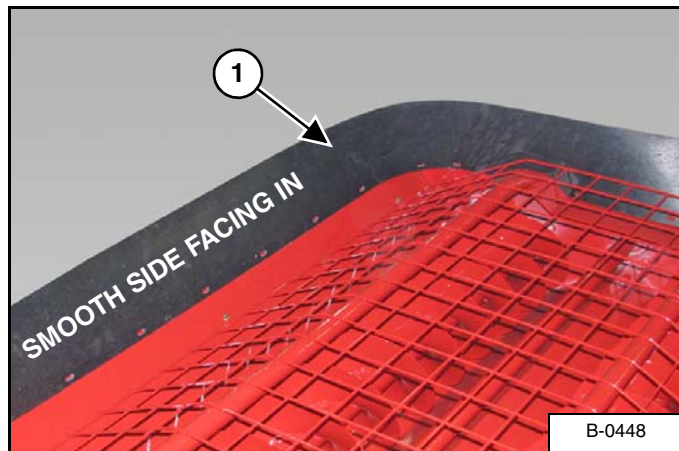
Align the hinged intake auger cover (Item 1) with the four mounting holes in the hopper. Install four 1/4" x 3/4" bolts (Item 2) **[Figure 100]** and 1/4" lock washers through the hinged intake auger cover and into the hopper. Tighten bolts.

**Figure 101**



Install the pivot hopper lid rod (Item 1) 5/8" flat washer and #7 hair pin clip (Item 2) **[Figure 101]**.

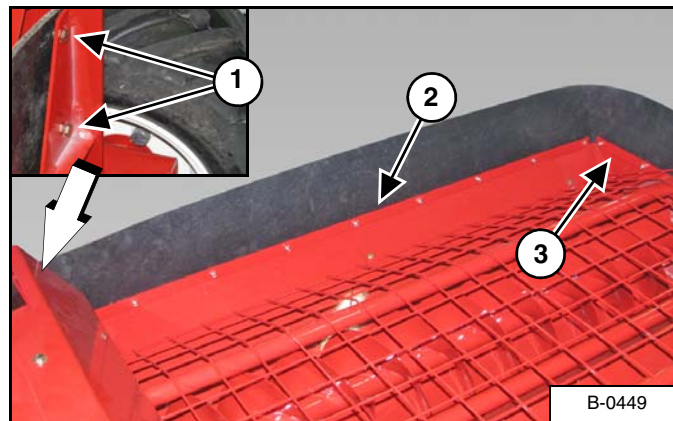
**Figure 102**



Place the rubber edge (Item 1) [Figure 102] inside the outer flange of the hopper.

**NOTE: Install the rubber edge with the smooth side facing IN.**

**Figure 103**



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 103] through the hopper and rubber edge. Install one 1/4" flat washer and 1/4" lock nut on each bolt (both ends).

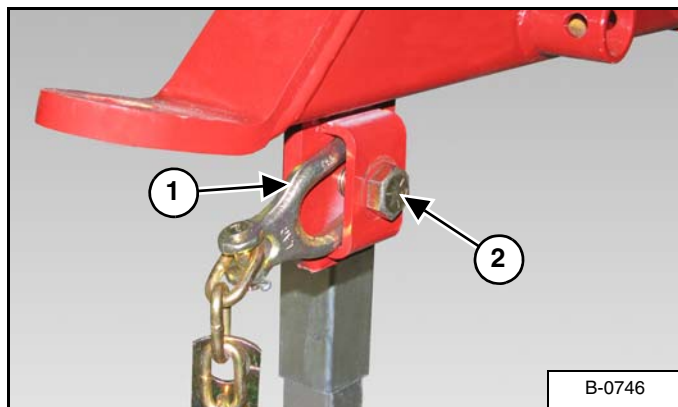
Align one long rubber reinforcement (Item 2) and one short rubber reinforcement (Item 3) [Figure 103] with holes in the rubber edge and outer hopper flange (both sides). Install 1/4" x 1" bolts through the hopper, rubber edge and rubber reinforcements (install bolts from the outside of the hopper flange). Install a 1/4" lock nut on each bolt. Do not tighten bolts and lock nuts at this time.

**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.

## Safety Chain Installation

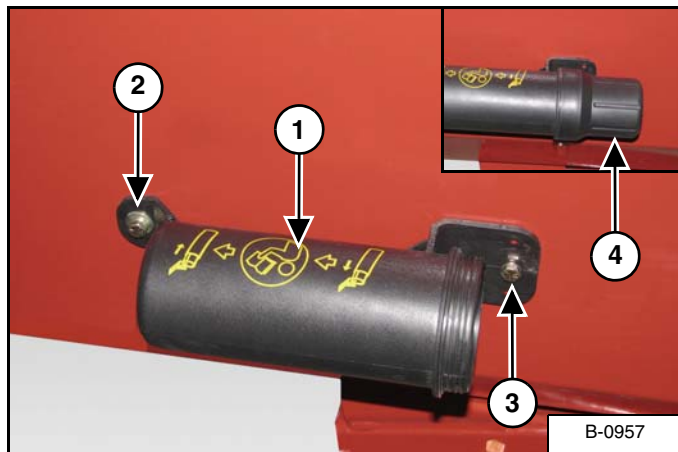
**Figure 104**



Install the safety chain loop (Item 1) into the opening on the bottom side of the hitch, install one 3/4" x 2-1/2" bolt (Item 2) [Figure 104] through the hitch and safety chain loop. Install one 3/4" lock nut and tighten to secure the safety chain to the hitch.

## Manual Holder Installation

**Figure 105**



Align the manual holder (Item 1) [Figure 105] with mounting holes on the right side of the input box.

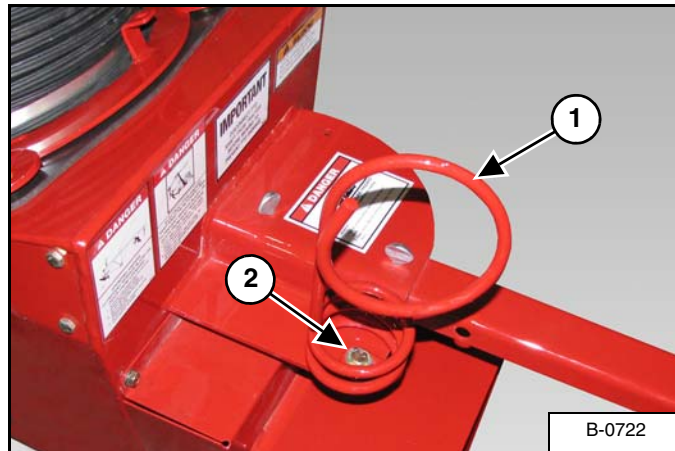
Install one 5/16" lock washer onto one 5/16" x 3/4" bolt (Item 2) [Figure 105], then install the bolt through the manual holder and into the input box.

Install one 5/16" lock washer onto one 5/16" x 3/4" bolt (Item 3) [Figure 105], then install the bolt through the manual holder and into the input box. Tighten bolts.

Install cap (Item 4) [Figure 105].

## Hydraulic Hose Holder Installation

**Figure 106**



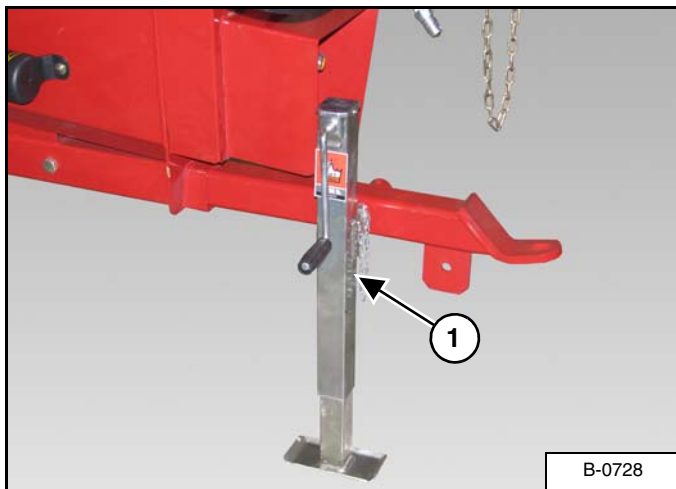
Install the hydraulic hose holder (Item 1) [Figure 106] onto the mounting bracket located on the top of the gearbox (above the hitch).

Install one 3/8" flat washer onto one 3/8" x 1-1/4" bolt (Item 2) [Figure 106], install the bolt down through the storage bracket and mounting bracket. Install one 3/8" lock nut on the bolt and tighten to secure the hydraulic hose holder to the gearbox.



## Jack Installation

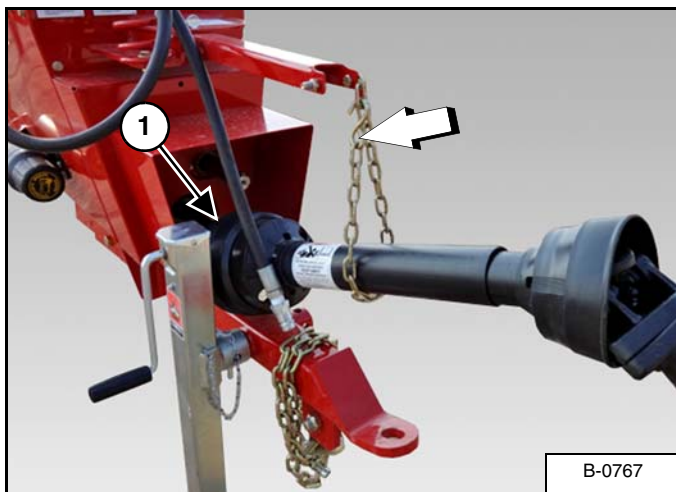
**Figure 107**



Align and install the jack (Item 1) **[Figure 107]** onto the hitch (hopper side).

## PTO Driveline Installation

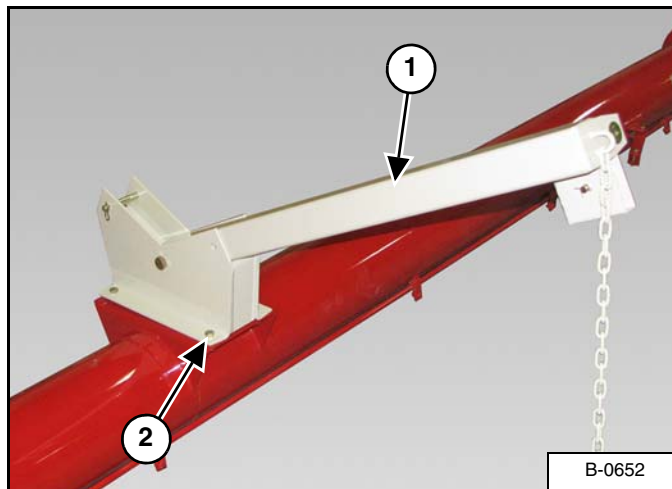
**Figure 108**



Push back on the collar (Item 1) **[Figure 108]** and install the shaft into the gearbox until the collar slides forward, locking the shaft in the gearbox. Place the PTO holder chain around the PTO driveline and hook chain back to itself.

## Lift Boom Arm Installation

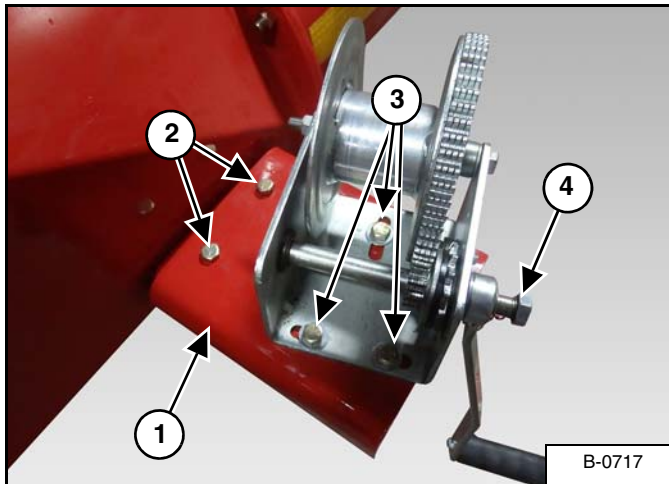
**Figure 109**



Align the intake lift boom (Item 1) with the mounting plate on the bottom tube section. Install four 1/2" x 1-1/2" bolts (Item 2) **[Figure 109]**, down through the intake lift boom and mounting plate. Install one 1/2" flat washer and 1/2" lock nut on each of the four 1/2" bolts. Tighten the bolts and nuts.

## Hand Winch And Cable Installation

**Figure 110**



Install the hand winch mounting bracket (Item 1) **[Figure 110]** on the input box (opposite side of the hopper).

Install two 3/8" x 1" bolts (Item 2) **[Figure 110]** through the hand winch mounting bracket and input box mount. Install one 3/8" lock nut on each bolt. Tighten bolts and lock nuts to secure the hand winch mounting bracket to the input box.

Align the hand winch with the three mounting slots on the hand winch mounting bracket.

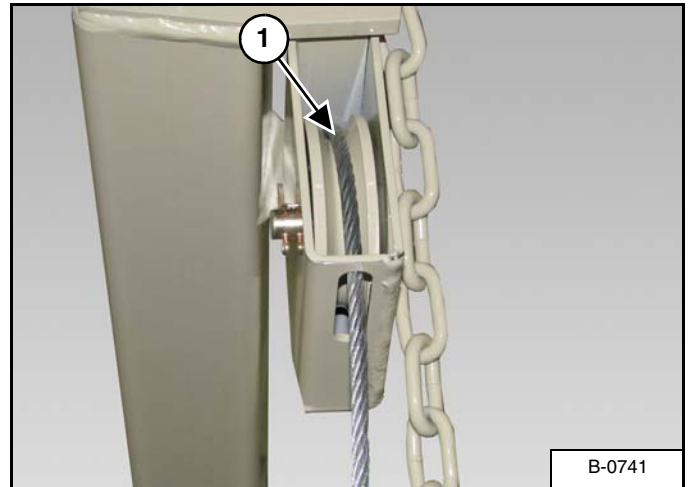
Install one 7/16" flat washer onto three 3/8" x 1" (Gr. 5) bolts (Item 3) **[Figure 110]**. Install the three bolts and flat washers down through the winch and mounting bracket. Install one 7/16" flat washer and 3/8" lock nut on the three bolts. Tighten bolts and nuts.

Tighten the nut (Item 4) **[Figure 110]** against the handle and torque to 22 - 25 ft.-lb. (30 - 34 N•m).

### **IMPORTANT**

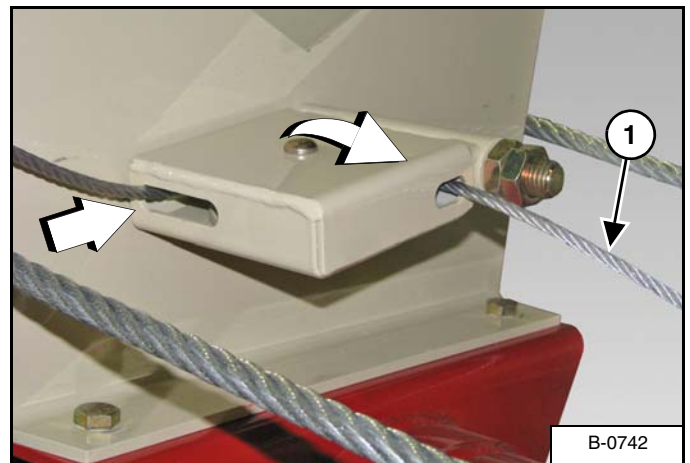
- Do not over torque the nut against the handle.
- Do not adjust the double lock nuts on the long end of the input shaft.

**Figure 111**



Locate the winch cable. Install the open end of the cable (Item 1) **[Figure 111]** through the slot and over the pulley on the top of the lift boom.

**Figure 112**



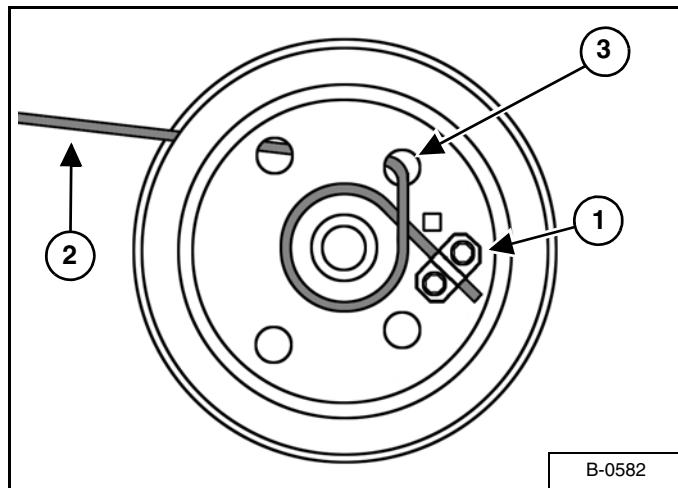
Feed the open end of the cable (Item 1) **[Figure 112]** through the slot(s) and around the lower pulley on the bottom of the lift boom.

Route the cable to the hand winch.

# **! IMPORTANT**

**Do not remove the drum to install the cable.**

**Figure 113**



Install the cable clamp (Item 1) [Figure 113] using the two bolts provided with winch. Leave bolts loose.

Route the cable over the top of the hand winch drum.

Install the cable (Item 2) from the inside of the drum through one of the dimpled holes (Item 3) [Figure 113] in the outer plate.

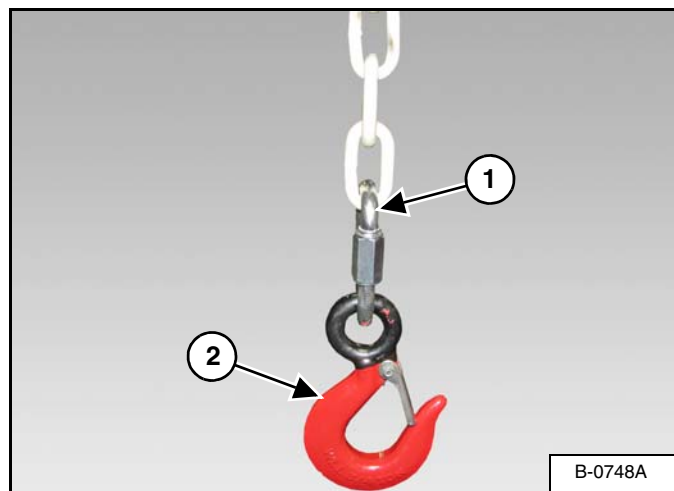
Loop the cable around the drum bearing. Feed the cable between the loop and outer plate, then through the cable clamp.

Leave approximately 1" of cable extending past the clamp. Tighten and torque the clamp bolts to approximately 2 ft.-lb. (3 N•m).

Turn handle to wrap cable around drum.

## **Hopper Safety Hook Installation**

**Figure 114**



Install the quick link (Item 1) through the eye of the hook (Item 2) [Figure 114]. Install the quick link onto the safety chain at the desired location. Tighten the quick link nut to securely fasten the quick link and hook to the safety chain.

**NOTE: The quick link and hook may need to be adjusted higher on the safety chain to make sure the hopper is approximately 16" above the ground for transport.**



## HYDRAULIC ASSEMBLY

### Hydraulic Cylinder Hose Installation

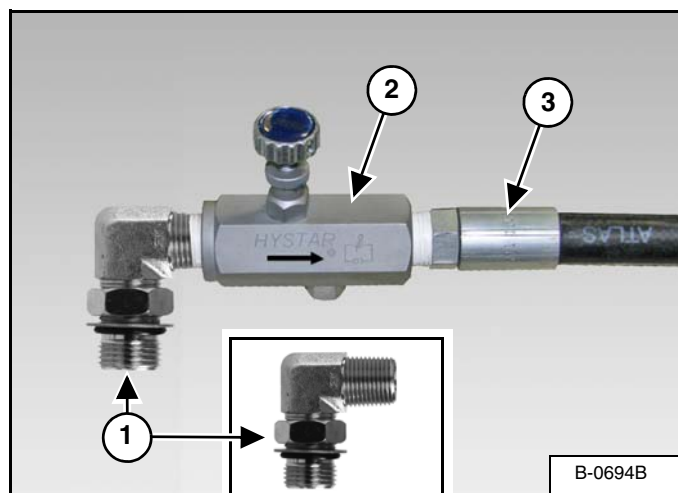
#### ! IMPORTANT

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 115



Locate one each of the following components [Figure 115]:

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)

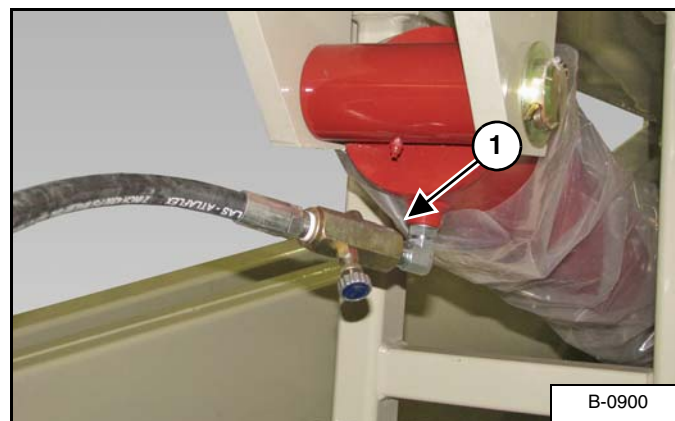
**NOTE:** Apply teflon tape to the male threads of each fitting.

Install the 08 MNPT x 08 MNPT 90° elbow into the flow control valve [Figure 115].

Install the 08 x 00 MJIC x 08 MNPT hydraulic hose into the 08 FNPT One Way Flow Control Valve [Figure 115].

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

Figure 116

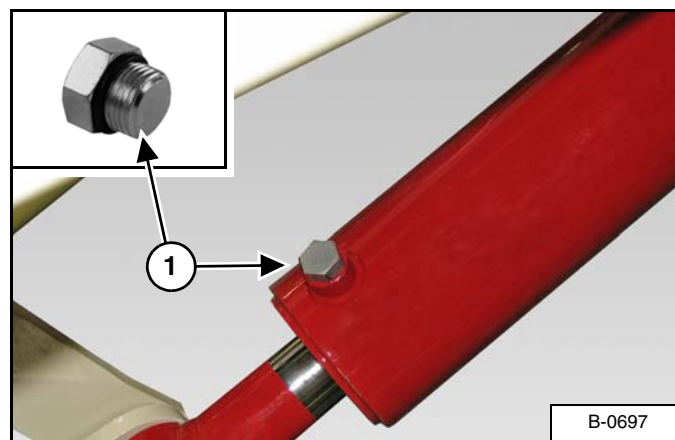


Remove the plastic plug from the base end (upper) of the hydraulic cylinder.

Install the flow control valve assembly (Item 1) [Figure 116] into the hydraulic cylinder.

Tighten all connections.

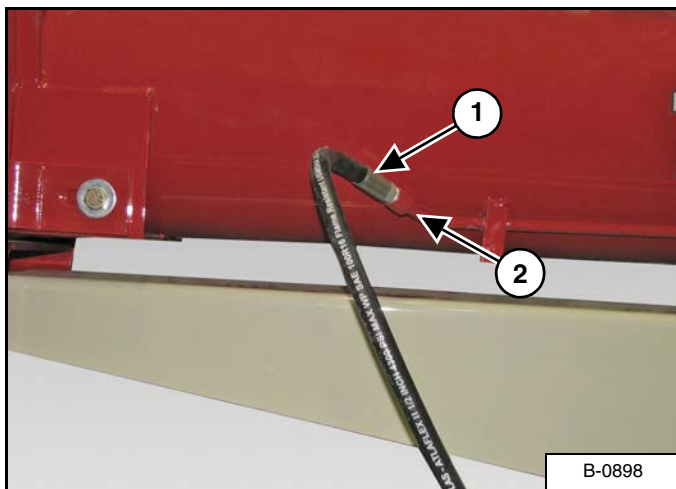
Figure 117



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

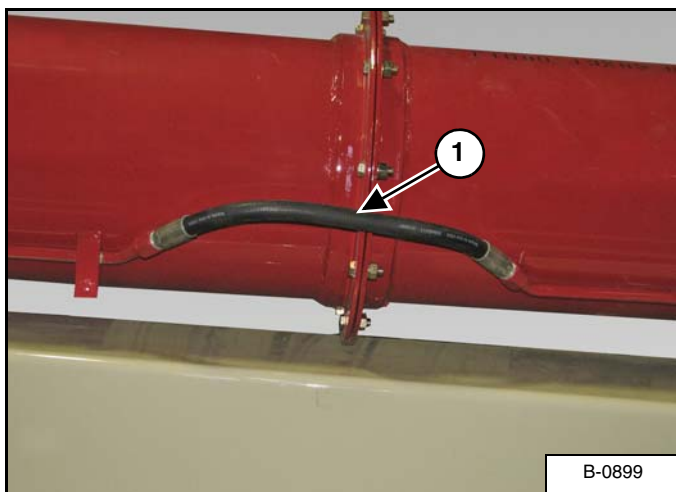
Locate and install the 08 MORB vent plug (Item 1) [Figure 117] into the hydraulic cylinder.

**Figure 118**



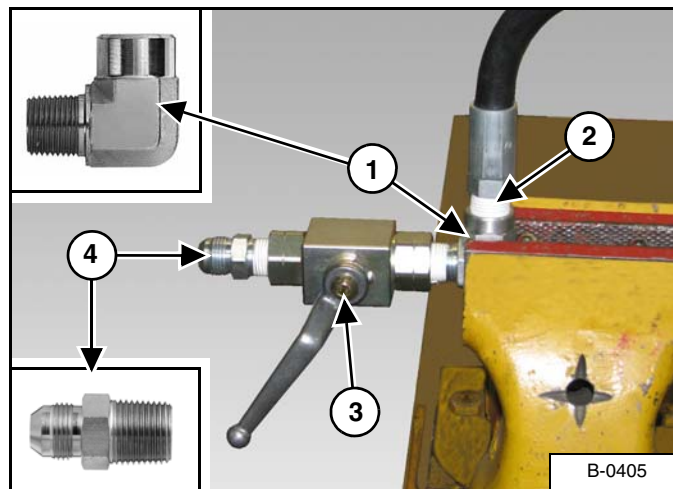
Install and tighten the 08 x 010 MJIC x 08 MNPT hydraulic hose (Item 1) into the tube (Item 2) **[Figure 118]** on the center tube section.

**Figure 119**



Install and tighten the 08 x 010 MJIC x 08 MNPT hydraulic hose (Item 1) **[Figure 119]** into the tubes on the center and bottom tube sections.

**Figure 120**



Locate one 90° elbow (Item 1) **[Figure 120]** 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 120]** assembly into the 90° elbow.

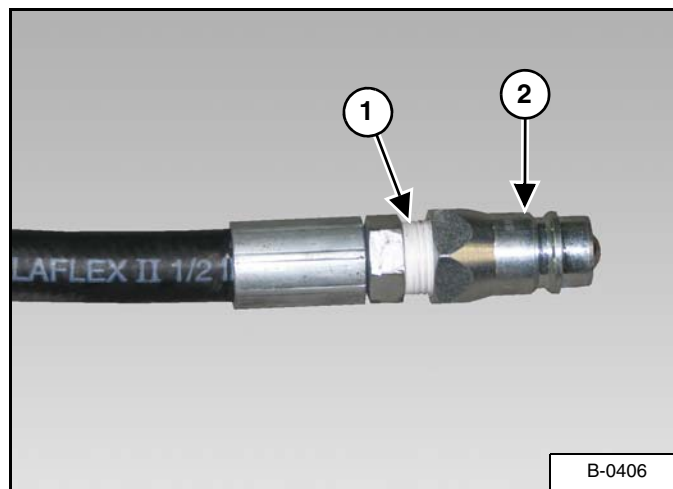
Apply teflon tape to the threads of the 90° elbow.

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

Locate one adapter fitting (Item 4) **[Figure 120]**.

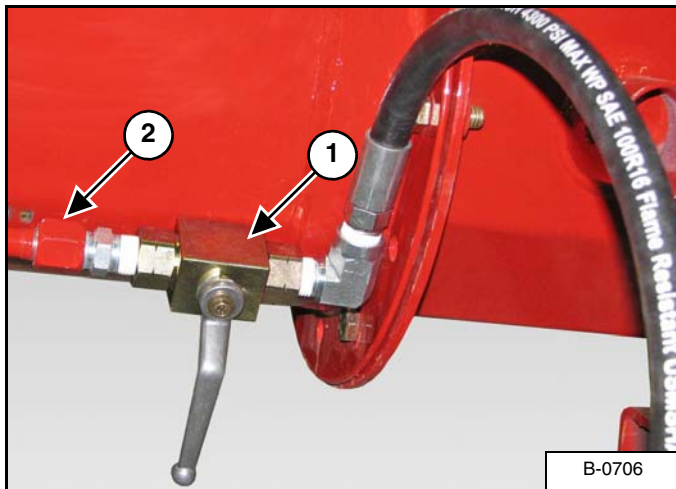
Apply teflon tape to the threads of the adapter fitting, then install and tighten adapter fitting into the 1/2" ball valve (Item 3) **[Figure 120]**.

**Figure 121**



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 121]**.

Figure 122

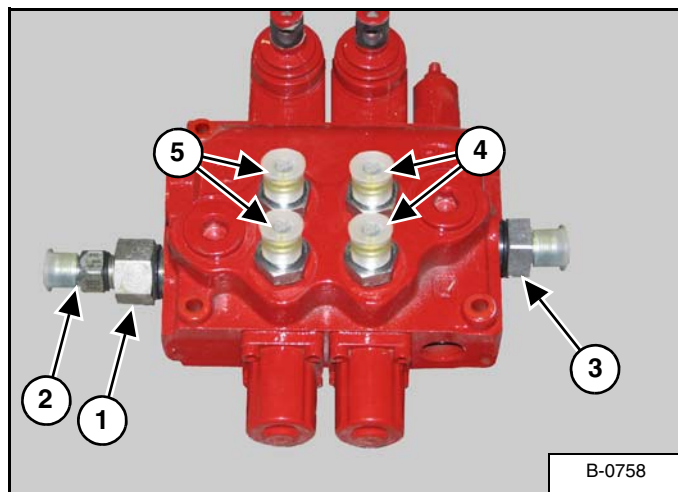


Install hose assembly (Item 1) into the hydraulic tube (Item 2) [Figure 122] on the bottom tube section. Route the hose towards the hitch and install into the hydraulic hose holder.

## HYDRAULIC MOVER AND WINCH (OPTIONAL)

### Hydraulic Control Valve Installation

**Figure 123**



Install fitting (Item 1) into the valve block. Install fitting (Item 2) [Figure 123].

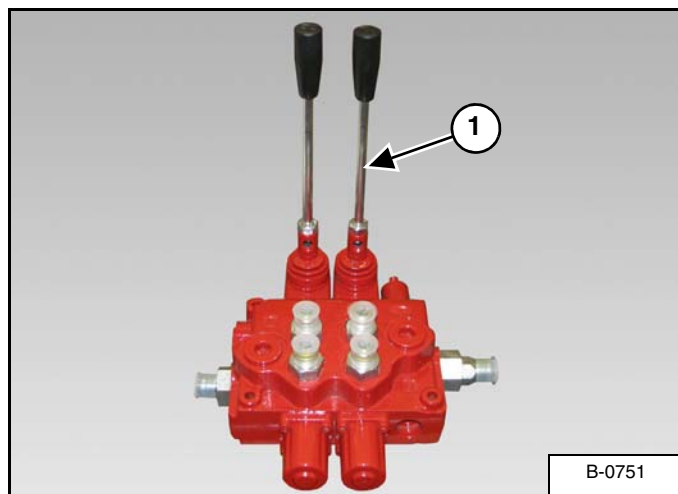
Install fitting (Item 3) [Figure 123] into the valve block.

Install the two restrictor fittings (Item 4) [Figure 123] into the valve block.

Install the two fittings (Item 5) [Figure 123] into the valve block.

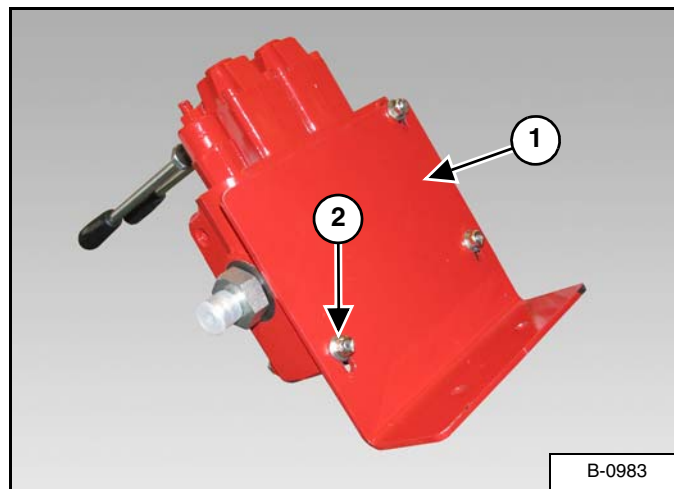
Tighten all fittings.

**Figure 124**



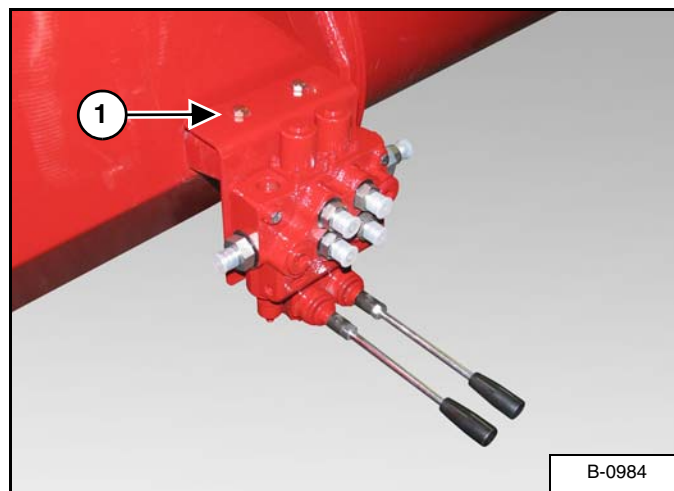
Install the two levers (Item 1) [Figure 124] into the valve block.

**Figure 125**



Install the mounting bracket (Item 1) onto the valve block using three 1/4" x 2-3/4" bolts, three 1/4" flat washers and three 1/4" lock nuts (Item 2) [Figure 125]. Tighten bolts and lock nuts.

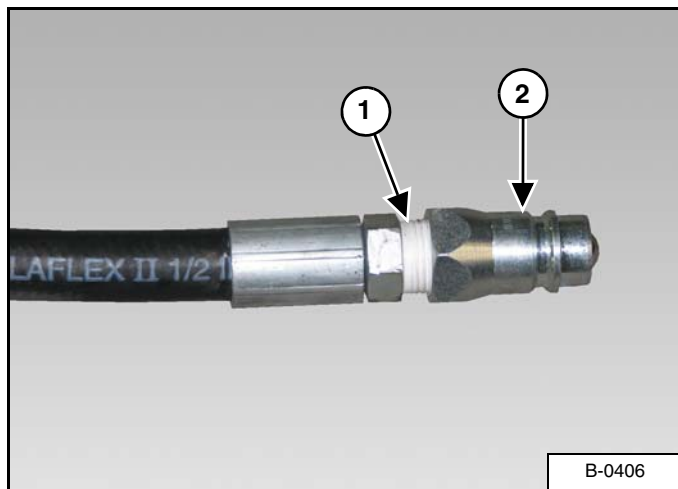
**Figure 126**



Install the valve block assembly onto the left side of the input box.

Install two 3/8" x 1" bolts (Item 1) [Figure 126] through the valve block mounting bracket and input box mount. Install two 3/8" lock nuts on the bolts and tighten.

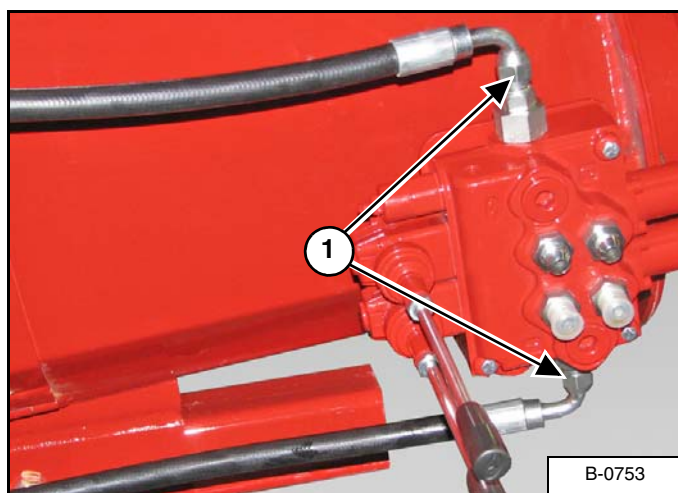
**Figure 127**



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 127].

Repeat for second quick coupler hose.

**Figure 128**



Install the quick coupler hoses (Item 1) [Figure 128] onto the control valve.

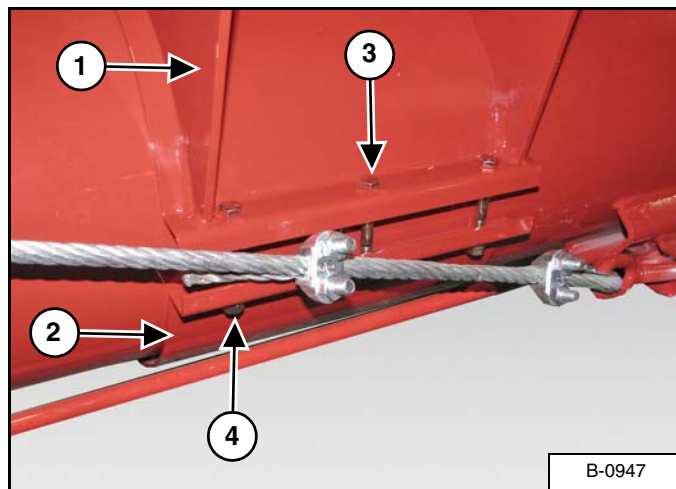
## Hydraulic Winch Installation

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

Remove the cable from the hand winch (if equipped).

Remove the hand winch from the input box (if equipped).

**Figure 129**



Locate one upper winch mount (Item 1), one lower winch mount (Item 2), six 3/8" x 2-3/4" bolts (Item 3) and six 3/8" lock nuts (Item 4) [Figure 129].

Position the upper winch mount (Item 1) on top of the bottom tube (approximately 32" from the lift arm boom).

**NOTE:** Loosen the hydraulic tube clamps to allow the lower winch mount to be installed.

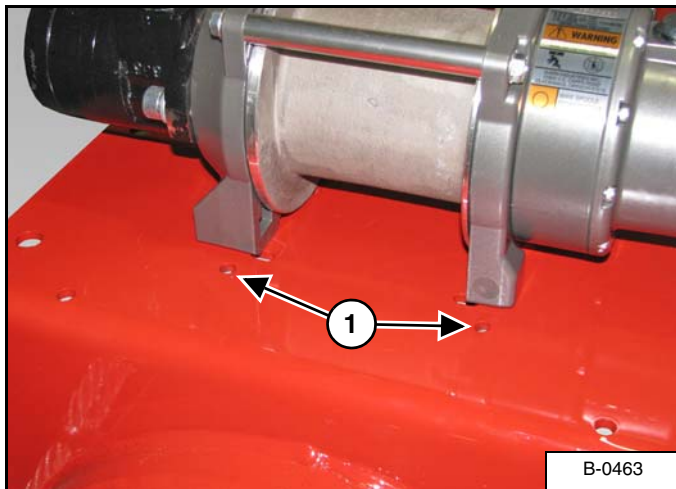
Install and align the lower winch mount (Item 2) [Figure 129] with upper winch mount. Install three 3/8" x 2-3/4" bolts through the two mounts and install one 3/8" lock nut on each bolt (both sides).

**NOTE:** Center and level the upper winch mount on the top of the bottom tube.

Tighten bolts and lock nuts until the two mounts are securely fastened around the bottom tube.

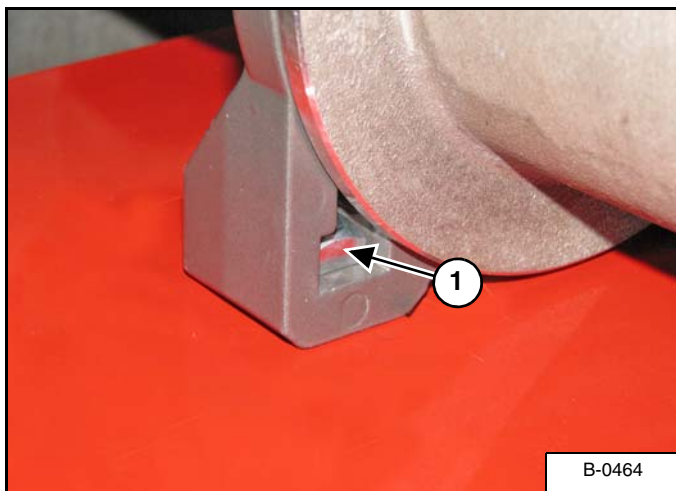


**Figure 130**



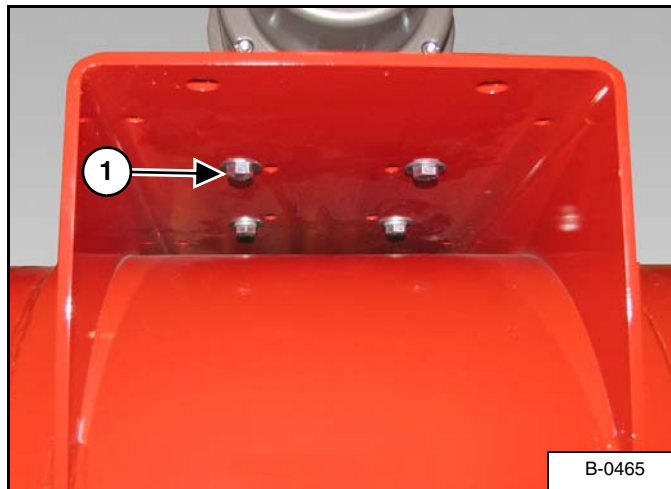
Align the winch with four holes (Item 1) **[Figure 130]** in the winch mounting plate on the top of the bottom tube.

**Figure 131**



Install one square head nut (Item 1) **[Figure 131]** into each foot of the winch (hardware supplied with winch).

**Figure 132**



Install one lock washer and flat washer onto the four bolts

While holding down on the square nut (Item 1) **[Figure 131]**, install one bolt, lock washer and flat washer (Item 1) **[Figure 132]** 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.

**CAUTION**



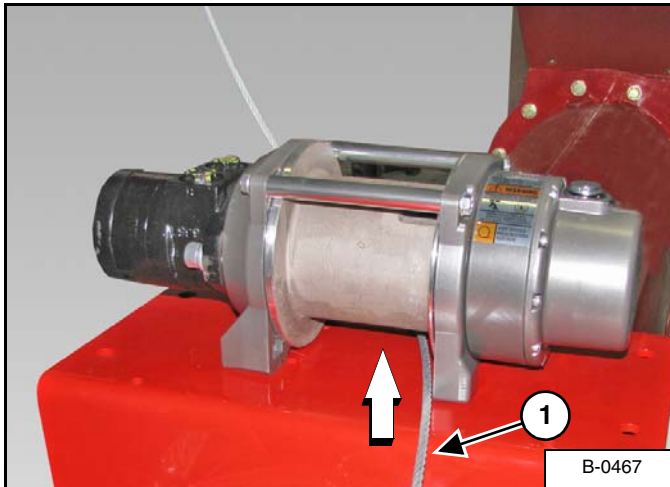
**CUT HAZARD**

**To prevent injury to fingers and hands:**

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

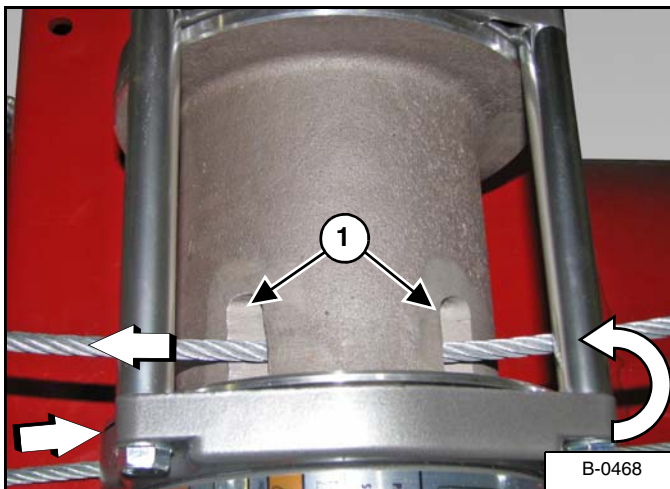


**Figure 133**



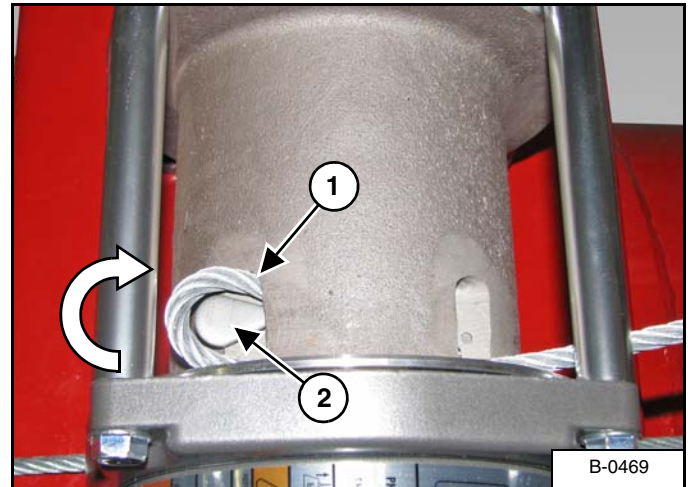
Route the winch cable (Item 1) [Figure 133] through the end pulley of the lift boom, down through the bottom pulley of the lift boom, across the top of the bottom tube and between the winch and winch mounting plate.

