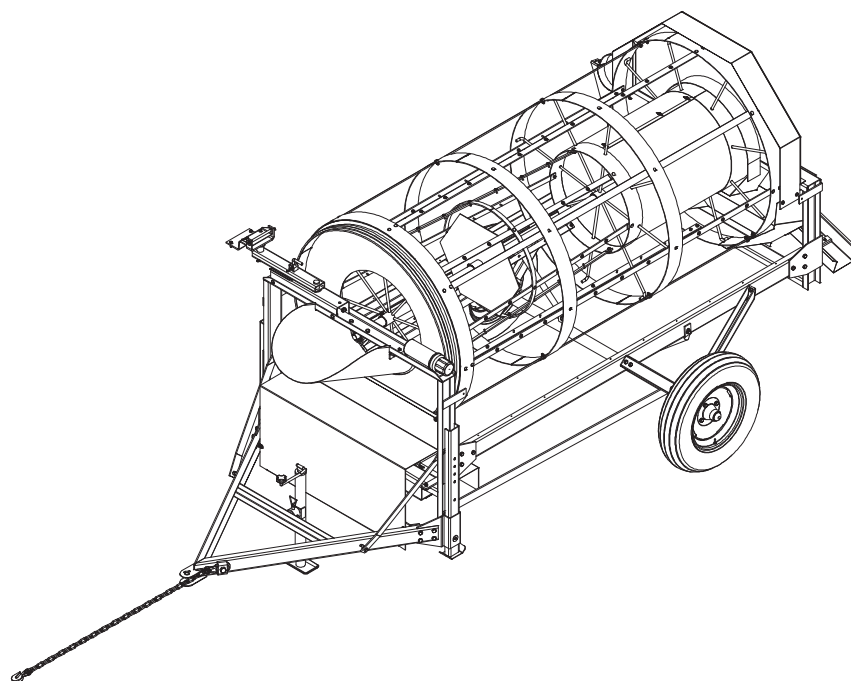


# Farm King

## OPERATOR AND PARTS MANUAL

### Grain Cleaner

Model 480





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

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## Warranty Registration Form

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

Customer Name:	
Customer Address:	
City:	Prov / State:
Postal / Zip Code:	Phone:

Dealer Name:	
Dealer Address:	
City:	Prov / State:
Postal / Zip Code:	Phone:

Equipment Model:	Serial Number:	Delivery Date:
------------------	----------------	----------------

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

**Dealer Inspection Report**

- Bearings Turn Freely
- Belt Tension Checked
- All Fasteners Are Tight
- Lubricate Machine

**Safety**

- Safety Chain On Hitch
- All Decals Installed
- Guards And Shields Installed And Secure
- Review Operating And Safety Instructions

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 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 480 Grain Cleaner. 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 onproduct 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.

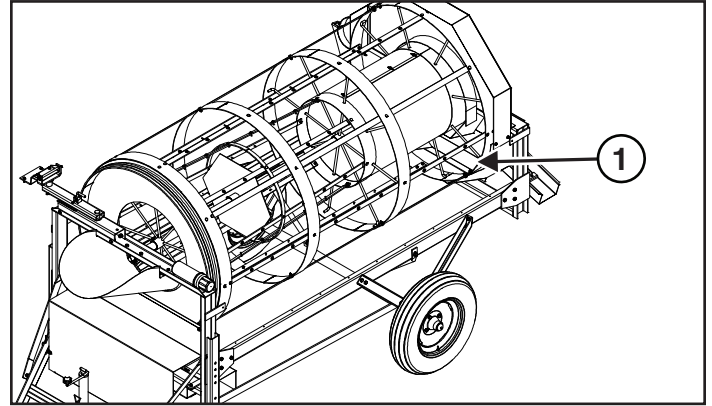
Contact your Farm King Dealer if you need assistance, information, or additional copies of the manual. Visit our website at [www.farm-king.com](http://www.farm-king.com) for a complete list of dealers in your area.

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:** \_\_\_\_\_

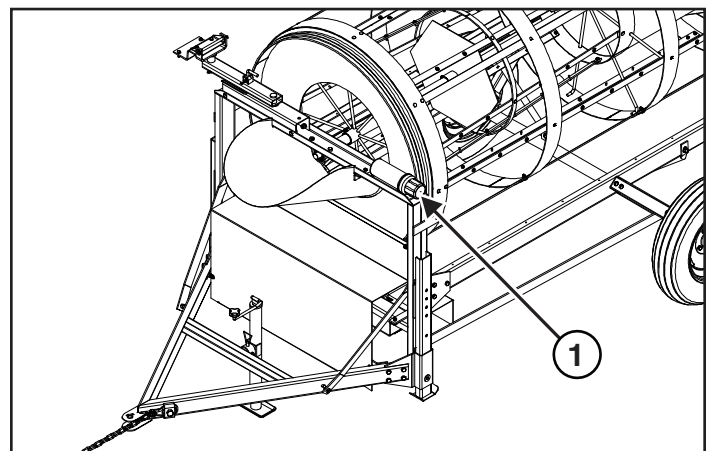
**Serial Number:** \_\_\_\_\_

The serial number plate (Item 1) [Figure 1] is located on the rear frame.