**Figure 134**



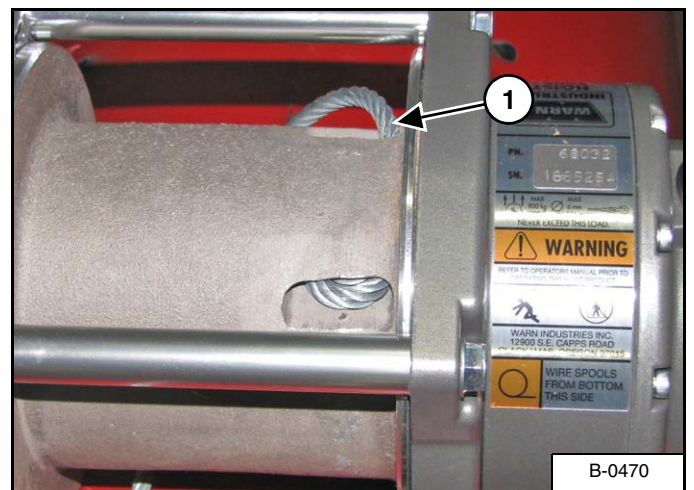
With the winch cable routed under the winch, feed the cable back through the two slots (Item 1) [Figure 134] of the winch.

**Figure 135**



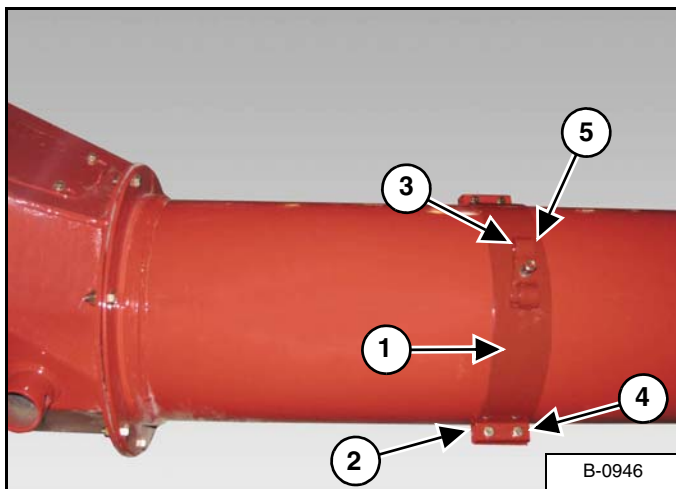
Loop the tail end (Item 1) of the cable and feed back into the slot, install the wedge (Item 2) [Figure 135] inside the loop.

**Figure 136**



Pull back on the cable (Item 1) [Figure 136] until the loop and wedge are inside the slot.

**Figure 137**



Locate one hose holder clamp weldment (Item 1), one clamp (Item 2), two hose clamps (Item 3), four 3/8" x 2" bolts (Item 4) and five 3/8" lock nuts (Item 5) [Figure 137].

Position the hose holder clamp weldment (Item 1) [Figure 137] on the bottom tube, approximately 36" from the input box, with the bolt rotated slightly (approximately 2 o'clock) from top center of the tube.

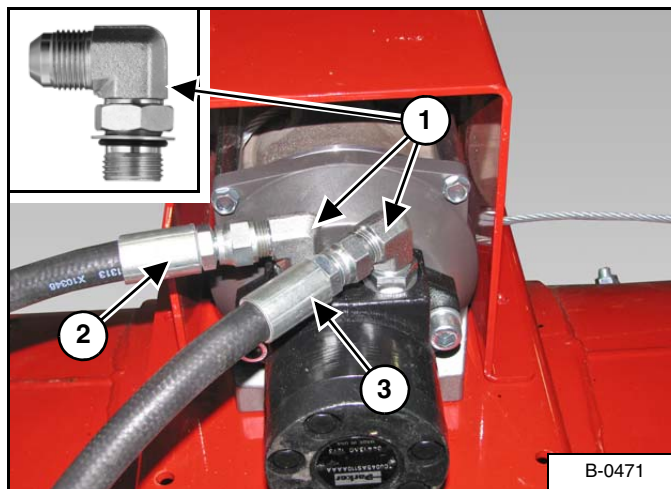
Align the clamp (Item 2) [Figure 137] with the hose holder clamp weldment. Install two 3/8" x 2" bolts through the two clamps and install one 3/8" lock nut on each bolt (both sides).

Tighten bolts and lock nuts until the two clamps are securely fastened around the intake auger tube.

Install the two hose clamps (Item 3) [Figure 137] (one up & one down) onto the hose holder clamp weldment bolt.

Install one 3/8" lock nut onto the hose holder clamp weldment bolt. Do not tighten at this time.

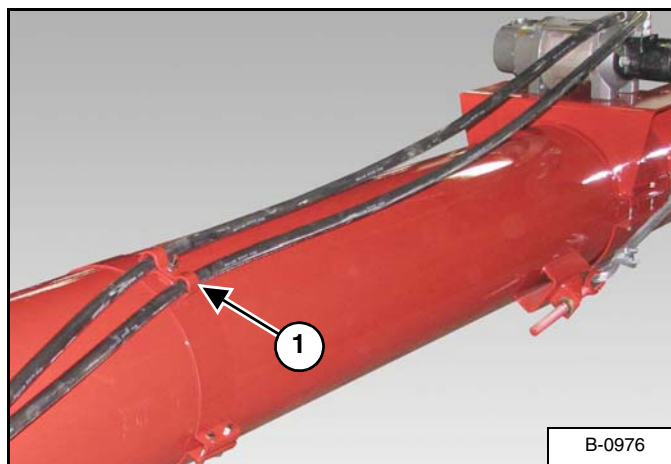
**Figure 138**



Install and tighten two 90° elbow fittings (Item 1) [Figure 138] into the winch.

Install and tighten the hydraulic hoses (Items 2 & 3) [Figure 138] onto the 90° elbow fittings.

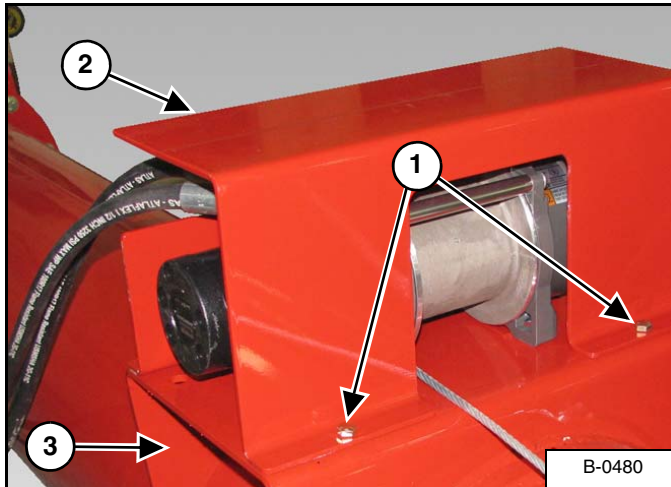
**Figure 139**



Route the two winch hydraulic hoses along the bottom tube and towards the input box / control valve [Figure 139].

Install hoses into the clamps (Item 1) [Figure 139] clamps on the bottom tube (do not cross hoses). Tighten the 3/8" lock nut to secure the hoses in the clamps.

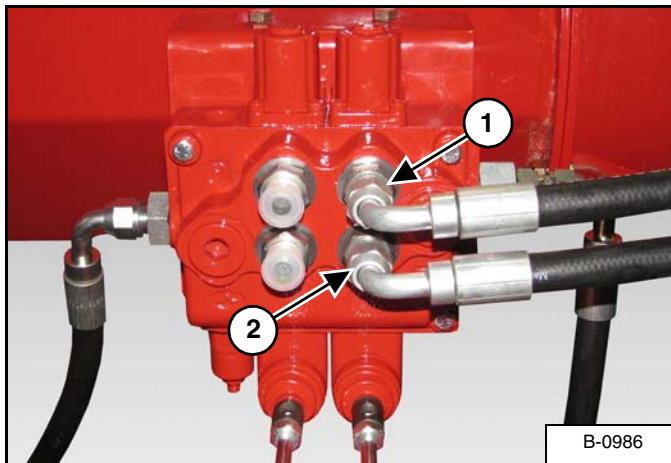
**Figure 140**



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 140].

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

**Figure 141**



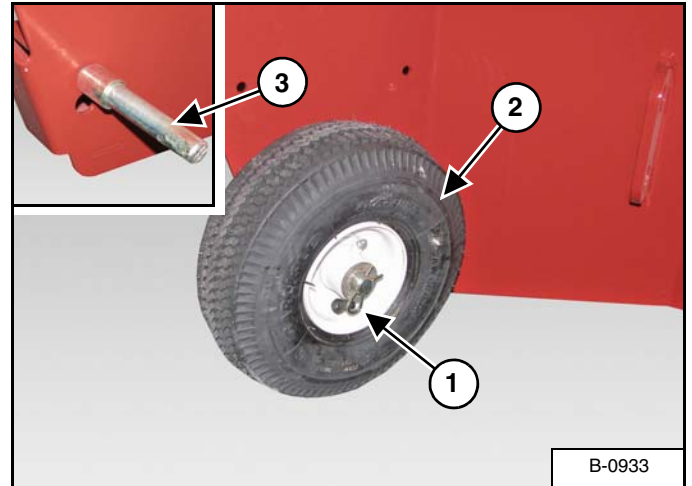
Install and tighten the inside winch hydraulic hose (Item 1) [Figure 141] onto the bottom right fitting on the valve block.

Install and tighten the outside winch hydraulic hose onto the bottom left fitting (Item 2) [Figure 141] on the valve block.

**NOTE:** Install plugs in all control valve ports not being used.

## Hydraulic Wheel Motor And Wheel Installation (Optional)

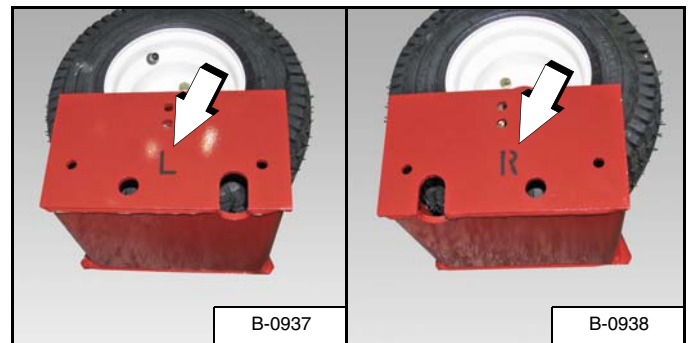
**Figure 142**



Remove the retaining clip (Item 1), washer and tire (Item 2) (intake auger end of the hopper). Remove the shaft (Item 3) [Figure 142].

Repeat to remove opposite wheel and shaft.

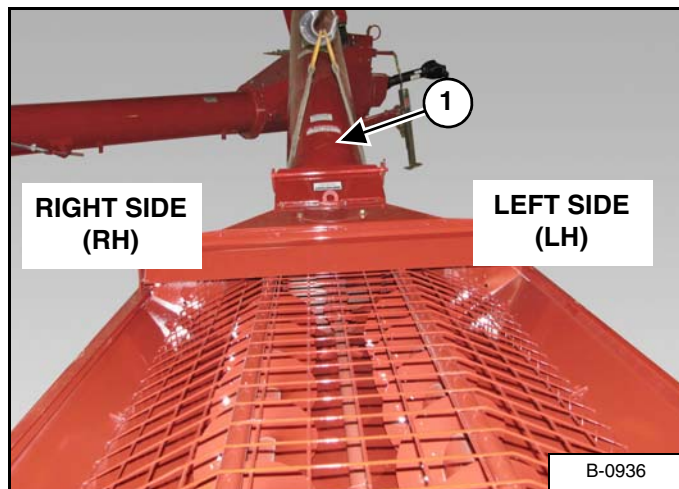
**Figure 143**



Locate the left hand (L) & right hand (R) hydraulic motor / wheel assemblies [Figure 143].

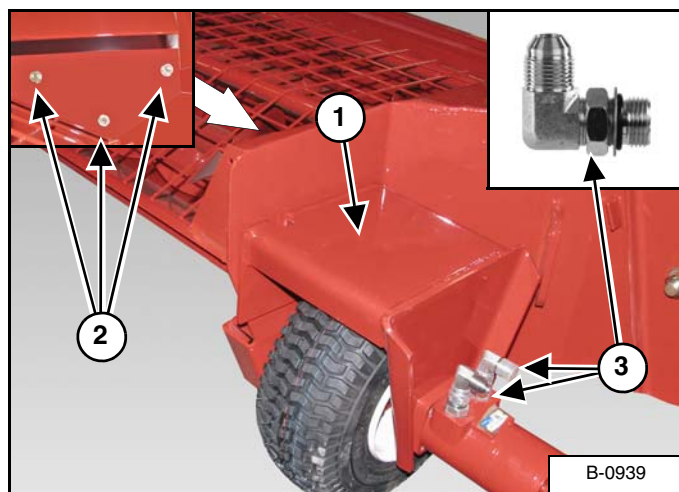


**Figure 144**



Right hand (RH) and left hand (LH) sides of the hopper are as viewed from the end of the hopper, looking towards the intake auger (Item 1) [Figure 144].

**Figure 145**

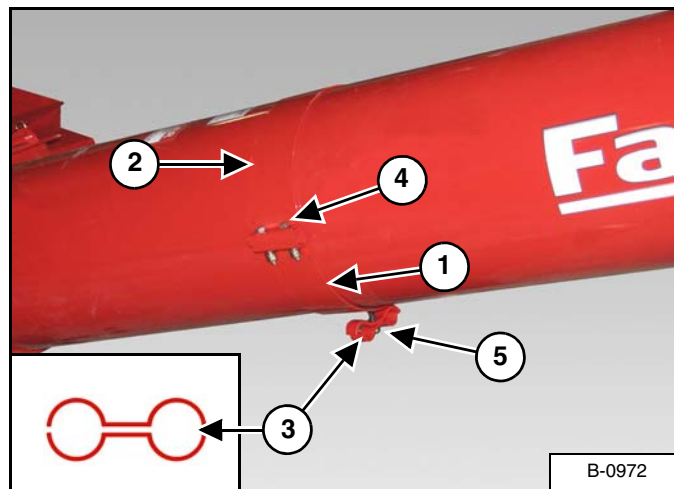


Install the left hand (L) hydraulic motor / wheel assembly (Item 1) onto the hopper using three 3/8" x 1" bolts and 3/8" lock nuts (Item 2) [Figure 145]. Tighten bolts and nuts.

Repeat for installing the right hand (R) hydraulic motor / wheel assembly.

Locate two 90° fittings (Item 3) [Figure 145]. Install the two fittings in the left hand (L) hydraulic motor. Repeat for installing fittings into the right hand (R) hydraulic motor.

**Figure 146**



Locate one hose holder clamp weldment (Item 1), one clamp (Item 2), two hose clamps (Item 3), four 3/8" x 1-1/2" bolts (Item 4) and five 3/8" lock nuts (Item 5) [Figure 146].

Position the hose holder clamp weldment (Item 1) [Figure 146] just above the two lower decals on the intake auger tube with the bolt centered on the bottom of the tube.

**NOTE: Do not cover decals.**

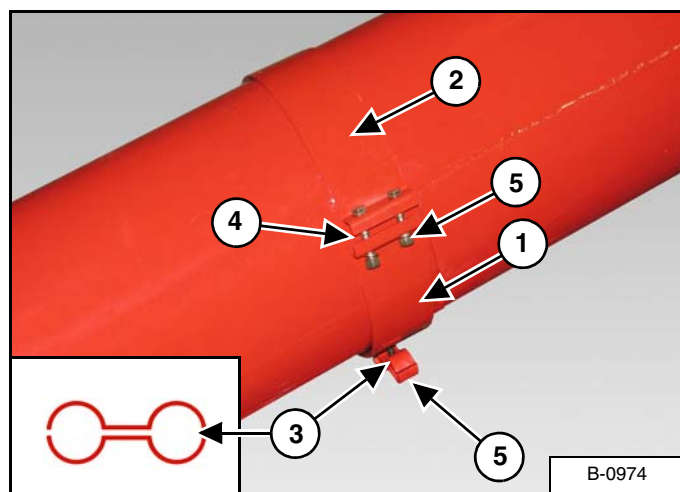
Align the clamp (Item 2) [Figure 146] with the hose holder clamp weldment. Install two 3/8" x 1-1/2" bolts through the two clamps and install one 3/8" lock nut on each bolt (both sides).

Tighten bolts and lock nuts until the two clamps are securely fastened around the intake auger tube.

Install the two hose clamps (Item 3) [Figure 146] (one up & one down) onto the hose holder clamp weldment bolt.

Install one 3/8" lock nut onto the hose holder clamp weldment bolt. Do not tighten at this time.

**Figure 147**



Locate one hose holder clamp weldment (Item 1), one clamp (Item 2), two hose clamps (Item 3), four 3/8" x 1-1/2" bolts (Item 4) and five 3/8" lock nuts (Item 5) [Figure 147].

Position the hose holder clamp weldment (Item 1) [Figure 147] just below the intake auger elbow (below tube reinforcement) on the intake auger tube with the bolt centered on the bottom of the tube.

**NOTE: Do not cover decals.**

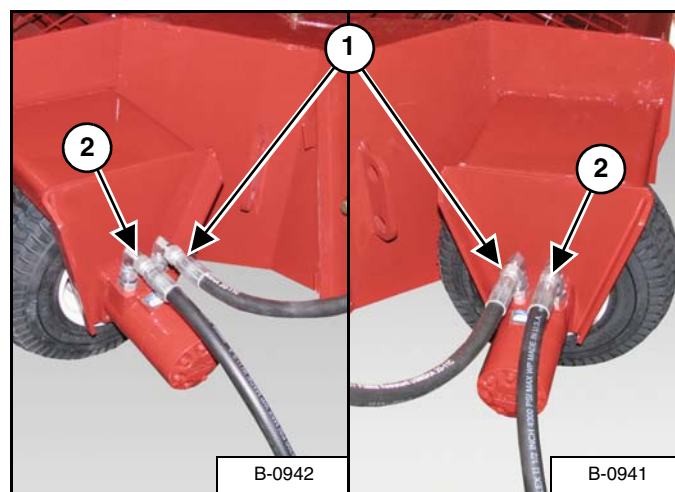
Align the clamp (Item 2) [Figure 147] with the hose holder clamp weldment. Install two 3/8" x 1-1/2" bolts through the two clamps and install one 3/8" lock nut on each bolt (both sides).

Tighten bolts and lock nuts until the two clamps are securely fastened around the intake auger tube.

Install the two hose clamps (Item 3) [Figure 147] (one up & one down) onto the hose holder clamp weldment bolt.

Install one 3/8" lock nut onto the hose holder clamp weldment bolt. Do not tighten at this time.

**Figure 148**

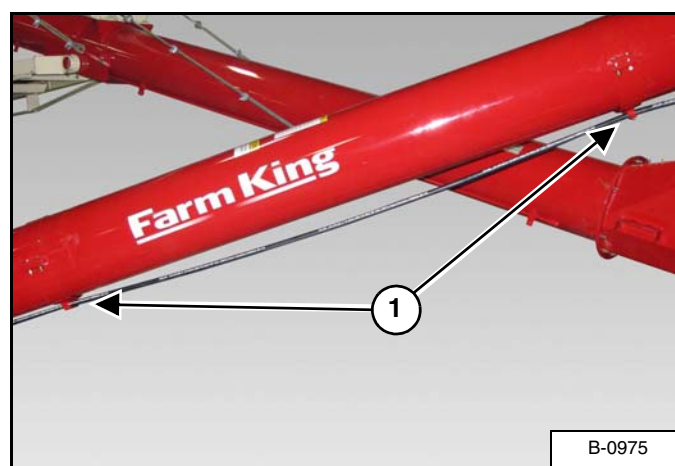


Locate one 60" hydraulic hose (Item 1) and two 84" hydraulic hoses (Item 2) [Figure 148].

Install the 60" hydraulic hose (Item 1) [Figure 148] onto the inside elbow fitting on the left hand (L) hydraulic wheel motor. Route the hose over the hopper and install the hose onto the inside elbow fitting of the right hand (R) hydraulic wheel motor.

Install one 84" hydraulic hose onto the outside elbow fitting of the left hand (L) and right hand (R) hydraulic wheel motors.

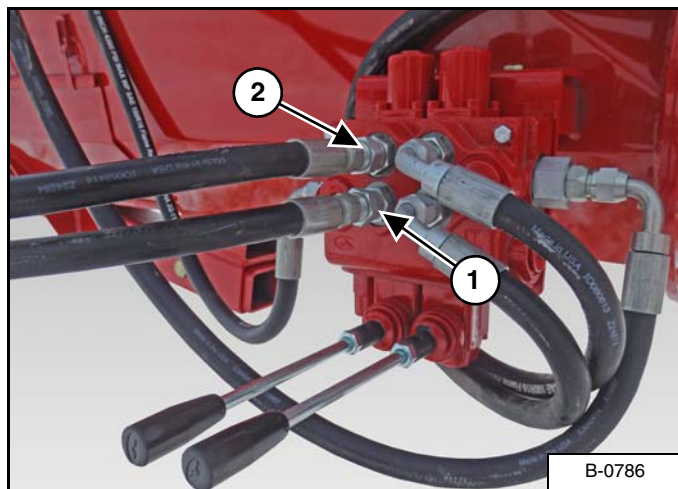
**Figure 149**



Route the two 84" hoses from the left hand (L) and right hand (R) hydraulic wheel motors along the bottom of the intake auger tube and around the intake auger elbow.

Install hoses into the lower and upper (Item 1) [Figure 149] clamps on the intake auger tube (do not cross hoses). Tighten the 3/8" lock nut to secure the hoses in the clamps.



**Figure 150**


Install the left wheel motor hydraulic hose (Item 1) **[Figure 150]** onto the upper left fitting on the valve block.

Install the right wheel motor hydraulic hose (Item 2) **[Figure 150]** onto the upper right fitting on the valve block.

# 1000 RPM RETRO FIT KIT

## Removing Intake Auger And Hopper

### **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**

All assembly, installation, removal and servicing of components is done with the auger fully lowered and disconnected from the tractor.

### **WARNING**



#### **AVOID INJURY OR DEATH**

Hydraulic fluid escaping under pressure can have sufficient force to enter a person's body by penetrating the skin. This can cause serious injury and possible death if proper medical treatment by a physician familiar with this injury is not received immediately.

### **IMPORTANT**

When repairing hydraulic systems, clean the work area before disassembly and keep all parts clean. Always install caps and plugs on hoses, tubelines and ports to keep dirt out. Dirt can quickly damage the system.

Lower the hopper to the ground. (See "Hydraulic Hopper Mover And Winch (If Equipped)" on page 99.)

Enter the tractor, 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. (See "Entering And Leaving The Operator's Position" on page 90.)

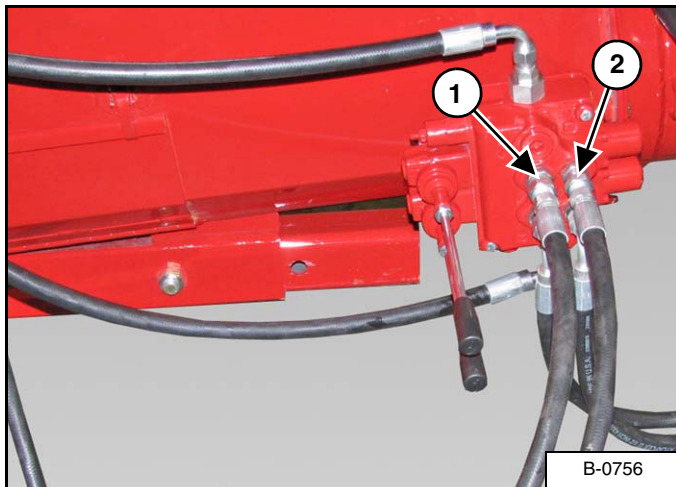
Disconnect the PTO driveline. (See "Connecting The PTO Driveline" on page 91.)

Disconnect hydraulic hoses from tractor. (See "Connecting Hydraulic Hoses" on page 96.)

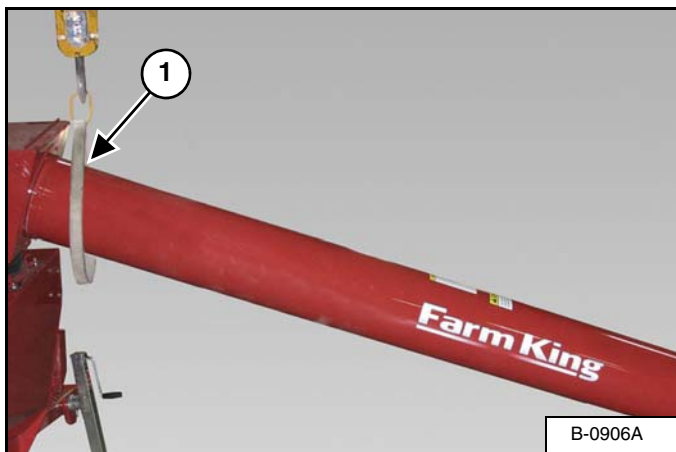
Lower the jack stand.

Disconnect the Backsaver Auger from the tractor. (See "Connecting The Backsaver Auger To The Tractor" on page 90.)

Move the tractor away from the auger.

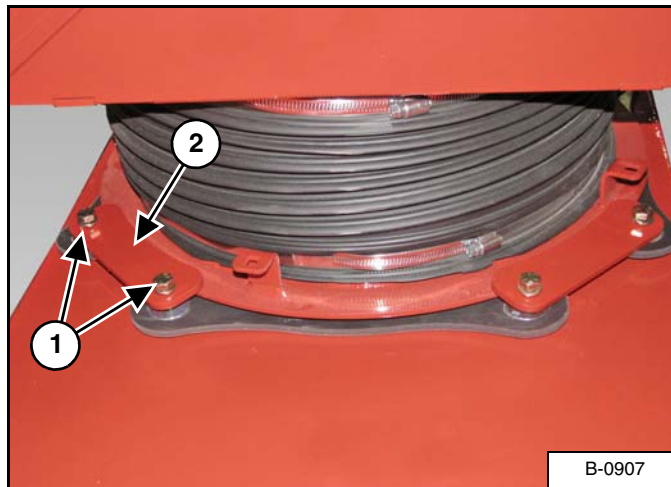
**Figure 151**


Disconnect the left and right wheel motor hydraulic hoses (Items 1 & 2) **[Figure 151]** from the valve block.

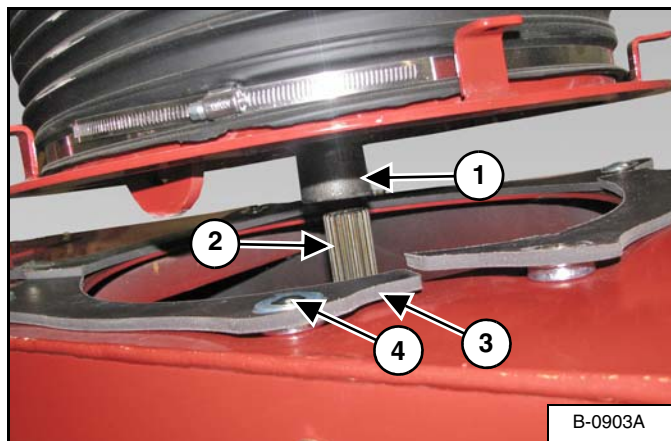
**Figure 152**


Install a strap (Item 1) **[Figure 152]** around the top of the intake auger.

Connect the strap to an approved lifting device.

**Figure 153**


Remove the two bolts (Item 1) and ring clamp (Item 2) **[Figure 153]**. Repeat to remove the three remaining ring clamps.

**Figure 154**


Raise the lifting device to remove the intake auger u-joint (Item 1) from the upper box shaft (Item 2) **[Figure 154]**.

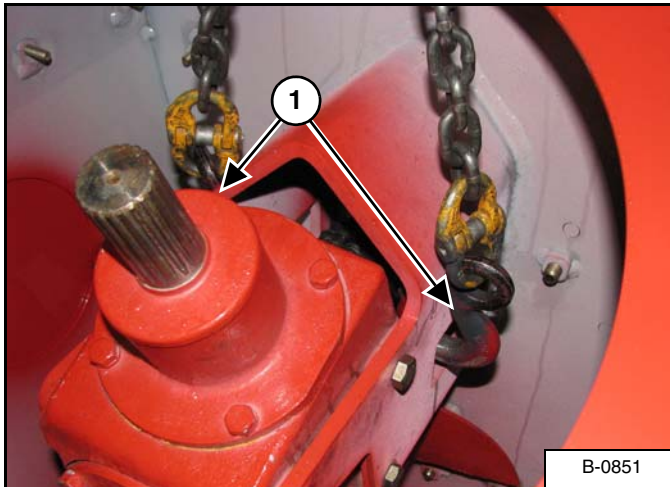
Remove the 1/4" x 13/32" ID x 1-1/4" OD washers (Item 3) and intake spacers (Item 4) **[Figure 154]**.

Move the intake auger and hopper away from the input box.

Lower the intake auger and hopper to the ground.

**NOTE:** Before lowering the intake auger to the ground, cover the u-joint to keep the coupling free of dirt and debris.

**Figure 155**



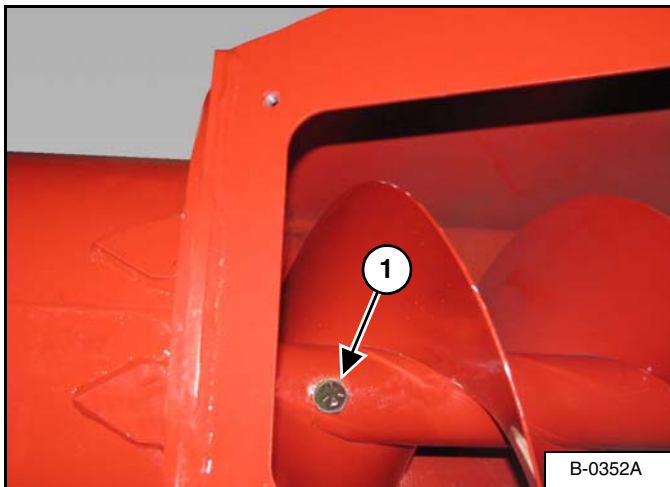
Install chains (Item 1) [Figure 155] inside the input box.

Connect the chain to an approved lifting device.

Raise the input box and place a support stand under the bottom auger tube.

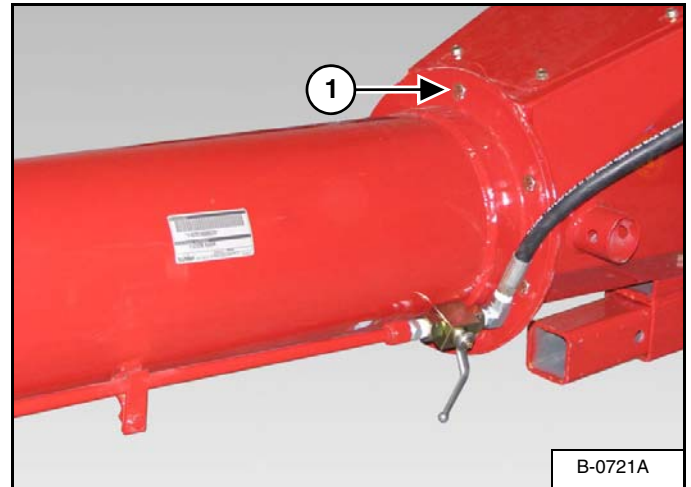
Lower input box until the tube is resting on the support stand.

**Figure 156**



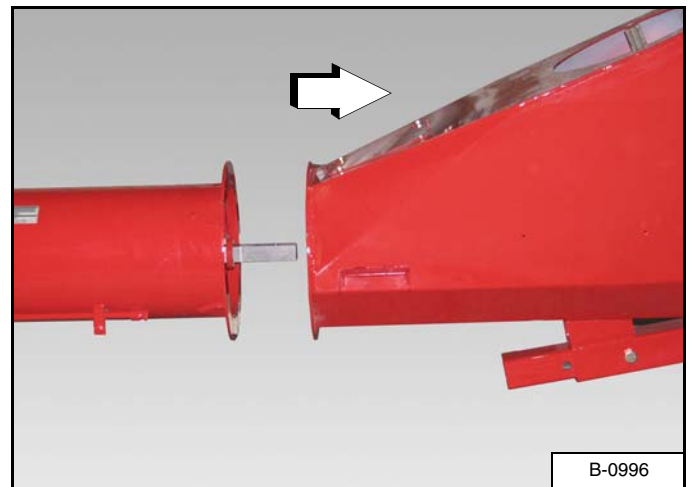
Remove the 1/2" x 3-1/4" bolt (Item 1) [Figure 156] and lock nut from the bottom tube flighting and input box flighting.

**Figure 157**



Remove the eight 7/16" x 1-1/4 bolts (Item 1) [Figure 157] and 7/16" lock nuts around the mounting flanges of the bottom tube and input box.

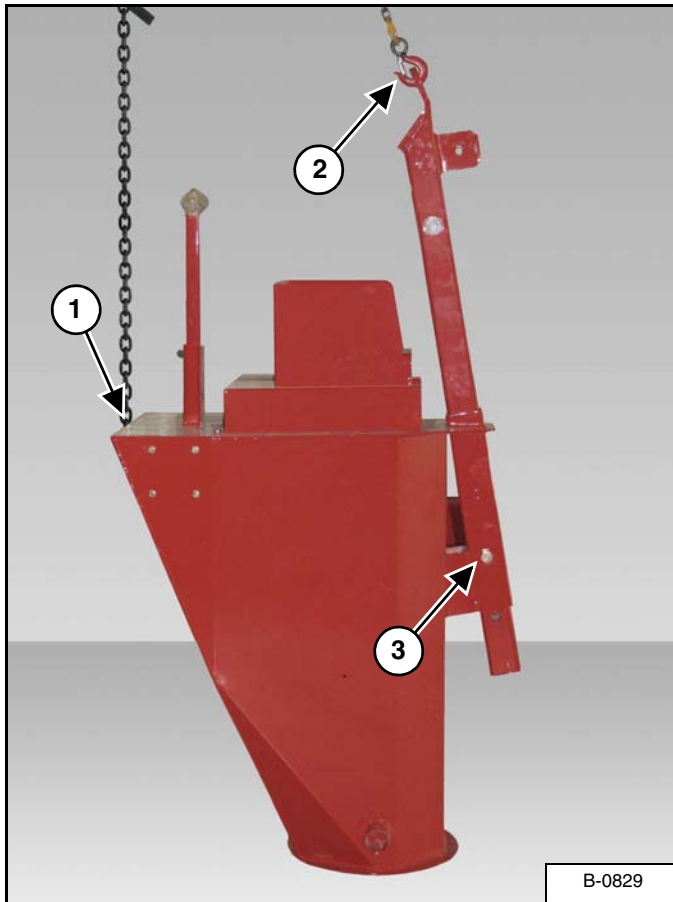
**Figure 158**



Move the input box away from the tube assembly [Figure 158].



**Figure 159**



Lower the input box to the ground with the tube mounting flange flat on the ground [Figure 159].

## ! IMPORTANT

**Do not remove chain (Item 1) [Figure 159] used to remove the input box from the tube assembly. This chain will help support the input box during 1000 RPM retro kit installation.**

Install a second chain (Item 2) [Figure 159] onto the hitch and connect second chain to an approved lifting device.

Remove the bolt (Item 3) [Figure 159] and lock nut.

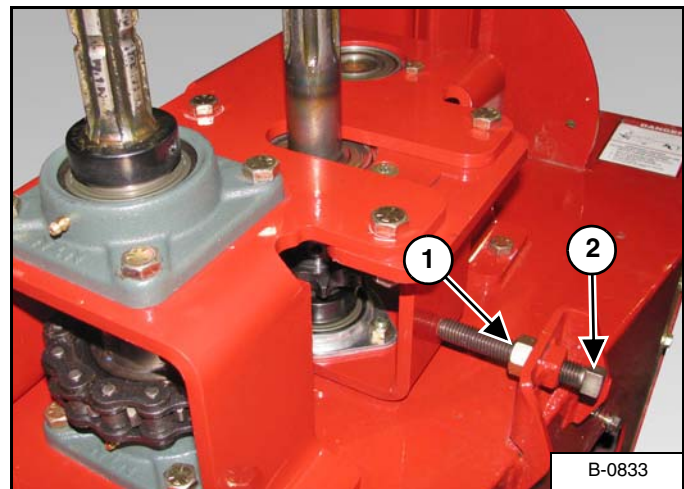
Raise the lifting device until the hitch is free from the input box.

**Figure 160**



Remove the four bolts (Item 1), then remove guard (Item 2) [Figure 160].

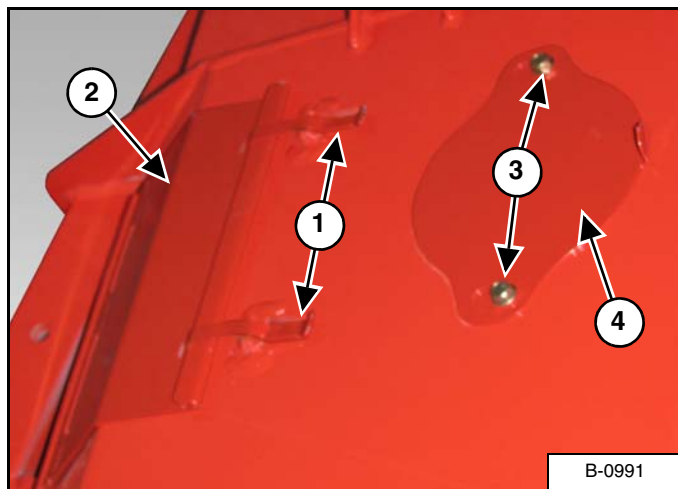
**Figure 161**



Loosen jam nut (Item 1) and remove tension bolt (Item 2) [Figure 161].



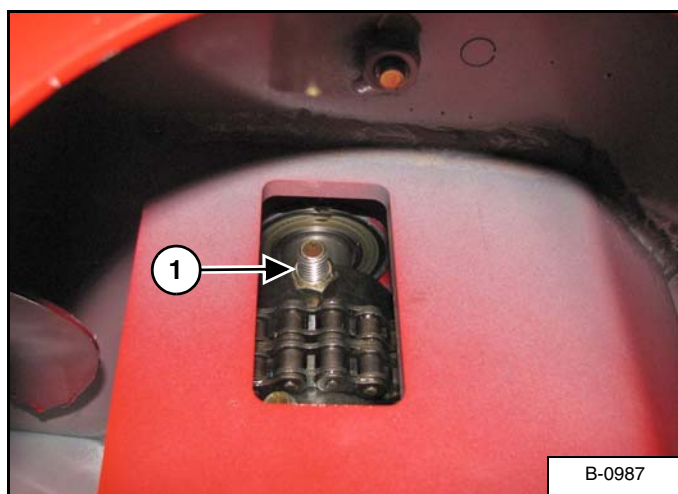
**Figure 162**



Release the two latches (Item 1) and open clean out cover (Item 2) [Figure 162].

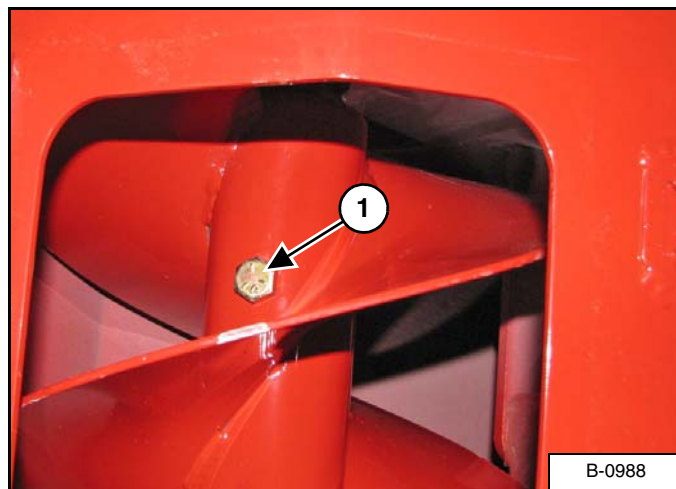
Loosen the two bolts (Item 3) and remove gearbox access cover (Item 4) [Figure 162].

**Figure 163**



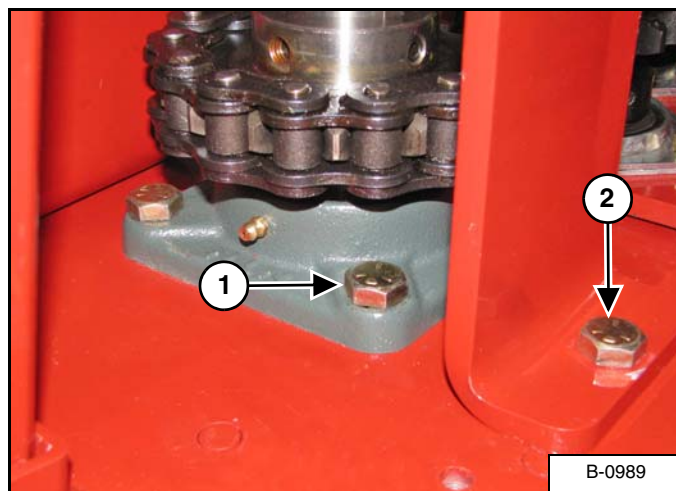
Remove bolt (Item 1) [Figure 163].

**Figure 164**



Remove the bolt (Item 1) [Figure 164] from input box flighting.

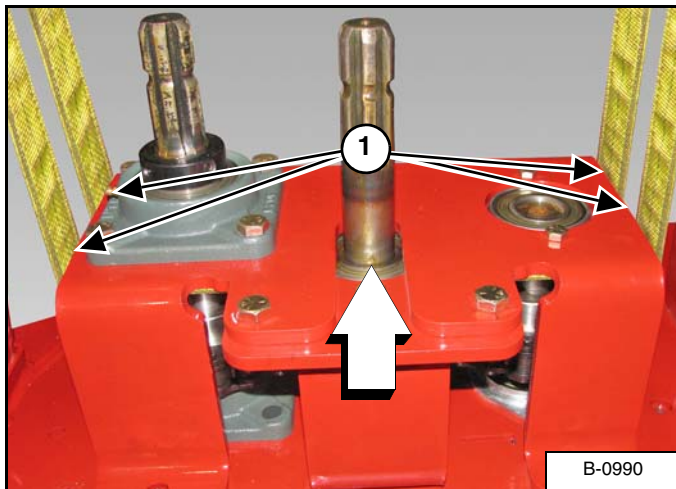
**Figure 165**



Remove the four bolts (Item 1) [Figure 165].

Remove the four bolts (Item 2) [Figure 165].

**Figure 166**

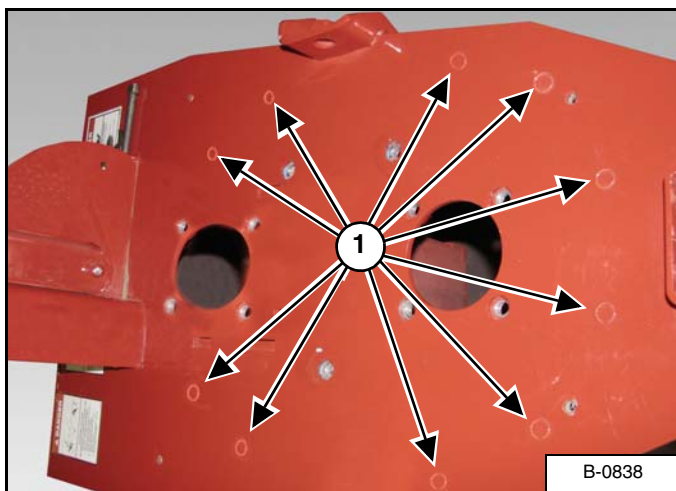


Install straps (Item 1) [Figure 166] through the drive assembly.

Connect the straps to an approved lifting device.

Raise and remove the drive assembly from the input box.

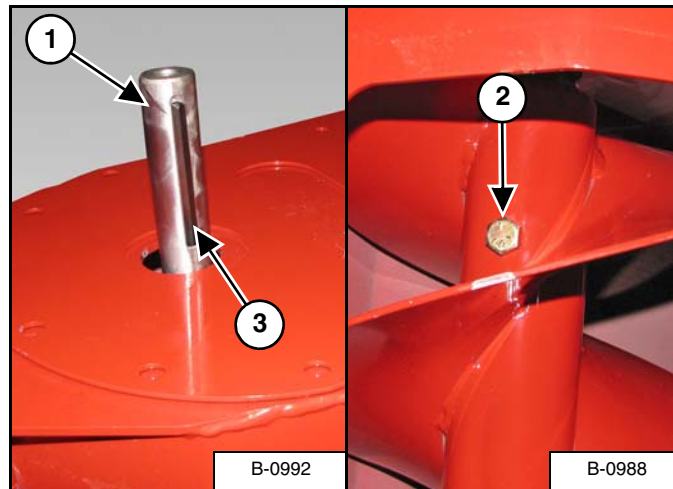
**Figure 167**



Locate the ten knock-outs (Item 1) [Figure 167] on top of intake box.

Using a punch, remove all ten knock-outs.

**Figure 168**



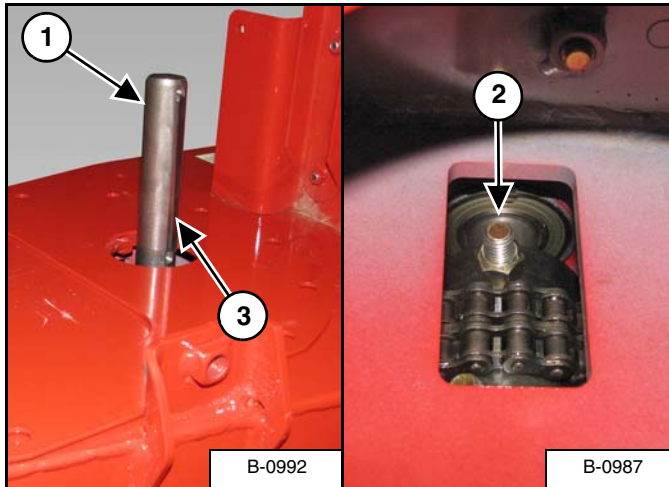
Install the square end of the bar shaft (Item 1) [Figure 168] into the input box flighting.

**NOTE:** Hold on to the bar shaft when installing into the input box flighting. If released before bolt is installed, the shaft will drop down inside the input box flighting tube.

Align the holes of the drive shaft and flighting. Install bolt (Item 2) [Figure 168] through the drive shaft and input box flighting. Install lock nut and tighten.

Install key (Item 3) [Figure 168].

**Figure 169**

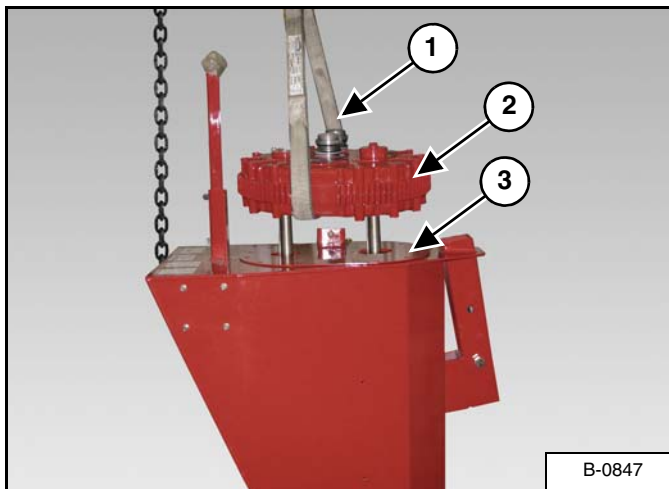


Install the gearbox shaft (Item 1) [Figure 169] into the input box gearbox cv joint.

Align the holes of the gearbox shaft and input box gearbox cv joint. Install bolt (Item 2) [Figure 169] through the gearbox shaft and input box gearbox cv joint. Install lock nut and tighten.

Install key (Item 3) [Figure 169].

**Figure 170**



Install a strap (Item 1) around the 1000 RPM gearbox (Item 2) [Figure 170]. Connect the strap to an approved lifting device.

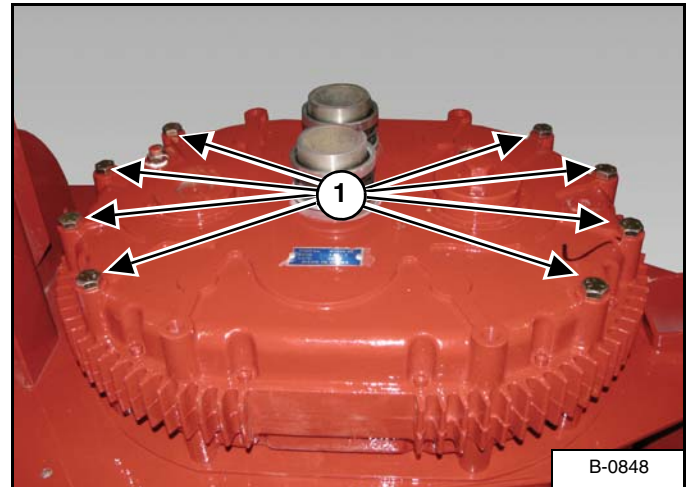
Align the spacer plate (Item 3) [Figure 170] with punched out holes input box (only fits one way).

Raise the 1000 RPM gearbox and position over the intake box.

**NOTE: When lowering the 1000 RPM gearbox onto the two shafts, verify that the keys remains in shaft's key way.**

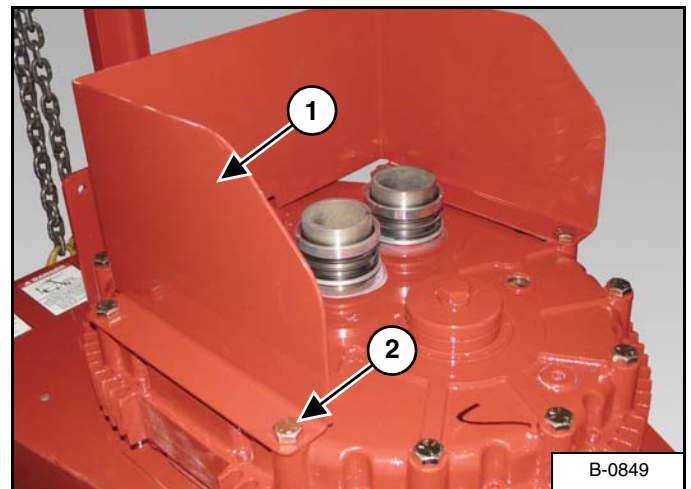
Align and lower the 1000 RPM gearbox onto the upper two shafts [Figure 170].

**Figure 171**



Install the eight bolts (Item 1) [Figure 171] through the 1000 PRM gearbox, spacer plate and input box. Install one lock nut on each bolt and tighten.

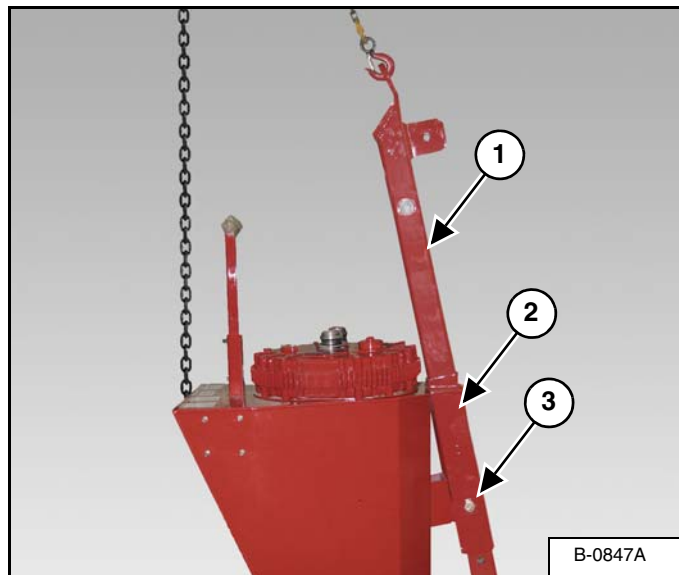
**Figure 172**



Place the guard (Item 1) on top of the input box and install the four bolts (Item 2) [Figure 172] into the 1000 RPM gearbox.



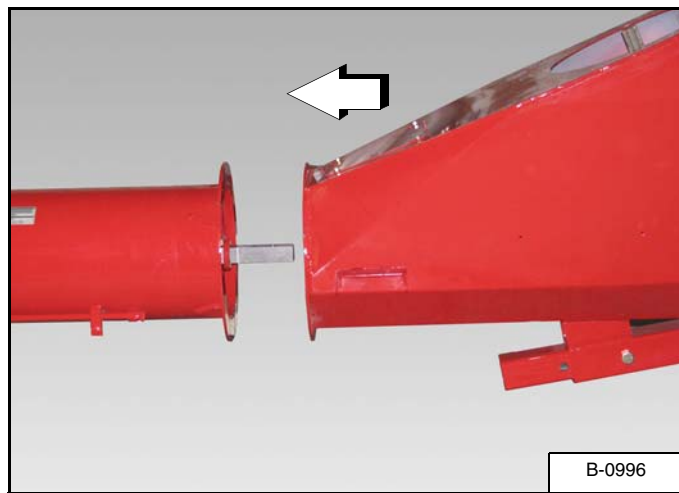
**Figure 173**



Raise the hitch (Item 1) and align with the mounting tube (Item 2) [Figure 173].

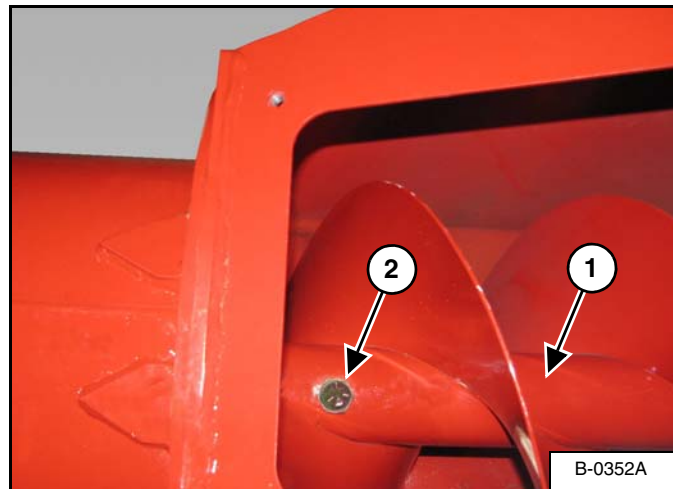
Align mounting holes, install bolt (Item 3) [Figure 173] and lock nut. Tighten bolt and lock nut.

**Figure 174**



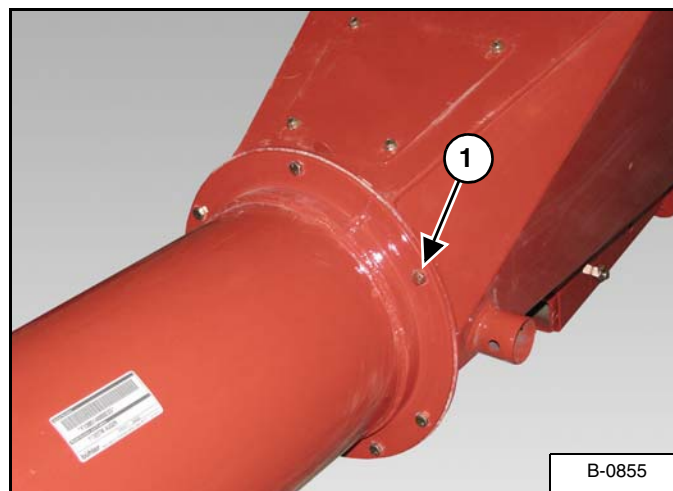
Raise the input box, move the input box in front of the tube assembly [Figure 174].

**Figure 175**



Align the input box flighting (Item 1) with the hole in the bottom tube flighting. Install bolt (Item 2) [Figure 175] and lock nut. Tighten bolt and lock nut.

**Figure 176**



Move the input box towards the bottom tube until the two mounting flanges make contact.

Align the mounting holes and install the eight 7/16" x 1-1/4 bolts (Item 1) [Figure 176] and 7/16" lock nuts around the mounting flanges of the bottom tube and input box. Tighten bolts and lock nuts.

Install intake auger / hopper.

## OPERATION

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# Farm King



## GENERAL 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.

1. Lubricate the equipment per the schedule outline in the Maintenance Section. (See "SERVICE SCHEDULE" on page 112.)
2. Check the auger hitch for damaged, loose or missing parts. Repair as needed before operation.
3. Check tire pressure. Inflate per manufacturer's specification.

4. Check wheel bolts for tightness. Torque as required. (See "AXLE" on page 117.)
5. Check the augers. Remove any material build-up or debris that has become entangled.
6. Check that all bearings turn freely. Replace as required.
7. Make sure that all guards and shields are in place, secured and functioning as designed.

## **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.**

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

**NOTE: Do not operate with hydraulic leaks.**

9. Check gearbox oil level. Fill as required. (See "LUBRICATION" on page 113.)
10. Verify that the tractor's drawbar is adjusted correctly for use with the auger. (See "Drawbar Adjustment" on page 89.)
11. Check that the PTO drivelines telescope easily and turn freely.
12. Make sure the PTO ends are securely attached to the auger and the tractor.

### Break - In Checklist

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

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

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

During the break-in-period:

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

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

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

1. Check the auger hitch for damaged, loose or missing parts. Repair as needed before operation.
2. Check for loose fasteners and hardware. Tighten as required.
3. Make sure that all guards and shields are in place, secured and functioning as designed
4. Check that the PTO driveline telescopes easily and turns freely.
5. Check condition of all hydraulic components for leaks. Tighten fittings to correct leaks or replace components. Do not operate with hydraulic leaks.
6. Check tire pressure. Inflate per manufacturer's specification.
7. Check gearbox oil level. Fill as required. (See "LUBRICATION" on page 113.)
8. Check the augers. Remove any debris.

## **WARNING**



### **AVOID INJURY OR DEATH**

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

## Tractor Requirements



- Do NOT exceed 540 RPM PTO if equipped with chain drive.
- Do NOT exceed 1000 RPM PTO if equipped with optional M1000 gearbox.
- Keep PTO shields and all guards in place.
- Keep away from moving parts.
- Keep bystanders away.

Figure 177

AUGER MODEL	HITCH WEIGHT	TOTAL WEIGHT
1370	1140 lb (518 kg)	5175 lb (2350 kg)
1385	1270 lb (577 kg)	6381 lb (2897 kg)
1395	1530 lb (694 kg)	6683 lb (3034 kg)

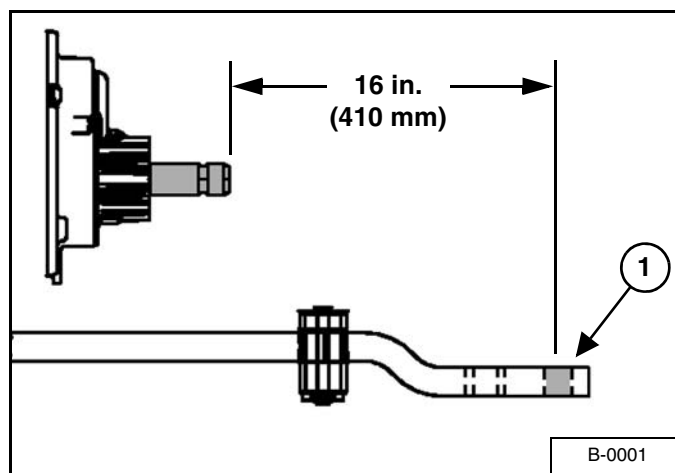
The chart [Figure 177] lists the hitch weight and total weight of the 13" Backsaver Auger models. The tractor / tow vehicle must be rated for listed weight to transport the specified auger model.

The tractor must be equipped with a 6 spline 1-3/8" (standard) or 21 spline 1-3/8" (optional) when used with the 13" Backsaver Auger.

Minimum tractor horsepower rating. (See "Performance" on page 201.)

## Drawbar Adjustment

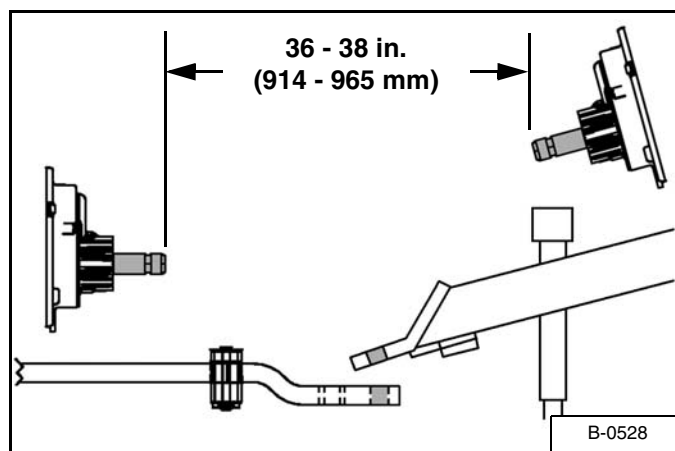
Figure 178



Adjust the tractor's drawbar in / out, until the center of the hitch pin hole (Item 1) [Figure 178] 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 179

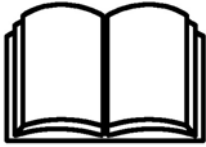


The distance between the tractor and the auger PTO shaft should be between 36 - 38 in. (914 - 965 mm) with the tractor and auger on level ground and the auger in full down position. This distance is obtained by either adjusting the tractor hitch, the auger hitch or both [Figure 179].

For checking PTO driveline see "Connecting The PTO Driveline" on page 91.

## 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.

## INITIAL SET-UP

### Connecting The Backsaver Auger To The Tractor

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

Verify that the tractor's drawbar is adjusted correctly for use with the Backsaver Auger. (See "Drawbar Adjustment" on page 89.)

Enter the operator's position. (See "Entering The Operator's Position" on page 90.)

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

### **WARNING**



#### **AVOID INJURY OR DEATH**

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

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

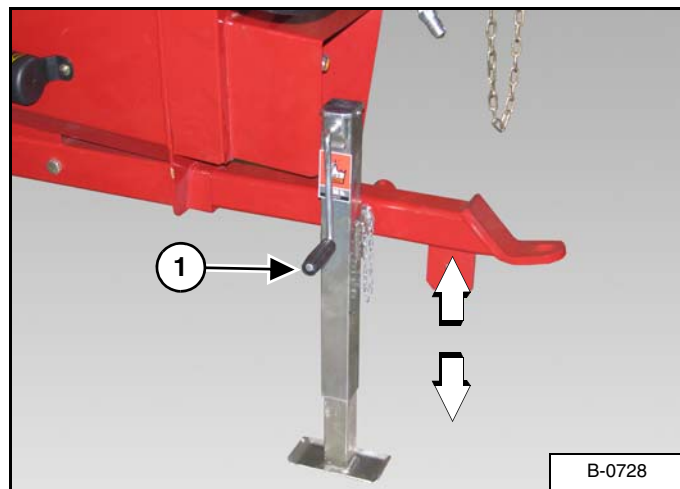
**NOTE: The jack may need to be lowered or raised for proper alignment of the drawbar and hitch.**

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

Leave the operator's position. (See "Leaving The Operator's Position" on page 90.)



**Figure 180**



Turn the handle (Item 1) [Figure 180] clockwise to raise the hitch or counterclockwise to lower the hitch.

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

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

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

Stop the tractor and leave operator's position.

**! WARNING**

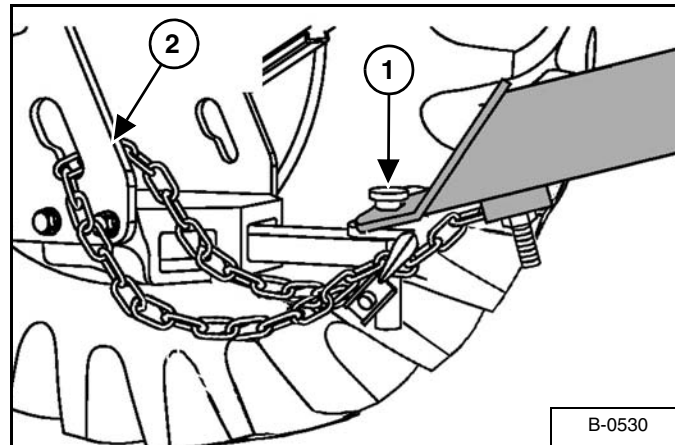


**AVOID INJURY OR DEATH**

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

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

**Figure 181**



Install the hitch pin (Item 1) [Figure 181] and retaining pin to securely fasten the Backsaver Auger hitch to the tractor drawbar.

Attach the safety chain (Item 2) [Figure 181] around the drawbar.

### Connecting The PTO Driveline

**! WARNING**

**AVOID INJURY OR DEATH**

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

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

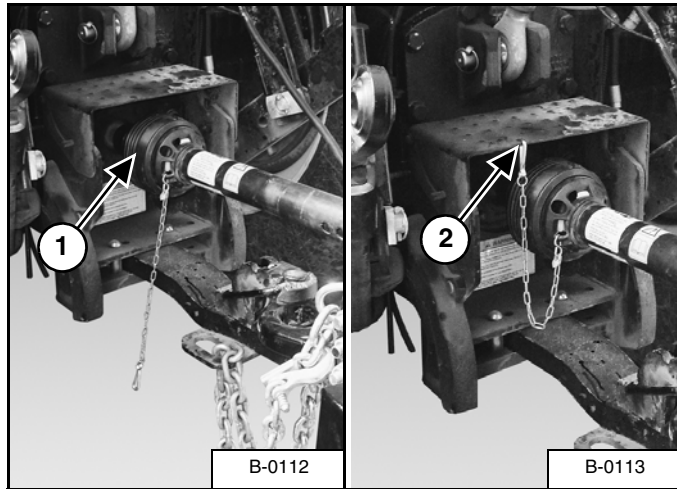
Stop the engine and leave the operator's position. (See "Leaving The Operator's Position" on page 90.)

**! 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 182**


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 182].

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

## **WARNING**



- Do NOT exceed 540 RPM PTO if equipped with chain drive.
- Do NOT exceed 1000 RPM PTO if equipped with optional M1000 gearbox.
- 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**

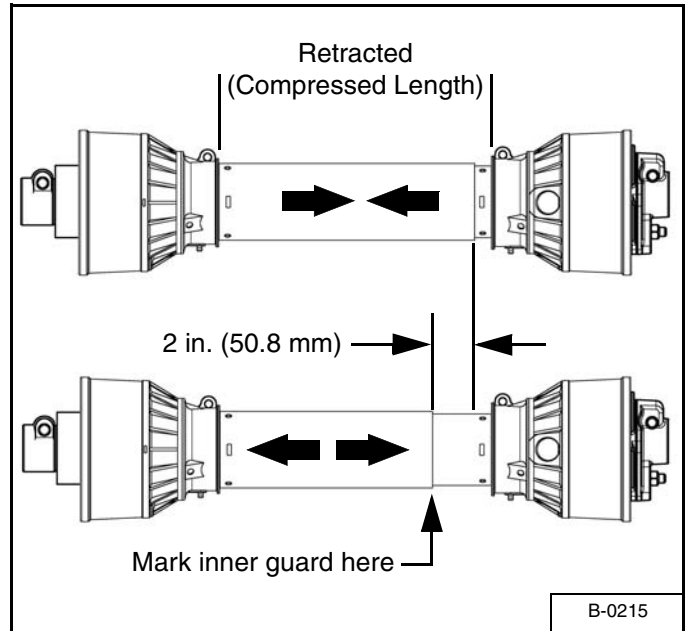
- Do NOT exceed the rated implement PTO speed.
- Stay clear of rotating driveline.
- Keep bystanders away.
- Keep hands, feet, clothing and long hair away.
- Keep PTO shields and all guards in place.
- Disengage PTO, move the tractor controls to the Neutral position, stop the engine and make sure all 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 90.)

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

**Figure 183**



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 183].
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 183].
4. Reattach the PTO driveline to the tractor PTO shaft.
5. Enter the operator's position. (See “Entering The Operator's Position” on page 90.) 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 90.)

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



### AVOID INJURY OR DEATH

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

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

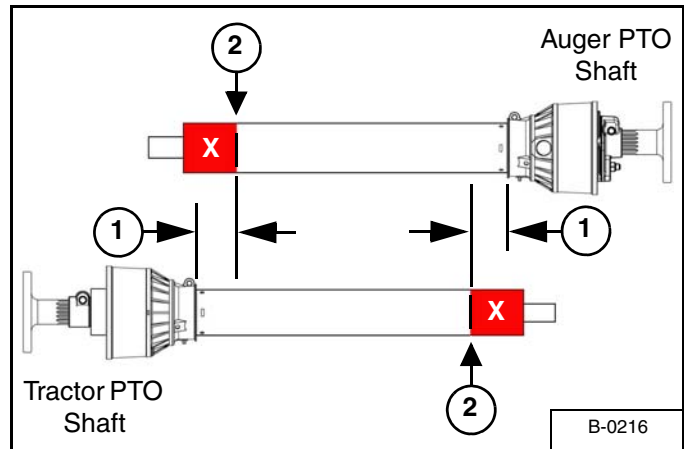
Enter the operator's position. (See "Entering The Operator's Position" on page 90.) Start the engine.

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 90.)

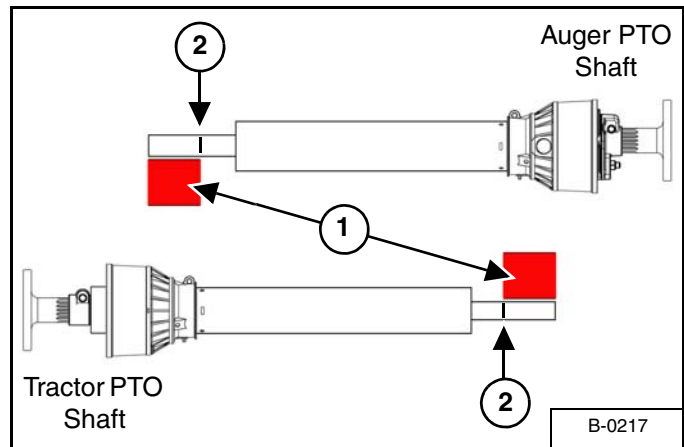
Pull the PTO driveline apart and reinstall each individual section; one half to the tractor PTO shaft and one half to the implement gearbox PTO shaft.

**Figure 184**



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 184].

**Figure 185**



2. Using the plastic guard lengths that were cut off in [Figure 184], align the cut off lengths (Item 1) with the end of the inner & outer shafts. Place a mark (Item 2) [Figure 185] 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 90.)

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

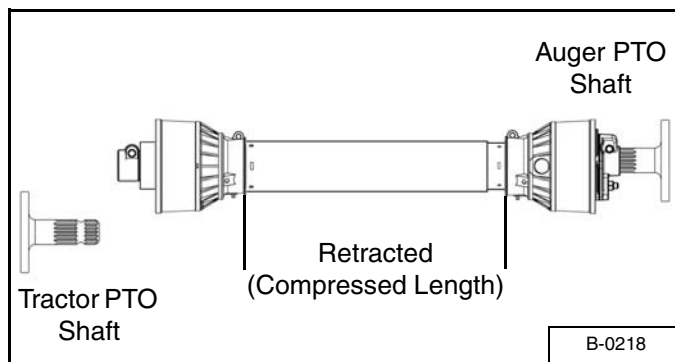


#### AVOID INJURY OR DEATH

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

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

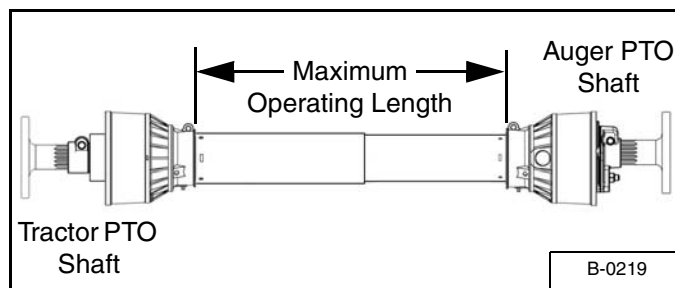
**Figure 186**



2. Measure the retracted (compressed) length of the PTO driveline between the bases of the plastic guards [Figure 186].

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 90.)
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 90.) Make sure the PTO driveline and all rotating components have come to a complete stop before leaving the operator's position.

**Figure 187**



8. Measure the length of the PTO driveline between the bases of the plastic shields [Figure 187] 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.

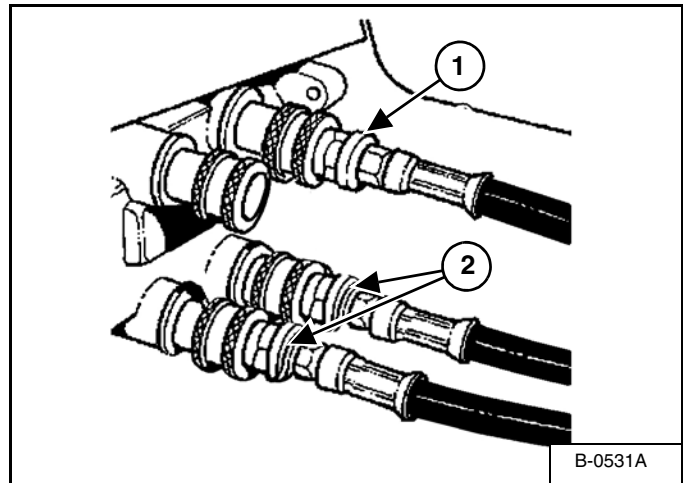
### **IMPORTANT**

- 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 188**



Pull back on the collar of the female coupler, push couplers together, release the collar when the couplers are fully engaged and locked [Figure 188].

Install the lift cylinder quick coupler hose (Item 1) [Figure 188].

Install the two valve block quick coupler hoses (Item 2) [Figure 188].

*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.

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

### Manual Hopper And Winch

#### Winch Operation

## WARNING



### ENTANGLEMENT HAZARD

To prevent injury to fingers and hands:

- Keep hands clear of winch during operation.

## CAUTION



### CUT HAZARD

To prevent injury to fingers and hands:

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

## CAUTION

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

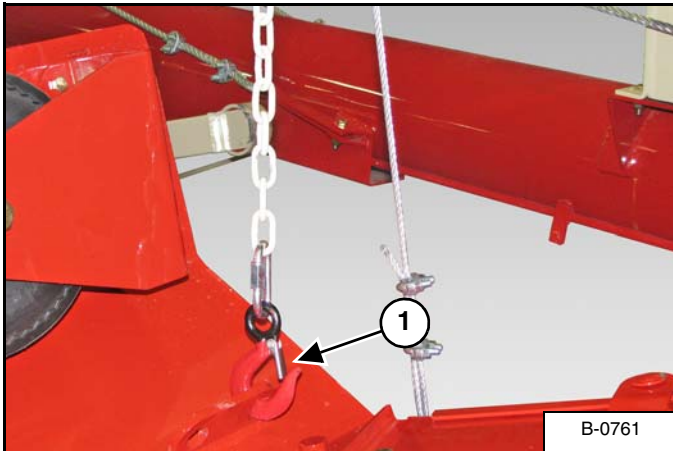
## IMPORTANT

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

Move the winch handle counterclockwise (towards the hitch) to raise the lift boom cable (wind cable). Move the handle clockwise (away from the hitch) to lower the boom cable (unwind cable).

*Hopper Operation*

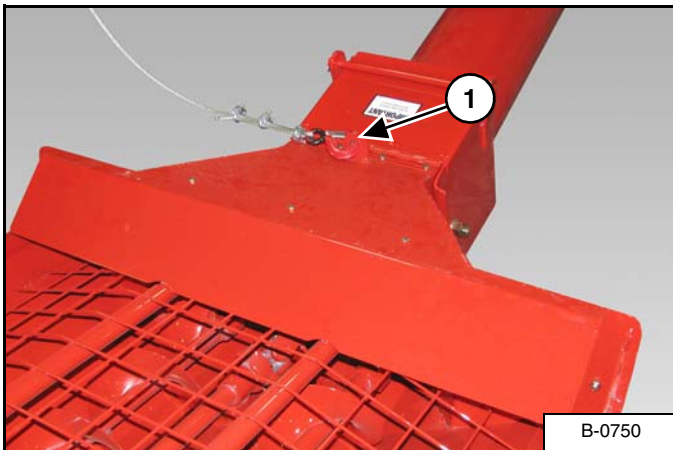
**Figure 189**



Turn the winch handle to raise the hopper and release the safety chain tension. Remove the safety chain hook (Item 1) **[Figure 189]** from the hopper.

Using the winch handle, slowly lower the hopper to the ground. Continue turning the winch handle until cable has enough slack to be removed from the hopper.

**Figure 190**



Remove the lift boom / winch cable hook (Item 1) **[Figure 190]** from the hopper.

Move the hopper to the desired location. (See “Unloading Belly Dump Units” on page 102.) or (See “Unloading Rear And Side Dump Units” on page 104.) for additional information.

### Hydraulic Hopper Mover And Winch (If Equipped)

## **WARNING**



### **ENTANGLEMENT HAZARD**

To prevent injury to fingers and hands:

- Keep hands clear of winch during operation.

## **CAUTION**



### **CUT HAZARD**

To prevent injury to fingers and hands:

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

## **CAUTION**

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

## **CAUTION**

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

## **IMPORTANT**

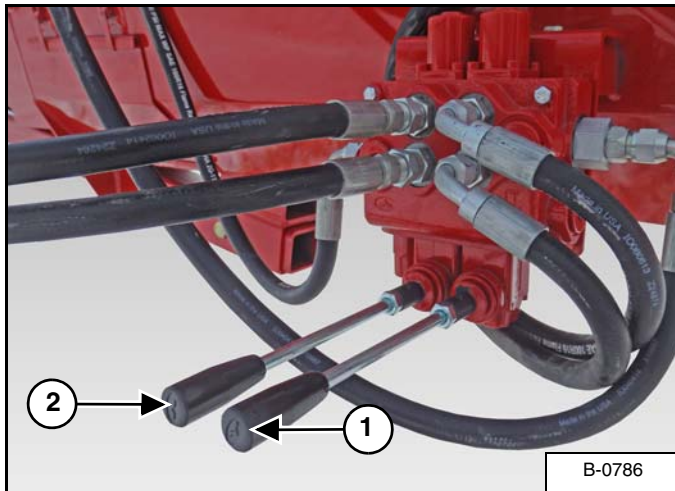
Always maintain a minimum of three wraps of cable on the drum of the winch.

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.

### Winch Operation

**Figure 191**



Move the lever (Item 1) **[Figure 191]** down to raise the boom cable (wind cable). Move the lever up to lower the boom cable (unwind cable).

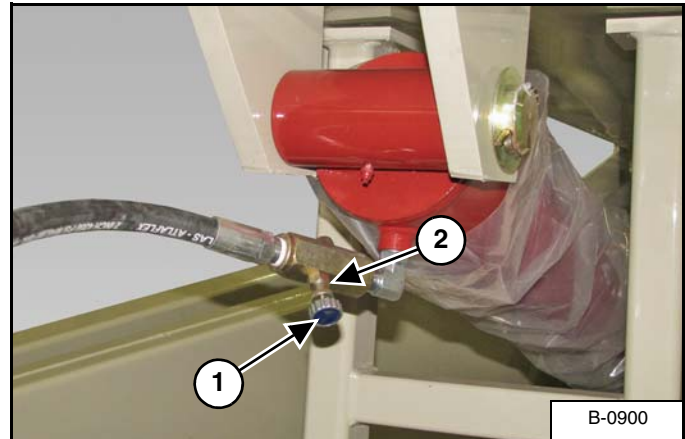
**NOTE: Never have less than three wraps of cable on the drum of the winch.**

### Hopper Mover Operation

Move the lever (Item 2) **[Figure 191]** down to move the hopper to the right. Move the lever up to move the hopper to the left.

### Adjusting Flow Control Valve

**Figure 192**



Turn the knob (Item 1) **[Figure 192]** 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 192]** 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 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 anchoring of the intake end to prevent sudden tipping.
- Disconnect power of electrical driven units before resetting motor overloads.
- 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.

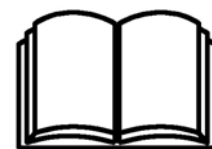


# IMPORTANT

- 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.

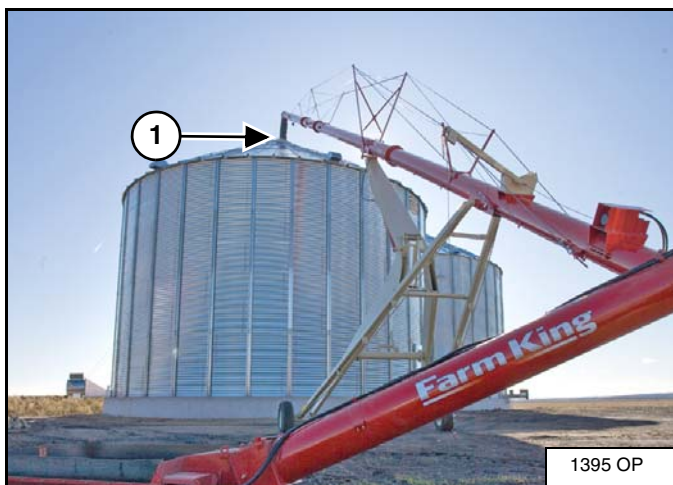
With the main auger in the fully down position, move the auger towards the bin or barn. Position the auger as close as possible to the bin or barn.



**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 193**



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



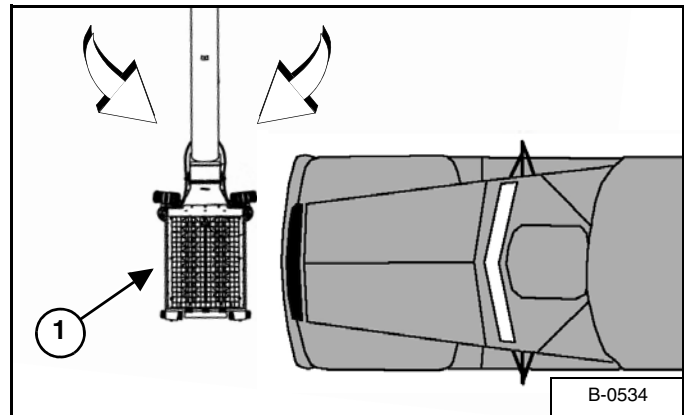
**Keep wheels of undercarriage level and on firm ground. Raise the auger to the desired height and back the auger into position. Do not support the auger on the bin. As the auger becomes full, the weight may cause damage to the underside of the auger or to the bin.**

Back the auger into position above the bin. Lower the auger until the downspout (Item 1) [Figure 193] enters the bin.

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

## Unloading Belly Dump Units

**Figure 194**



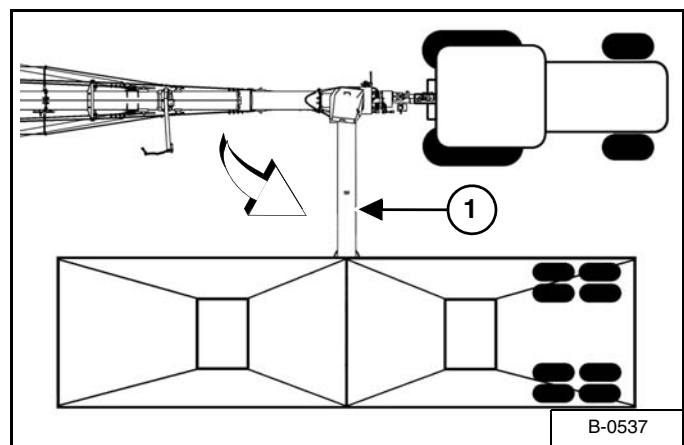
Move the hopper (Item 1) [Figure 194] out at a 90° angle from the auger.

Move the belly dump unit into position, centered on the hopper [Figure 194].

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.

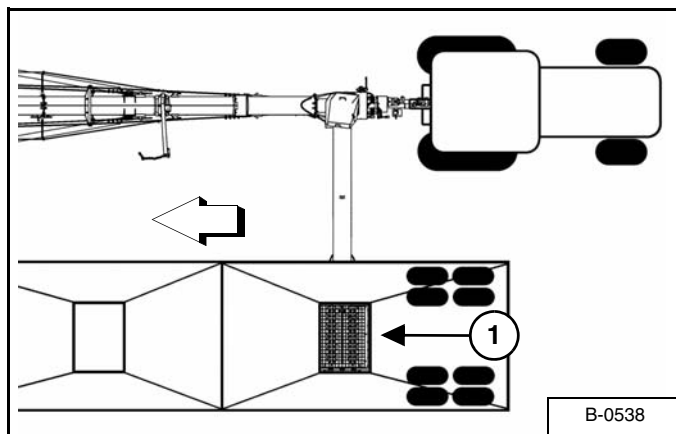
**Figure 195**



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

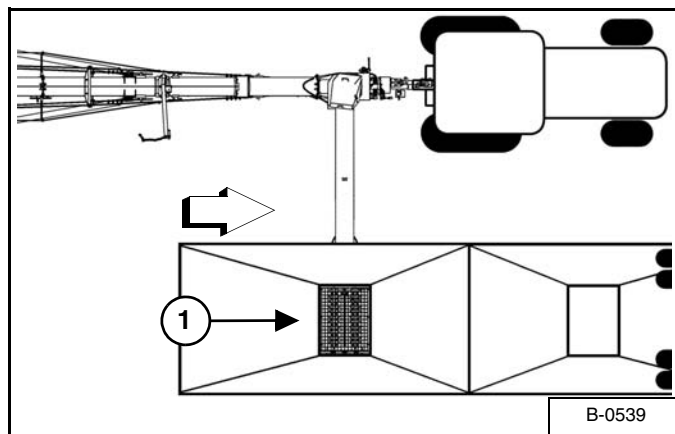
Move the hopper (Item 1) [Figure 195] under the belly dump unit.

**Figure 196**



Move the belly dump unit forward until the rear compartment is directly over the hopper (Item 1) [Figure 196].

**Figure 197**



Move the belly dump unit back until the front compartment is directly over the hopper (Item 1) [Figure 197].

## ⚠ WARNING



- Do NOT exceed 540 RPM PTO if equipped with chain drive.
- Do NOT exceed 1000 RPM PTO if equipped with optional M1000 gearbox.
- 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 540 RPM PTO speed / M1000 Option is 1000 RPM).

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.

## ⚠ WARNING



- Do NOT exceed 540 RPM PTO if equipped with chain drive.
- Do NOT exceed 1000 RPM PTO if equipped with optional M1000 gearbox.
- 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 540 RPM PTO speed / M1000 Option is 1000 RPM).

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.

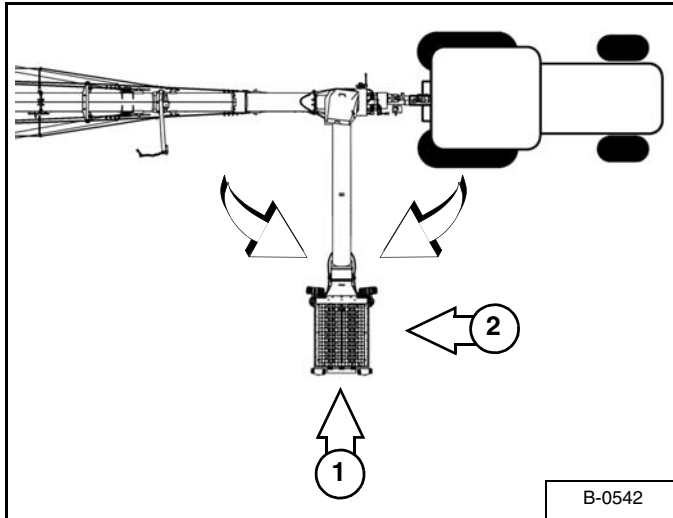
Move the hopper in the desired position away from vehicle traffic.

Disengage the tractor hydraulics and exit the tractor.

## Unloading Rear And Side Dump Units

### Rear Dump Units

**Figure 198**



Move the hopper out at a 90° angle from the auger [Figure 198].

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 198].

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 540 RPM PTO if equipped with chain drive.
- Do NOT exceed 1000 RPM PTO if equipped with optional M1000 gearbox.
- 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 540 RPM PTO speed / M1000 Option is 1000 RPM).

Slowly open the gate on the rear dump unit.

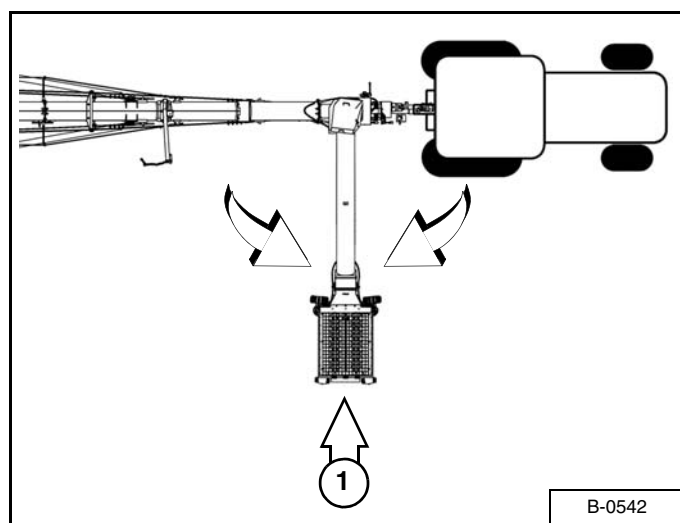
Adjust gate until the hopper augers and intake auger can move grain to the main auger without overflowing the hopper.

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 199**



Move the hopper out at a 90° angle from the auger **[Figure 199]**.

Move the side dump unit into the unloading position at the end of the hopper (Item 1) **[Figure 199]**.