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

## Manual Storage

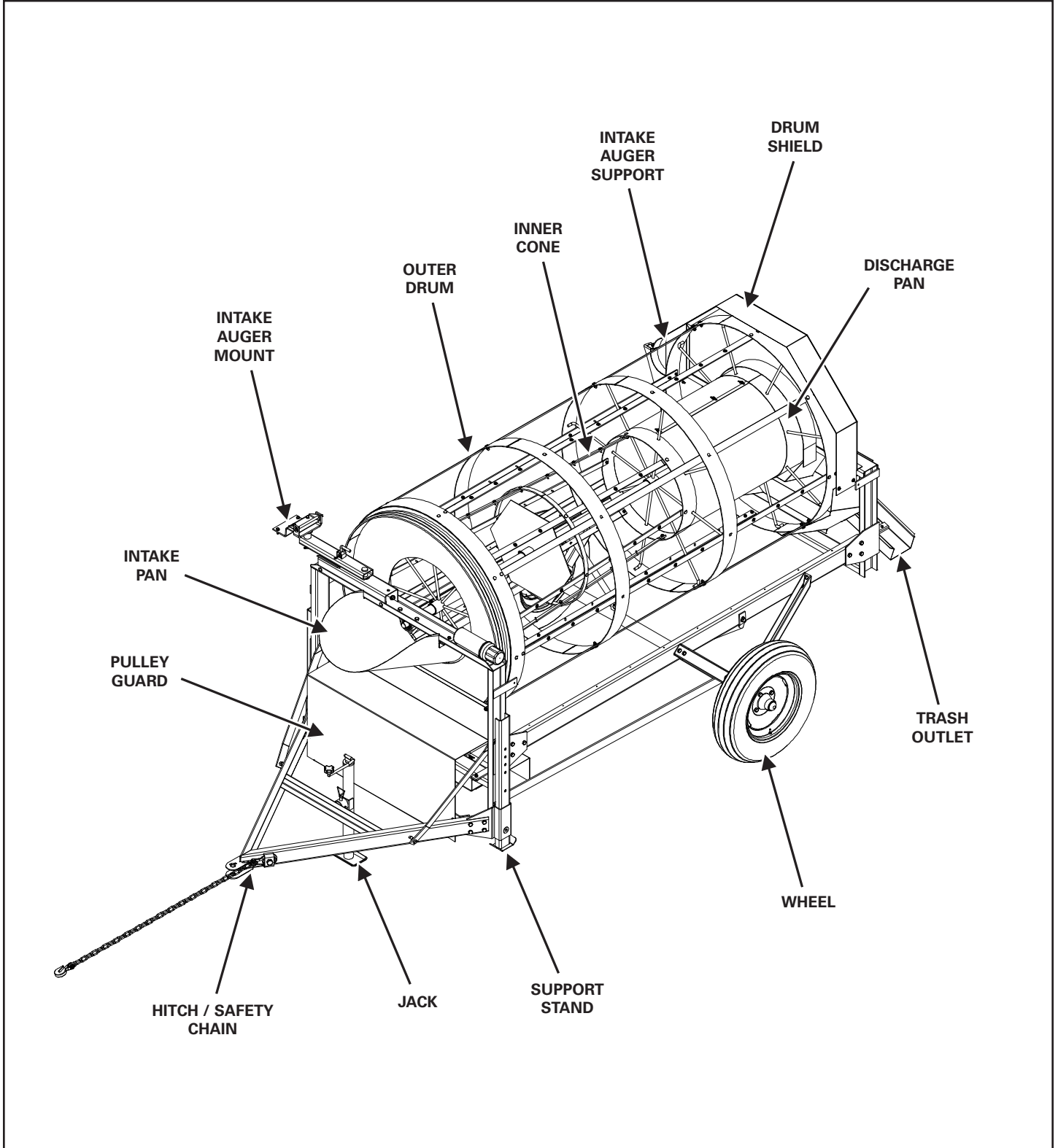
**Figure 2**



The operator and parts manual and other documents can be stored in the canister (Item 1) [Figure 2].

## Equipment Identification

### Component Location



# Safety


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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>	


	<b>CAUTION</b>
<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.</p>	

	<b>DANGER</b>
<p>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.</p>	

	<b>WARNING</b>
<p>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.</p>	

	<b>IMPORTANT</b>
<p>This notice identifies procedures which must be followed to avoid damage to the machine.</p>	

### Safe Operation Needs A Qualified Operator

	<b>WARNING</b>
<p><b>Operators must have instructions before operating the machine. Untrained operators can cause injury or death.</b></p>	

For an operator to be qualified, he or she must not use drugs or alcohol 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.

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.

## 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.
- In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.
- Check that the equipment is securely fastened to the tractor / towing vehicle.
- Make sure all the machine controls are in the NEUTRAL position before starting the machine.
- Operate the equipment only from the operator's position.
- Operate the equipment according to the Operator And Parts Manual.
- When learning to operate the equipment, do it at a slow rate in an area clear of bystanders, especially small children.
- DO NOT permit personnel to be in the work area when operating the equipment.
- The equipment must be used ONLY on approved tractors / transport vehicles.
- DO NOT modify the equipment in any way. Unauthorized modification may impair the function and / or safety and could affect the life of the equipment.
- Stop tractor engine, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing, unplugging or filling.
- DO NOT make any adjustments or repairs on the equipment while the machine is running.
- Keep shields and guards in place. Replace if damaged.
- Keep hands, feet, hair and clothing away from all moving parts.

## 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.
- 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. Roll-away can occur because the transmission may not prevent machine movement.

## Transport Safety

- Do not exceed 20 mph (32 kph). Reduce speed on rough roads and surfaces.
- Comply with state and local laws governing highway safety and movement of machinery on public roads.
- The use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use.
- Local laws should be checked for all highway lighting and marking requirements.
- Always 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).

## 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 before operation. (See Maintenance section)
- Do not use the machine where exhaust, arcs, sparks or hot components can contact flammable material, explosive dust or gases.

## Starting

- Do not use ether or starting fluids on any engine that has glow plugs. These starting aids can cause explosion and injure you or bystanders.
- Use the procedure in the tractor's operator's manual for connecting the battery and for jump starting.

## Electrical



- Check all electrical wiring and connections for damage. Keep the battery terminals clean and tight. Repair or replace any damaged part or wires that are loose or frayed.
- Battery gas can explode and cause serious injury. Do not jump start or charge a frozen or damaged battery. Keep any open flames or sparks away from batteries. Do not smoke in battery charging area.

## Hydraulic System

- Check hydraulic tubes, hoses and fittings for damage and leakage. Never use open flame or bare skin to check for leaks. Hydraulic tubes and hoses must be properly routed and have adequate support and secure clamps. Tighten or replace any parts that show leakage.
- Always clean fluid spills. Do not use gasoline or diesel fuel for cleaning parts. Use commercial nonflammable solvents.

## Fueling



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

## Fire Extinguishers



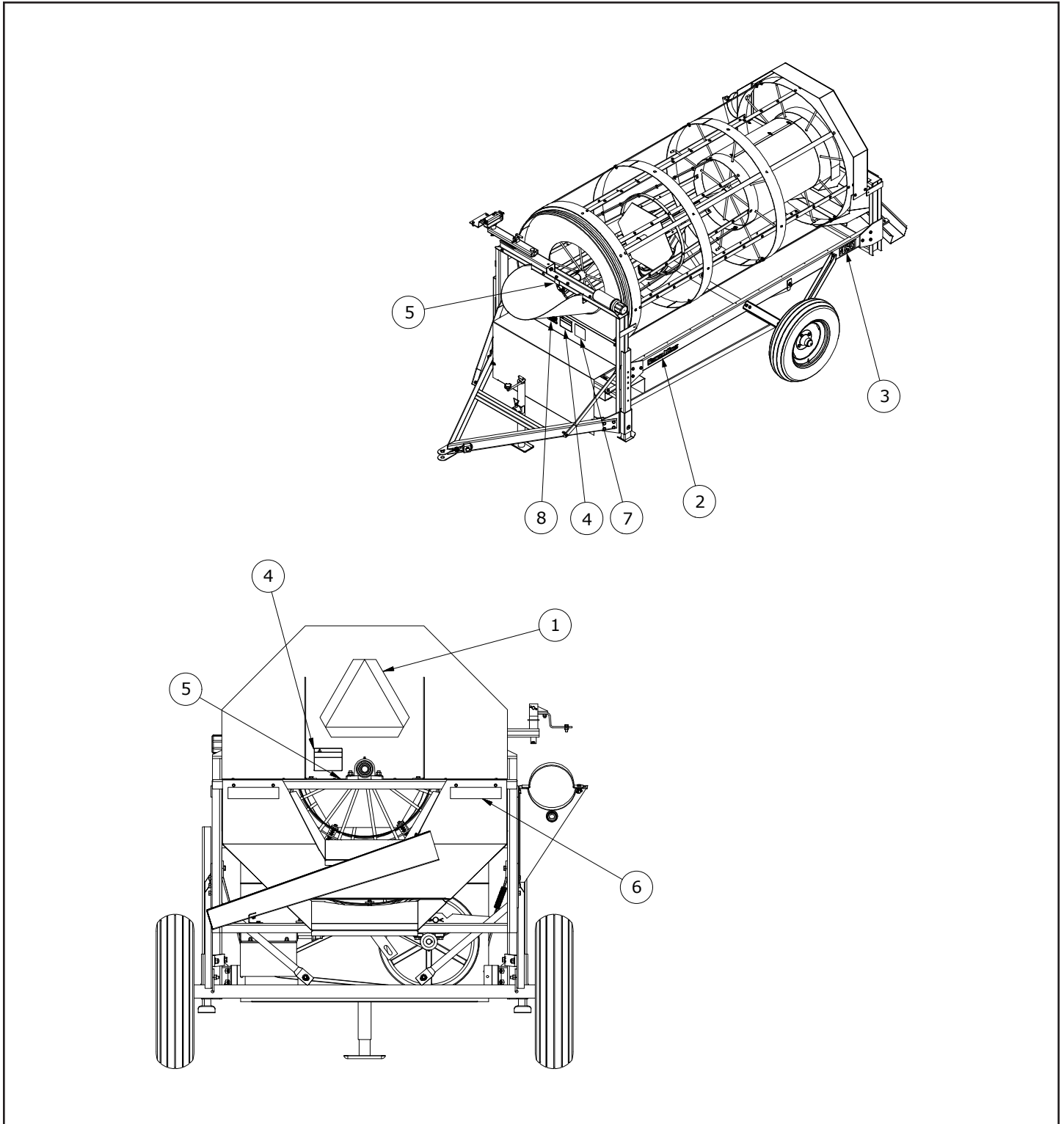
- Know where fire extinguishers and first aid kits are located and how to use them. Inspect the fire extinguisher and service the fire extinguisher regularly. Obey the recommendations on the instructions plate.