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 540 RPM PTO if equipped with chain drive.
- Do NOT exceed 1000 RPM PTO if equipped with optional M1000 gearbox.
- 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 540 RPM PTO speed / M1000 Option is 1000 RPM).

Slowly open the gate on the side dump unit.

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

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

Disengage the tractor hydraulics and exit the tractor.



**TRANSPORTING  
Requirements**



**ELECTROCUTION HAZARD**

To prevent serious injury or death from electrocution:

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



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

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



- Do not operate the unit before reading and understanding the Operator 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 public roadways.

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

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

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

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

Disconnect the PTO driveline from the tractor before transporting.

**Transporting Guidelines**

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

TRAVEL SPEED - Acceptable travel speed.

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

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

## Transporting Procedure

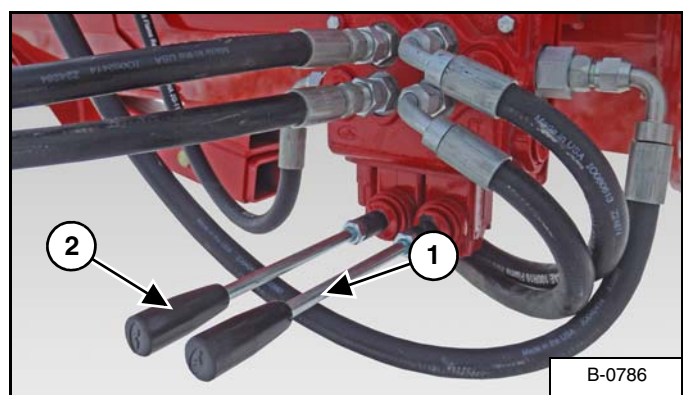
Remove all supports on the discharge end and anchoring from the intake end (if required).

### *Hydraulic Mover And Winch (If equipped)*

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

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

**Figure 200**

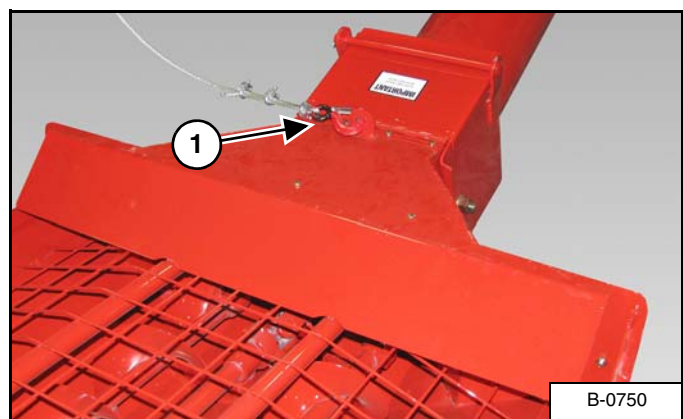


Move the lever (Item 1) [Figure 200] up to move the hopper to the right (toward the auger) until the boom cable can be installed.

Move the lever (Item 2) [Figure 200] down to lower the boom cable (unwind cable).

### *Hydraulic Or Manual Winch*

**Figure 201**



Install the boom cable (Item 1) [Figure 201] onto the hopper.

### *Hydraulic Winch*

Move the lever (Item 2) [Figure 200] to the left (towards the hitch) to raise the boom cable (wind cable).

Raise the hopper until the transport chain can be installed.

### *Manual Winch*

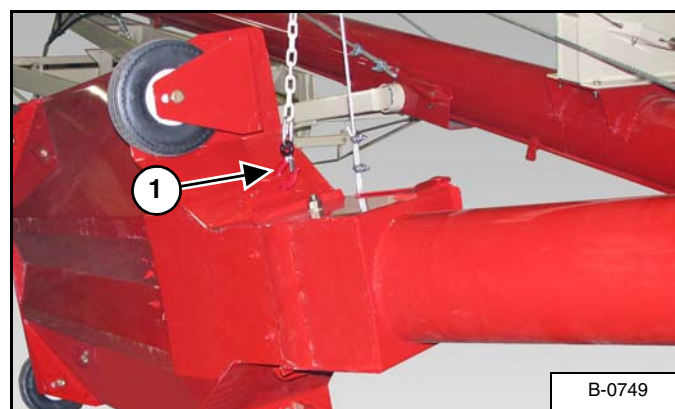
Move the lever to raise the boom cable (wind cable).

Raise the hopper until the transport chain can be installed.



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 202**



Install the transport chain (Item 1) [Figure 202] 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.

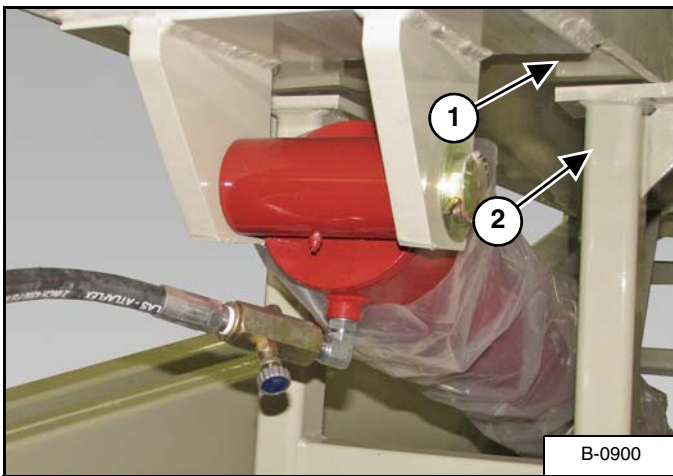
Release the parking brake and move the tractor and auger forward (away from the bin) until there is adequate space for the auger to be lowered into the transport position.

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 203**



Fully lower the auger until the upper lift arm (Item 1) contacts the cradle rest (Item 2) [Figure 203] (both sides).

## ! WARNING

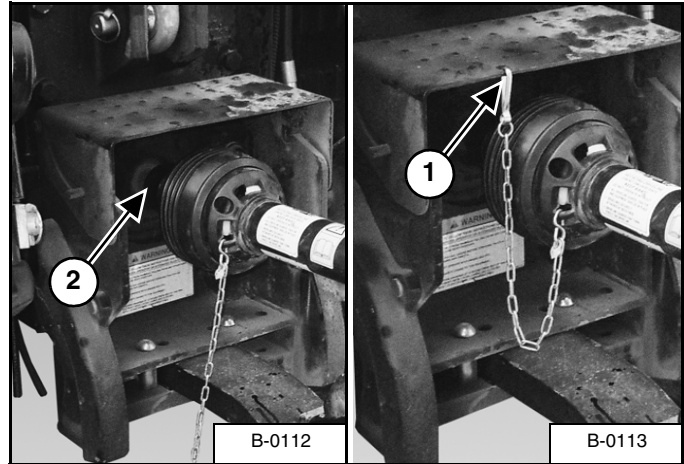
### AVOID INJURY OR DEATH

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.

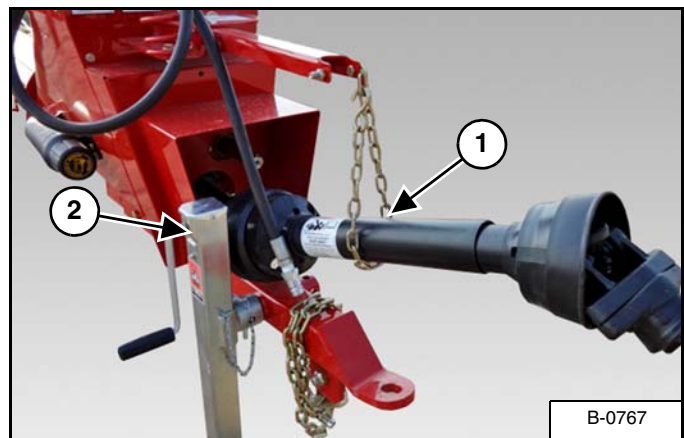
Engage the tractor's parking brake, stop the engine and exit the tractor.

**Figure 204**



Remove the PTO driveline safety chain (Item 1). Retract the collar (Item 2) [Figure 204] and slide the PTO driveline off the tractor PTO shaft.

**Figure 205**



Place the PTO holder chain (Item 1) [Figure 205] around the PTO driveline.

Fully raise the jack (Item 2) [Figure 205] and rotate into the transport position (horizontal).

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.

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# Farm King





## TROUBLESHOOTING

## Chart



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

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

PROBLEM	CAUSE	CORRECTION
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 Backsaver Auger.



# WARNING

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

#	DESCRIPTION	SERVICE PROCEDURES						
		Check	Clean	Lube	Change	Adjust	Drain	Locations
Daily Maintenance (or every 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.

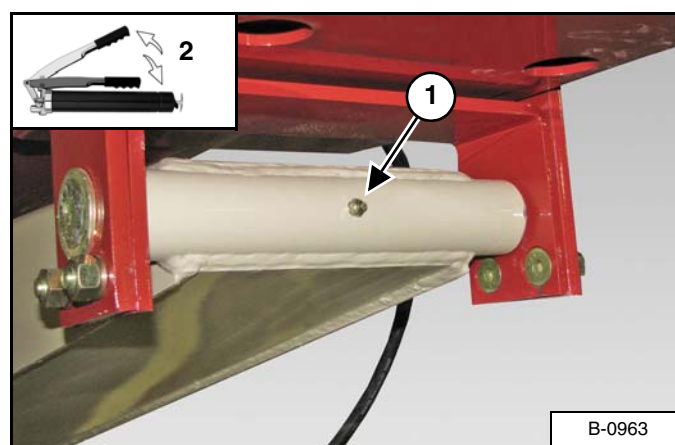
## Locations

## ! 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 206**

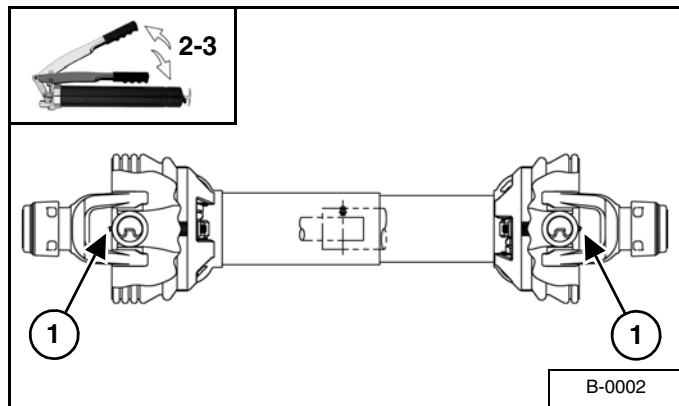


Apply two pumps of grease to the (Item 1) [Figure 206].

Lubricate the following grease locations EVERY 50 HOURS:

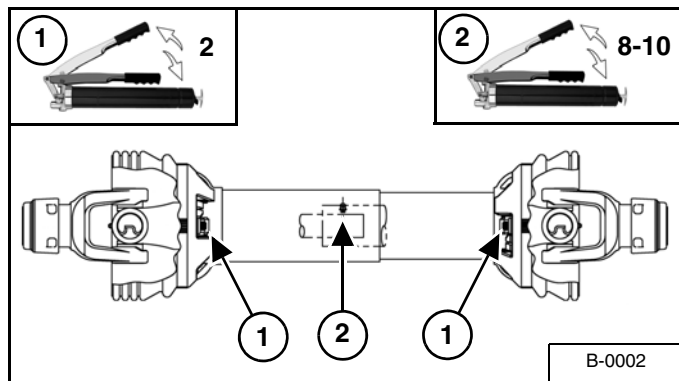
**NOTE: The PTO shaft is equipped with extended life bearings. Do not over-grease.**

**Figure 207**



Apply two - three pumps of grease to the cross and bearings (Item 1) [Figure 207] on the PTO driveline.

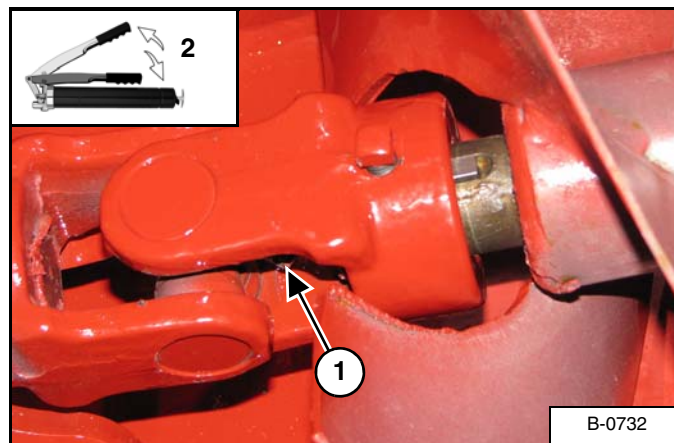
**Figure 208**



Apply two pumps of grease to the guard bushings (Item 1) [Figure 208].

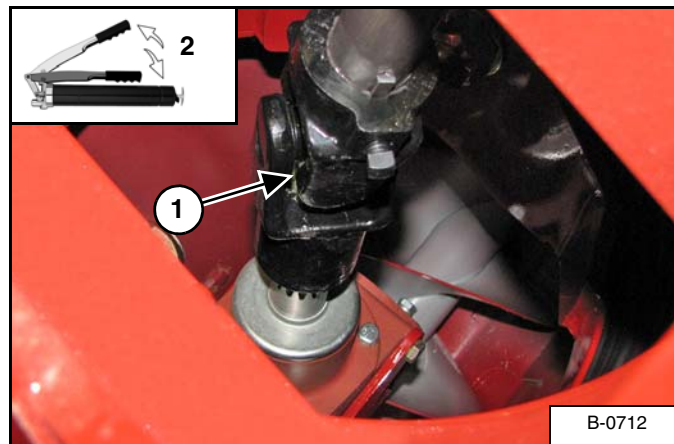
Apply eight - ten pumps of grease to the telescoping member (Item 2) [Figure 208].

**Figure 209**



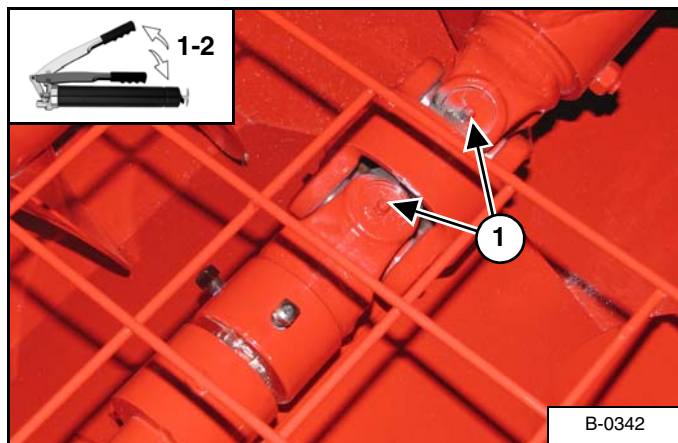
Apply 1-2 pumps of grease to the universal joint (Item 1) (Item 1) [Figure 209] on the hopper auger drive shaft.

**Figure 210**



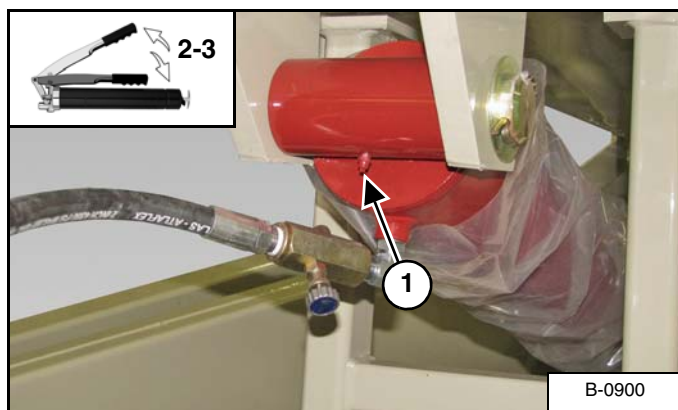
Apply 1-2 pumps of grease to the intake drive shaft side (Item 1) [Figure 210].

**Figure 211**



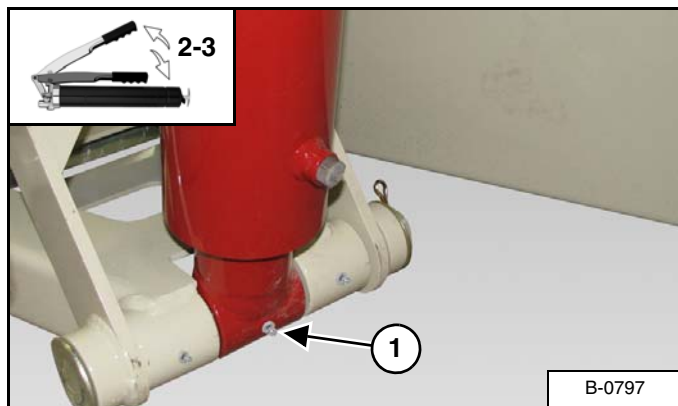
Apply 1-2 pumps of grease to the intake hopper drive shaft (Item 1) [Figure 211].

**Figure 212**



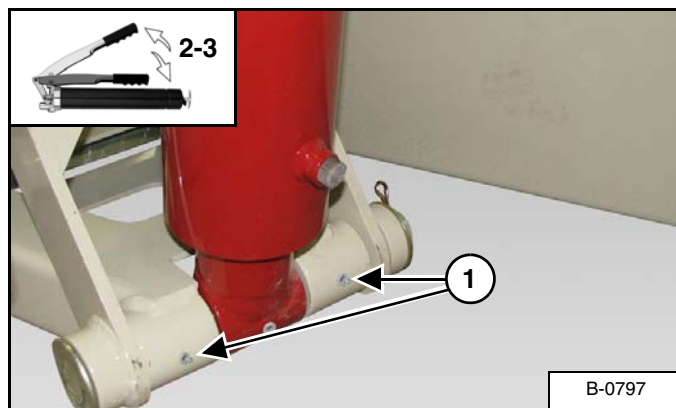
Apply two - three pumps of grease to the base end of the lift cylinder (Item 1) [Figure 212].

**Figure 213**



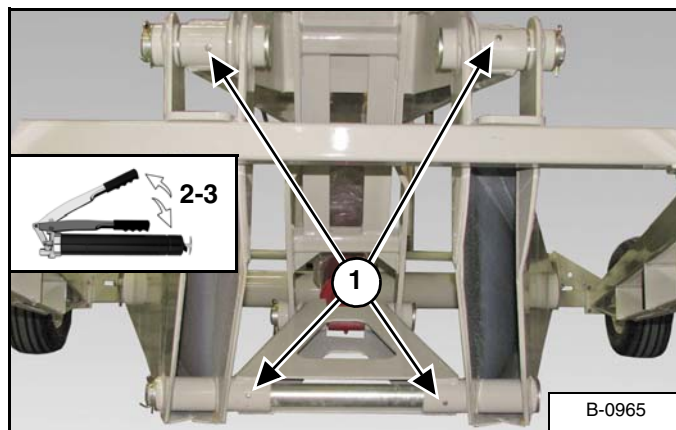
Apply two - three pumps of grease to the rod end of the lift cylinder (Item 1) [Figure 213].

**Figure 214**



Apply two - three pumps of grease to the connecting link (Item 1) [Figure 214].

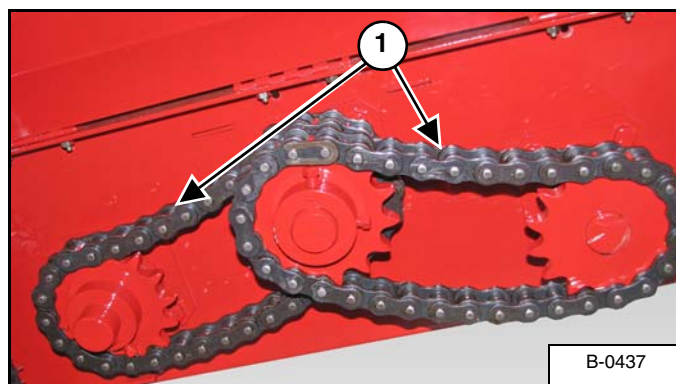
**Figure 215**



Apply two - three pumps of grease to the LH & RH lower lift arms (Item 1) [Figure 215].

### Hopper Dual Auger Drive Chains

**Figure 216**

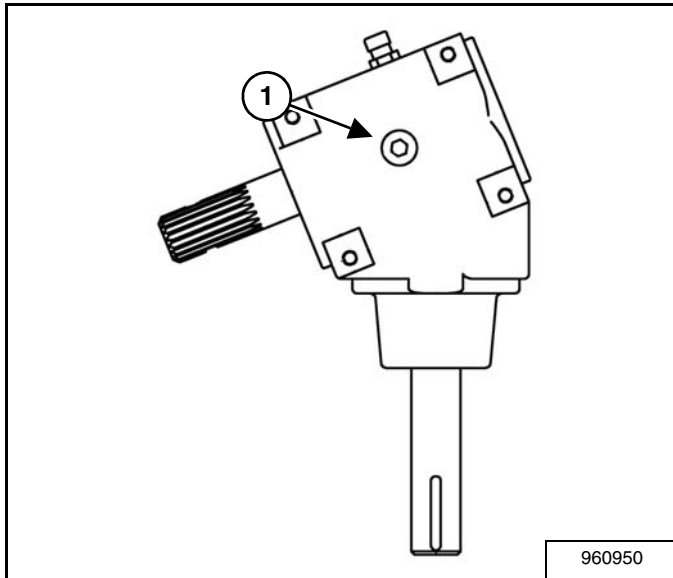


Apply oil to the dual auger drive chains (Item 1) [Figure 216] daily or every eight hours.



## 4168 Upper Gearbox

**Figure 217**



Check the gearbox oil level every 50 hours or weekly.

Remove the fill / drain plug (Item 1) **[Figure 217]** 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 217]** 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 / drain plug.

### **Cleaning And Inspection**

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

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

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

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

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

## AXLE

### Wheel Lug Nut Torque

Check the torque on wheel lug nuts daily. Tighten lug nuts to 120 lb. / ft. (162 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

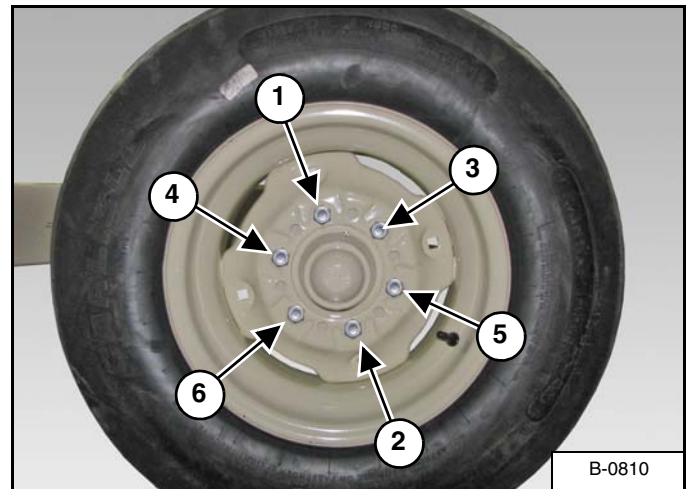
- The parking brake must be engaged before leaving the operator's position. Rollaway can occur because the transmission may not prevent machine movement.
- Always chock tires before performing any maintenance or service.

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 218**



Install the tire with the valve stem facing out (both sides). Install the six wheel bolts (both sides) [Figure 218].

Tighten wheel nuts in a criss-cross pattern [Figure 218]. 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 45 - 50 PSI (310 - 345 kpa). Maximum tire pressure of 60 PSI (415 kpa).**

## BRIDGING CABLES

### Cable Inspection

#### ! IMPORTANT

**Always wear the proper hand and eye protection when servicing 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

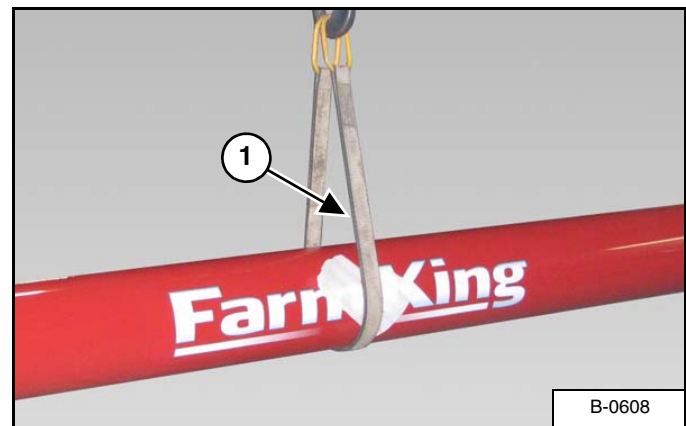
#### Before servicing bridging cables:

- 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 219**

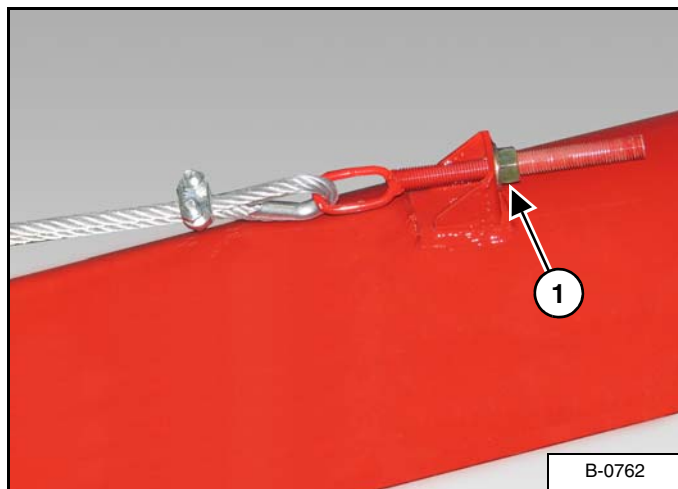


Install a strap (Item 1) [Figure 219] around the tube.

Connect the strap to an approved lifting device.

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

**Figure 220**



Loosen all cable clamps along the cable being tightened.

Tighten the nut (Item 1) **[Figure 220]** of the desired bridging cable on tube.

Tighten both left and right 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 that the auger tube is straight. No bend right or left.

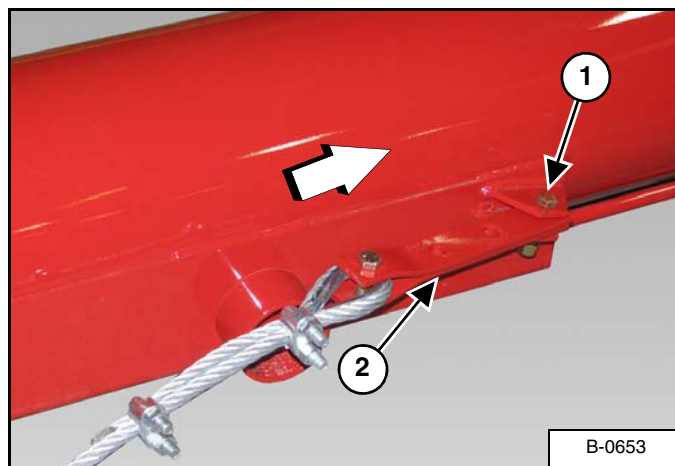
**NOTE: If the nut is fully tightened and bottoms out against the eye of the adjustment bolt, the cable will need to be loosened and additional adjustments will be made on the opposite end of the cable.**

If the nut bottoms out against the eye of the adjustment bolt, loosen the nut (Item 1) **[Figure 220]**.

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

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

**Figure 221**



Remove bolt (Item 1) **[Figure 221]** and lock nut (from mounting bracket on the bottom tube section), 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 bridging cables.

**SAFETY SIGN (DECAL) INSTALLATION****Procedure**

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

---

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

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



## STORAGE AND RETURN TO SERVICE

### Storage

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



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

---

- 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

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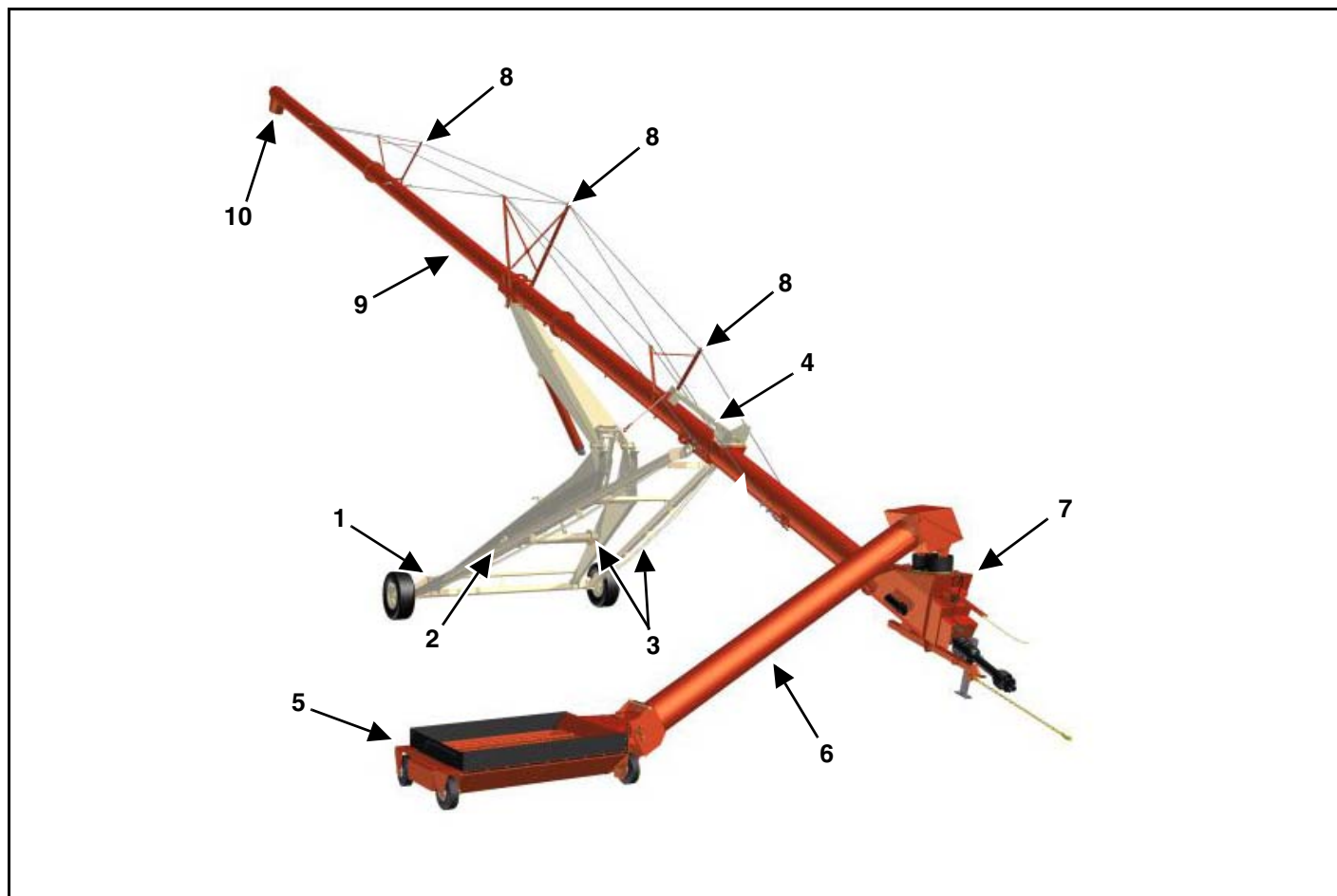
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## GENERAL INFORMATION

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

## 13" BACKSAVER AUGER

### Components

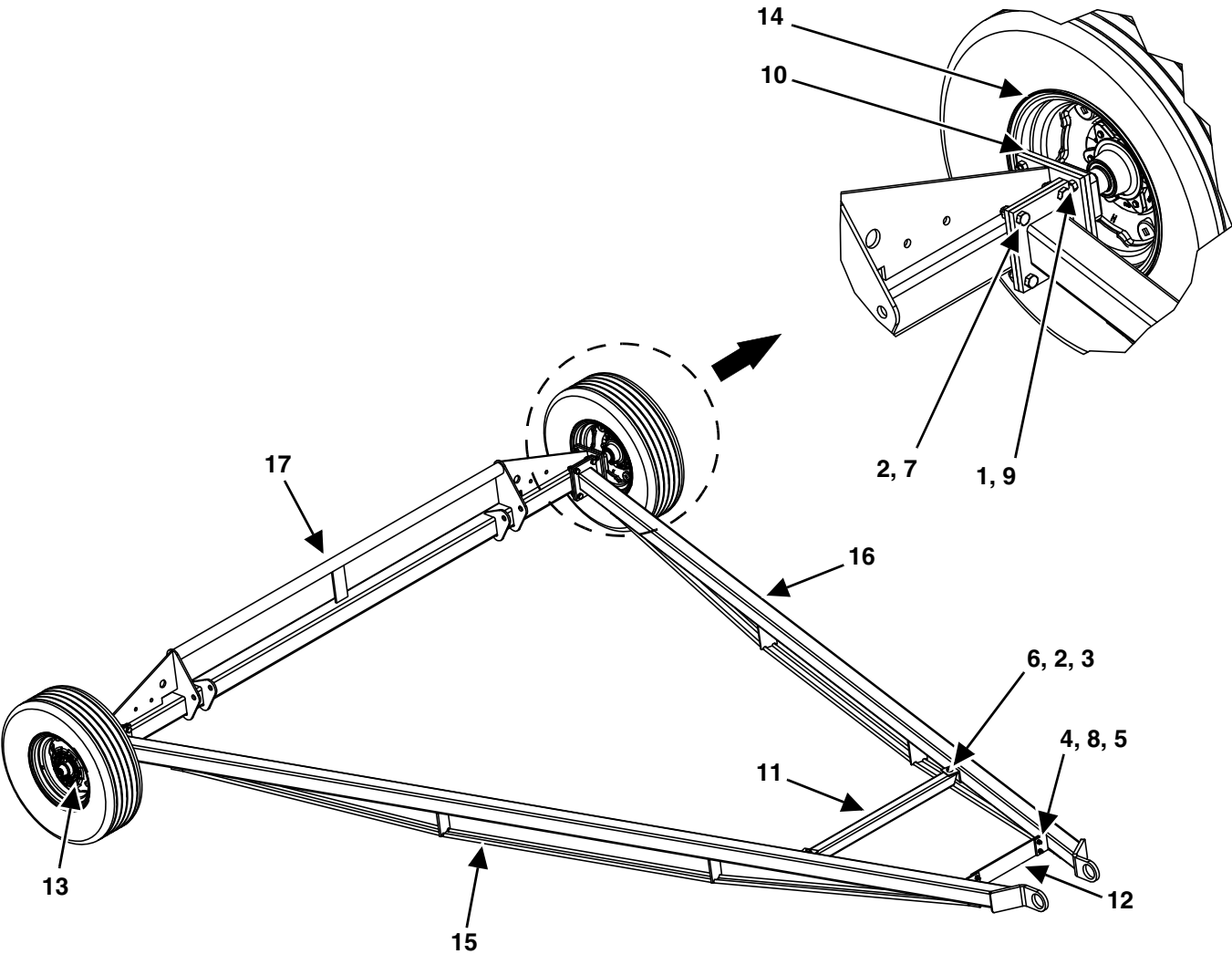


ITEM	DESCRIPTION
1	AXLE
2	UNDERCARRIAGE
3	LIFT ARMS
4	BOOM
5	HOPPER
6	INTAKE AUGER
7	INPUT BOX
8	BRIDGING
9	MAIN AUGER
10	DISCHARGE SPOUT



BS1370 UNDERCARRIAGE

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

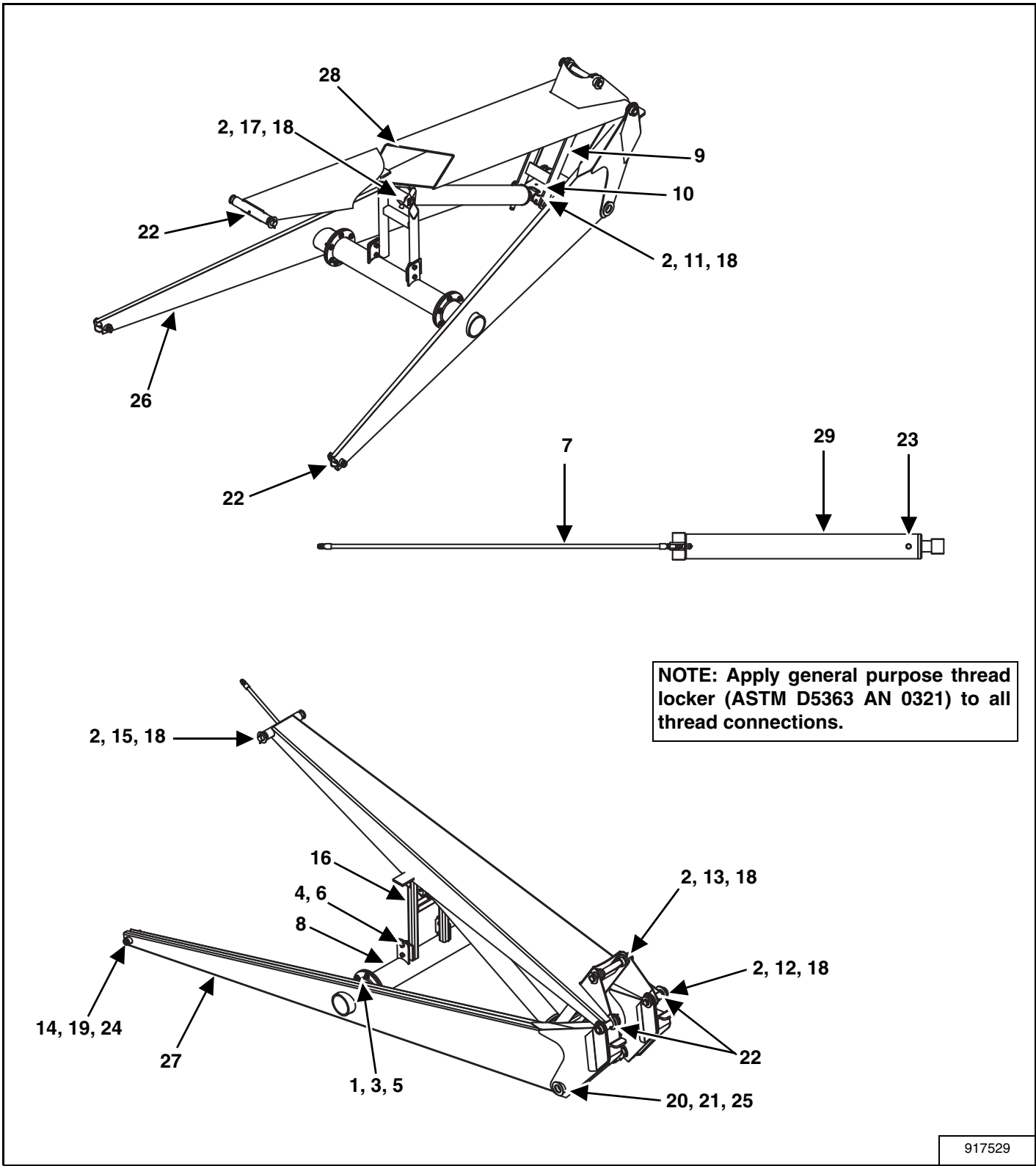


919024-B

ITEM	PART NUMBER	DESCRIPTION	QTY
1	812364	LOCK NUT, 1/2" (PL)	8
2	812482	LOCK NUT, 5/8" (PL)	10
3	812639	WASHER, 5/8" SAE FLAT BS PL	2
4	81599	BOLT, 7/16" x 1-1/2" HEX (PL)	4
5	84041	FLAT WASHER, 7/16" SAE (PL)	4
6	84270	BOLT, 5/8" x 1-3/4" HEX (PL)	2
7	84299	BOLT, 5/8" x 2" HEX GR 5 (PL)	8
8	86273	LOCK NUT, 7/16" (PL)	4
9	87553	BOLT, 1/2" x 1 3/4" HEX (PL)	8
10*	906572	STUB AXLE ASSEMBLY 13" x 70"	2
11	960634	LIFT ARM CRADLE, 3/16" x 2-1/2" x 2-1/2" x 40"	1
12	960699	TIE PLATE, 3/8" x 3-1/2" x 20"	1
13	968404	WHEEL BOLT, 1/2" x 1-1/4" (PL)	12
14	F0210	WHEEL, 15 x 6 x 6 BOLT	2
15	F1925	RH UNDERCARRIAGE ARM WELDMENT	1
16	F1926	LH UNDERCARRIAGE ARM WELDMENT	1
17	F1933	BS1370 AXLE WELDMENT	1

\*For assembly parts breakdown, see the following pages.

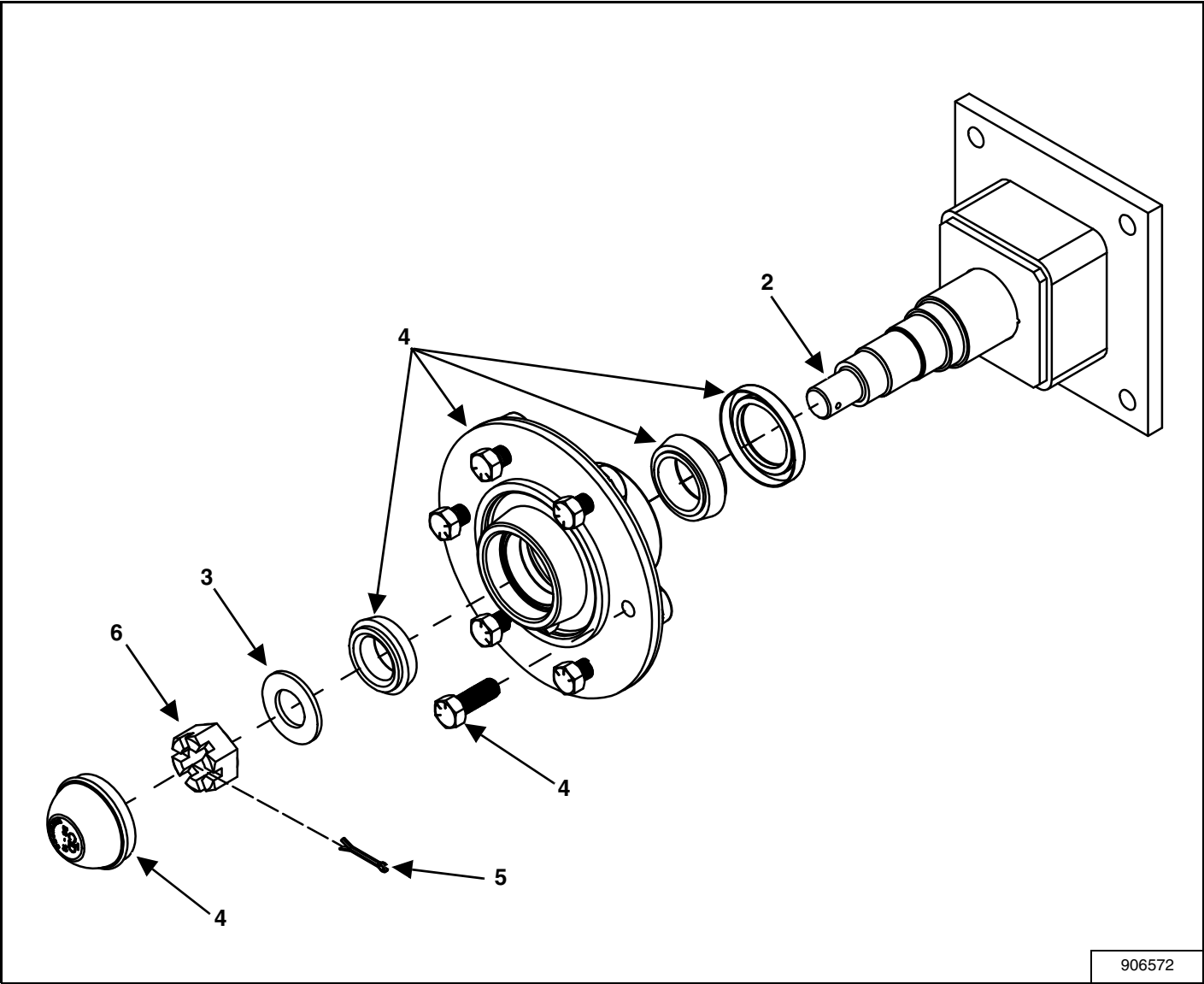
LIFTING ARMS - BS1370



917529

ITEM	PART NUMBER	DESCRIPTION	QTY
1	811791	BOLT, 1/2" x 2" HEX (PL)	16
2	81210	COTTER PIN, 1/4" x 2" (PL)	6
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	84270	BOLT, 5/8" x 1 3/4" HEX (PL)	4
7	912751	HYDRAULIC ROUTING	1
8	914966	LIFT ARM TORQUE TUBE WELDT	1
9	960624	YOKE WELDMENT	1
10	960625	LINK WELDMENT	1
11	960628	BOTTOM CYL PIN WELDMENT 1.500" DIA	1
12	960629	LIFT ARM CLEV PIN WELDMENT 1.500" DIA	2
13	960630	TOP YOKE PIN WELDMENT 1.500" DIA	1
14	960631	LIFT ARM CLEVIS PIN WELDMENT 1.000" DIA	2
15	960632	LIFT ARM PIVOT PIN WELDMENT 1.500" DIA	1
16	960633	LIFT ARM CRADLE WELDMENT	1
17	960691	TOP CYLINDER PIN WELDMENT 1.500" DIA	1
18	967135	RIM WASHER, 1 1/2" (10GA) (PL)	6
19	967140	NARROW RIM WASH, 1" x 10GA (PL)	2
20	967153	NARROW RIM WASHER, 2" x 10GA (PL)	1
21	967162	COTTER PIN, 5/16" x 3" (PL)	1
22	967164	DRIVE-IN GREASE ZERK	9
23	967908	PLUG, 8 ORB VENT	1
24	9812434	COTTER PIN, 1/4" x 1 1/2" (PL)	2
25	F0034	CONNECTING PIN WELDMENT 2.000" DIA	1
26	F1771	LOWER LIFT ARM (LH)	1
27	F1772	LOWER LIFT ARM (RH)	1
28	F9707	UPPER LIFT ARM (70')	1
29	F9778	HYDRAULIC CYLINDER, 4" x 36"	1

STUB AXLE ASSEMBLY - BS1370

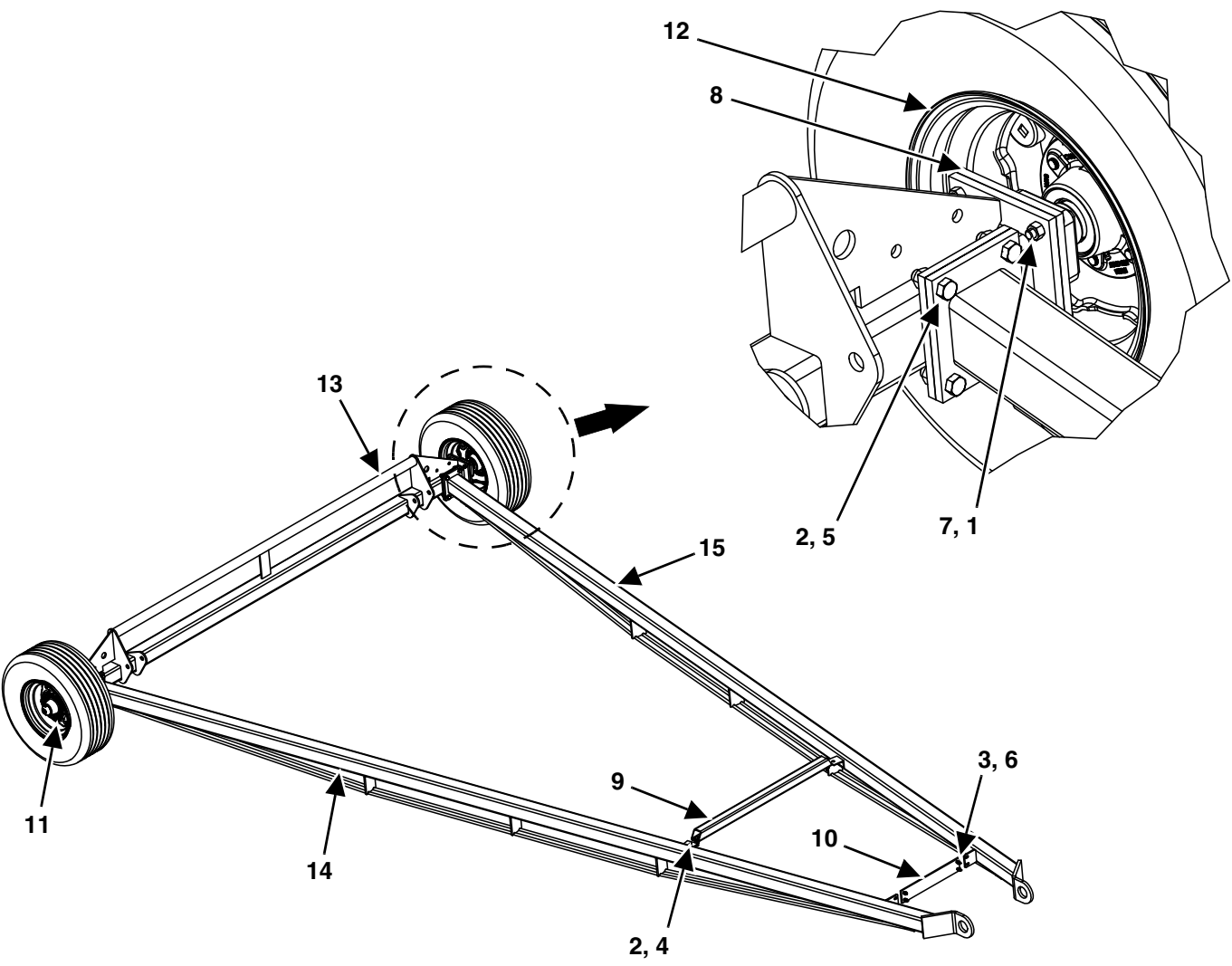




ITEM	PART NUMBER	DESCRIPTION	QTY
1	904902	GREASE GRADE 2	28g
2	906466	STUB AXLE WELDMENT	1
3	967713	7/8" SAE FLAT WASHER (BR)	1
4	967731	HUB CTD H611 COMPLETE ASSY	1
5	9812486	1/8" x 1 1/2" COTTER PIN (BR)	1
6	810010	NUT-SLOTTED 7/8" UNF (BR)	1

BS1385 UNDERCARRIAGE

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

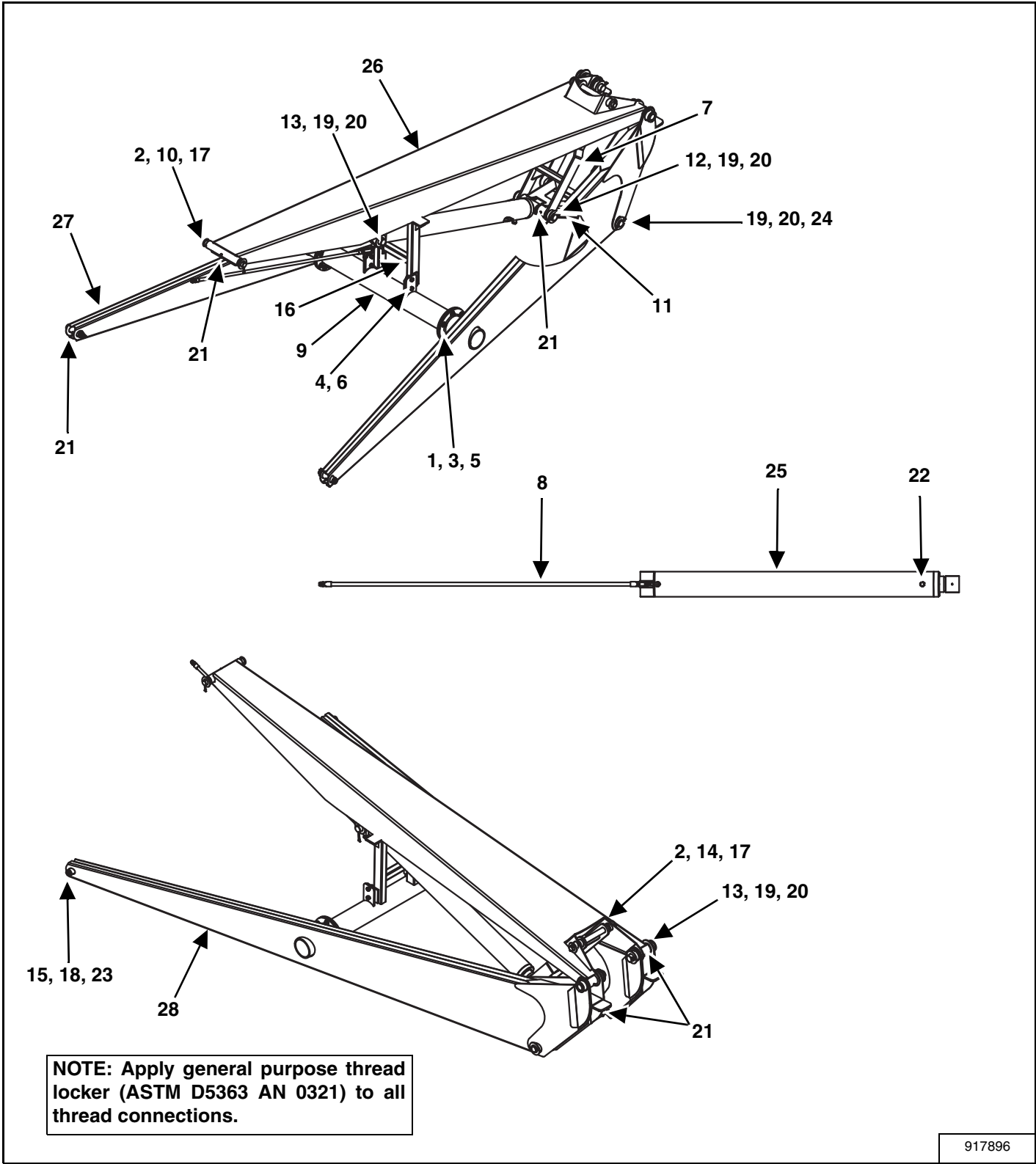


919020

ITEM	PART NUMBER	DESCRIPTION	QTY
1	812364	LOCK NUT, 1/2" (PL)	8
2	812482	LOCK NUT, 5/8" (PL)	10
3	81599	BOLT, 7/16" x 1-1/2" HEX (PL)	4
4	84270	BOLT, 5/8" x 1-3/4" HEX (PL)	2
5	84299	BOLT, 5/8" x 2" HEX GR 5 (PL)	8
6	86273	LOCK NUT, 7/16" (PL)	4
7	87553	BOLT, 1/2" x 1-3/4" HEX UNC GR 5 (PL)	8
8*	906573	STUB AXLE ASSEMBLY	2
9	919464	UNDERCARRIAGE ARM BRACE TUBE	1
10	960699	TIE PLATE, 3/8" x 3-1/2" x 20"	1
11	967210	WHEEL BOLT, 9/16" x 1-1/4" NF GR 5 (PL)	12
12	F0211	WHEEL, 15 x 8 x 6 BOLT	2
13	F1460	AXLE TUBE WELDT (134-1/2" LG)	1
14	F1480	RIGHT UNDERCARRIAGE ARM	1
15	F1481	LEFT UNDERCARRIAGE ARM	1

\*For assembly parts breakdown, see the following pages.

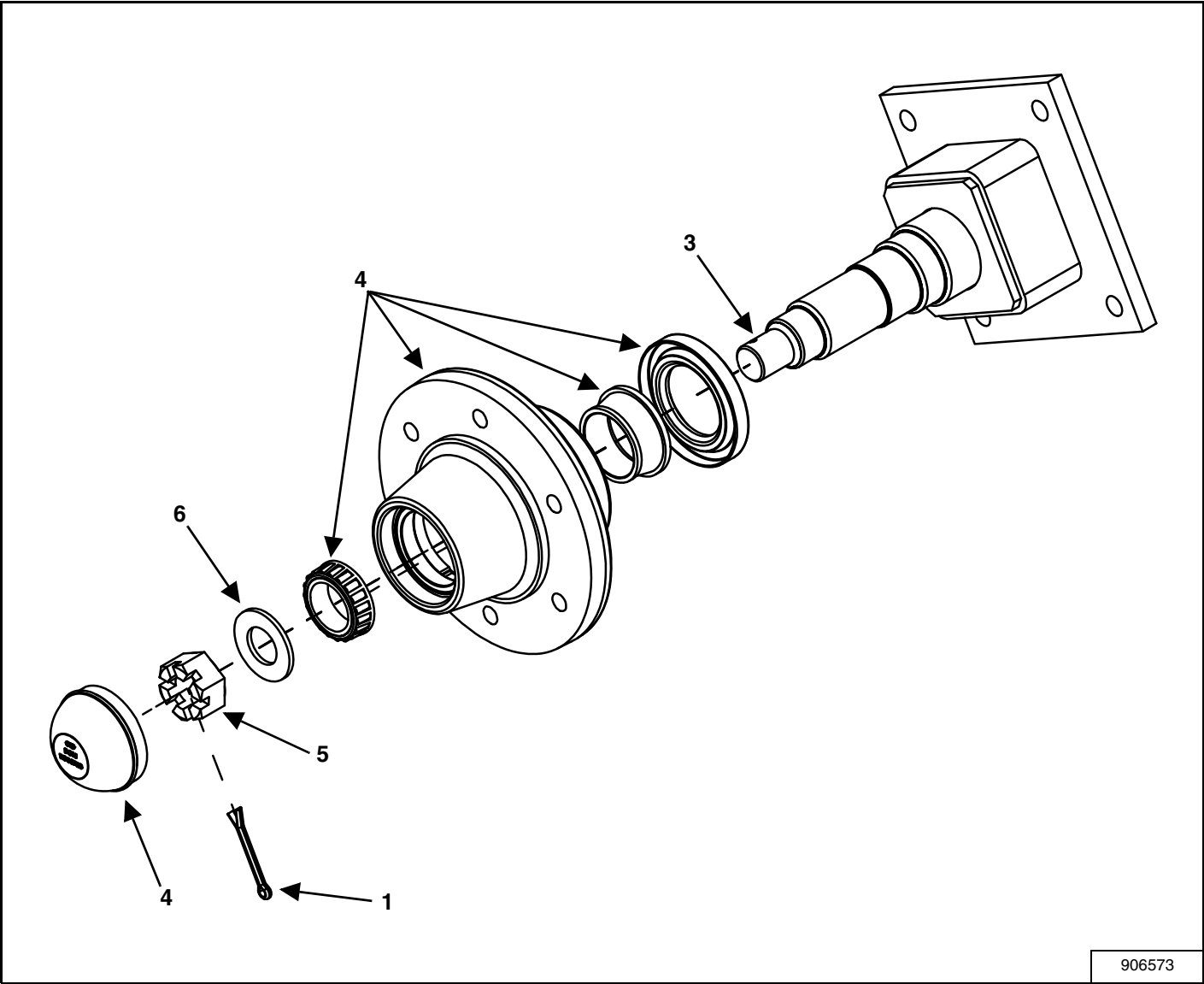
LIFTING ARMS - BS1385



ITEM	PART NUMBER	DESCRIPTION	QTY
1	811791	BOLT, 1/2" x 2" HEX (PL)	16
2	81210	COTTER PIN, 1/4" x 2" (PL)	2
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	84270	BOLT, 5/8" x 1 3/4" HEX (PL)	4
7	907342	YOKE WELDMENT (13" BS)	1
8	912751	HYDRAULIC ROUTING	1
9	914956	LIFT ARM TORQUE TUBE WELDMENT	1
10	960632	LIFT ARM PIVOT PIN WELDMENT 1.500" DIA	1
11	960688	LINK WELDMENT 13"	1
12	960690	BOTTOM CYL PIN WELDMENT 2.000" DIA	1
13	960692	TOP CYLINDER PIN WELDMENT 2.000" DIA	3
14	960694	WELDMENT-TOP YOKE PIN 1.500" DIA	1
15	960695	LIFT ARM CLEVIS PIN 1.000" DIA	2
16	919427	UPPER LIFT ARM CRADLE	1
17	967135	RIM WASHER, 1 1/2" (10GA) (PL)	2
18	967140	NARROW RIM WASH, 1" x 10GA (PL)	2
19	967153	NARROW RIM WASHER, 2" x 10GA (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	9812434	COTTER PIN, 1/4" x 1 1/2" (PL)	2
24	F0035	CONNECTING LINK PIN WELDMENT 2.000" DIA	1
25	F0445M	CYLINDER, 5.0 x 51.35	1
26	F0464	UPPER LIFT ARM (85')	1
27	F1769	LOWER LIFT ARM, LEFT HAND	1
28	F1770	LOWER LIFT ARM, RIGHT HAND	1



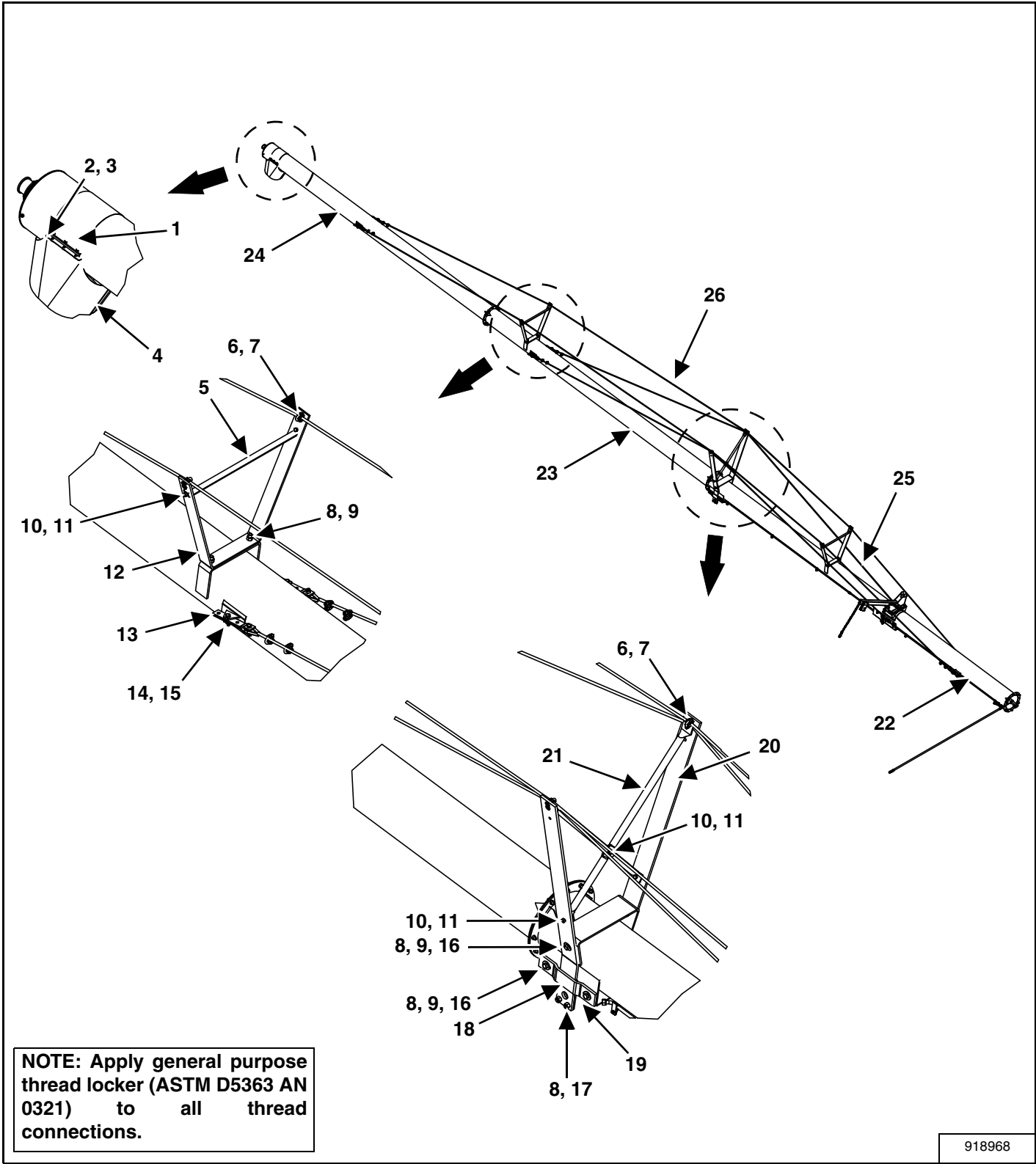
STUB AXLE ASSEMBLY - BS1385 / BS1395



906573

ITEM	PART NUMBER	DESCRIPTION	QTY
1	81207	3/16" x 2" COTTER PIN (BR)	1
2	904902	GREASE GRADE 2	32g
3	906467	STUB AXLE WELDMENT	1
4	960586	HUB CTD H618 COMPLETE ASSY	1
5	967217	SLOTTED HEX NUT 1.0 NF	1
6	967218	1" SAE FLAT WASHER (BR)	1

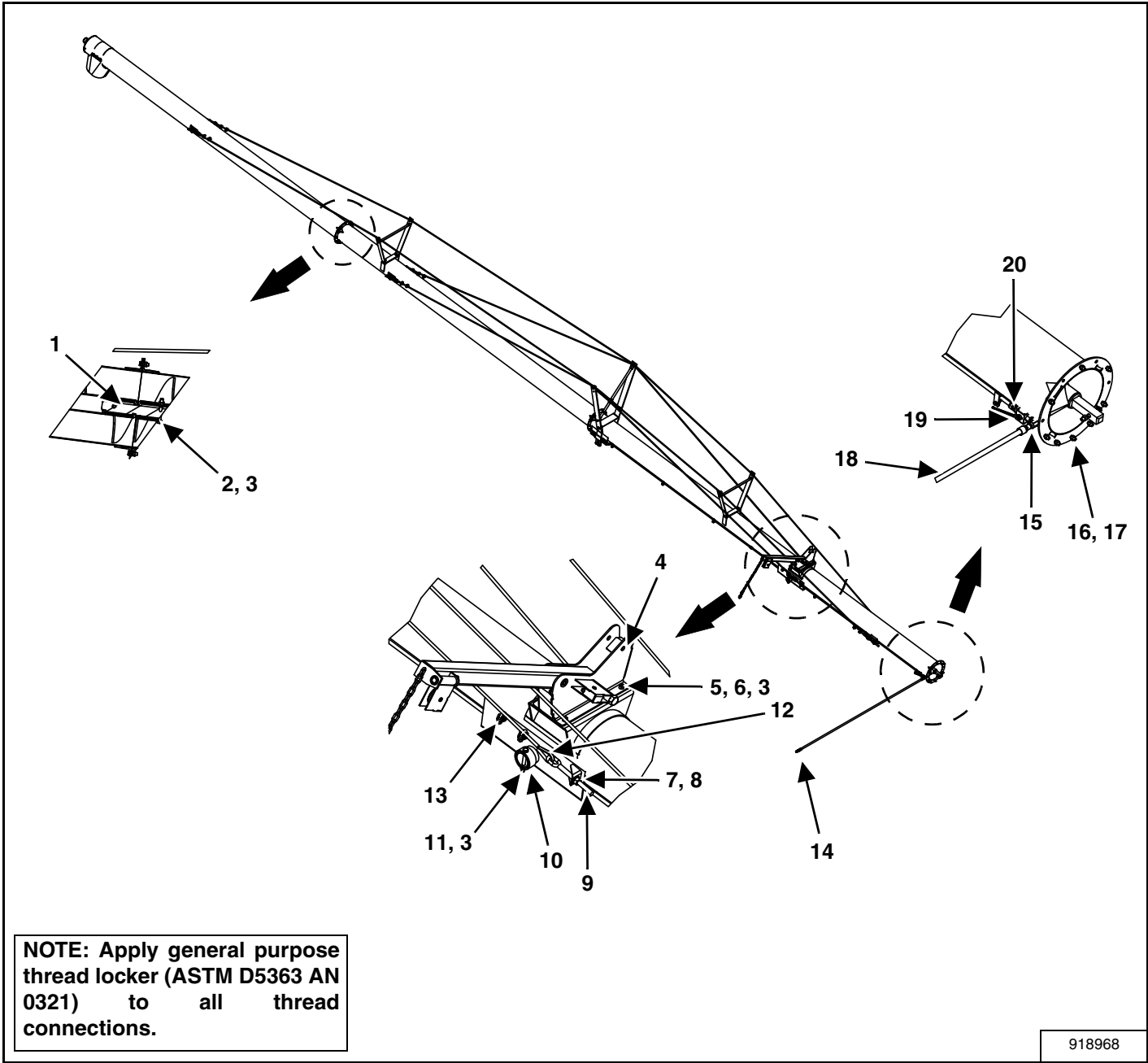
TUBE LAYOUT AND BRIDGING - BS1370



ITEM	PART NUMBER	DESCRIPTION	QTY
1	960612	SPOUT CLAMP, PL	1
2	812363	LOCK NUT, 3/8" (PL)	6
3	967291	BOLT, 3/8" x 2" FULL THREAD HEX (PL)	6
4	F9716	DISCHARGE SPOUT, 13" B/S	1
5	960677	BRIDGING TIE BAR, 1/4" x 1-1/4" x 31-1/2" PL	2
6	964001	FLAT WASHER, 1" x 7/16" x 10 GA (PL)	12
7	964565	CABLE CLAMP, 1/2" (PL)	6
8	812482	LOCK NUT, 5/8" (PL)	14
9	84299	BOLT, 5/8" x 2" HEX GR 5 (PL)	10
10	86273	LOCK NUT, 7/16" (PL)	9
11	81598	BOLT, 7/16" x 1-1/4" HEX (PL)	9
12	960675	LOWER BRIDGING YOKE	2
13	960244	CABLE YOKE	8
14	812364	LOCK NUT, 1/2" (PL)	8
15	811791	BOLT, 1/2" x 2" HEX (PL)	8
16	81678	FLAT WASHER, 5/8" STD (PL)	8
17	967284	BOLT, 5/8" x 1-3/4" FLAT HEAD SOCKET (PL)	4
18	960745	MAIN BRIDGING YOKE CLAMP WELDMENT	2
19	960615	MAIN BRIDGING YOKE MOUNT, 3/8" x 4" x 21"	1
20	960607	MAIN BRIDGING YOKE, 1/2" x 4" x 59-5/8"	2
21	960608	MAIN BRIDGING X-BRACE	2
22*	F1917	BS1370 BOTTOM TUBE ASSEMBLY	1
23*	F1918	BS1370 CENTER TUBE ASSEMBLY	1
24*	F1919	BS1370 TOP TUBE ASSEMBLY	1
25	907443	LOWER CABLE BUNDLE	1
26	907442	UPPER CABLE BUNDLE	1

\*For assembly parts breakdown, see the following pages.

TUBE LAYOUT AND HYDRAULICS - BS1370

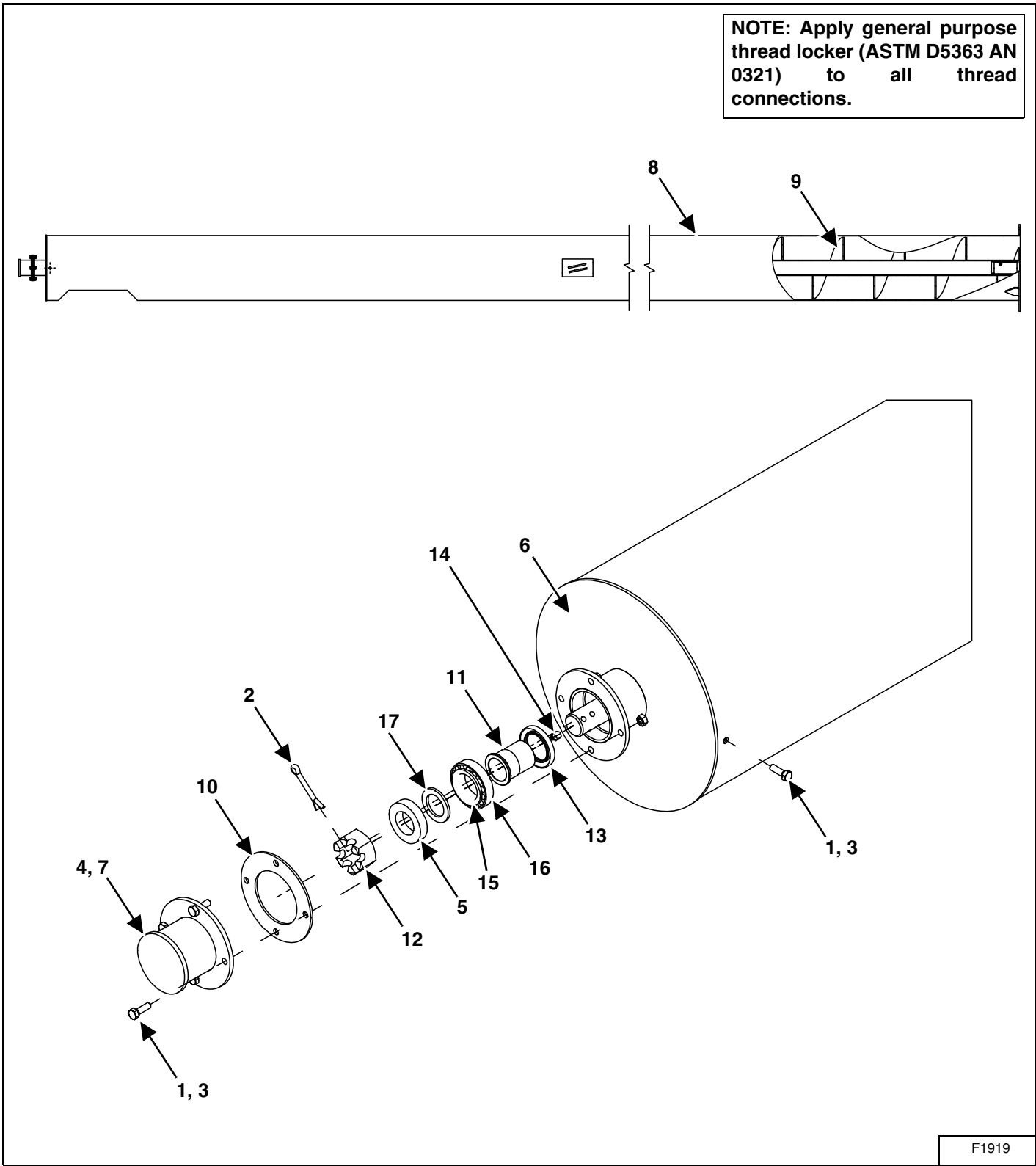


ITEM	PART NUMBER	DESCRIPTION	QTY
1	918739	FLIGHTING SHAFT, SQUARE	3
2	910025	BOLT, 1/2" x 4" GR 8 HEX (PL)	6
3	812364	LOCK NUT, 1/2" (PL)	8
4*	F1913	BS13 LIFT BOOM ASSEMBLY	1
5	81620	BOLT, 1/2" x 1-1/4" HEX (PL)	4
6	81638	FLAT WASHER, 1/2" BS (PL)	4
7	81700	NUT, 3/4" HEX (PL)	4
8	84050	FLAT WASHER, 3/4" S.A.E. (PL)	4
9	960613	CABLE TIGHTENER, 3/4" x 7-7/8" CHAIN LINK	4
10	905736	UNDERCARRIAGE PIN SLEEVE, 3-1/6" ID x 3-1/2" OD x 1-1/2"	2
11	811691	BOLT, 1/2" x 4-1/2" HEX (PL)	2
12	964587	CABLE THIMBLE, 1/2"	4
13	964565	CABLE CLAMP, 1/2" (PL)	8
14	812208	NIPPLE 1/2" BODY 1/2"-14 NPTF QUICK CONNECT	1
15	960585	90 DEGREE STREET ELBOW, 1/2" (STEEL)	1
16	81598	BOLT, 7/16" x 1-1/4" HEX (PL)	32
17	86273	LOCK NUT, 7/16" (PL)	32
18	967463	HOSE, #8 x #8 MNPT x #8 MNPT	1
19	960057	BALL VALVE, #8 FNPT 2 WAY	1
20	960152	STRAIGHT ADAPTOR, #10 MJIC x #8 MNPT	1

\*For assembly parts breakdown, see the following pages.



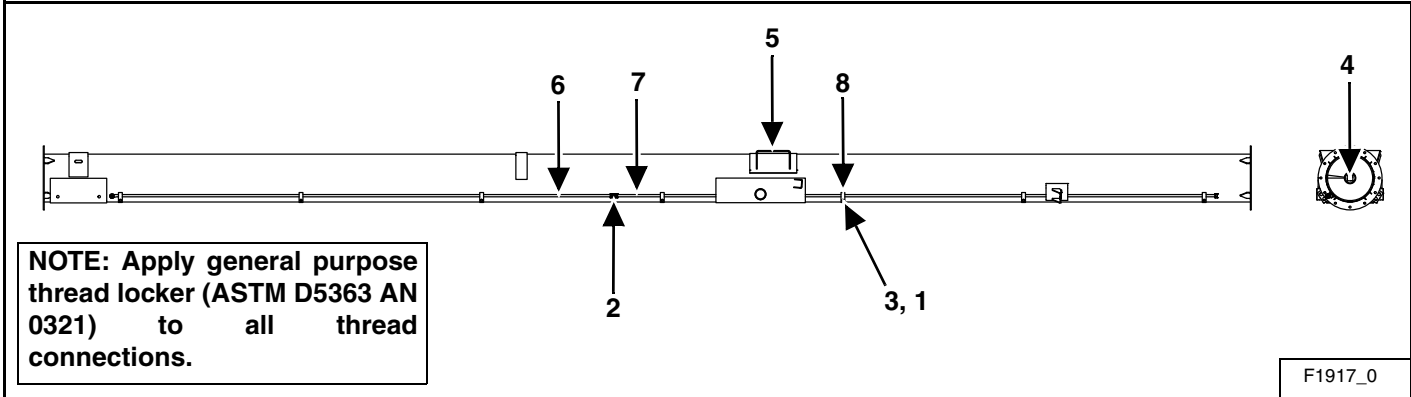
BS1370 TOP TUBE ASSEMBLY



F1919

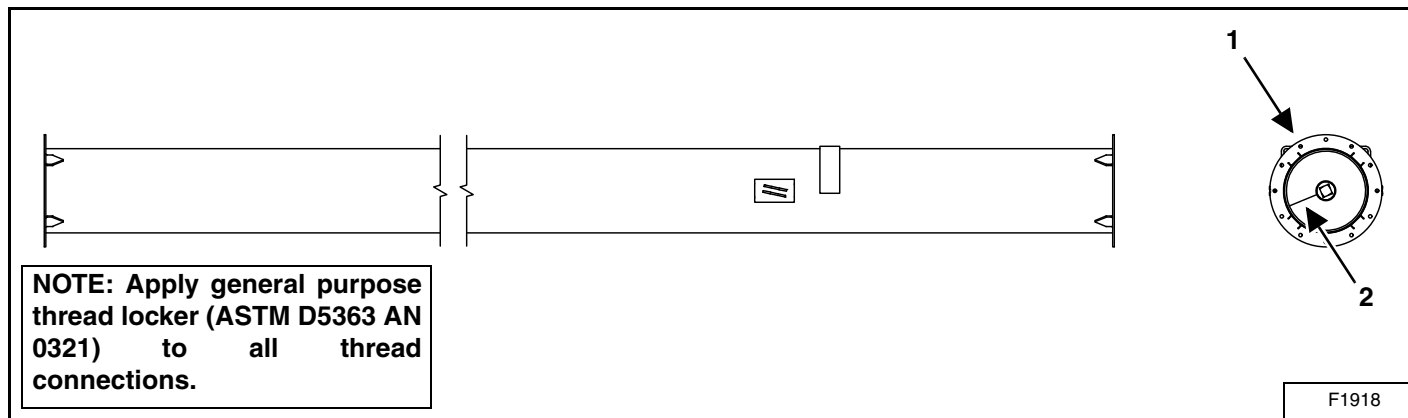
ITEM	PART NUMBER	DESCRIPTION	QTY
1	812026	BOLT, 5/16" x 1" HEX (PL)	6
2	81210	COTTER PIN, 1/4" x 2" (PL)	1
3	812362	LOCK NUT, 5/16" (PL)	6
4	904902	GREASE, GRADE 2	1
5	918816L	TOP FLIGHTING ADJUSTMENT PLATE	1
6	918817	TOP PLATE WELDMENT	1
7	918828	TOP FLANGE CAP WELDMENT	1
8	918969	BS1370 TOP TUBE WELDMENT	1
9	918970	BS1370 TOP FLIGHTING WELDMENT	1
10	920211	FLIGHTING TENSIONER GASKET	1
11	960035	END BEARING SLEEVE	1
12	960037	SLOTTED HEX NUT, 1-1/4" UNF	1
13	960125	OIL SEAL, (CR14939)	1
14	967164	DRIVE-IN GREASE ZERK	1
15	967708	BEARING CONE, (LM29749)	1
16	967709	BEARING CUP, (LM29710)	1
17	9812442	FLAT WASHER, 1-1/4" x 10 GA (BR)	1

BS1370 BOTTOM TUBE ASSEMBLY



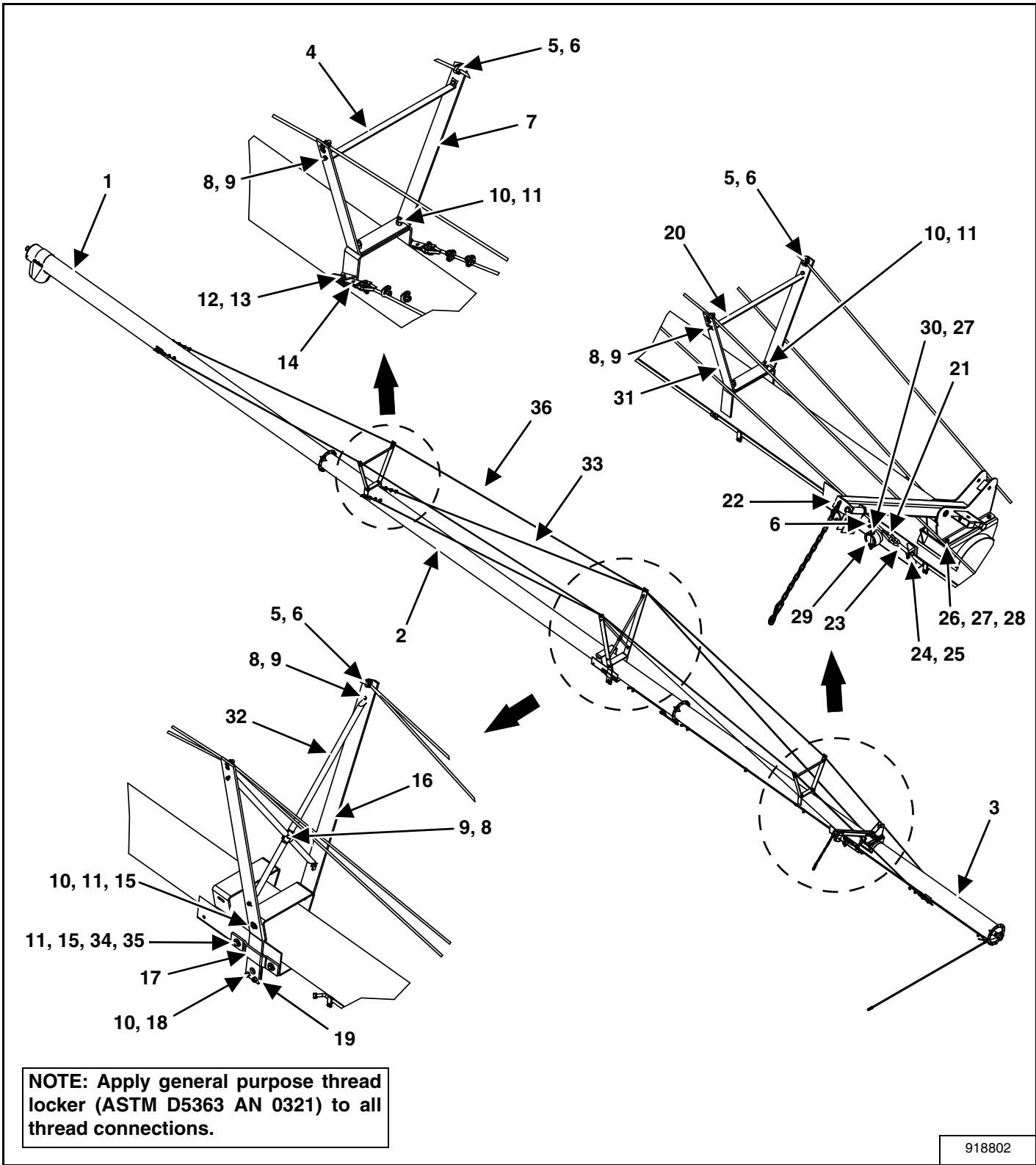
ITEM	PART NUMBER	DESCRIPTION	QTY
1	812363	LOCK NUT, 3/8" (PL)	7
2	812711	JIC UNION -10-10	1
3	86170	BOLT, 3/8" x 1" HEX GR.5 (PL)	7
4	918752	BS1370 BOTTOM FLIGHTING WELDMENT	1
5	918974	BS1370 BOTTOM TUBE WELDMENT	1
6	960144	HYDRAULIC LINE, 5/8" x 11' (JIC FEMALE ENDS)	1
7	960468	HYDRAULIC LINE, 5/8" x 13'-4" (JIC FEMALE ENDS)	1
8	960639	HYDRAULIC LINE CLAMP	7

**BS1370 CENTER TUBE ASSEMBLY**



ITEM	PART NUMBER	DESCRIPTION	QTY
1	918973	BS1370 CENTER TUBE WELDMENT	1
2	918975	BS1370 CENTER FLIGHTING WELDMENT	1

TUBE LAYOUT AND BRIDGING - BS1385

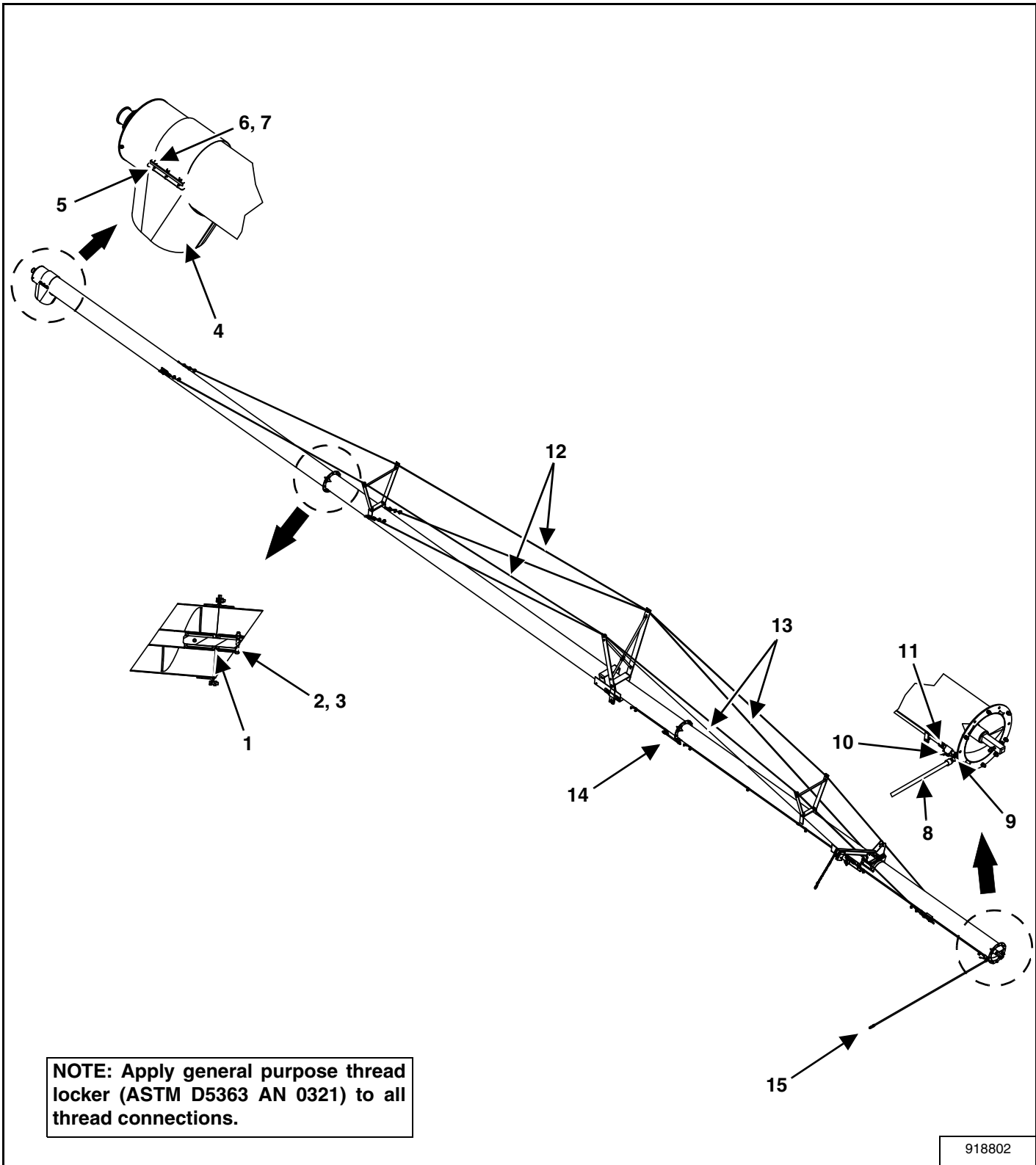


ITEM	PART NUMBER	DESCRIPTION	QTY
1*	F1908	BS1385 TOP TUBE ASSEMBLY	1
2*	F1907	BS1385 CENTER TUBE ASSEMBLY	1
3*	F1906	BS1385 BOTTOM TUBE ASSEMBLY	1
4	960678	BRIDGING TIE BAR, PL 1/4" x 1-1/4" x 34"	1
5	964001	FLAT WASHER, 1" x 7/16" x 10 GA (PL)	12
6	964565	CABLE CLAMP, 1/2" (PL)	14
7	960676	UPPER BRIDGING YOKE	1
8	86273	LOCK NUT, 7/16" (PL)	41
9	81598	BOLT, 7/16" x 1-1/4" HEX (PL)	41
10	812482	LOCK NUT, 5/8" (PL)	10
11	84299	BOLT, 5/8" x 2" HEX GR5 (PL)	10
12	812364	LOCK NUT, 1/2" (PL)	14
13	811791	BOLT, 1/2" x 2" HEX (PL)	8
14	960244	CABLE YOKE	8
15	81678	FLAT WASHER, 5/8" STD (PL)	8
16	960742	MAIN BRIDGING YOKE, 1/2" x 4" x 74"	2
17	960745	MAIN BRIDGING YOKE CLAMP WELDMENT	2
18	967284	BOLT, 5/8" x 1-3/4" FLAT HEAD SOCKET (PL)	4
19	960743	MAIN BRIDGING YOKE MOUNT	1
20	960677	BRIDGING TIE BAR, 1/4" x 1-1/4" x 31-1/2" PL	1
21	964587	CABLE THIMBLE, 1/2"	4
22*	F1913	BS13 LIFT BOOM ASSEMBLY	1
23	960613	CABLE TIGHTENER CHAIN LINK, 3/4" x 7-7/8"	4
24	81700	NUT, 3/4" HEX (PL)	4
25	84050	FLAT WASHER, 3/4" S.A.E. (PL)	4
26	81620	BOLT, 1/2" x 1-1/4" HEX PL	4
27	812364	LOCK NUT, 1/2" (PL)	14
28	81638	FLAT WASHER, 1/2" BS (PL)	4
29	905736	UNDERCARRIAGE PIN SLEEVE, 3-1/16" ID x 3-1/2" OD x 1-1/2"	2
30	811691	BOLT, 1/2" x 4-1/2" HEX (PL)	2
31	960675	LOWER BRIDGING YOKE	1
32	960674	MAIN BRIDGING BRACE, 1-5/16" OD x 56" LG	2
33	907444	LOWER CABLE BUNDLE	1
34	81677	WASHER, 0.625 LOCK (PL)	4
35	81676	NUT, 5/8" HEX (PL)	4
36	907445	UPPER CABLE BUNDLE	1

\*For assembly parts breakdown, see the following pages.