### Equipment And 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.

Figure 3



Equipment And Safety Signs [Figure 3]

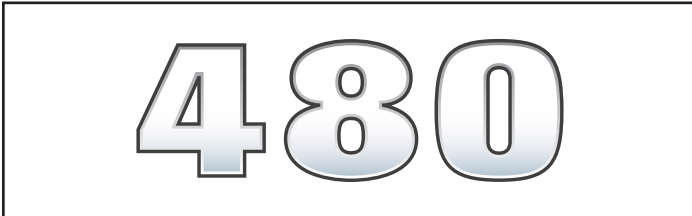
86547711 - SMV EMBLEM CAUTION (Item 1)



910625 - FK 1.85 X 12 (Item 2)



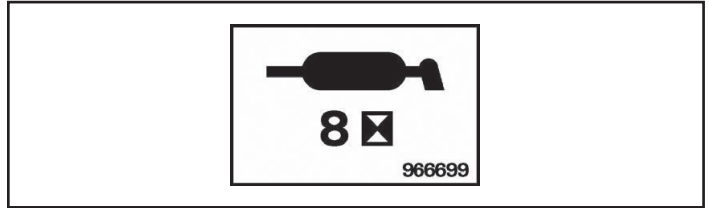
911389 - 480 GC (Item 3)



918272 - DANGER ROTATING DRIVELINE (Item 4)



966699 - GREASE (Item 5)



967053 - REFLECTIVE 2 X 9 RED (Item 6)




967382 - CAUTION (Item 7)



SZ06023 - WARNING, SHIELD (Item 8)



## Safety Sign-Off Form

	<b>WARNING</b>
<p><b>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.</b></p>	

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 equipment 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

# Farm King




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# Farm King



## Preparing For Assembly

	<b>IMPORTANT</b>
<p>Equipment may be shipped without some components installed due to transport restrictions.</p> <ul style="list-style-type: none"> <li>• Using the packing list, locate and count the individual components and verify that you have received the correct number of each component.</li> <li>• Check all the components for damage. If any components are damaged or missing, contact your Farm King dealer.</li> </ul>	

	<b>WARNING</b>
	
<p><b>AVOID INJURY OR DEATH</b></p> <p>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.</p>	

Move the tractor, equipment and components to an area large enough for assembly.

	<b>WARNING</b>
<p><b>AVOID INJURY OR DEATH</b></p> <p>Before you leave the operator's position:</p> <ul style="list-style-type: none"> <li>• Always park on a flat level surface.</li> <li>• Place all controls in NEUTRAL.</li> <li>• Engage the park brake.</li> <li>• Stop the engine and remove the key.</li> <li>• Wait for all moving parts to stop.</li> </ul>	

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.

	<b>WARNING</b>
<p><b>AVOID INJURY OR DEATH</b></p> <p>Wear safety glasses to prevent eye injury when any of the following conditions exist:</p> <ul style="list-style-type: none"> <li>• When fluids are under pressure.</li> <li>• Flying debris or loose material is present.</li> <li>• Engine is running.</li> <li>• Tools are being used.</li> </ul>	

	<b>IMPORTANT</b>
<p>The directions front, rear, right, and left are viewed as the operator sitting in the tractor with the equipment hitched to the tractor.</p>	

## Frame And Wheel Assembly

Position the front and rear frame weldments (Item 1, 2) with the right and left frame sides (Item 3, 4). Attach using 1/2" x 1-1/4" hex bolts and 1/2" lock nuts. Frame ends and sides must be squared before tightening bolts **[Figure 4]**.

Position wheels (Item 5) on the axle / hub assembly (Item 6). Attach using 1/2" x 1-1/4" wheel bolts. Torque wheel bolts to 80 ft.-lbs. **[Figure 4]**.

Lift the frame using an adequate hoist. Position axle and wheel assembly under the frame.

Position the front and rear axle braces (Item 7, 8) between the frame sides and axle. Attach axle braces using 1/2" x 1-1/4" hex bolts and 1/2" lock nuts **[Figure 4]**.

Position the center axle braces (Item 9) between the frame sides and axle. Attach axle braces using 1/2" x 1-1/4" hex bolts, 1/2" flat washers, and 1/2" lock nuts **[Figure 4]**.

Position the frame braces (Item 10) between the front axle braces (Item 7) and front frame weldment (Item 1). Attach frame braces using 1/2" x 1-1/4" hex bolts, 1/2" flat washers, and 1/2" lock nuts **[Figure 4]**.

Attach hitch weldment (Item 11) to the frame using 1/2" x 1-1/4" hex bolts and 1/2" lock nuts **[Figure 4]**.

Attach the left and right hitch braces (Item 12, 13) between the hitch weldment and front frame using 1/2" x 1-1/4" hex bolts and 1/2" lock nuts **[Figure 4]**.

Slide the support stands (Item 14) into the front frame weldment mounts. Secure using stand pin and clip **[Figure 4]**.

Attach the manual holder (Item 15) to the top of the front frame weldment using 5/16" x 1" hex bolts and 5/16" lock nuts **[Figure 4]**.

Connect the jack stand (Item 16) to the hitch weldment **[Figure 4]**.

Attach the trash chute mount (Item 17) to the rear frame weldment **[Figure 4]**.

Attach one pillow bearing (Item 18) to the top of the rear frame weldment using 1/2" x 1-3/4" hex bolts, 1/2" flat washers, and 1/2" lock nuts **[Figure 4]**.

Attach one pillow bearing (Item 19) to the underside of the front frame weldment using 1/2" x 1-3/4" hex bolts, 1/2" flat washers, and 1/2" lock nuts **[Figure 4]**.

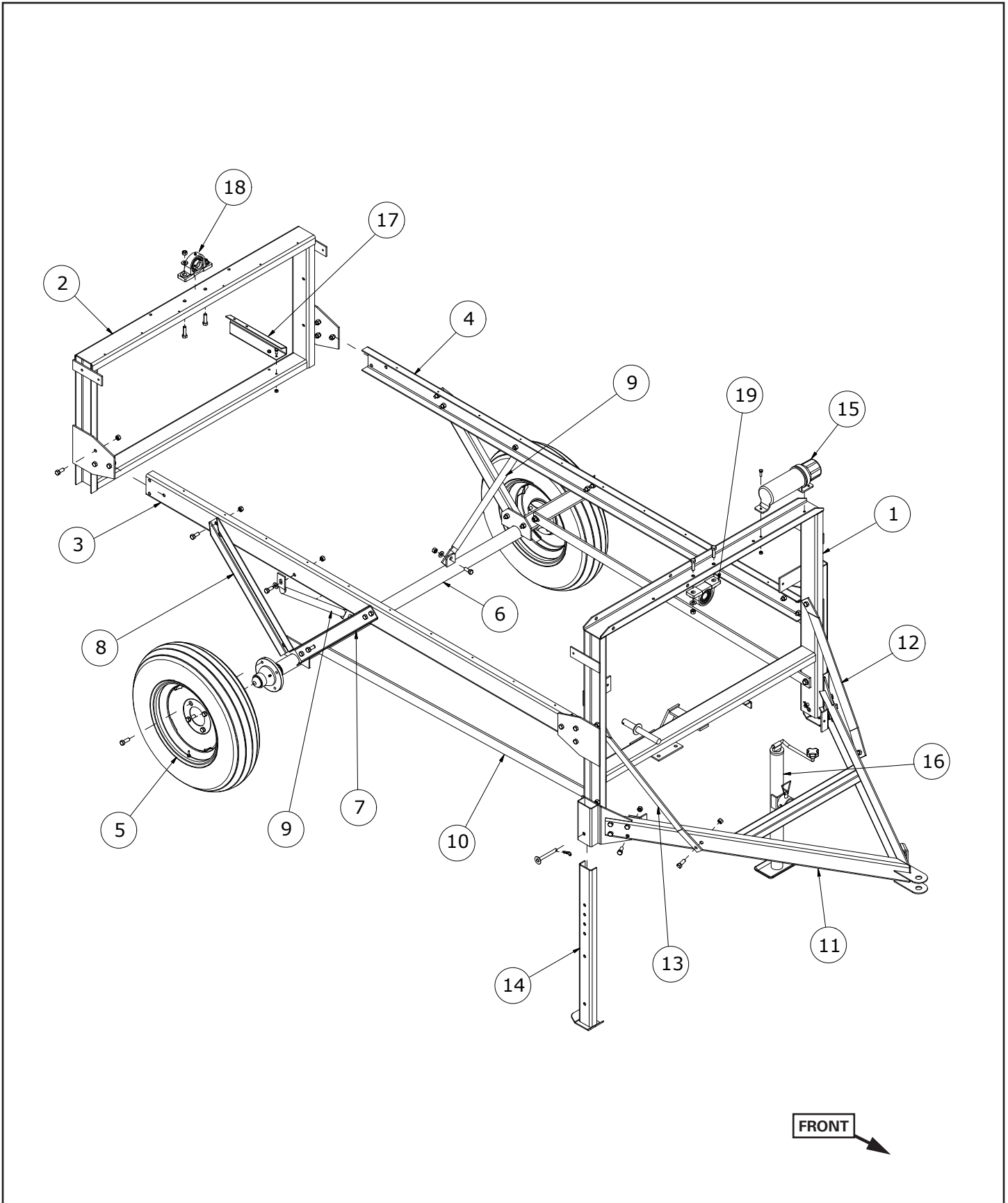


### IMPORTANT

**All bolts connecting the frame must be firmly tightened to proper torque. Any loose bolts could result in the frame separating while towing the cleaner.**



Figure 4



## Pulley Assembly

Slide two pillow bearings (Item 1) onto the reducer shaft (Item 2). Attach the two pillow bearings to the bottom of the reducer mount (Item 3) using 1/2" x 1-3/4" hex bolts, 1/2" flat washers, and 1/2" lock nuts [Figure 6].

Slide one 3" double pulley (Item 4) onto the rear end of the reducer shaft. Attach with key and two Ø3/8" x 3/8" socket set screw [Figure 6].

Slide one 12" double pulley (Item 5) onto the front end of the reducer shaft. Attach pulley using one 1/4" x 2-1/2" key and two Ø3/8" x 1/2" socket set screws [Figure 6].

Slide one idler plate (Item 6), one shaft bushing (Item 7), and one idler plate (Item 8) onto the idler shaft (Item 9). Attach using 1/4" x 2" cotter pin [Figure 6].

Position two idler pulleys (Item 10) and three 5/8" flat washers (Item 11) between the ends of the idler plates (Item 6, 8). Place the washers between the pulleys. Attach washers and pulleys to idler plates using one 5/8" x 4" hex bolt and 5/8" lock nut [Figure 6].

Connect two tightener springs (Item 12) to the idler plates (Item 6, 8) [Figure 6].

## Motor Mount Assembly

Position the motor mount (Item 13) on the front frame with two motor mount clamps (Item 14). Attach motor mount and clamps using 3/8" x 1-1/4" hex bolts and 3/8" lock nuts [Figure 6].

The tightener hole in the side of the motor mount must face the tightener bracket welded to the rear frame.

Connect the 1/2" x 4" belt tightener set screw (Item 15) between the motor mount and the welded bracket on the frame [Figure 6].

## Motor Assembly (Motor Not Supplied)

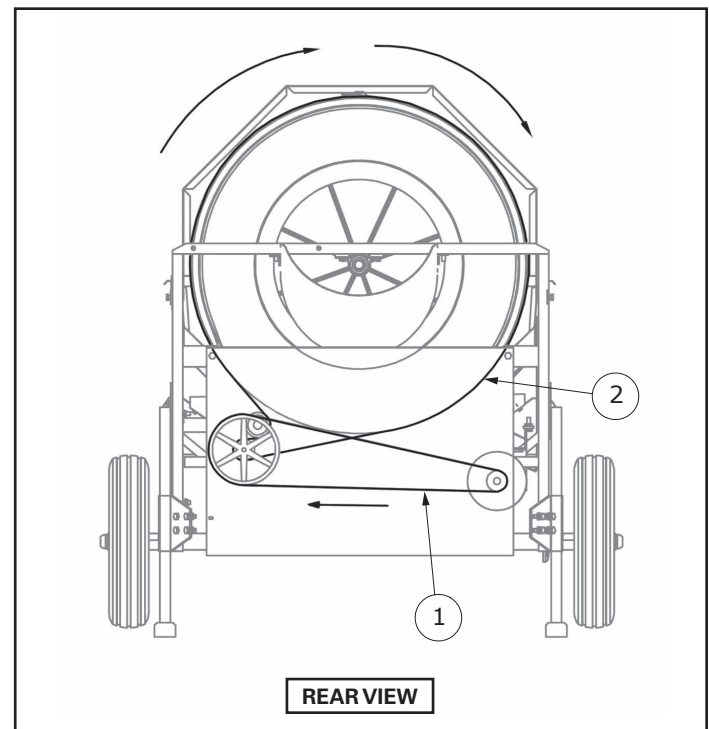
Attach the motor guard (Item 16) and 3 HP electric motor (not shown) to the motor mount (Item 13) using 5/16" x 1" hex bolts, 5/16" flat washers, and 5/16" lock nuts [Figure 6].

Motor shaft must face front. Motor guard must face rear.

Position one 3" double pulley on the electric motor shaft. Attach using one key and two Ø3/8" x 3/8" socket set screws (not shown).