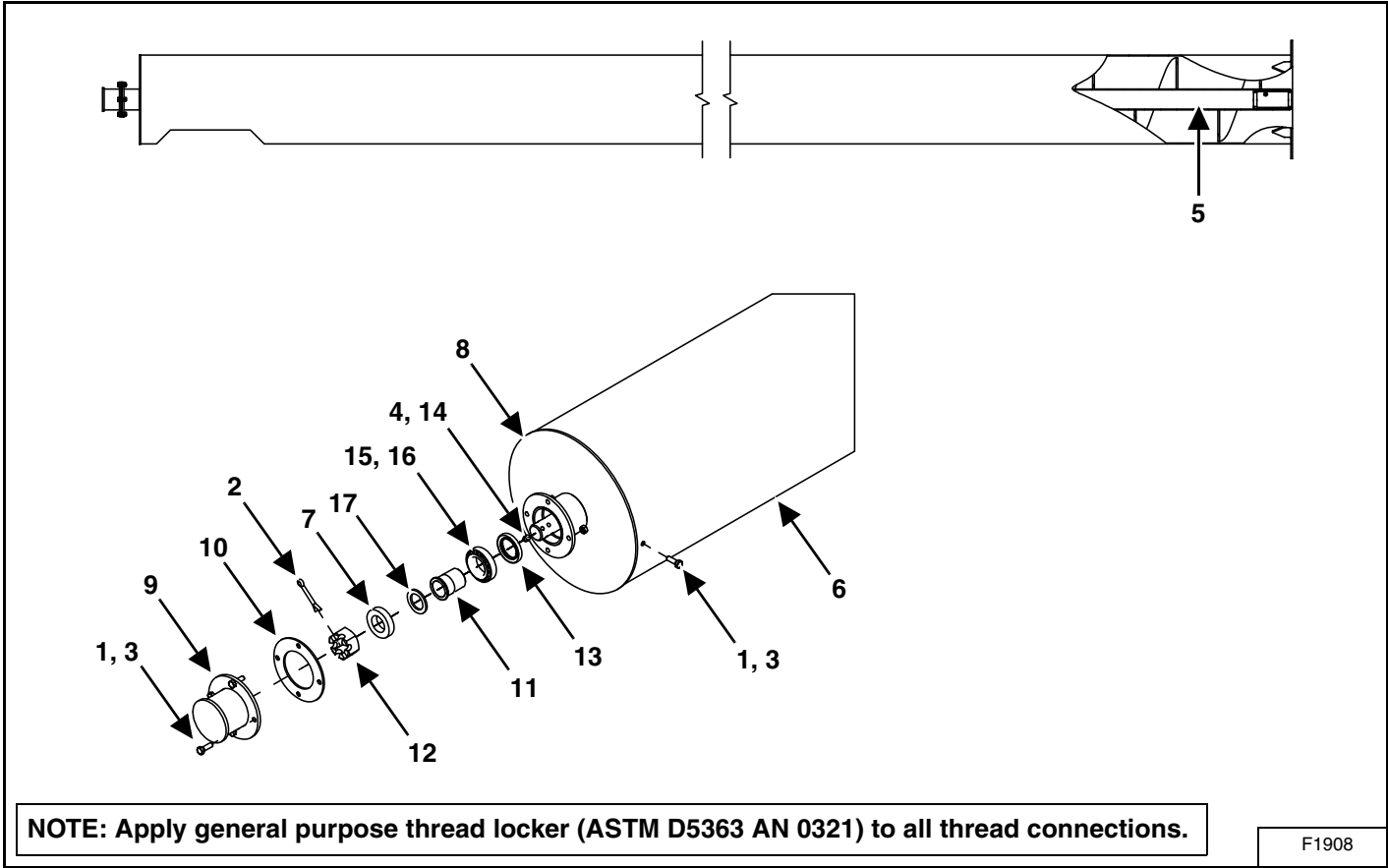


TUBE LAYOUT AND HYDRAULICS - BS1385 / BS1395

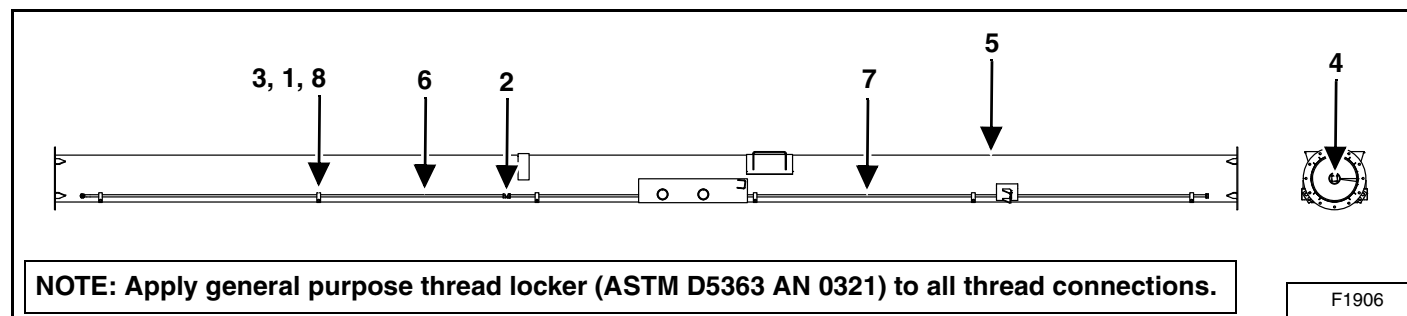


ITEM	PART NUMBER	DESCRIPTION	QTY
1	918739	FLIGHTING SQUARE SHAFT	3
2	910025	BOLT, 1/2" x 4" GR8 HEX (PL)	6
3	812364	LOCK NUT, 1/2" (PL)	6
4	F9716	13" B/S DISCHARGE SPOUT	1
5	960612	SPOUT CLAMP PLATE	1
6	812363	LOCK NUT, 3/8" (PL)	6
7	967291	BOLT, 3/8" x 2" FULL THREAD HEX (PL)	6
8	967463	HOSE, #8 x #8 MNPT x #8 MNPT	1
9	960585	ELBOW, 1/2" x 90 DEGREE STREET (STEEL)	1
10	960057	BALL VALVE, #8 FNPT 2 WAY	1
11	960152	ADAPTOR, #10 MJIC x #8 MNPT STRAIGHT	1
12	907444	LOWER CABLE BUNDLE	1
13	907445	UPPER CABLE BUNDLE	1
14	960162	HOSE, #8 x #10 MJIC x #10 MJIC	1
15	812208	NIPPLE, 1/2" BODY 1/2"-14 NPTF QUICK CONNECT	1

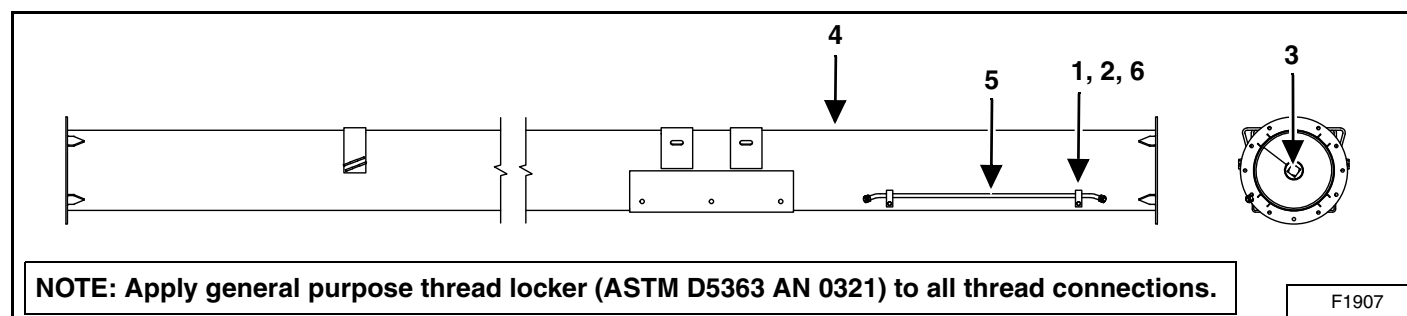
BS1385 TOP TUBE ASSEMBLY



ITEM	PART NUMBER	DESCRIPTION	QTY
1	812026	BOLT, 5/16" x 1" HEX (PL)	6
2	81210	COTTER PIN, 1/4" x 2" (PL)	1
3	812362	LOCK NUT, 5/16" (PL)	6
4	904902	GREASE, GRADE 2	1
5	918746	BS1385 TOP FLTG WELDMENT	1
6	918813	BS1385 TOP TUBE WELDMENT	1
7	918816L	TOP FLIGHTING ADJUSTMENT PLATE	1
8	918817	TOP PLATE WELDMENT	1
9	918828	TOP FLANGE CAP WELDMENT	1
10	920211	FLIGHTING TENSIONER GASKET	1
11	960035	END BEARING SLEEVE	1
12	960037	SLOTTED HEX NUT, 1-1/4" UNF	1
13	960125	OIL SEAL (CR14939)	1
14	967164	DRIVE-IN GREASE ZERK	1
15	967708	BEARING CONE (LM29749)	1
16	967709	BEARING CUP (LM29710)	1
17	9812442	FLAT WASHER, 1-1/4" x 10GA (BR)	1

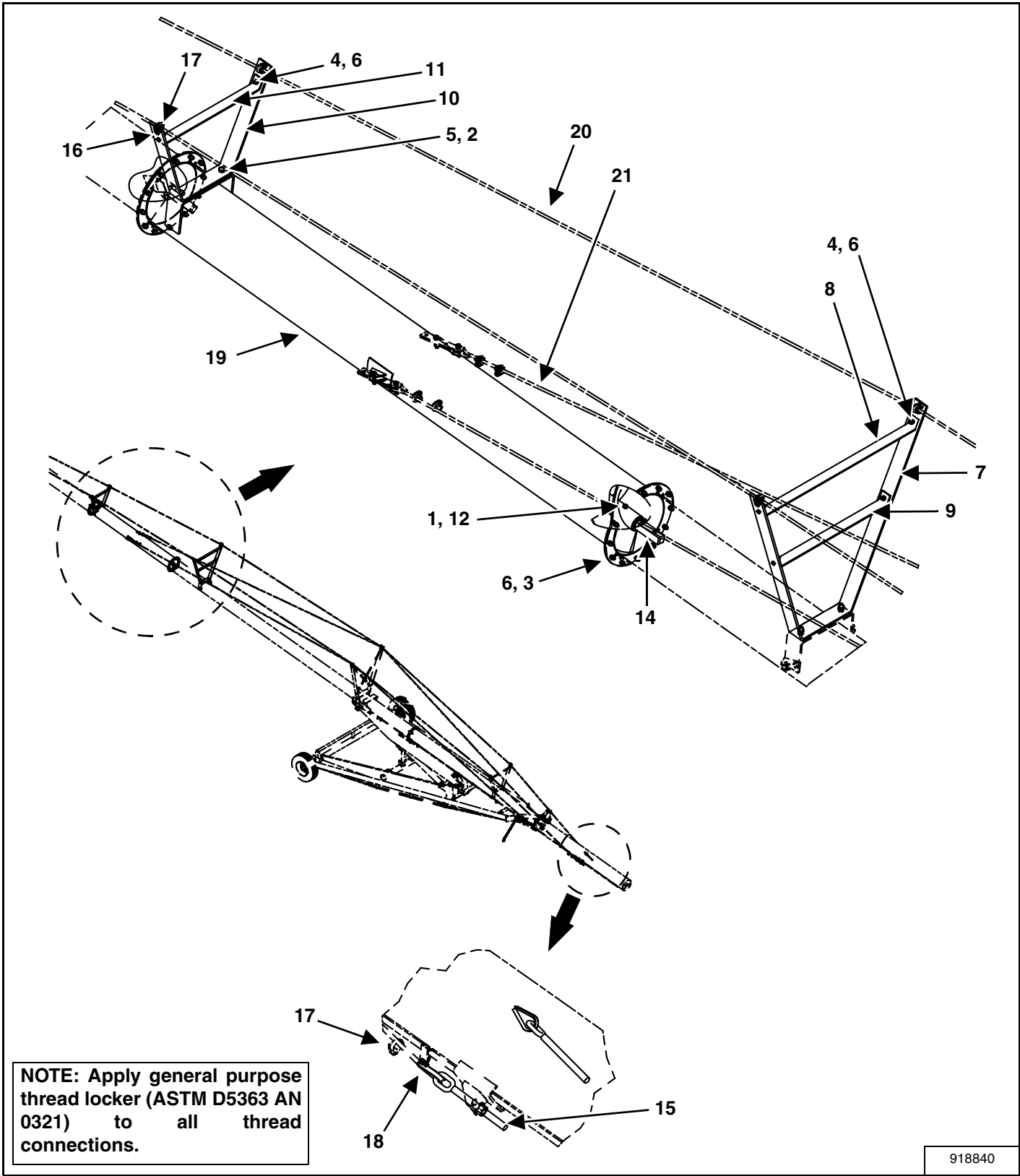
**BS1385 BOTTOM TUBE ASSEMBLY**


ITEM	PART NUMBER	DESCRIPTION	QTY
1	812363	LOCK NUT, 3/8" (PL)	6
2	812711	JIC UNION, #10 x #10	1
3	86170	BOLT, 3/8" x 1" HEX GR 5 (PL)	6
4	918752	BS1370 BOTTOM FLIGHTING WELDMENT	1
5	918808	BS1385 BOTTOM TUBE WELDMENT	1
6	960200	HYDRAULIC LINE, 5/8" OD x 9'-7"	1
7	960467	HYDRAULIC LINE, 5/8" x 15'-10"	1
8	960639	HYDRAULIC LINE CLAMP	6

**BS1385 CENTER TUBE 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	918731	BS1385 CENTER FLIGHTING WELDMENT	1
4	918812	BS1385 CENTER TUBE WELDMENT (360")	1
5	960143	HYDRAULIC LINE, 5/8" x 36"	1
6	960639	HYDRAULIC LINE CLAMP	2

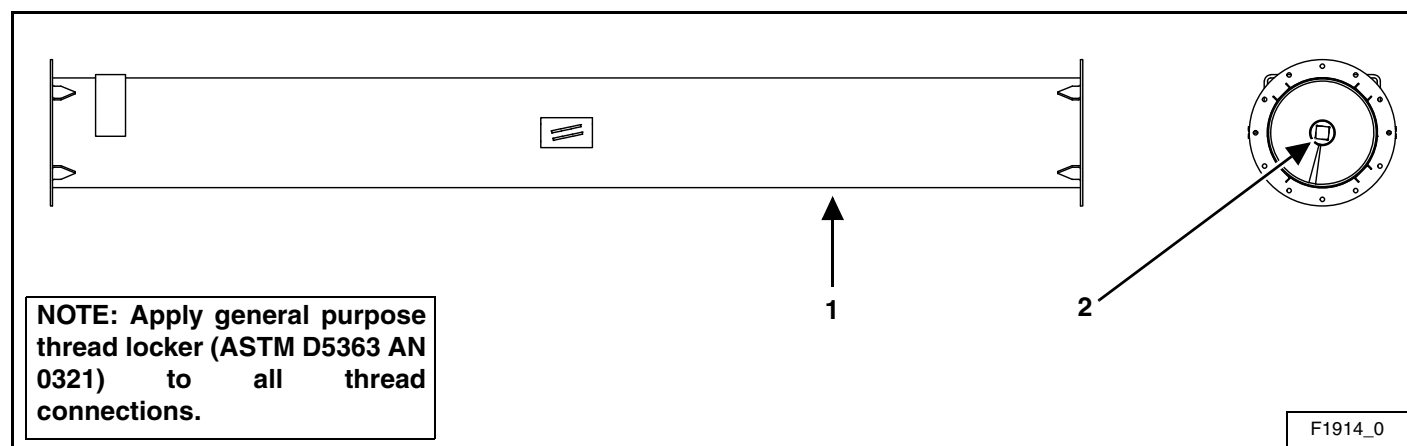
TUBE EXTENSION 10' AND BRIDGING - BS1395



ITEM	PART NUMBER	DESCRIPTION	QTY
1	812364	LOCK NUT, 1/2" (PL)	2
2	812482	LOCK NUT, 5/8" (PL)	2
3	81598	7/16" x 1-1/4" HEX BOLT (PL)	12
4	81599	7/16" x 1-1/2" HEX BOLT (PL)	6
5	84270	5/8" x 1-3/4" HEX BOLT (PL)	2
6	86273	LOCK NUT, 7/16" (PL)	18
7	909944	UPPER BRIDGING YOKE, 3/8"	1
8	909945	UPPER BRIDGING TOP TIE BAR, 1/4" x 2" x 42 1/4"	1
9	909946	UPPER BRIDGING BOTTOM TIE PLATE, 1/4" x 2" x 30 7/8"	1
10	909947	EXTENSION TUBE BRIDGING YOKE, 3/8" x 3" x 57"	1
11	909948	EXTENSION TUBE BRIDGING TIE PLATE, 1/4" x 2" x 27-3/4"	1
12	910025	BOLT, 1/2" x 4" GR8 HEX (PL)	2
13	912830	LOCTITE, 242 BLUE 0.02 OZ (0.5 ml)	1
14	918739	SHAFT, FLTG SQUARE	1
15	960613	CABLE TIGHTENER CHAIN LINK, (3/4" x 7-7/8")	4
16	964001	FLAT WASHER, 1" x 7/16" x 10 GA (PL)	4
17	964565	CABLE CLAMP, 1/2" (PL)	10
18	964587	CABLE THIMBLE, 1/2"	4
19*	F1914	BS13 10' EXTENSION ASSEMBLY	1
20	F9172	UPPER CABLE BUNDLE	1
21	F0915	LOWER CABLE BUNDLE	1

\*For assembly parts breakdown, see the following pages.

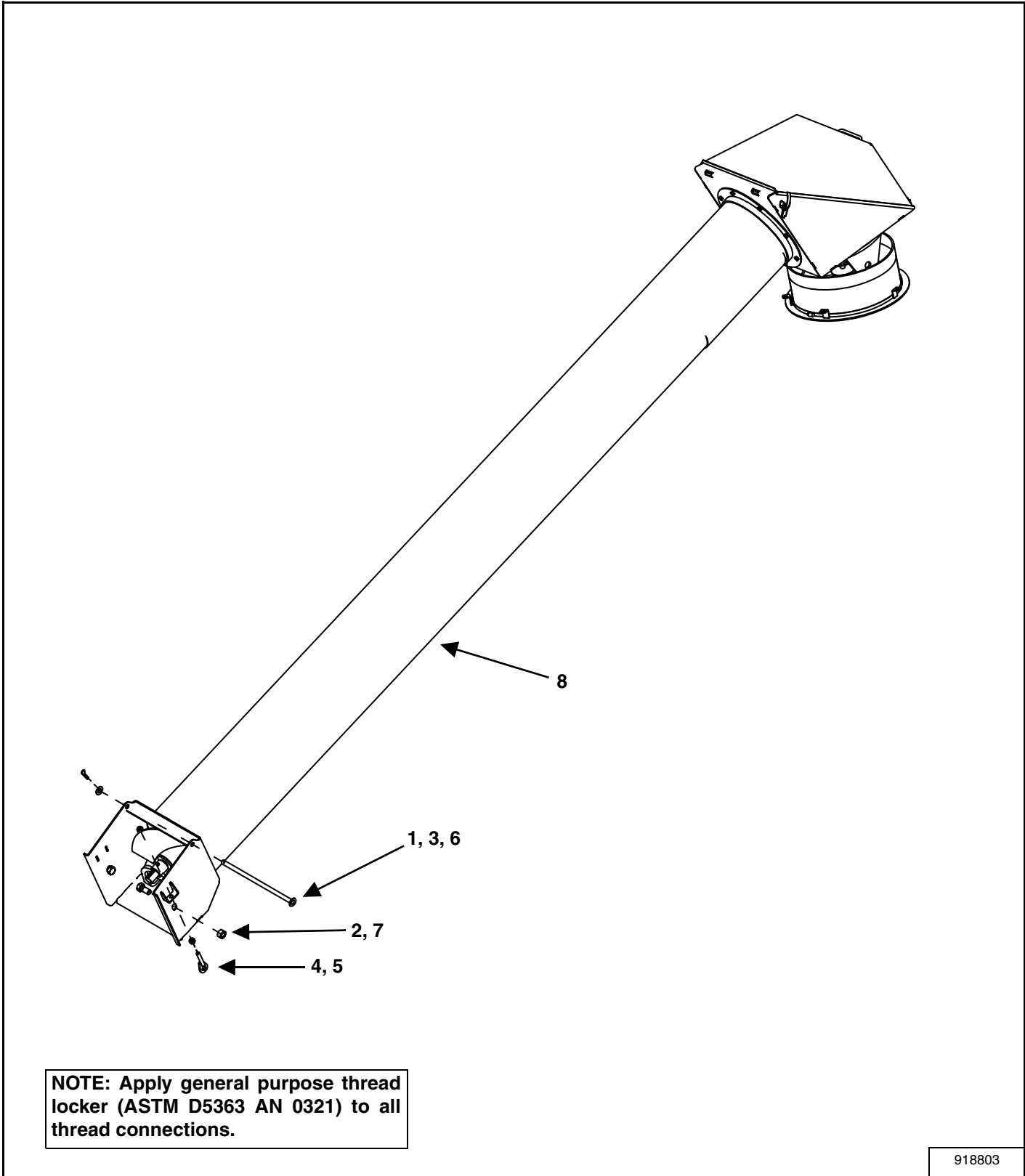
### BS13 10' EXTENSION ASSEMBLY



ITEM	PART NUMBER	DESCRIPTION	QTY
1	918836	BS13 10' EXTENSION WELDMENT	1
2	918837	BS13 EXTENSION FLIGHTING WELDMENT	1



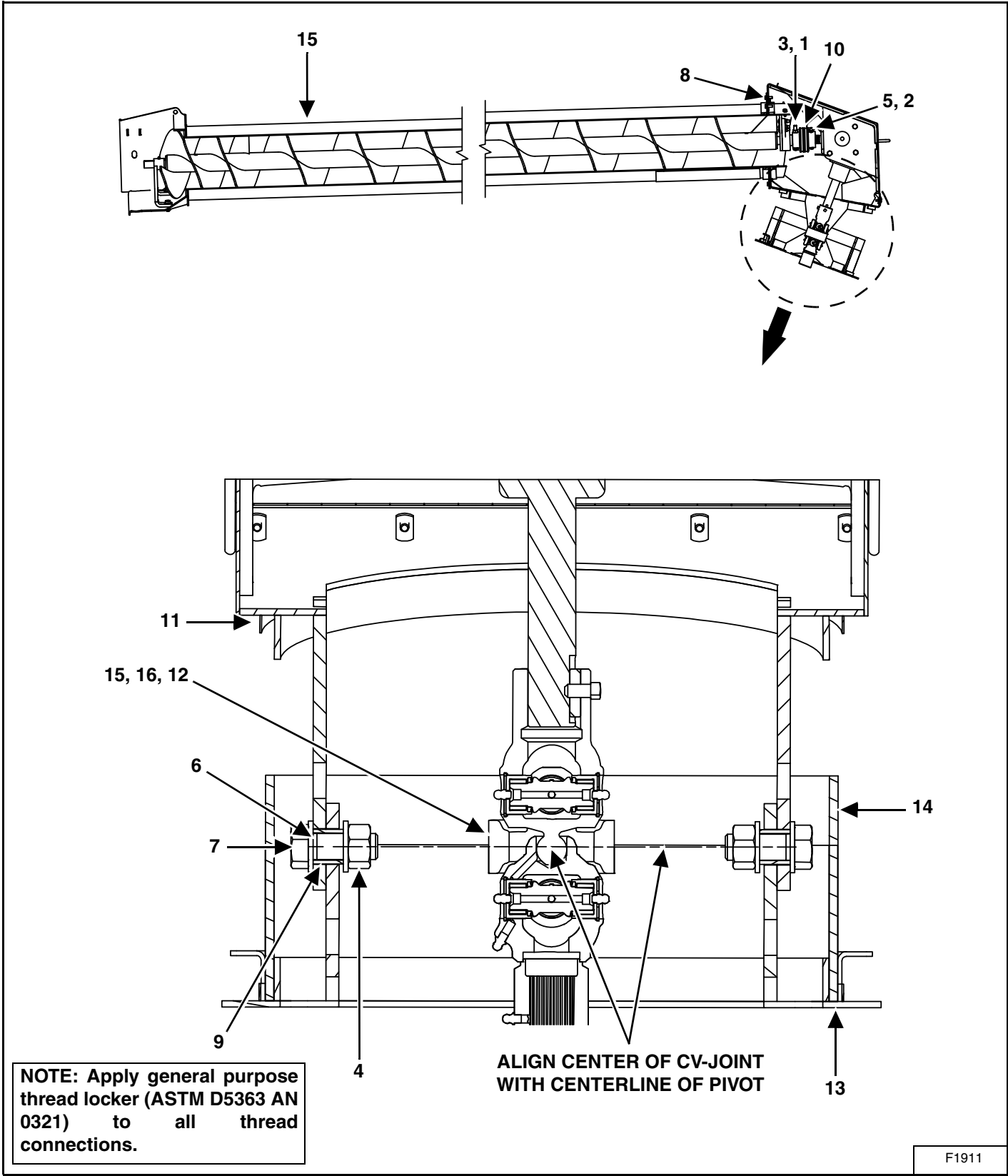
**INTAKE AUGER**



ITEM	PART NUMBER	DESCRIPTION	QTY
1	12780	HAIR PIN CLIP, #7	1
2	812365	LOCK NUT, 3/4" (PL)	2
3	812639	WASHER, 0.625" SAE FLAT BS PL	1
4	81636	NUT, 1/2" HEX (PL)	4
5	914449	HOPPER ADJUSTMENT, WELDMENT	2
6	918914	PIVOT PIN, WELDMENT	1
7	967437	BOLT, 3/4" x 1 5/8" HEX (PL)	2
8*	F1911	INTAKE AUGER, ASSEMBLY	1

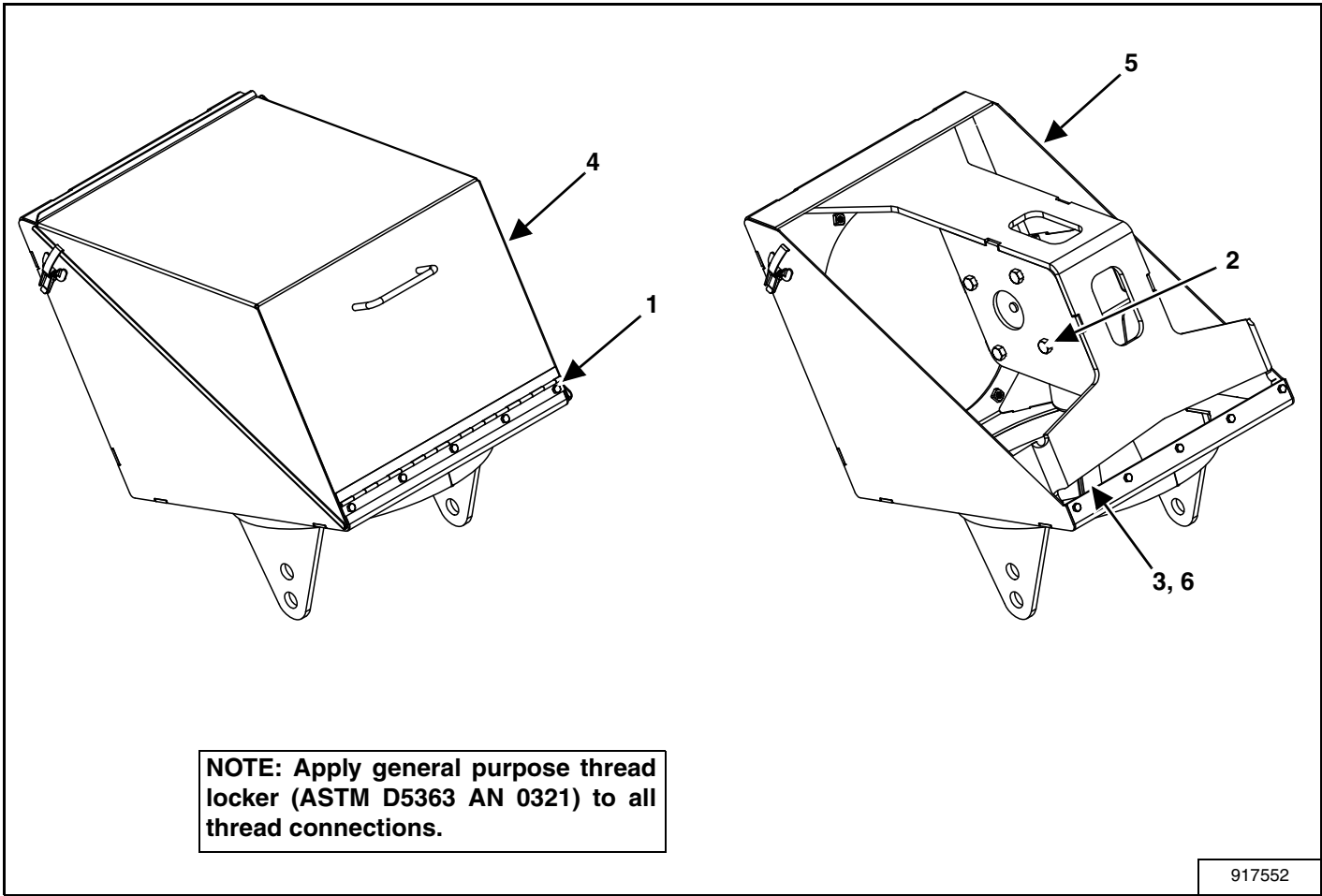
\*For assembly parts breakdown, see the following pages.

BS13 INTAKE AUGER ASSEMBLY

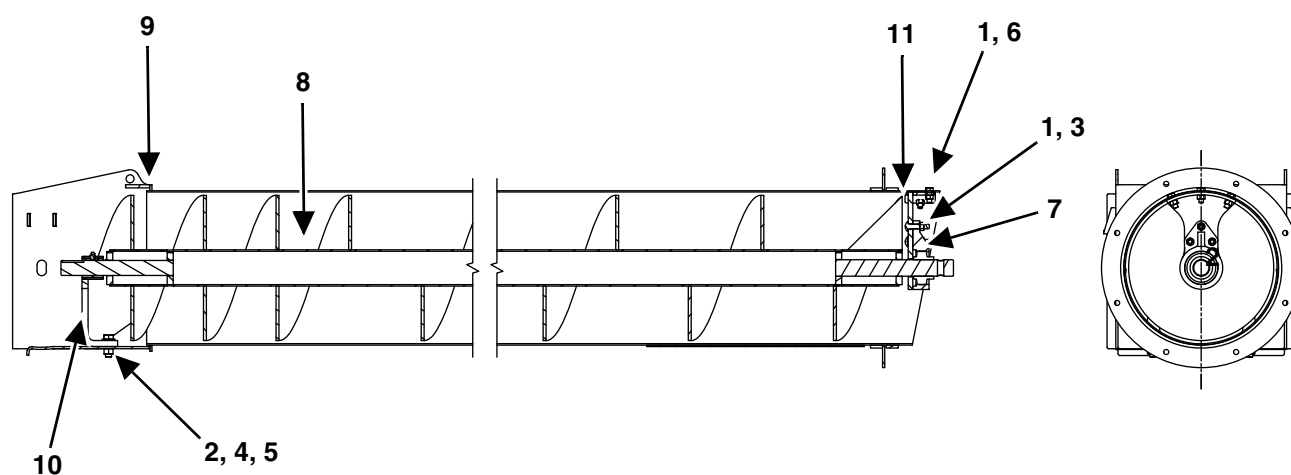


ITEM	PART NUMBER	DESCRIPTION	QTY
1	811752	BOLT, 1/2" x 4" HEX (PL)	1
2	812363	LOCK NUT, 3/8" (PL)	1
3	812364	LOCK NUT, 1/2" (PL)	1
4	812365	LOCK NUT, 3/4" (PL)	2
5	81585	BOLT, 3/8" x 3-1/2" HEX (PL)	1
6	84050	FLAT WASHER, 3/4" S.A.E. (PL)	4
7	84467	BOLT, 3/4" x 2" HEX (PL)	2
8	86170	BOLT, 3/8" x 1" HEX GR.5 (PL)	8
9	912503	UNDERCARRIAGE SPACER	2
10	917630	COUPLING H5018 W/SPLINE ASSEMBLY	1
11	917706	HOSE CLAMP, 15.375 TO 17.375	2
12	917913	CV JOINT, CAT 3, 50 DEG E4BL	1
13	917965	INPUT BOX PIVOT WELDMENT	1
14	919032	INPUT BOX PIVOT COVER	1
15	960180	U-JOINT & SPROCKET KEY, 0.313" SQ. x 1.375"	1
16	9812378	SET SCREW, 3/8" x 3/4" SQ HD SER	2

INPUT BOX ELBOW ASSEMBLY - BS13



ITEM	PART NUMBER	DESCRIPTION	QTY
1	81525	BOLT, 1/4" x 3/4" HEX (PL)	5
2	81620	BOLT, 1/2" x 1 1/4" HEX (PL)	8
3	904578	GEAR OIL, SAE 75W-90 SYNTHETIC	1.0 L
4	917554	WELDMENT-ELBOW ACCESS DOOR BS13"	1
5	917785	WELDMENT-INPUT BOX ELBOW BS13"	1
6	960950	UPPER GEARBOX, 4168, 68 DEG	1

**INTAKE AUGER TUBE ASSEMBLY**


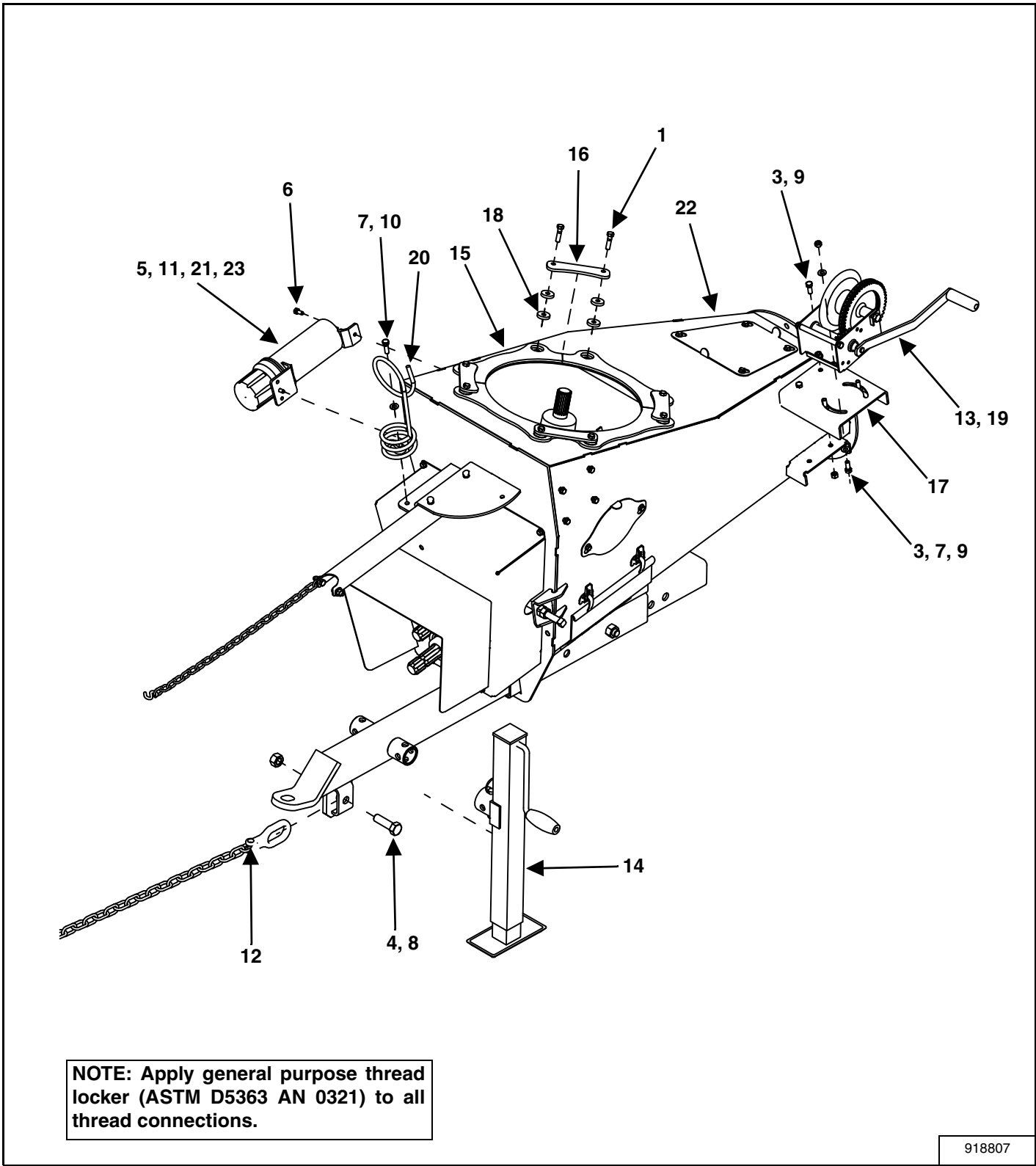
**NOTE: Apply general purpose thread locker (ASTM D5363 AN 0321) to all thread connections.**

918818

ITEM	PART NUMBER	DESCRIPTION	QTY
1	812363	LOCK NUT, 3/8" (PL)	6
2	812364	LOCK NUT, 1/2" (PL)	2
3	813517	BOLT, CARRIAGE, 3/8" x 1.75" (PL)	3
4	84048	FLAT WASHER, 1/2" SAE (PL)	2
5	84277	BOLT, 1/2" x 1 1/2" HEX (PL)	2
6	86170	BOLT, 3/8" x 1" HEX GR.5 (PL)	3
7	917712	BEARING, 1.375 ID FLANGE	1
8	918755	INTAKE FLIGHTING, WELDMENT	1
9	918845	INTAKE AUGER TUBE, WELDMENT	1
10	918916	INTAKE FLIGHTING HOLDER, WELDMENT	1
11	918978	HANGER BRACKET, WELDMENT	1



INPUT BOX

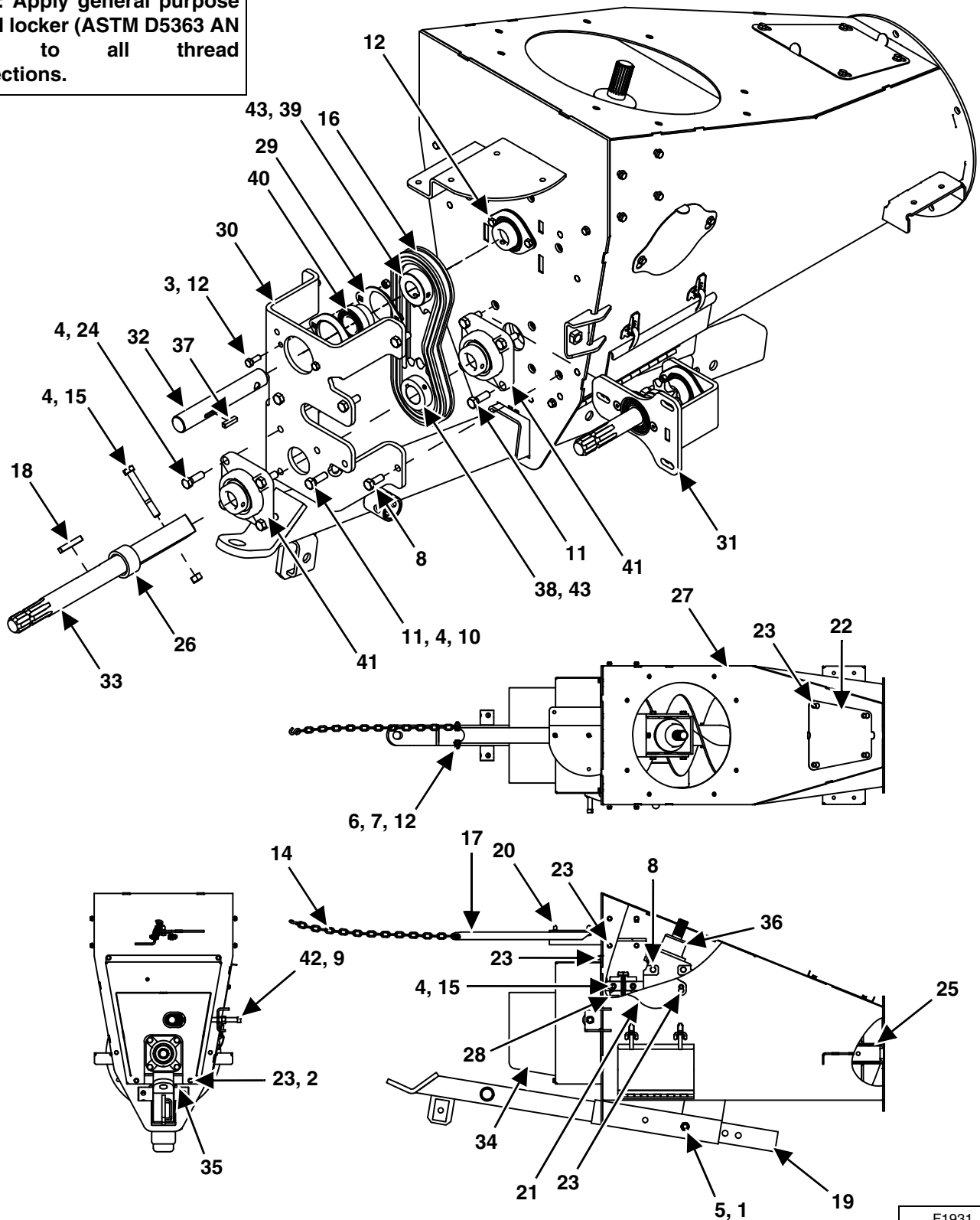


ITEM	PART NUMBER	DESCRIPTION	QTY
1	811792	BOLT, 3/8" x 1 1/2" HEX GR.5 (PL)	8
2	81210	COTTER PIN, 1/4" X 2" (PL)	1
3	812363	LOCK NUT, 3/8" (PL)	6
4	812365	LOCK NUT, 3/4" (PL)	1
5	814433	WARRANTY REGISTRATION MANUAL	1
6	81549	BOLT, 5/16" x 3/4" HEX (PL)	2
7	84039	FLAT WASHER, 3/8" (PL)	7
8	84346	3/4" x 2 1/2" HEX (PL)	1
9	86170	BOLT, 3/8" x 1" HEX GR.5 (PL)	5
10	86171	BOLT, 3/8" x 1 1/4" HEX (PL)	1
11	909277	MANUAL HOLDER 3 1/2" x 12"	1
12	910287	HOOK & SAFETY CHAIN ASSEMBLY	1
13	910506	CABLE HYD WINCH ASSEMBLY	1
14	914426	JACK, 5000 LB	1
15	917596	SPACER, INTAKE	4
16	917707L	PLATE, RING CLAMP	4
17	918957	BRACKET, MANUAL WINCH MOUNT	1
18	960494	WASHER, 1/4" W x 13/32" ID x 1 1/4" OD (PL)	16
19	961888	WINCH (FULTON - K1550)	1
20	966314	HYDRAULIC HOSE HOLDER	1
21	967458	ADMA PTO SAFETY MANUAL	1
22*	F1931	INPUT BOX ASSEMBLY	1
23	FK325	MANUAL, 13" BACKSAVER AUGER	1

\*For assembly parts breakdown, see the following pages.