## Belt Routing

Figure 5



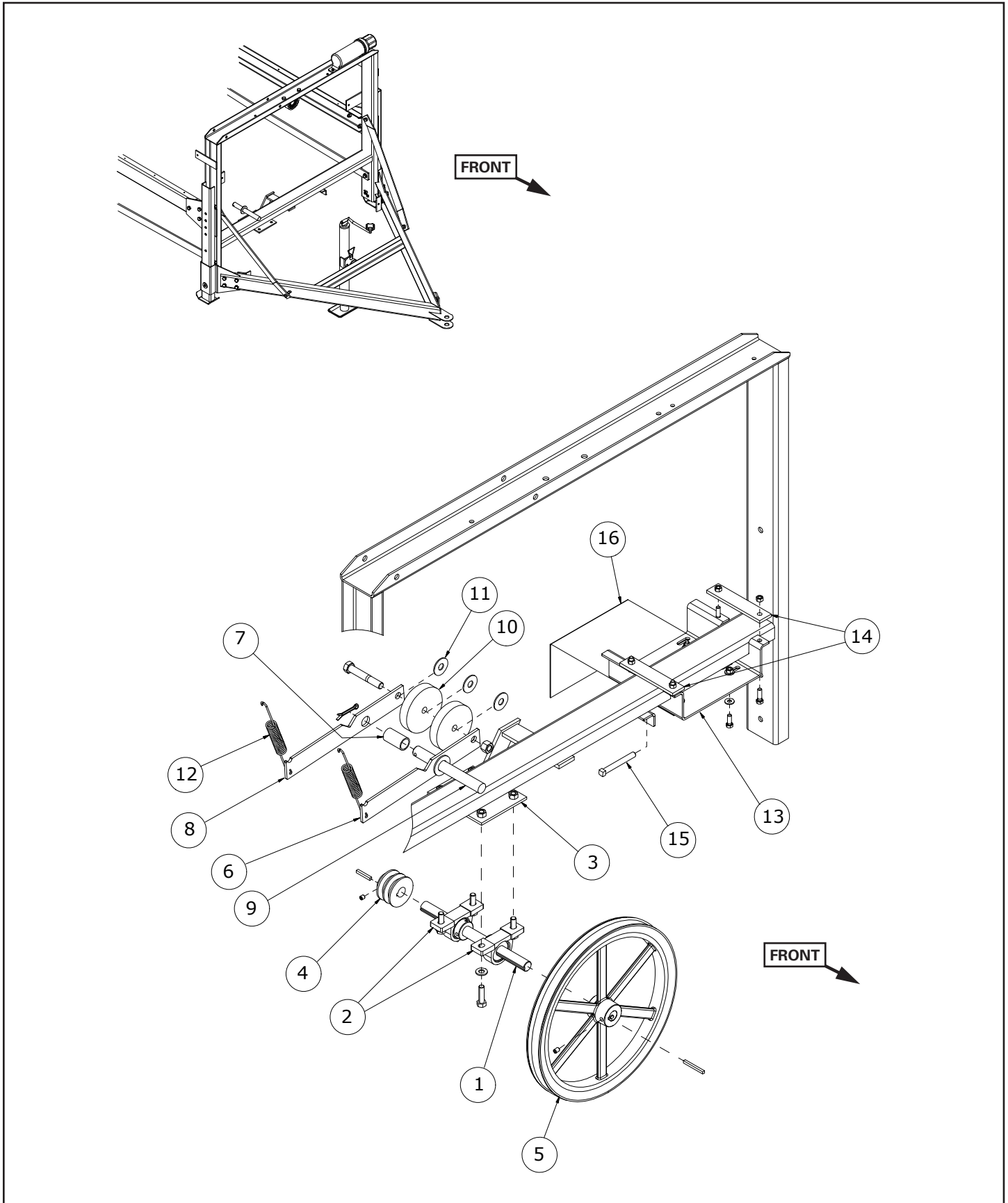
Route two B-87 V-belts (Item 1) around the motor double pulley and 12" double pulley [Figure 5].

Tighten belt using belt tightener set screw (Item 15) [Figure 6].

Route two B-164 V-belts (Item 2) around the outer drum assembly, the idler pulleys, and 3" double pulley [Figure 5].

Tighten belt by connecting the belt tightener springs (Item 12) to the frame [Figure 6].

Figure 6



## Front Guard Assembly

Attach the intake pan (Item 1) to the underside of the front frame weldment using 3/8" x 1" hex bolts, 5/16" flat washers, and 3/8" lock nuts **[Figure 7]**.

Position the front pulley guard (Item 2) over the pulley assembly. Attach pulley guard to the front frame mounts using 5/16" x 3/4" hex bolts, 5/16" flat washers, and 5/16" lock nuts **[Figure 7]**.

Attach the swivel arm assembly (Item 3) to the top right of the front frame using 1/2" x 1" hex bolts, 1/2" lock washers, and 1/2" hex nuts **[Figure 7]**.

Attach the intake auger connector plate (Item 4) to the swivel arm assembly using one pin and clip. Attach the offset connector (Item 5) to the plate (Item 4) using 3/8" x 1" hex bolts and 3/8" lock nuts **[Figure 7]**.

Attach the safety chain (Item 6) to the hitch using 3/4" x 2-1/4" hex bolt and 3/4" lock nut **[Figure 7]**.

## Rear Guard Assembly

Position the discharge pan weldment (Item 7) within the rear frame. Attach the top of the weldment to the frame using 1/4" x 3/4" self tapping screws (Item 8). Attach the sides of the weldment to the frame using 5/16" x 3/4" hex bolts (Item 9), 5/16" flat washers, and 5/16" lock nuts. **[Figure 7]**

Position the discharge chute (Item 10) on the discharge pan weldment (Item 7). Attach top end of chute to weldment using 1/4" x 3/4" hex bolts and 1/4" lock nuts. Attach bottom end of the chute to the rear frame using 1/4" x 3/4" hex bolts, 5/16" flat washers, and 1/4" lock nuts **[Figure 7]**.

Position the rear drum shield weldment (Item 11) on top of the rear frame. Attach the weldment to the rear frame using 1/4" x 3/4" self tapping screws (Item 12). Attach the brackets using 3/8" x 1" hex bolts (Item 13), 5/16" flat washers, and 3/8" lock nuts. Attach the sides of the weldments using 1/4" x 3/4" hex bolts (Item 14), 5/16" flat washers, and 1/4" lock nuts **[Figure 7]**.

Attach the intake auger support (Item 15) to the right side of the rear frame. Attach using 3/8" x 1" hex bolts and 3/8" lock nuts. Attach one half clamp (Item 16) using 3/8" x 1" hex bolt, washer, and wing nut **[Figure 7]**.

## Drum Assembly

Assemble the inner cone (Item 17), outer drum (Item 18), and center drum shaft (Item 19). Install assembly and center drum shaft to pillow bearings on main frame **[Figure 7]**.

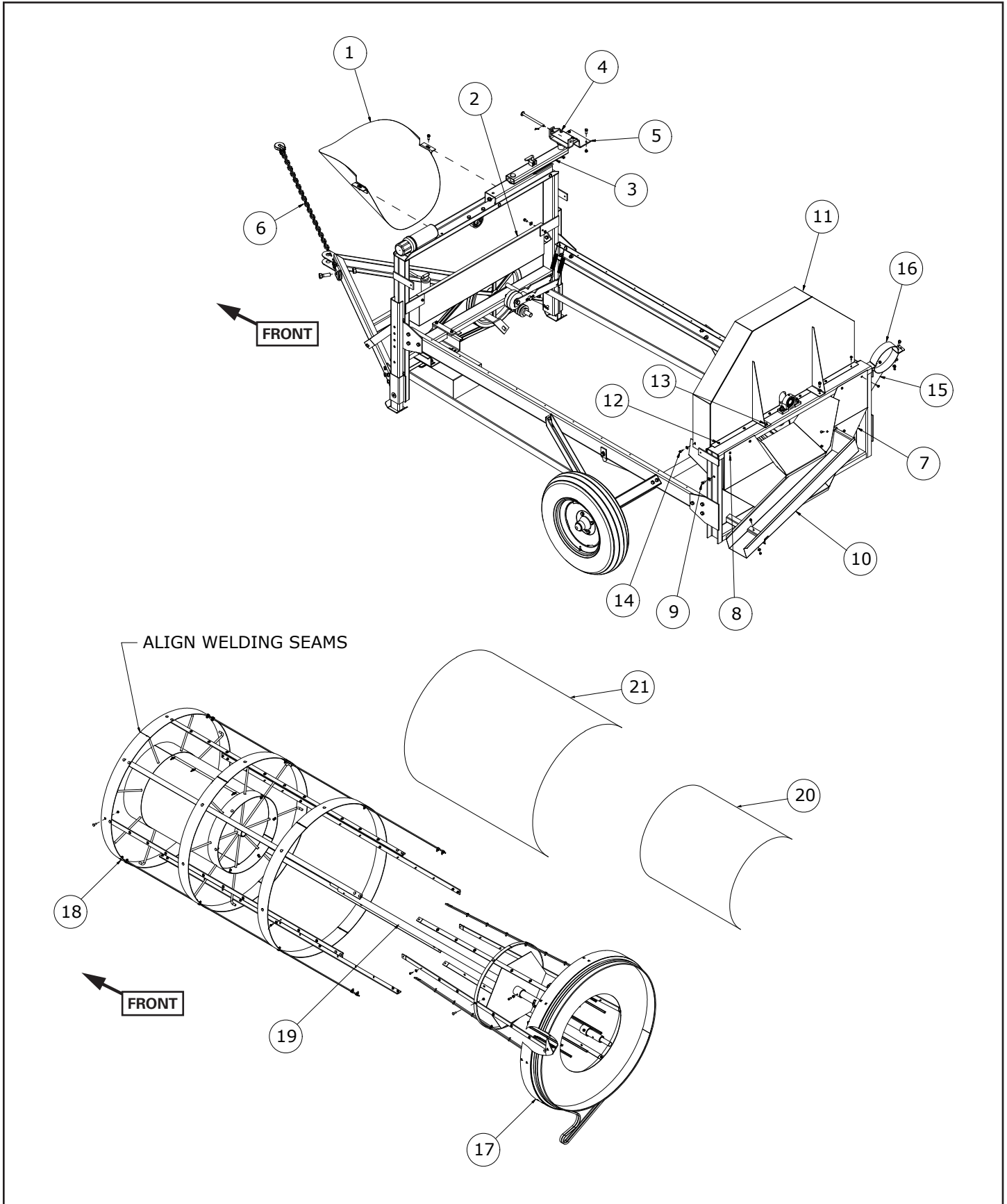
Assemble the inner cone screen (Item 20) and outer drum screen (Item 21) **[Figure 7]**.