## BS13 INPUT BOX ASSEMBLY

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



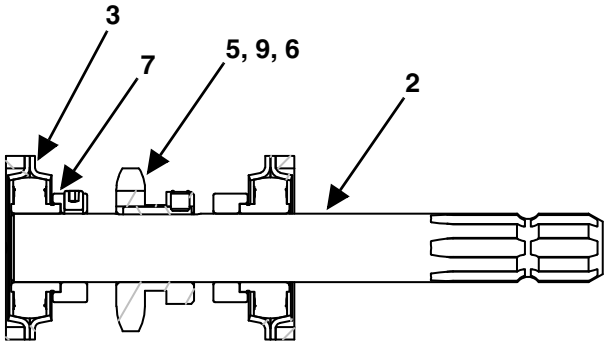
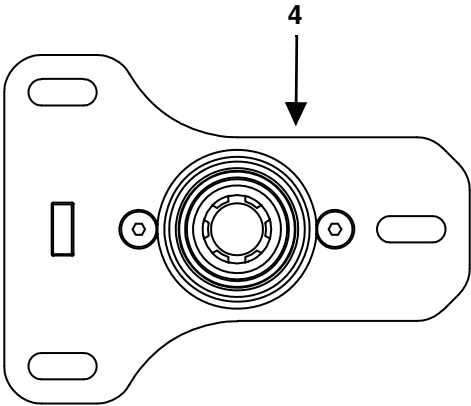
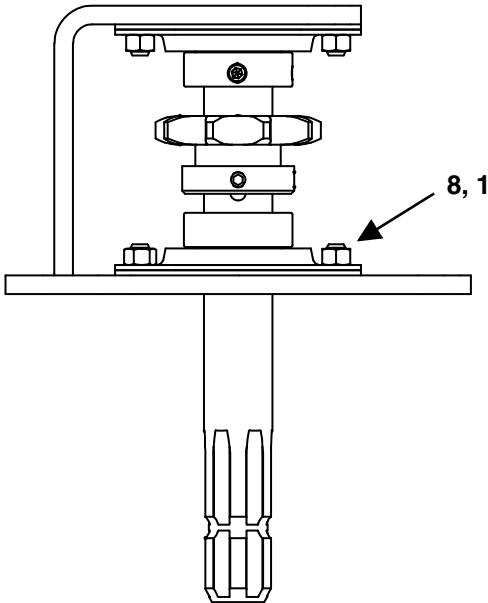
F1931

ITEM	PART NUMBER	DESCRIPTION	QTY
1	811790	BOLT, 3/4"x 4-1/2" HEX GR5 (PL)	1
2	812362	LOCK NUT, 5/16" (PL)	2
3	812363	LOCK NUT, 3/8" (PL)	2
4	812364	LOCK NUT, 1/2" (PL)	10
5	812365	LOCK NUT, 3/4" (PL)	1
6	81570	FLAT WASHER, 3/8" STD (PL)	2
7	81592	NUT, 3/8" HEX (PL)	2
8	81620	BOLT, 1/2" x 1-1/4" HEX (PL)	10
9	81676	NUT, 5/8" HEX (PL)	1
10	84048	FLAT WASHER, 1/2" SAE (PL)	3
11	84277	BOLT, 1/2" x 1-1/2" HEX (PL)	11
12	86170	BOLT, 3/8" x 1" HEX GR5 (PL)	6
13	904578	SYNTHETIC GEAR OIL, SAE 75W-90	0.7 L
14	909703	PTO HOLDER CHAIN ASSEMBLY	1
15	910025	BOLT, 1/2" x 4" GR8 HEX (PL)	3
16	910989	ROLLER CHAIN, 80H x 36 PITCHES	1
17	911111	PTO HOLDER ARM WELDMENT	1
18	911161	KEY, 3/8" SQ. x 58 mm	1
19	911395	HITCH WELDMENT, (54" LG TUBE)	1
20	911943	THUMB SCREW, 3/8" x 3/4" (PL)	2
21	917446	GEARBOX ACCESS COVER	1
22	917447	TOP ACCESS COVER	1
23	917483	BOLT, 0.313 NC x 1.00" FL GR5 PL	20
24	87553	BOLT, 1/2" UNC x 1.75" GR5 (PL)	4
25	918743	INPUT BOX FLIGHTING WELDMENT	1
26	918913	SHAFT SPACER TUBE, M1000	1
27	918955	BS13 INPUT BOX WELDMENT	1
28	919354	COUPLING ASSEMBLY, H5018	1
29	919368	BEARING FLANGE, 2 BOLT (PL)	4
30	919377	BEARING MOUNT BRACKET	1
31*	919378	IDLER ASSEMBLY	1
32	919387	TOP CHAIN DRIVE SHAFT	1
33	919389	FLIGHTING CHAIN DRIVE SHAFT	1
34	919390	PTO SHIELD WELDMENT	1
35	919396	LOWER CHAIN GUARD BRACKET	1
36	919474	LOWER GEARBOX, 4168 - 68 DEG	1
37	960180	U-JOINT & SPROCKET KEY, 0.313" SQ. x 1.375"	1
38	960719	SPROCKET, H80B15 (1.5" BORE)	1
39	961041	SPROCKET, H80B15 (1.375" BORE)	1
40	965917	BEARING, 1-3/8"	2
41	968632	DUCTILE W / BEARING, 1-1/2" x 4-BOLT HSG	2
42	968898	SQ HEAD SET SCREW, 5/8" x 4.00" (BR)	1
43	988999	SET SCREW, 3/8" x 3/8" SOCKET (BR)	4

\*For assembly parts breakdown, see the following pages.

IDLER ASSEMBLY

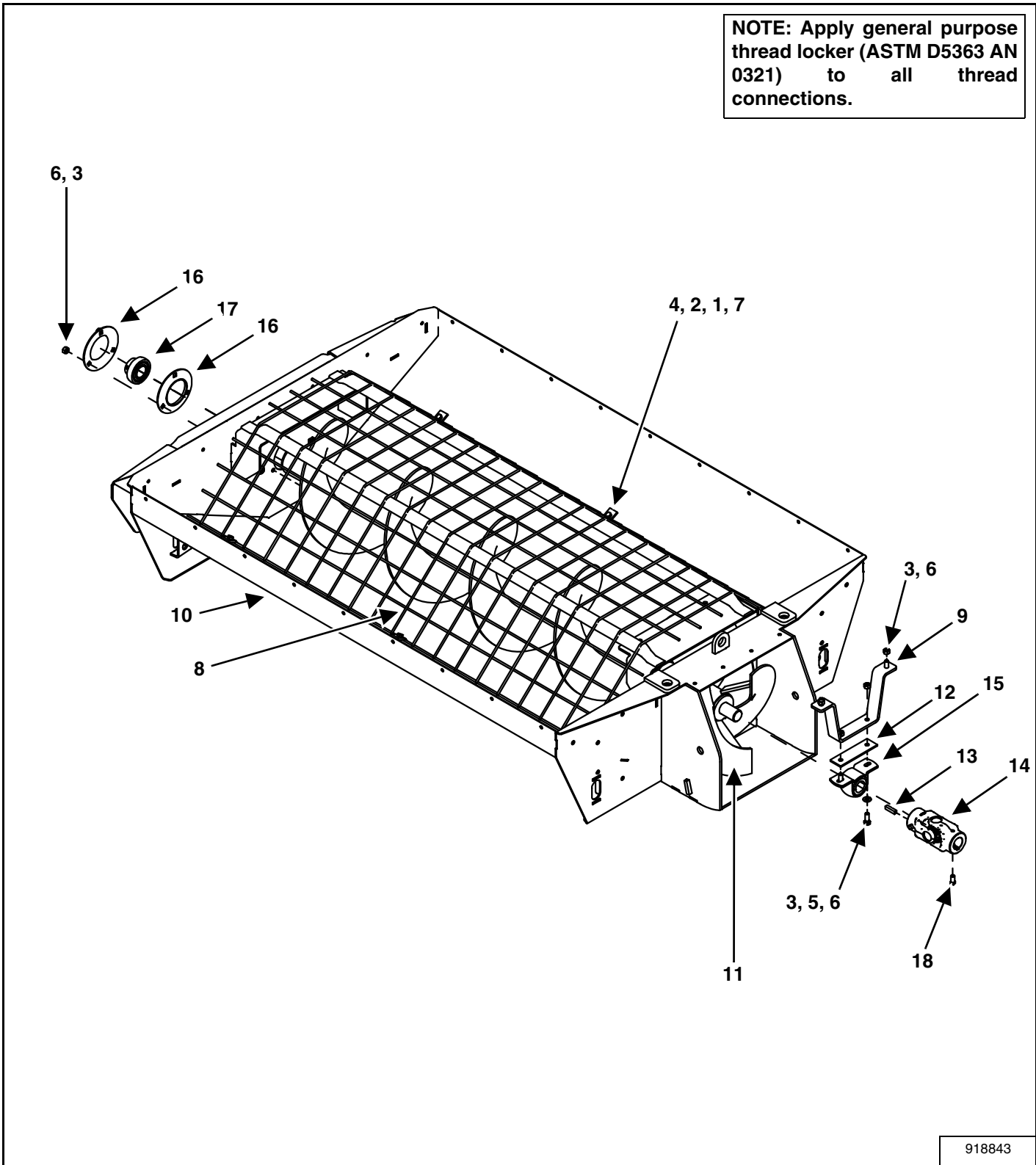
NOTE: Apply general purpose thread locker (ASTM D5363 AN 0321) to all thread connections.



ITEM	PART NUMBER	DESCRIPTION	QTY
1	812363	3/8" LOCK NUT (PL)	4
2	919363	SHAFT, REVERSE PTO	1
3	919368	BEARING FLANGE, 2-BOLT (PL)	4
4	919379	WELDMENT, IDLER	1
5	919438	H80B9 SPROCKET (1.375 BORE)	1
6	960180	U-JOINT & SPROCKET KEY 0.313" SQ. x 1.375"	1
7	965917	1-3/8" BEARING	2
8	967431	FLAT HEAD SOCKET CAP SCREW 0.375" x 1.00"	4
9	988999	3/8" x 3/8" SOCKET SET SCREW (BR)	2

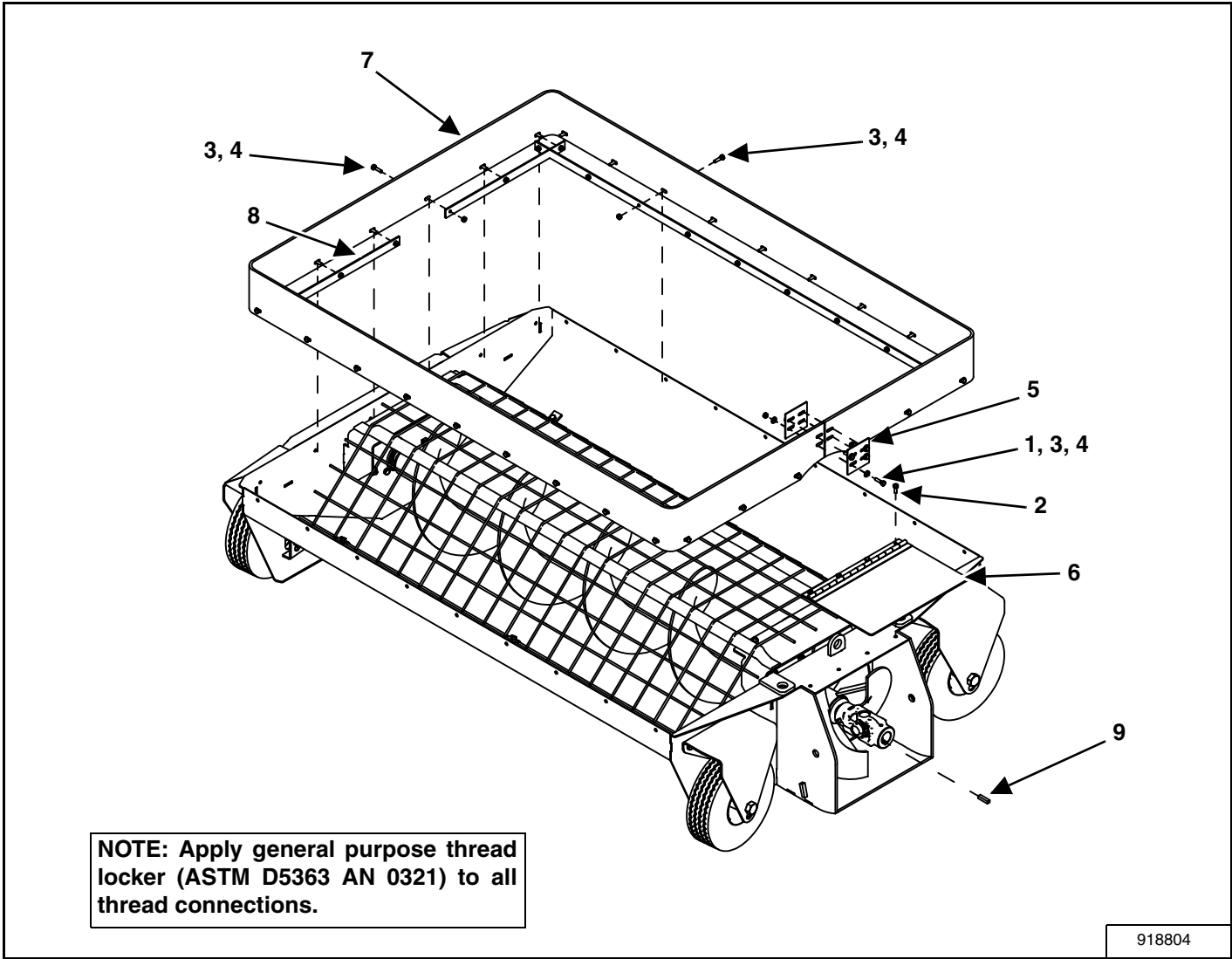


SINGLE FLIGHTING HOPPER



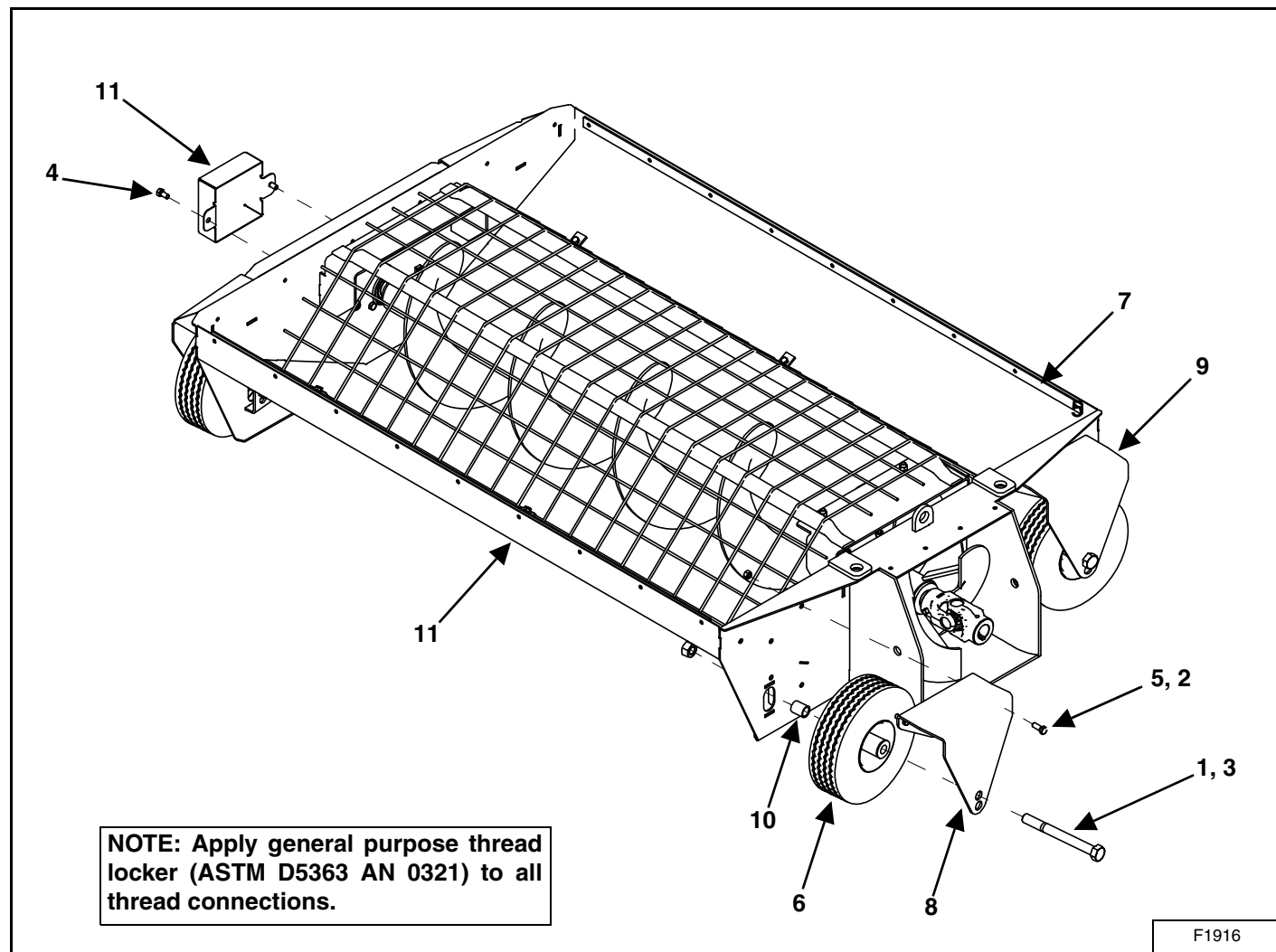
ITEM	PART NUMBER	DESCRIPTION	QTY
1	812026	BOLT, 5/16" x 1" HEX (PL)	6
2	812362	LOCK NUT, 5/16" (PL)	6
3	812363	LOCK NUT, 3/8" (PL)	7
4	81546	FLAT WASHER, 5/16" (PL)	6
5	84039	FLAT WASHER, 3/8" (PL)	2
6	86170	BOLT, 3/8" x 1" HEX GR 5 (PL)	7
7	910898	CAGE MOUNTING PLATE	6
8	911040	HOPPER FLIGHTING GUARD	1
9	917573	BEARING MOUNT BRACKET	1
10	918844	BS13 SINGLE FLIGHTING HOPPER WELDMENT	1
11	918901	SINGLE HOPPER FLIGHTING WELDMENT	1
12	919433L	PLATE-BEARING SPACER	1
13	960180	U-JOINT & SPROCKET KEY 0.313" SQ. x 1.375"	1
14	960547	UNIVERSAL JOINT - 12E	1
15	960658	WOODEN BEARING (1-1/4")	1
16	961675	BEARING FLANGE 72MS	2
17	961676	BEARING, 1-1/4" AEL207-104 (RHP #1230)	1
18	9812378	SET SCREW, 3/8" x 3/4" SQ HD SER	4

SINGLE FLIGHTING HOPPER



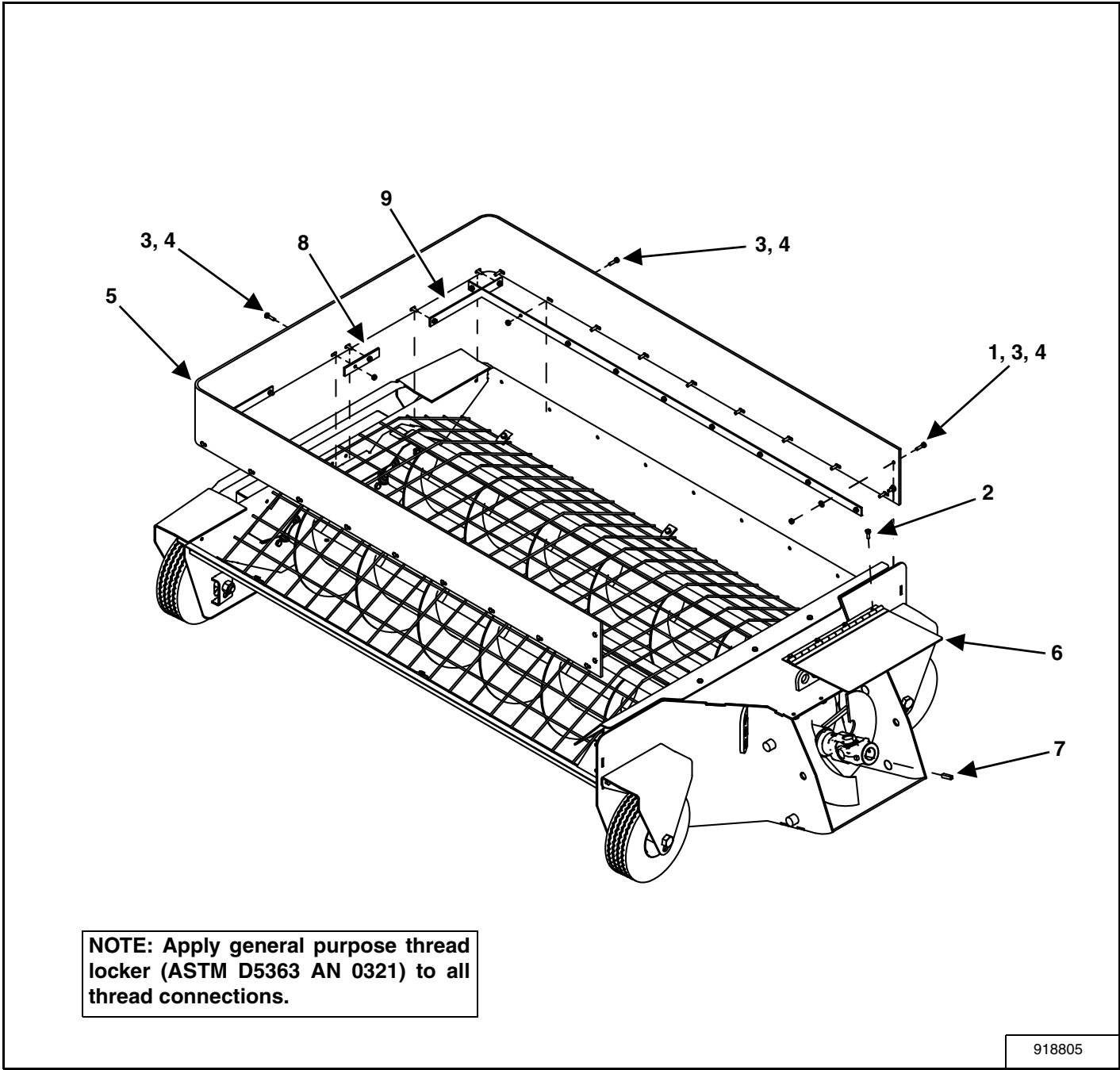
ITEM	PART NUMBER	DESCRIPTION	QTY
1	812624	FLAT WASHER, 1/4" (PL)	8
2	81525	BOLT, 1/4" x 3/4" HEX (PL)	4
3	81527	BOLT, 1/4" x 1" HEX (PL)	34
4	84498	LOCK NUT, 1/4" (PL)	34
5	903483L	RUBBER CONN PL 14GA x 3" SQ.	2
6	918850	INTAKE ACCESS, WELDMENT	1
7	918911	RUBBER-HOPPER SKIRT	1
8	918912L	PLATE, RUBBER REINFORCEMENT	4
9	960180	U-JOINT & SPROCKET KEY 0.313" SQ. x 1.375"	1

## SINGLE FLIGHTING HOPPER



ITEM	PART NUMBER	DESCRIPTION	QTY
1	811746	BOLT, 3/4" x 7.5" HEX	4
2	812363	LOCK NUT, 3/8" (PL)	6
3	812365	LOCK NUT, 3/4" (PL)	4
4	84072	BOLT, 3/8" x 3/4" HEX (PL)	2
5	86170	BOLT, 3/8" x 1" HEX GR.5 (PL)	6
6	909670	4.10-4/2.25 FOAM FILLED WHEEL	4
7	914768L	RUBBER REINFORCEMENT	2
8	917536	BRKT-WHEEL MOUNT LH	1
9	917537	BRKT-WHEEL MOUNT RH	1
10	917546	TUBE-WHEEL SPACER 1.000" DIA	4
11	919470	GUARD, HOPPER BEARING	1

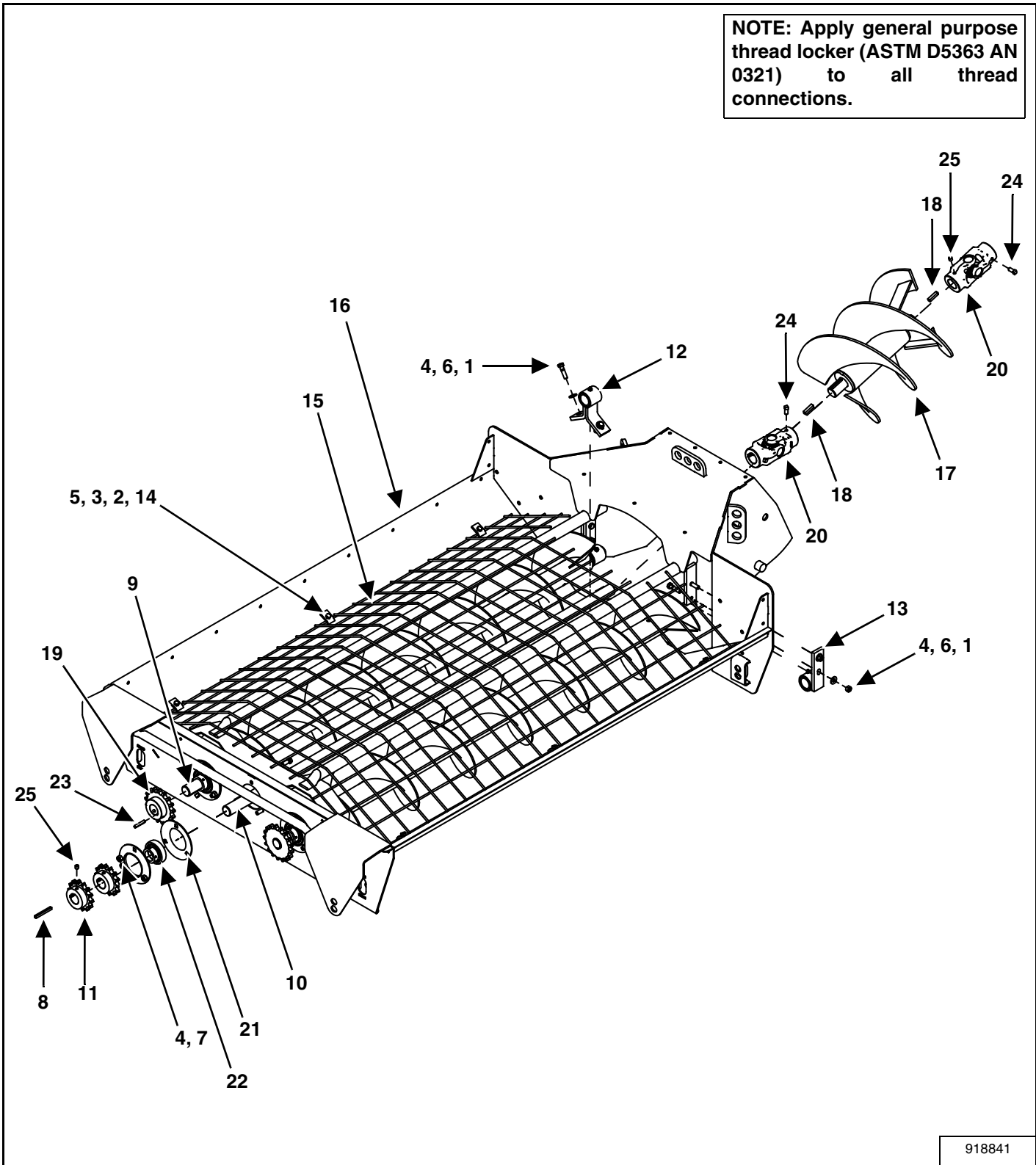
MULTI FLIGHTING HOPPER



ITEM	PART NUMBER	DESCRIPTION	QTY
1	812624	FLAT WASHER, 1/4" (PL)	4
2	81525	BOLT, 1/4" x 3/4" HEX (PL)	4
3	81527	BOLT, 1/4" x 1" HEX (PL)	28
4	84498	LOCK NUT, 1/4" (PL)	28
5	911359	RUBBER HOPPER EDGING	1
6	918850	INTAKE ACCESS, WELDTMENT	1
7	960180	U-JOINT & SPROCKET KEY 0.313' SQ. x 1.375"	1
8	960834	RUBBER REINF 3/16" x 1" x 5"	1
9	960837	BACK RUBBER REINF 10 GA x 1 x 10 1/2"	2

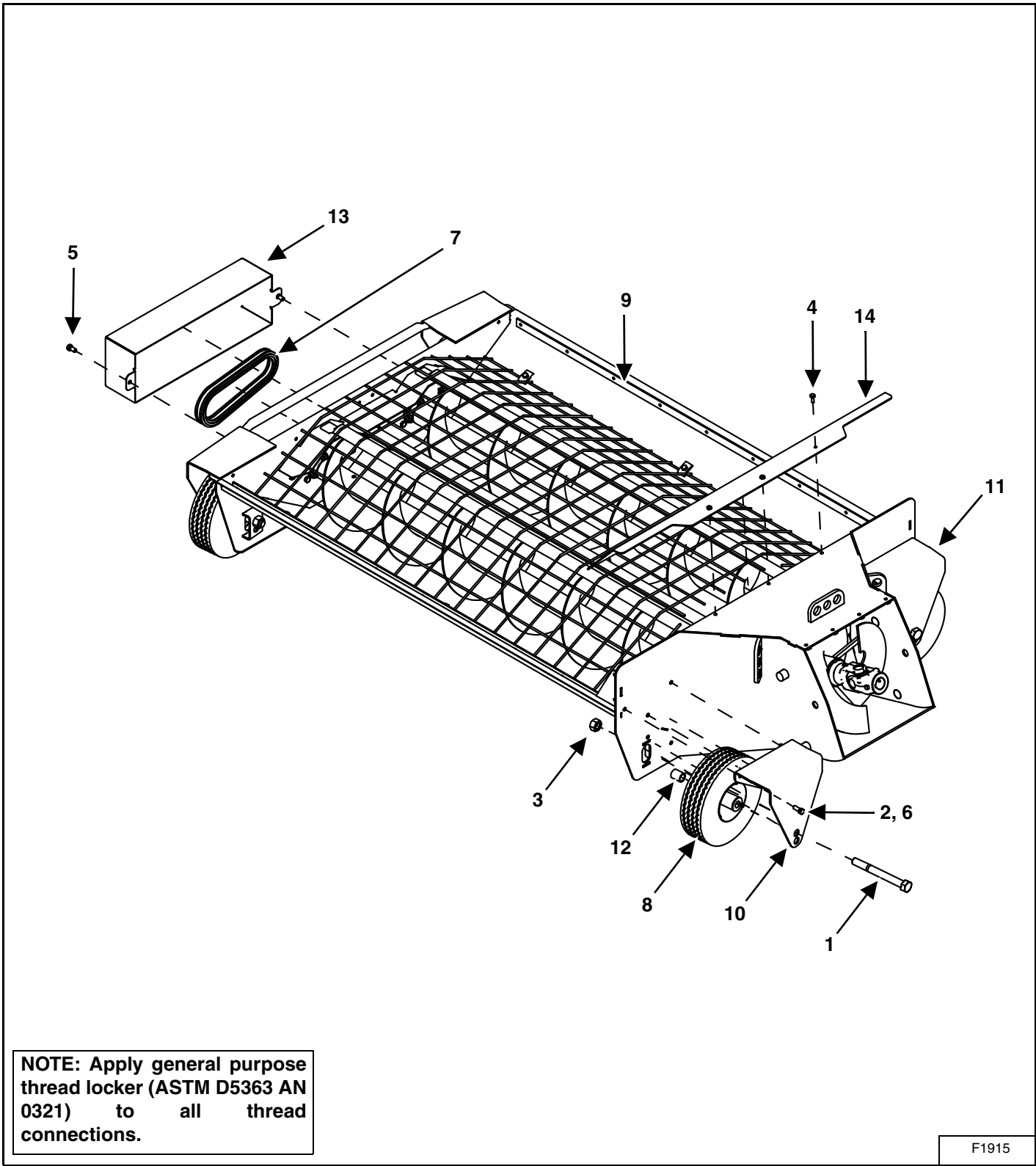


MULTI-FLIGHTING HOPPER ASSEMBLY



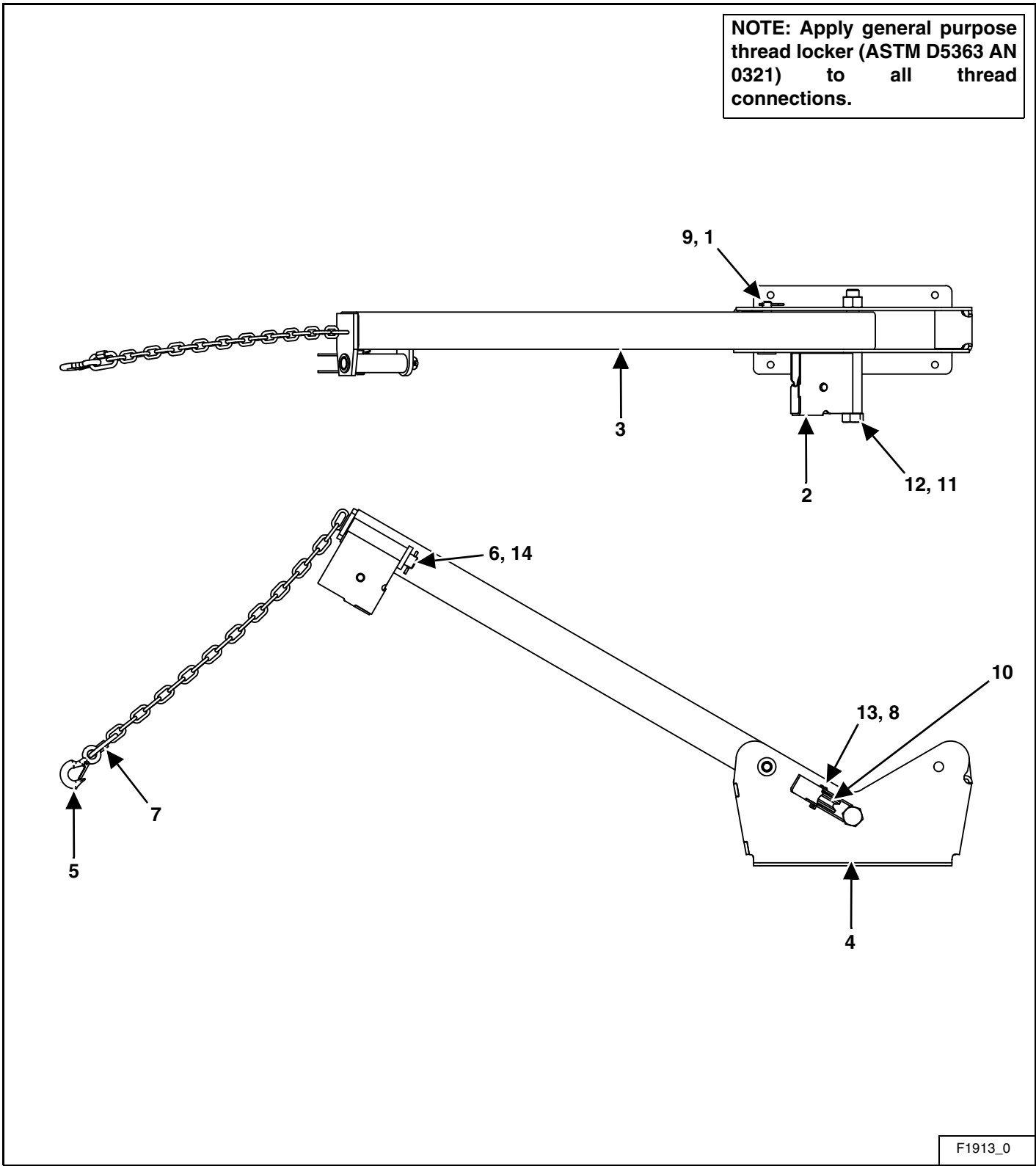
ITEM	PART NUMBER	DESCRIPTION	QTY
1	811792	BOLT, 3/8" x 1-1/2" HEX BOLT GR 5 (PL)	6
2	812026	BOLT, 5/16" x 1" HEX (PL)	6
3	812362	LOCK NUT, 5/16" (PL)	6
4	812363	LOCK NUT, 3/8" (PL)	15
5	81546	FLAT WASHER, 5/16" (PL)	6
6	81570	FLAT WASHER, 3/8" STANDARD (PL)	8
7	86170	BOLT, 3/8" x 1" HEX GR 5 (PL)	9
8	905369	INSIDE SPROCKET KEY 1/4" x 1/4" x 2 1/2"	1
9	905419	OUTSIDE FLIGHTING WELDMENT, (59" TUBE)	2
10	905434	CENTER FLIGHTING ROD	1
11	905562	SPROCKET, H60B14 (1-1/4" BORE)	2
12	905834	CENTER SHAFT HOLDER	1
13	905844	OUTSIDE FLIGHTING HOLDER	2
14	910898	CAGE MOUNTING PLATE	6
15	910912	INTAKE FLIGHTING GUARD	1
16	918842	MULTI-FLIGHTING HOPPER WELDMENT, BS13	1
17	918924	FLIGHTING PIVOT WELDMENT	1
18	960180	U-JOINT & SPROCKET KEY 0.313" SQ x 1.375"	3
19	960492	SPROCKET, H60B17 (1-1/4" BORE)	2
20	960547	UNIVERSAL JOINT, 12E	2
21	961675	BEARING FLANGE, 72MS	6
22	961676	BEARING, 1-1/4" AEL207-104 (RHP #1230)	3
23	963026	KEY, 1/4" SQ x 1-1/2"	2
24	9812378	SET SCREW, 3/8" x 3/4" SQ HD SER	6
25	988999	SET SCREW, 3/8" x 3/8" SOCKET (BR)	10

MULTI-FLIGHTING HOPPER ASSEMBLY



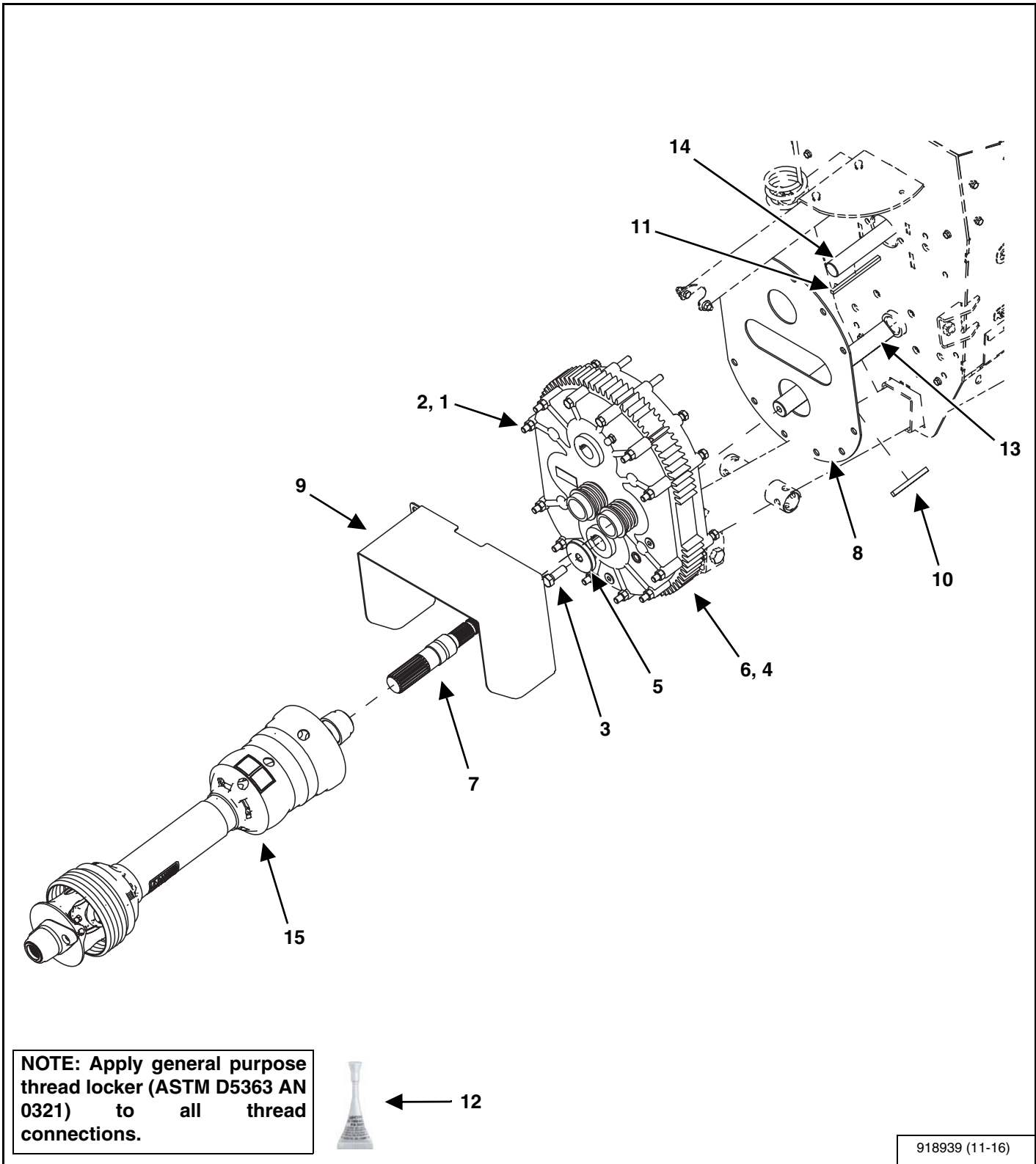
ITEM	PART NUMBER	DESCRIPTION	QTY
1	811746	BOLT, 3/4" x 7" HEX (PL)	4
2	812363	LOCK NUT, 3/8" (PL)	6
3	812365	LOCK NUT, 3/4" (PL)	4
4	81525	BOLT, 1/4" x 3/4" HEX (PL)	3
5	84072	BOLT, 3/8" x 3/4" HEX (PL)	2
6	86170	BOLT, 3/8" x 1" HEX GR 5 (PL)	6
7	906558	CHAIN ASSEMBLY, #60 x 35 PITCHES INCL. CONN	2
8	909670	WHEEL, 4.10-4 / 2.25 FOAM FILLED	4
9	914768L	RUBBER REINFORCEMENT	2
10	917536	LH WHEEL MOUNT BRACKET	1
11	917537	RH WHEEL MOUNT BRACKET	1
12	917546	TUBE-WHEEL SPACER 1.000" DIA	4
13	917607	GUARD-HOPPER CHAIN	1
14	918875	HOPPER ACCESS BRACKET	1

BS13 LIFT BOOM ASSEMBLY



ITEM	PART NUMBER	DESCRIPTION	QTY
1	905821	PIN WELDMENT, 0.750" DIA	1
2	914619	PULLEY HOLDER WELDMENT	2
3	918822	BOOM ARM WELDMENT	1
4	918823	HOPPER LIFT ARM MOUNT WELDMENT	1
5	960041	HOOK WITH LATCH	1
6	960111	CYLINDER PIN WELDMENT, 1.000" DIA	1
7	960167	QUICK LINK (PL)	1
8	960913	CLEVIS PIN, 1/2" x 1-13/16" (PL)	2
9	961012	HAIR PIN CLIP, #16	1
10	961846	CABLE PULLEY, 1/2" ID x 3 1/2" OD x 1-1/8"	2
11	967148	LOCK NUT, 1" (PL)	1
12	967233	BOLT, 1" x 10" HEX (PL)	1
13	9812430	COTTER PIN, 1/8" x 1" (PL)	2
14	9812433	COTTER PIN, 3/16" x 1-1/2"	1