Attach the screen sections using 1/4" x 3/4" self-tap screws and flat washers. Strap the ends of the screen sections to the rear and center rings using the two straps **[Figure 7]**.

Tighten straps with 1/4" x 2-1/2" round head bolts and 1/4" square nuts. After strapping, the screen is tightened by attaching the remaining self-tapping screws **[Figure 7]**.

All the strap bolts holding the screens should be turned so the end of the bolt trails the direction of drum rotation **[Figure 7]**.

Figure 7



## Trash Pan Assembly (GC482 Option)

Attach the two trash pan ends (Item 1, 2) and trash pan sides (Item 3, 4) to the trough (Item 5) using 1/4" x 3/4" hex bolts, 5/16" flat washers, and 1/4" lock nuts [Figure 9].

The stub shaft of the trough flighting must face front.

Slide the trash pan assembly underneath the frame. Rest trash pan on frame edges.

Position left and right trash pan side panels (Item 6, 7) on the frame edges. Align holes along bottom of side panels with trash pan holes. Attach side panels and trash pan to frame using 1/4" x 3/4" self-tapping screws [Figure 9].

Attach top corners of side panels to frame mounts using 1/4" x 3/4" hex bolts, 5/16" flat washers, and 1/4" lock nuts.

Slide one 6" single pulley (Item 8) onto the trough flighting stub shaft. Attach pulley using one key and two  $\text{Ø}5/16"$  x 1/4" socket set screws [Figure 9].

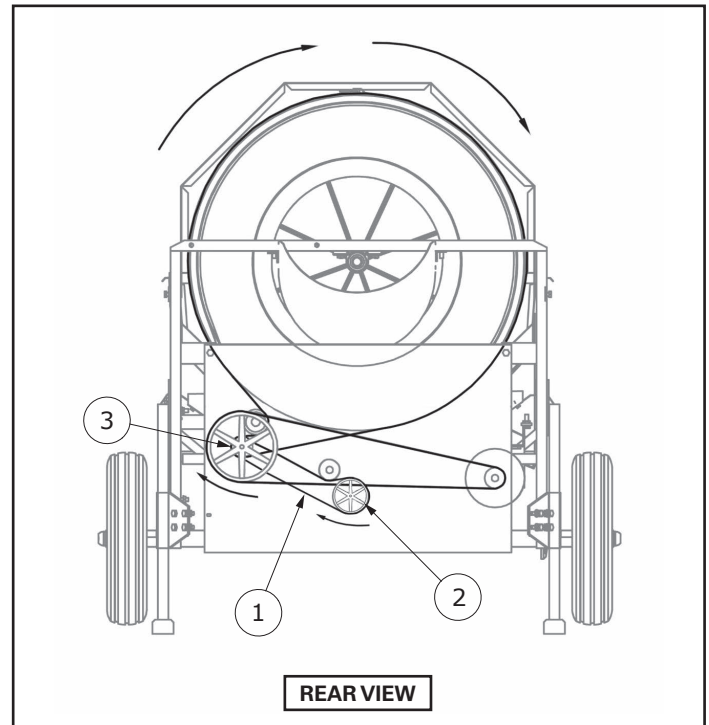
Slide one 3" single pulley (Item 9) onto the end of the reducer shaft. Attach pulley using one key and two  $\text{Ø}3/8"$  x 1/2" socket set screws [Figure 9].

Attach one 3" idler pulley (Item 10) to the slotted bracket welded to the front frame using one 5/8" x 3" hex bolt, 5/8" flat washers, and 5/8" lock nut [Figure 9].

**NOTE:** Use 5/8" flat washers as required on both sides of idler pulley to align with belt assembly.

## Belt Routing (GC482 Option)

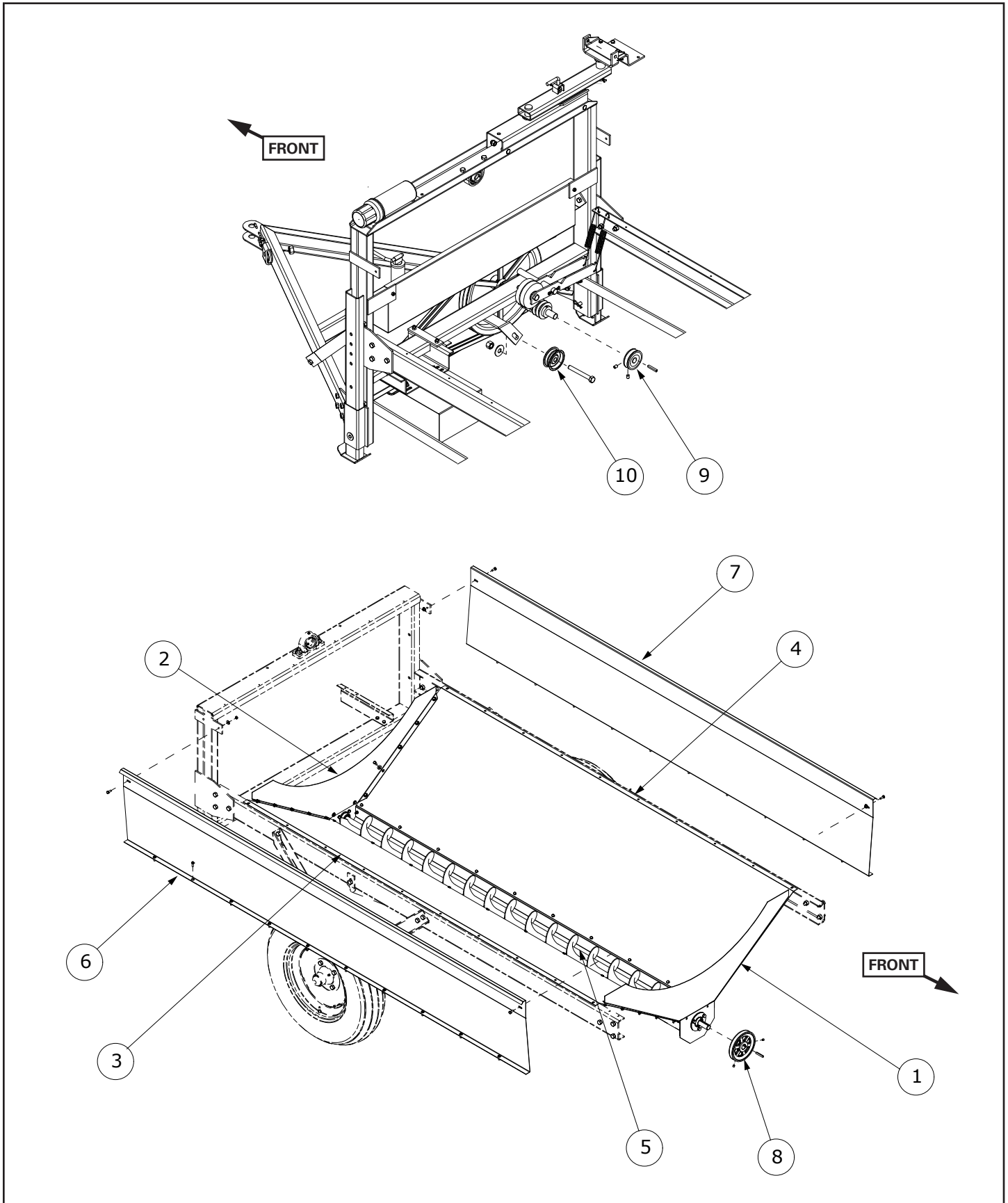
Figure 8



Route one B-37 V-belt (Item 1) around the 6" single pulley (Item 2) on flighting stub shaft and the 3" single pulley (Item 3) on the reducer shaft [Figure 8].

The belt must pass under the idler pulley. Adjust tension by moving the idler pulley on the slotted bracket and tightening hardware.

Figure 9



# Farm King





# Operation

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# Farm King



## Pre - Operation Checklist

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

1. Lubricate the equipment per the schedule outline in the Maintenance Section.
2. Check the equipment for damaged, loose or missing parts. Repair as needed before operation.
3. Use only a tractor of adequate power and weight to pull the machine.
4. Check the drums. Remove any twine, wire or other material that has become entangled.
5. Check belt tension.
6. Check that all bearings turn freely. Replace any that are rough or seized.
7. Make sure that all guards and shields are in place, secured and functioning as designed.

	<b>WARNING</b>
	
<b>AVOID INJURY OR DEATH</b>	
<p><b>Before moving the tractor, look in all directions and make sure no bystanders, especially small children are in the work area.</b></p> <p><b>Do not allow anyone between the tractor and the equipment when backing up to the equipment for connecting.</b></p>	

	<b>WARNING</b>
	
<b>AVOID INJURY OR DEATH</b>	
<p><b>Keep fingers and hands out of pinch points when connecting and disconnecting equipment.</b></p>	


	<b>WARNING</b>
<b>AVOID INJURY OR DEATH</b>	
<p><b>Before you leave the operator's position:</b></p> <ul style="list-style-type: none"> <li>• Always park on a flat level surface.</li> <li>• Place all controls in NEUTRAL.</li> <li>• Engage the park brake.</li> <li>• Stop the engine and remove the key.</li> <li>• Wait for all moving parts to stop.</li> </ul>	

## Theory Of Operation

The Farm King 480 Grain Cleaner handles up to 2500 bushels per hour. The 480 Grain Cleaner also uses two stage screening. Trash and fines are discharged onto the ground and cleaned grain discharged from the chute [Figure 10].

The Farm King 482 Grain Cleaner is equipped with an optional trash pan. The trash pan collects and separates using an auger [Figure 11].

	<h1>CAUTION</h1>
<ul style="list-style-type: none"> <li>• Read operator and parts manual before operating the implement.</li> <li>• Do not permit riders.</li> <li>• Keep all guards and shields in place.</li> <li>• Keep hands, feet, clothing and hair away from moving parts.</li> <li>• Stop engine, set brake, remove key and wait for all moving parts to stop before servicing, adjusting, repairing and unplugging.</li> <li>• Remove bystanders, especially children, before starting or while operating.</li> <li>• Block up before working beneath unit.</li> <li>• Review safety instructions annually.</li> </ul>	

	<h1>IMPORTANT</h1>
<p><b>3 HP 1725 RPM electric motor is recommended to drive the cleaner.</b></p> <p><b>The electric motor with weatherproof switch must be supplied by the customer.</b></p> <p><b>Consult electric motor manual for proper operation.</b></p>	

## Operation

	<h1>WARNING</h1>
<p style="text-align: center;"><b>ROTATING DRIVELINE HAZARD</b></p> <ul style="list-style-type: none"> <li>• Keep shields and all guards in place.</li> <li>• Keep away from moving parts.</li> <li>• Keep bystanders away.</li> </ul>	


Connect the equipment to the tractor and place the support stands into the travel position.

Move equipment to the work area.

Adjust the height of the front legs to maximize capacity.

Position and adjust bins or intake auger (if applicable).

Choose the appropriate screen for the work required.

	<h1>CAUTION</h1>
<p><b>Rest cleaner on the two adjustable front legs during operation. Do Not rest cleaner on jack during operation.</b></p> <p><b>Adjust the cleaner height to achieve maximum capacity without grain loss through the trash chute.</b></p> <p><b>The cone flow control must also be adjusted so trash can get through while minimizing grain loss.</b></p>	

Capacity will vary with grain type and moisture content. The flow control on the intake auger will allow you to match input to the equipment capacity (if applicable).

The equipment should run until empty before stopping. Do not leave grain in the drum or start the equipment while loaded.