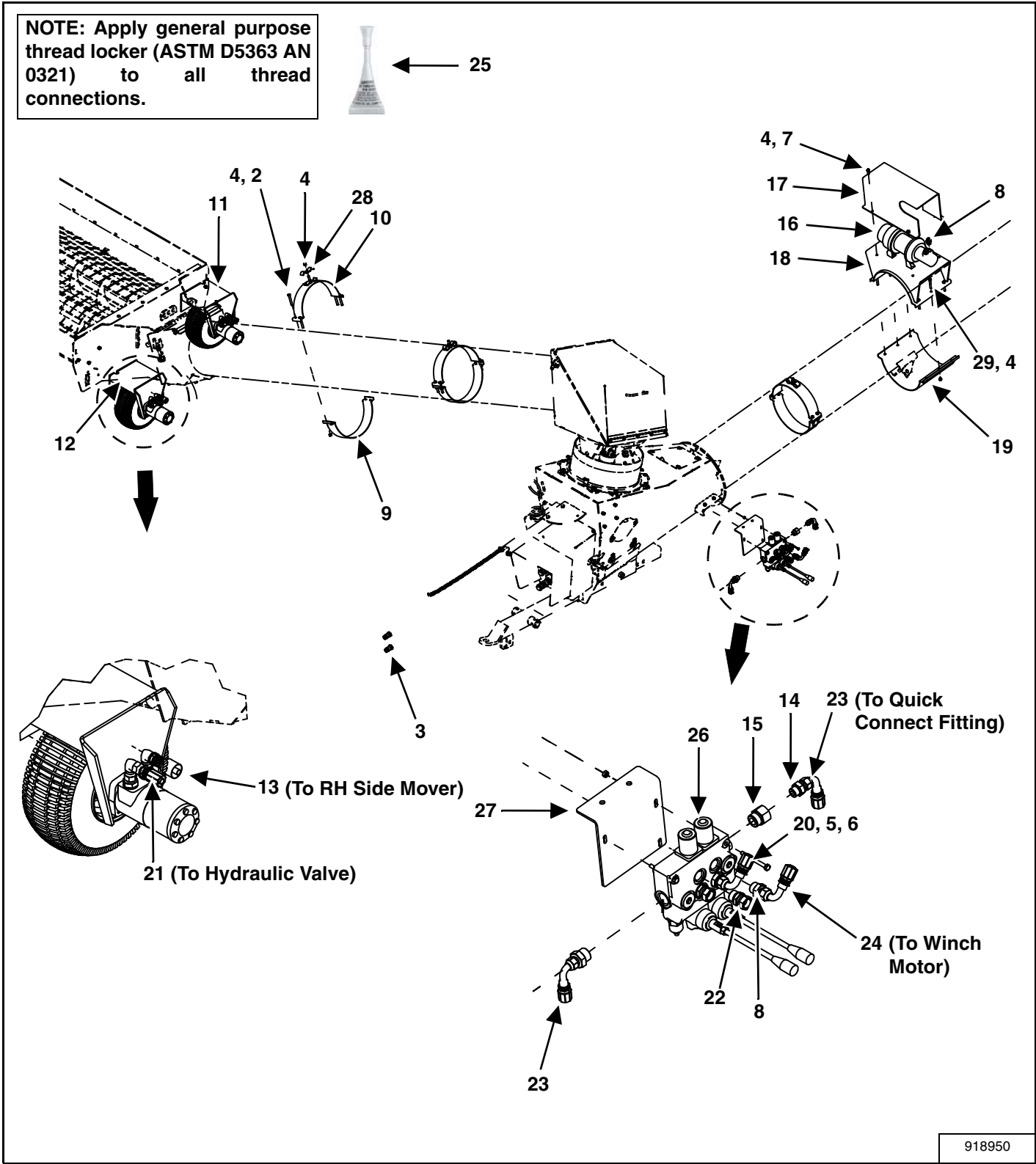
M1000 GEARBOX (OPTION)





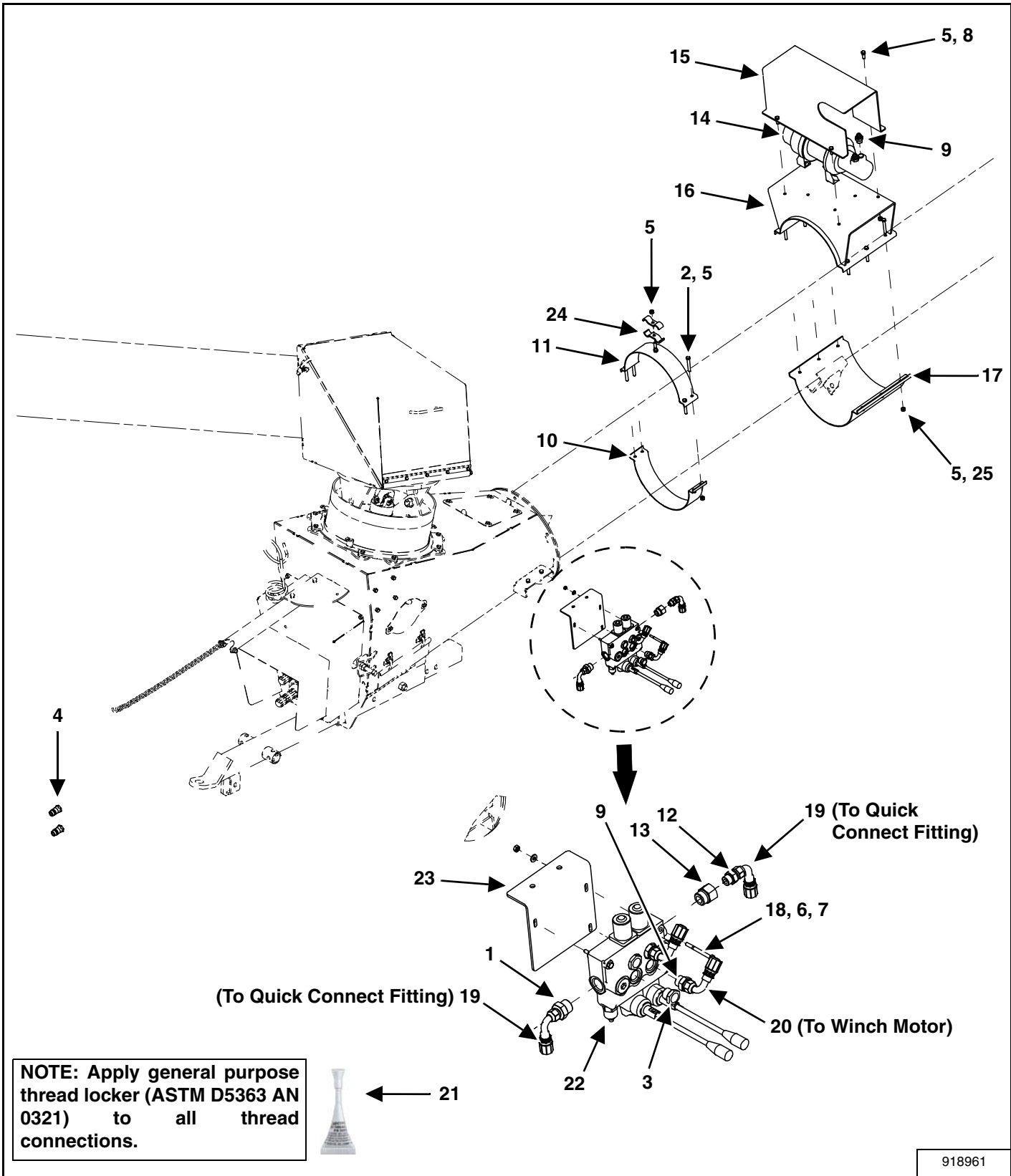
ITEM	PART NUMBER	DESCRIPTION	QTY
1	811829	BOLT, 1/2" x 7" HEX (PL)	12
2	812364	LOCK NUT, 1/2" (PL)	10
3	84270	5/8" X 1-3/4" HEX BOLT (PL)	1
4	904578	GEAR OIL, SAE 75W-90 SYNTHETIC	2.5L
5	906073	WASHER, INPUT BOX SHAFT 21/32" ID x 3" OD x 1/2"	1
6	910927	GEARBOX, M1000 HELICAL	1
7	910947	M1000 SPLINE STUB SHAFT	1
8	911001	HELICAL GEARBOX PLATE	1
9	911083	M1000 HELICAL GEARBOX GUARD	1
10	911130	KEY, 3/8" SQ x 100 mm	1
11	911163	KEY, 5/16" SQ x 140 mm	1
12	912830	LOCTITE, 242 BLUE 0.02 OZ (0.5 ml)	1
13	918820	BAR, M1000 SHAFT	1
14	919359	SHAFT, M1000 GEARBOX	1
15	F1089	PTO SHAFT	1

BS13 HYDRAULIC MOVER AND WINCH (OPTION)



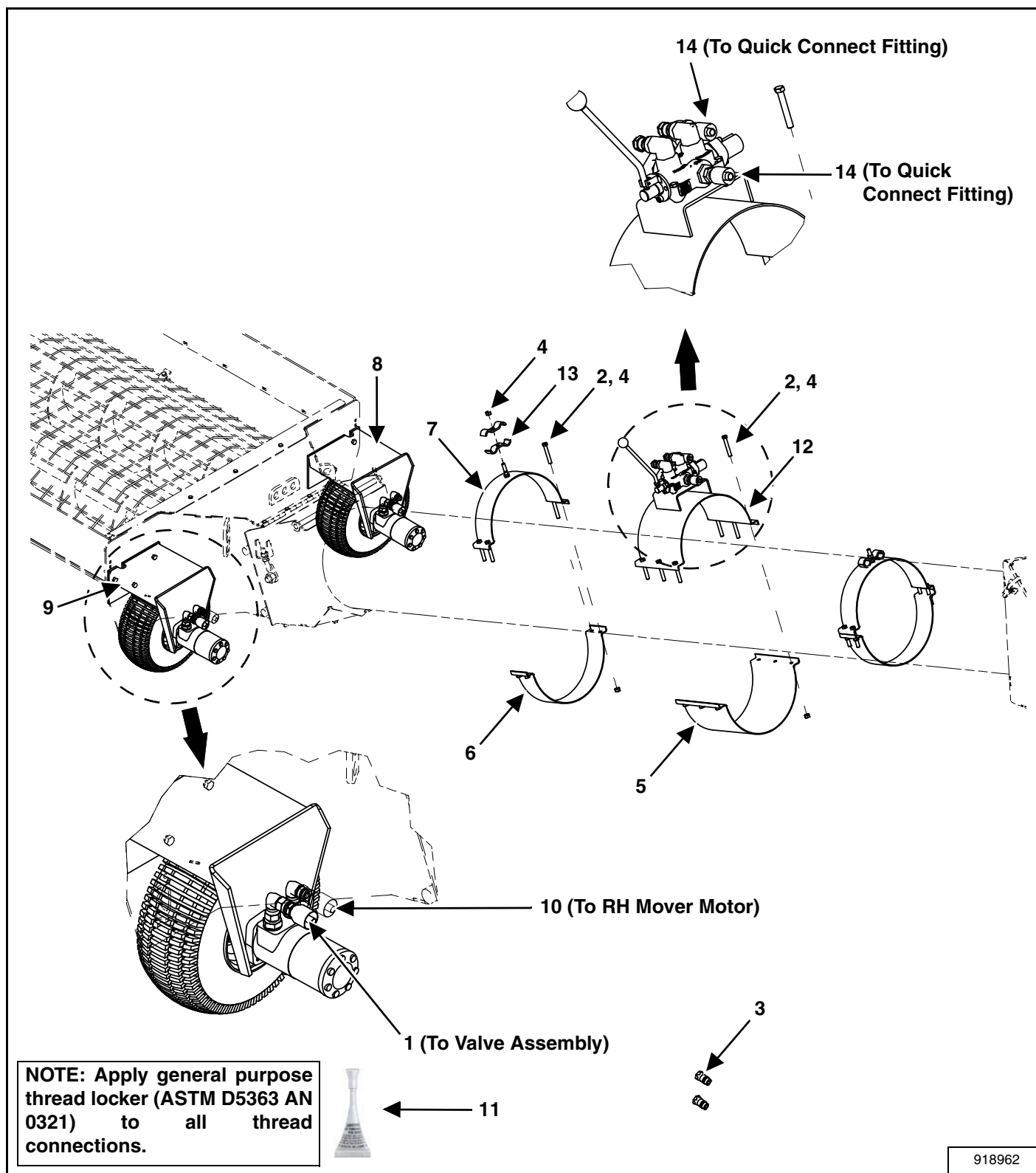
ITEM	PART NUMBER	DESCRIPTION	QTY
1	811748	ADAPTOR, #12 MORB x #8 MJIC	1
2	811792	BOLT, 3/8" x 1 1/2" HEX GR.5 (PL)	12
3	812208	NIPPLE, 1/2" BODY 1/2"-14 NPTF QUICK CONNECT	2
4	812363	LOCK NUT, 3/8" (PL)	25
5	812624	FLAT WASHER, 1/4" PL	3
6	84498	LOCK NUT, 1/4" (PL)	3
7	86170	BOLT, 3/8" x 1" HEX GR 5 (PL)	4
8	886897	ADAPTOR, 7/8" MORB x 3/4" MJIC S STR	4
9	902207	2-BOLT CLAMP, 12GA	3
10	902208	2-BOLT CLAMP, WELDMENT	3
11	905161	LEFT WHEEL BRACKET ASSEMBLY	1
12	905162	RIGHT WHEEL BRACKET ASSEMBLY	1
13	906087	HOSE, #8 x #8 SWFJIC x #8 SWFJIC	1
14	909935	ADAPTOR CHECK VALVE, (#8 MORB - #8 MJIC)	1
15	909936	ADAPTOR, #12 MORB x #8 FORB	1
16	910483	WARN HYDRAULIC WINCH	1
17	910490	HYDRAULIC WINCH SHIELD, 7GA	1
18	910492	HYDRAULIC WINCH MOUNT WELDMENT	1
19	910496	HYDRAULIC WINCH MOUNT 3-BOLT CLAMP, 10 GA	1
20	910523	BOLT, 1/4" x 2-3/4" HEX (PL)	3
21	910926	HOSE, #8 x #8 SWMNPT x #8 SWFJIC	2
22	911947	ADAPTOR #10 MORB X #8 SWFNPT	2
23	912250	HYDRAULIC HOSE, 1/2" x 140"	2
24	912251	HYDRAULIC HOSE, 1/2" x 112"	2
25	912830	LOCTITE, 242 BLUE 0.02 OZ (0.5 ml)	1
26	917223	VALVE ASSEMBLY, W/HANDLEVERS	1
27	918958	HYDRAULIC VALVE MOUNT BRACKET	1
28	964638	HOSE HOLDER CLAMP 3/16"	6
29	967488	BOLT, 3/8" x 2-3/4" HEX (PL)	6

BS13 HYDRAULIC WINCH (OPTION)



ITEM	PART NUMBER	DESCRIPTION	QTY
1	811748	ADAPTOR, #12 MORB x #8 MJIC	1
2	811792	BOLT, 3/8" x 1 1/2" HEX GR.5 (PL)	4
3	811970	PLUG, #10 (7/8") MORB STEEL	2
4	812208	NIPPLE, 1/2" BODY 1/2"-14 NPTF QUICK CONNECT	2
5	812363	LOCK NUT, 3/8" (PL)	15
6	812624	FLAT WASHER, 1/4" (PL)	3
7	84498	LOCK NUT, 1/4" (PL)	3
8	86170	BOLT, 3/8" x 1" HEX GR 5 (PL)	4
9	886897	ADAPTOR, STRAIGHT 7/8" MORB x 3/4" MJIC S	4
10	902207	2-BOLT CLAMP, 12 GA	1
11	902208	2-BOLT CLAMP, WELDMENT	1
12	909935	ADAPTOR CHECK VALVE, (#8 MORB - #8 MJIC)	1
13	909936	ADAPTER, #12MORB x #8FORB	1
14	910483	WARN HYDRAULIC WINCH	1
15	910490	HYDRAULIC WINCH SHIELD 7 GA	1
16	910492	HYDRAULIC WINCH MOUNT WELDMENT	1
17	910496	HYDRAULIC WINCH MOUNT, 3-BOLT CLAMP 10 GA	1
18	910523	BOLT, 1/4" x 2-3/4" HEX (PL)	3
19	912250	HYDRAULIC HOSE, 1/2" x 140"	2
20	912251	HYDRAULIC HOSE, 1/2" x 112"	2
21	912830	LOCTITE, 242 BLUE 0.02 OZ (0.5 ml)	1
22	917223	VALVE W / HAND LEVERS ASSEMBLY	1
23	918958	HYDRAULIC VALVE MOUNT BRACKET	1
24	964638	HOSE HOLDER CLAMP, 3/16"	2
25	967488	BOLT, 3/8" x 3/4" HEX (PL)	6

### BS13 HYDRAULIC MOVER (OPTION)

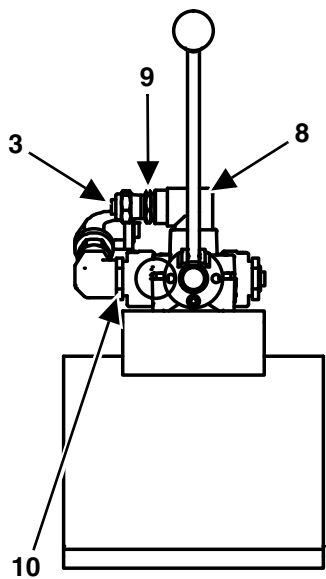
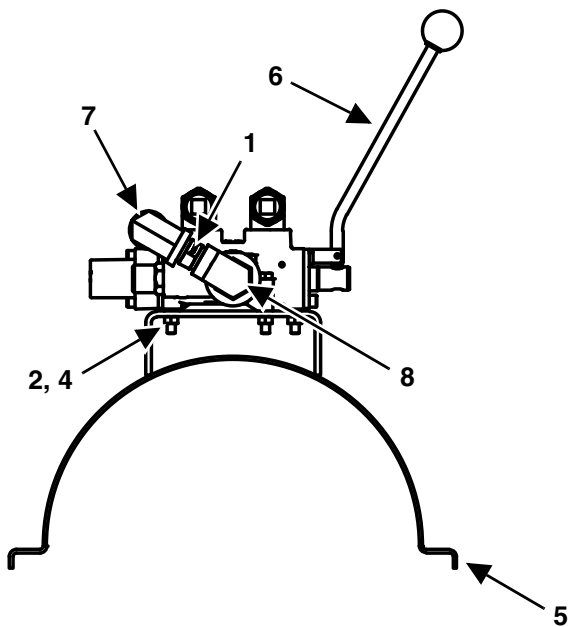
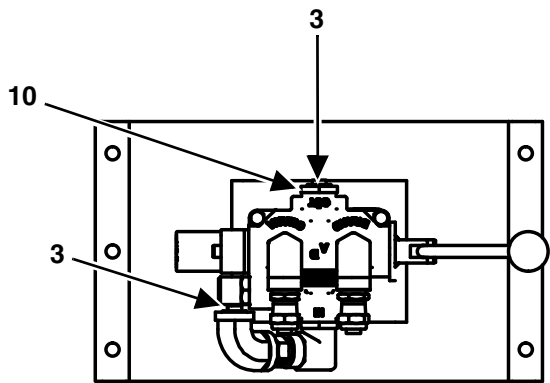


ITEM	PART NUMBER	DESCRIPTION	QTY
1	811484	HOSE, #8 x #8 MNPT x #8 SWFJIC	2
2	811792	BOLT, 3/8" x 1 1/2" HEX GR.5 (PL)	14
3	812208	NIPPLE, 1/2" BODY 1/2"-14 NPTF QUICK CONNECT	2
4	812363	LOCK NUT, 3/8" (PL)	16
5	902200	3-BOLT CLAMP, 12 GA	1
6	902207	2-BOLT CLAMP, 12 GA	2
7	902208	2-BOLT CLAMP WELDMENT	2
8	905161	LH WHEEL BRACKET ASSEMBLY	1
9	905162	RH WHEEL BRACKET ASSEMBLY	1
10	906087	HOSE, #8 x #8 SWFJIC x #8 SWFJIC	1
11	912830	LOCTITE, 242 BLUE 0.02 OZ (0.5 ml)	1
12	919463	HYDRAULIC MOVER VALVE ASSEMBLY	1
13	964638	HOSE HOLDER CLAMP, 3/16"	4
14	967478	HOSE, #8 x #8 MNPT x #8 MNPT	2



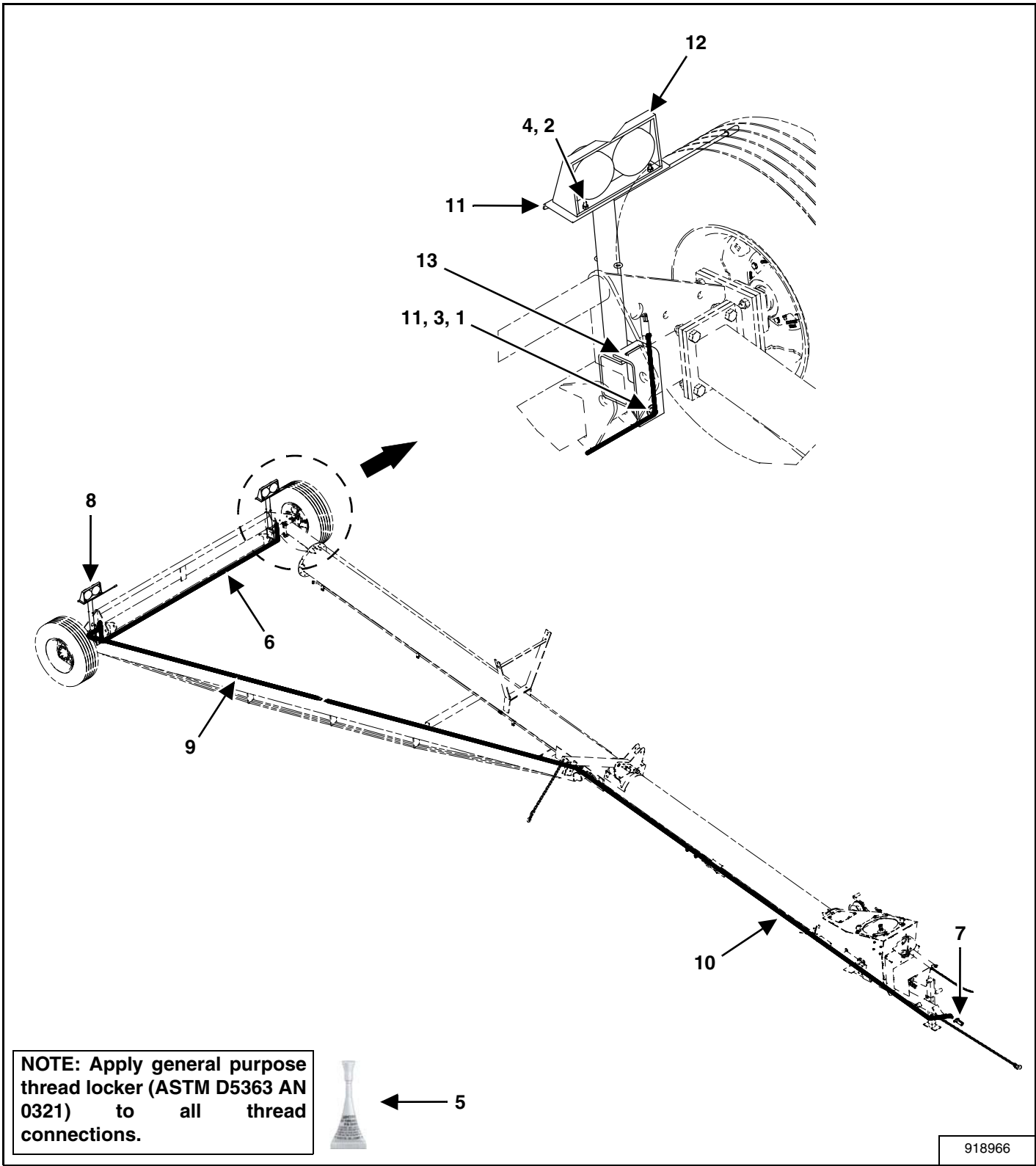
HYDRAULIC MOVER VALVE ASSEMBLY

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



ITEM	PART NUMBER	DESCRIPTION	QTY
1	811469	STRAIGHT ADAPTOR, #8 MNPT x #8 MNPT	1
2	81530	BOLT, 1/4" x 1-3/4" HEX GR 5 (PL)	3
3	81913	CAP PLUG, 1/2" NPT	4
4	84498	LOCK NUT, 1/4" (PL)	3
5	902204	VALVE MOUNT CLAMP WELDMENT	1
6	908995	4 WAY DIRECTIONAL CONTROL VALVE (AO)	1
7	914930	ELBOW, #8 FPT x #8 FPT	1
8	960585	90 DEGREE STREET ELBOW, 1/2" (STEEL)	3
9	966307	ADAPTOR, 1/2" MNPT x 1/2" FNPT - 0.0520R	2
10	967158	REDUCER BUSHING, 3/4" x 1/2" NPT	2

BS SAFETY LIGHT KIT (OPTION)



ITEM	PART NUMBER	DESCRIPTION	QTY
1	812363	LOCK NUT, 3/8" (PL)	2
2	81527	BOLT, 1/4" x 1" HEX (PL)	8
3	84000	FLAT WASHER, 7/16" (PL)	2
4	84498	LOCK NUT, 1/4" (PL)	8
5	912830	LOCTITE, 242 BLUE 0.02 OZ (0.5 ml)	1
6	919052	WIRE HARNESS, AG ECONOMY EXT, 10'	1
7	919053	WIRING ADAPTER, 7 POLE ROUND TO 4 WIRE FLAT	1
8	967054	TAIL LIGHT, AG3WIRE R #2601	1
9	967056	WIRE-WISHBONE HARNESS, W/ PROTECTIVE COVERING, 10'	1
10	967057	WIRE HARNESS, LIGHT KIT 4 PIN - 4 PIN 35'	1
11	967063	LIGHT BRACKET WELDMENT	2
12	967067	TAIL LIGHT, AG3WIRE L #2600	1
13	967072	BOTTOM BRACKET CLIP	2
---	967103	TIE, 30" (Not Available)	10

# Farm King



## SHIPPING KIT AND BUNDLE NUMBERS

SHIPPING KIT AND BUNDLE NUMBERS .....	193
Y1370TMR 13" x 70' Backsaver Auger W/Single Flighting Hopper .....	193
Y1370TMMR 13" x 70' Backsaver Auger W/Multi-Flighting Hopper .....	193
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# Farm King





**SHIPPING KIT AND BUNDLE NUMBERS**

The following is a list of Kit Numbers for this product and the Bundle Numbers, Descriptions, and Quantities for each Kit.

**Y1370TMR 13" x 70' Backsaver Auger W/Single Flighting Hopper**

QTY	BUNDLE NUMBER	DESCRIPTION
2	F0210	WHEEL 15" x 6" x 6 BOLT
1	F1771	LOWER LIFT ARM - LH
1	F1772	LOWER LIFT ARM - RH
1	F1911	ASSY-BS13 INTAKE AUGER
1	F1916	ASSY-SINGLE FLTG HOPPER
1	F1917	ASSY-BS1370 BOTTOM TUBE
1	F1918	ASSY-BS1370 CENTER TUBE
1	F1919	ASSY-BS1370 TOP TUBE
1	F1925	WELDT-RH UNDERCARRIAGE ARM
1	F1926	WELDT-LH UNDERCARRIAGE ARM
1	F1931	ASSY-BS13 INPUT BOX
1	F1933	WELDT-BS1370 AXLE
1	F1936	1370 BS CRATE OF PARTS
1	F1938	BS13" SINGLE FLT HOPPER CARTON
1	F9707	UPPER LIFT 13" x 70'

**Y1370TMMR 13" x 70' Backsaver Auger W/Multi-Flighting Hopper**

QTY	BUNDLE NUMBER	DESCRIPTION
2	F0210	WHEEL 15" x 6" x 6 BOLT
1	F1771	LOWER LIFT ARM - LH
1	F1772	LOWER LIFT ARM - RH
1	F1911	ASSY-BS13 INTAKE AUGER
1	F1915	ASSY-MULTI FLTG HOPPER
1	F1917	ASSY-BS1370 BOTTOM TUBE
1	F1918	ASSY-BS1370 CENTER TUBE
1	F1919	ASSY-BS1370 TOP TUBE
1	F1925	WELDT-RH UNDERCARRIAGE ARM
1	F1926	WELDT-LH UNDERCARRIAGE ARM
1	F1931	ASSY-BS13 INPUT BOX
1	F1933	WELDT-BS1370 AXLE
1	F1936	1370 BS CRATE OF PARTS
1	F1939	BS13" MULTI FLTG HOPPER CARTON
1	F9707	UPPER LIFT 13" x 70'

**Y1385TMR 13" x 85' Backsaver Auger W/Single Flighting Hopper**

QTY	BUNDLE NUMBER	DESCRIPTION
2	F0211	WHEEL 15" x 8" x 6 BOLT
1	F1460	AXLE TUBE WELDMENT
1	F1480	RIGHT UNDERCARRIAGE ARM
1	F1481	LEFT UNDERCARRIAGE ARM
1	F1769	LOWER LIFT ARM -LH
1	F1770	LOWER LIFT ARM -RH
1	F1906	ASSY-BS1385 BOTTOM TUBE
1	F1907	ASSY-BS1385 CENTER TUBE
1	F1908	ASSY-BS1385 TOP TUBE
1	F1911	ASSY-BS13 INTAKE AUGER
1	F1916	ASSY-SINGLE FLTG HOPPER
1	F1931	ASSY-BS13 INPUT BOX
1	F1937	1385 BS CRATE OF PARTS
1	F1938	BS13" SINGLE FLT HOPPER
1	F1943	WELDT-UPPER LIFT ARM

**Y1385TMMR 13" x 85' Backsaver Auger W/Multi-Flighting Hopper**

QTY	BUNDLE NUMBER	DESCRIPTION
2	F0211	WHEEL 15" x 8" x 6 BOLT
1	F1460	AXLE TUBE WELDMENT
1	F1480	RIGHT UNDERCARRIAGE ARM
1	F1481	LEFT UNDERCARRIAGE ARM
1	F1769	LOWER LIFT ARM -LH
1	F1770	LOWER LIFT ARM -RH
1	F1906	ASSY-BS1385 BOTTOM TUBE
1	F1907	ASSY-BS1385 CENTER TUBE
1	F1908	ASSY-BS1385 TOP TUBE
1	F1911	ASSY-BS13 INTAKE AUGER
1	F1915	ASSY-MULTI FLTG HOPPER
1	F1931	ASSY-BS13 INPUT BOX
1	F1937	1385 BS CRATE OF PARTS
1	F1939	BS13" MULTI FLTG HOPPER CARTON
1	F1943	WELDT-UPPER LIFT ARM

**OPTIONAL BUNDLE NUMBERS**

The following is a list of options available for the Standard Kits.

**Options Available**

QTY	BUNDLE NUMBER	DESCRIPTION
1	F0014	REFLECTIVE SAFETY DECAL KIT
1	F0018	OPTION-SAFETY LIGHT KIT
1	F0923	CLEVIS HITCH
1	F0946	CLOSED CENTER HOPPER MOVER VALVE KIT
1	F1940	OPTION-M1000 GEARBOX
1	F3005	13" OVAL POLY SPOUT
1	Y141	EXTENSION 13" x 10' W/CABLES
1	Y210	SET OF 2 (F254) 11L x 8 PLY TIRES
1	Y1304	OPTION-BS13 HYDRAULIC MOVER
1	Y1308	13" BACKSAVER STEERING KIT
1	Y1311	13" ELECTRIC OVER HYDRAULIC REMOTE POWER HOPPER MOVER (NO WINCH)
1	Y1321	OPTION-BS13 HYDRAULIC WINCH
1	Y1331	OPTION-BS13 HYD MOVER AND WINCH
1	SZ000859	BS13" REMOTE CONTROL RETROFIT (RCR) (FOR AUGERS W/HYD MOVER)
1	SZ000916	BS13" REMOTE CONTROL RETROFIT (RCR) (FOR AUGERS W/HYD MOVER AND WINCH)
1	SZ000793	SPARE REMOTE CONTROL FOR RCR KIT-3 BUTTON
1	SZ000788	HARNESS PLUG FROM RCR KIT TO BATTERY POWER
1	SZ001013	ELECTRIC REMOTE HOPPER MOVER & REMOTE WINCH
1	SZ001002	SPARE REMOTE CONTROL (7 BUTTON)
1	SZ000998	SPARE TRACTOR POWER HARNESS

# Farm King

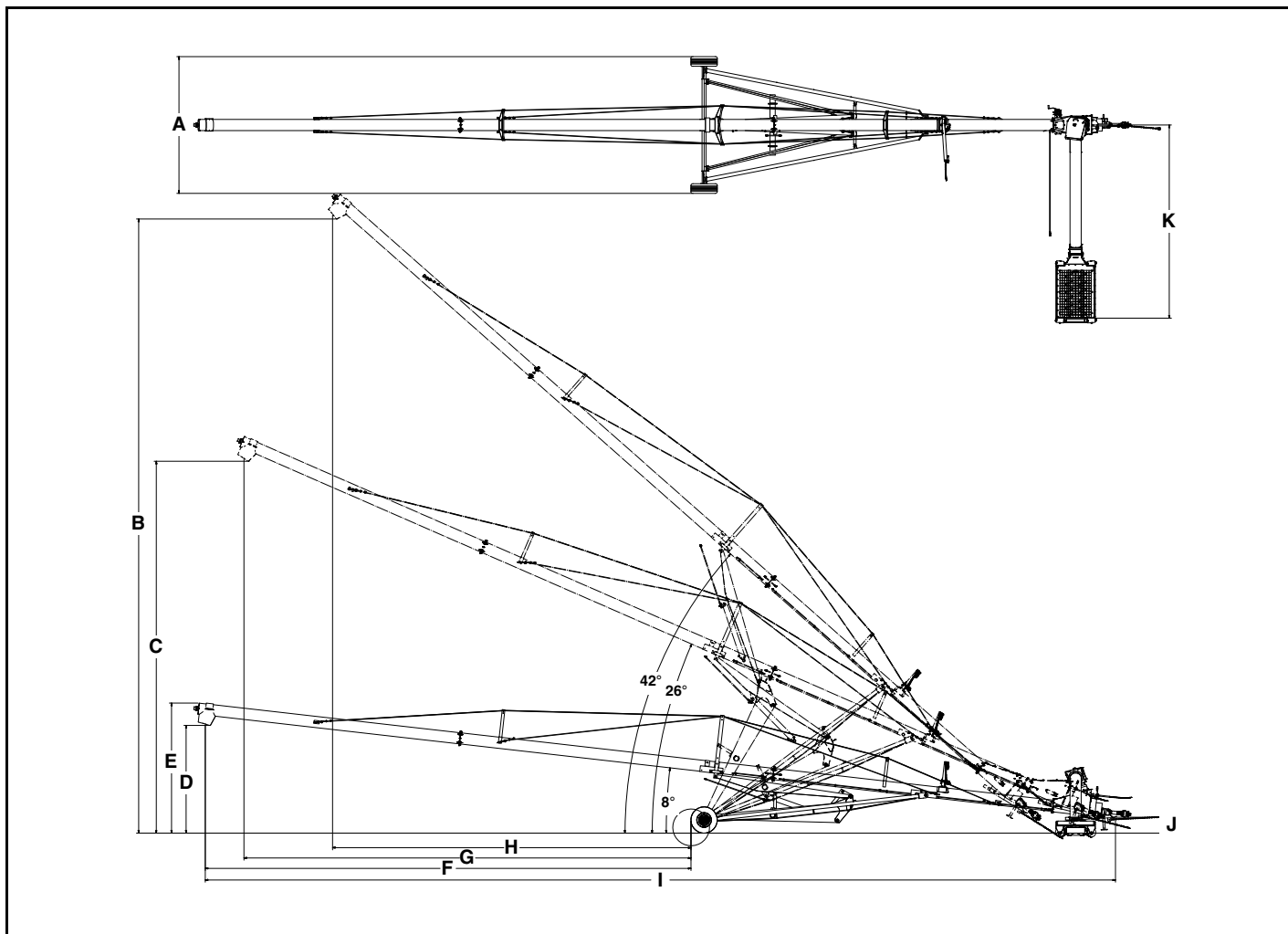


## SPECIFICATIONS

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# Farm King

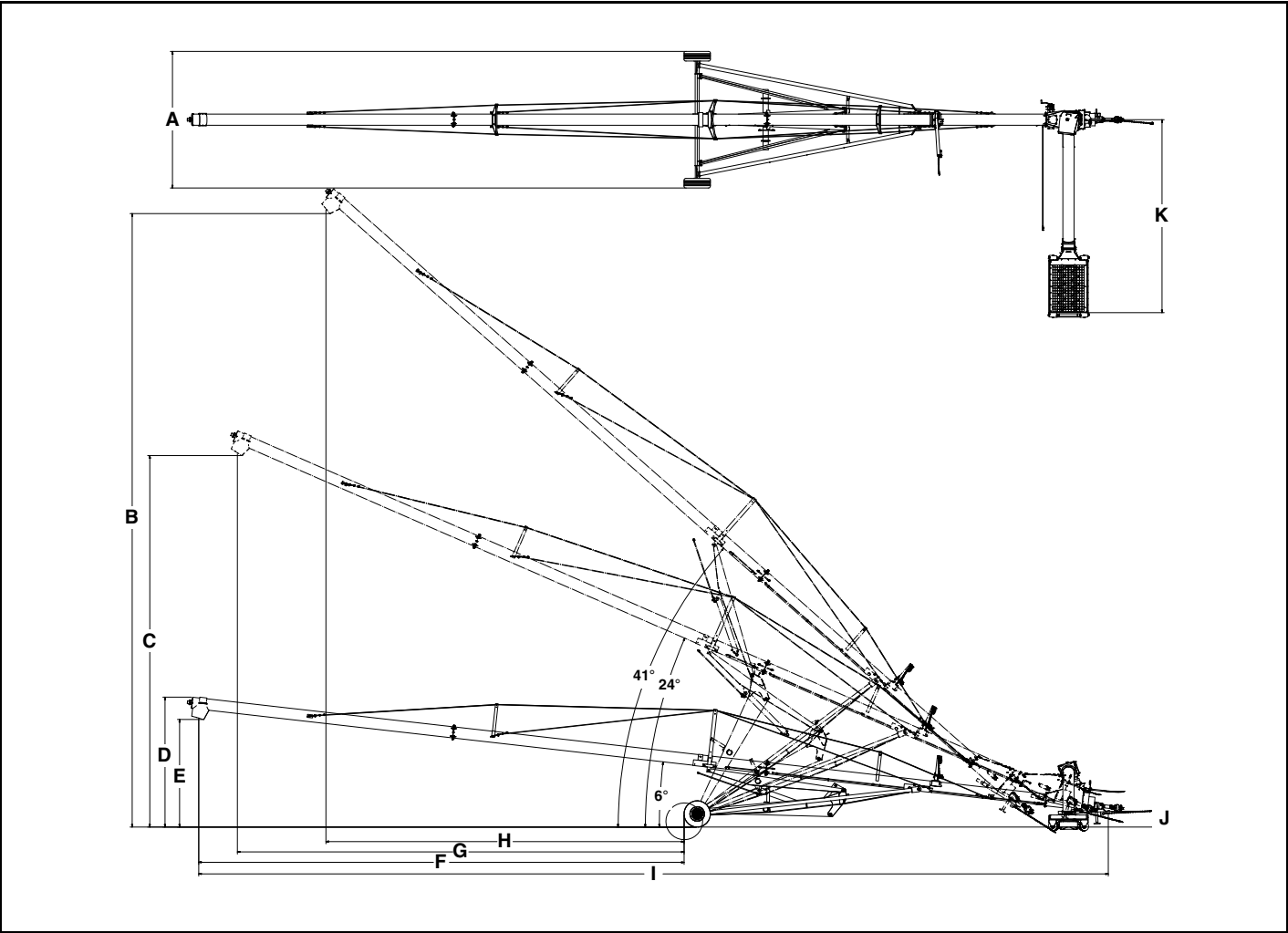


**SPECIFICATIONS**
**Dimensions (1370)**


DESCRIPTION	1370
Overall Width (A)	156 in.
Discharge Spout Height @ 42° Angle (B)	593 in.
Discharge Spout Height @ 26° Angle (C)	388 in.
Discharge Spout Height @ 8° Angle (D)	153 in.
Transport Height (E)	127 in.
Discharge Spout To Wheels @ 8° Angle (F)	446 in.
Discharge Spout To Wheels @ 26° Angle (G)	410 in.
Discharge Spout To Wheels @ 42° Angle (H)	347 in.
Overall Length (I)	856 in.
Hitch Height (J)	18 in.
Input Auger / Hopper Length (K)	220 in.



Dimensions (1385 & 1395 Models)



DESCRIPTION	1385	1395
Overall Width (A)	156 in.	156 in.
Discharge Spout Height @ 42° Angle (B)	701 in.	763 in.
Discharge Spout Height @ 24° Angle (C)	424 in.	462 in.
Discharge Spout Height @ 6° Angle (D)	148 in.	162 in.
Transport Height (E)	123 in.	136 in.
Discharge Spout To Wheels @ 6° Angle (F)	554 in.	673 in.
Discharge Spout To Wheels @ 24° Angle (G)	510 in.	614 in.
Discharge Spout To Wheels @ 42° Angle (H)	409 in.	505 in.
Overall Length (I)	1039 in.	1158 in.
Hitch Height (J)	18 in.	18 in.
Input Auger / Hopper Length (K)	220 in.	220 in.

**Performance**

DESCRIPTION	1370	1385	1395
Size	13" x 70'	13" x 85'	13" x 95'
Tubing	All Sections 12 Gauge		
Flighting	1/4" Flighting in Swing-Away And Main Auger		
Flighting Shaft	11 Gauge - 3" Diameter		
Undercarriage	3-1/2" x 3-1/2" x 3-16" Square Tubing	4" x 4" x 1/4" Square Tubing	
Lift Arms	1/4" Formed Upper Tubing - 7 Gauge Lower		
Bridging	1/2" Cable		
Wheels And Hubs	15" With 6 Bolt Automotive Type Hubs And Bearings		
Swing Auger Drive	Single Internal Gearbox (PTO Driven) - Sprocket And Chain		
Hopper Dimensions	43-1/2" x 60"		
Standard Hopper Height (From Ground)*	16-3/4" (Heel End) - 16-1/4" (Opposite End)		
Multi-Flighting Hopper (From Ground)*	12-3/4" (Both Ends)		
Minimum HP (W/540 RPM PTO)	80 HP	90 HP	100 HP
Hydraulic Pressure	1200 PSI		
Hitch Weight	1140 lb	1270 lb	1530 lb
Total Weight	5175 lb	6381 lb	6683 lb
4168 Gearbox	75W - 90 Synthetic Gear Oil		
Winch	Manual / Optional Hydraulic Winch		
* Not including rubber spill guard			

## HARDWARE TORQUE VALUES

### Metric Chart

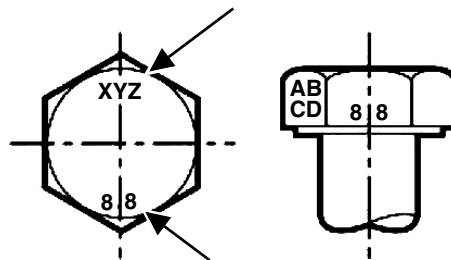
**NOTE: Do not use the values listed in the charts if a different torque value or tightening procedure is specified in this manual for a specific application. Torque values listed are for general use only.**

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)
<b>NOTE: Torque values shown with * are inch pounds.</b>							

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

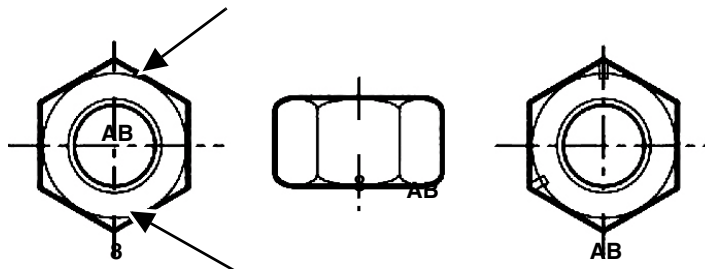
### MANUFACTURER'S IDENTIFICATION



### PROPERTY CLASS

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

### MANUFACTURER'S IDENTIFICATION



### PROPERTY CLASS

**HARDWARE TORQUE VALUES (CONT'D)**
**Imperial Chart**

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

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

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

**Identification of Hex Cap Screws and Carriage Bolts**

 SAE GRADE  
2 BOLTS

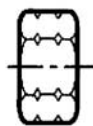
 SAE GRADE  
5 BOLTS

 SAE GRADE  
8 BOLTS

 SAE GRADE  
2 NUTS

 SAE GRADE  
2 NUTS

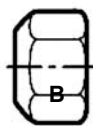
 SAE GRADE  
2 NUTS

**Identification of Hex Nuts and Lock Nuts**


Grade A - No Notches

Grade B - One Circumferential Notch

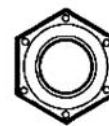
Grade C - One Circumferential Notches



Grade A - No Mark

Grade B - Letter B

Grade C - Letter C



Grade A - No Marks

Grade B - Three Marks

Grade C - Six Marks

(Marks not always located at corners)

## HYDRAULIC CONNECTION SPECIFICATIONS

### O-Ring Fitting (Straight Thread)

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

### O-ring Face Seal Connection

**Figure 222**

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

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

### Flare Fitting

**Figure 223**

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

Tighten until the nut makes contact with the seat. Use the chart [Figure 223] to find the correct tightness needed.

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

### Port Seal (O-ring Boss) Fitting

**Figure 224**

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

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

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

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

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

Do not over tighten the port seal fitting.

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

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

### Tubelines And Hoses

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

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

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

**WARRANTY**

WARRANTY .....207

# 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 representative and the buyer must prepay transportation charges.

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

**REPAIR PARTS LIMITED WARRANTY**

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

**WHAT IS NOT COVERED**

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

**AUTHORIZED DEALER AND LABOR COSTS**

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

# **Farm King**

## **Limited Warranty**

### **WARRANTY REQUIREMENTS**

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

### **EXCLUSIVE EFFECT OF WARRANTY AND LIMITATION OF LIABILITY**

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

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

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

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

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

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

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# Farm King





[www.farm-king.com](http://www.farm-king.com)

# **Farm King**

301 Mountain Street South  
Morden, Manitoba Canada R6M 1X7  
Toll Free: 1-888-FK-80001  
E-mail: [info@buhler.com](mailto:info@buhler.com)  
[www.farm-king.com](http://www.farm-king.com)

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