Figure 10

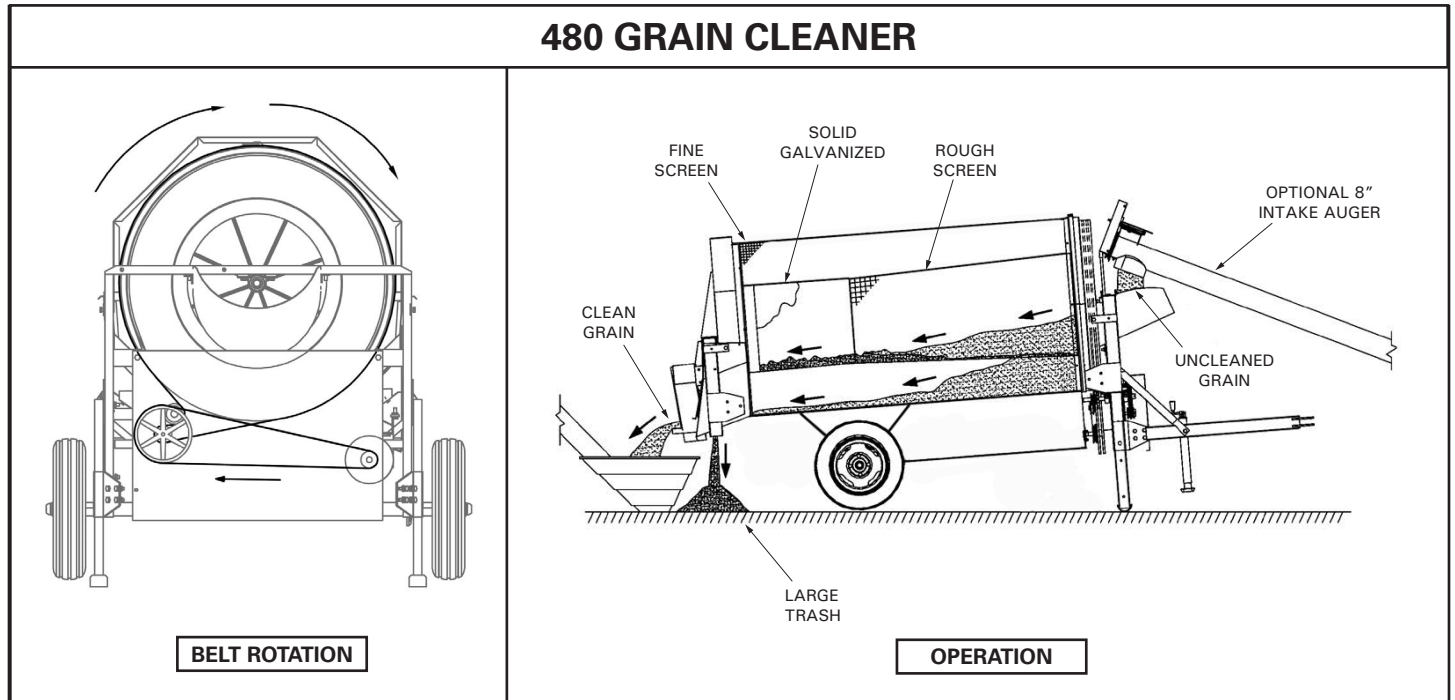
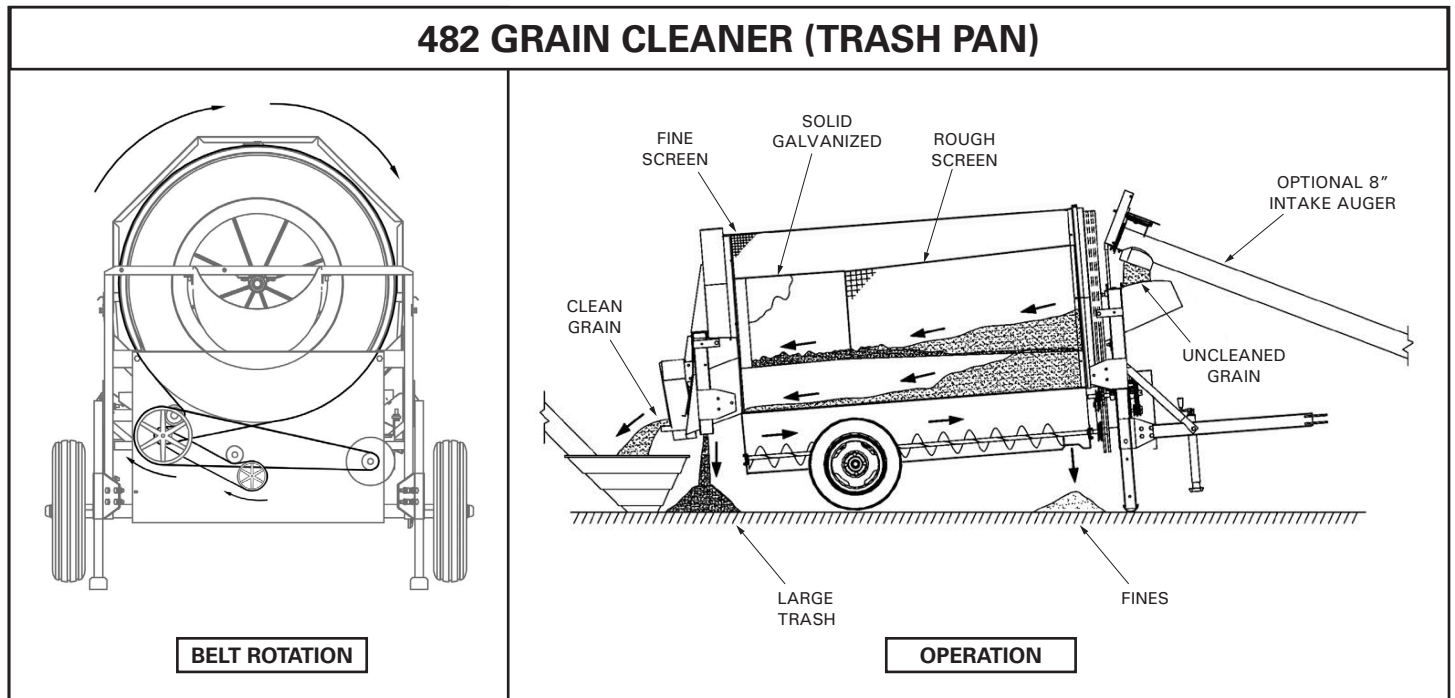




Figure 11



## Transporting

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

	<b>WARNING</b>
<b>AVOID INJURY OR DEATH</b>	
<ul style="list-style-type: none"> <li>• <b>Keep shields and all guards in place</b></li> <li>• <b>Keep bystanders away.</b></li> <li>• <b>Do not allow riders.</b></li> <li>• <b>Always use hazard flashers on the tractor when transporting unless prohibited by law.</b></li> <li>• <b>Always follow local regulations when transporting on public roadways. Check with your local authorities.</b></li> </ul>	

	<b>IMPORTANT</b>
<b>Never exceed 20 mph (32 kph).</b>	

	<b>WARNING</b>
<b>Use of an unapproved hitch or tractor / tow vehicle can result in loss of control, leading to serious injury or death.</b>	
<b>Tractor / tow vehicle and hitch must have the rated capacity to tow equipment.</b>	

Tires provided are for low speed towing only. Fill tires to a maximum of 60 psi (400 kPa).

Verify that the tractor / tow vehicle is 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.

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
20 mph (32 kph)	Less than 1 to 1
10 mph (16 kph)	Less than 2 to 1
DO NOT TOW	More than 2 to 1

# Maintenance


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# Farm King





## Service Schedule


	<h1>WARNING</h1>
<p>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.</p>	

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 equipment.


#	DESCRIPTION	SERVICE PROCEDURES					
		CHECK	CLEAN	LUBE	CHANGE	COVER	DRAIN
<b>Daily Maintenance (or every 8 hours of use)</b>							
1	Drum Screens	✓	✓				
2	Pulleys & Belt Tension	✓					
3	Guards & Shields	✓					
4	Tire Pressure	✓					
<b>Weekly (or every 40 hours of use)</b>							
4	Driveline Pillow Bearings	✓		✓			
<b>Annually (or every 500 hours of use)</b>							
5	Entire Machine	✓	✓				

## Lubrication

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

	<b>IMPORTANT</b>
<p><b>Do not over-grease bearings. Greasing too often can damage seals and lead to premature bearing failure.</b></p>	

- 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.

	<b>IMPORTANT</b>
<p><b>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.</b></p>	


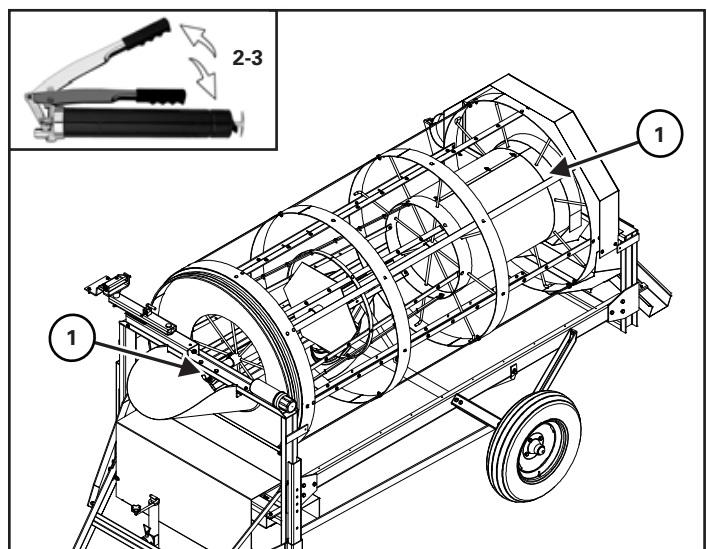
	<b>WARNING</b>
<p><b>AVOID INJURY OR DEATH</b></p>	
<p><b>Stop engine, set brake, remove ignition key, and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.</b></p>	
<p><b>Support the equipment with blocks or safety stands before working beneath it.</b></p>	
<p><b>Follow good shop practices:</b></p>	
<ul style="list-style-type: none"> <li>• Keep service area clean and dry</li> <li>• Be sure electrical outlets and tools are properly grounded</li> <li>• Use adequate light for the job.</li> </ul>	
<p><b>Use only tools, jacks, and hoists of sufficient capacity for the job.</b></p>	
<p><b>Replace and secure all shields removed during servicing before operating.</b></p>	
<p><b>Use heavy leather gloves to handle sharp objects.</b></p>	

Figure 12

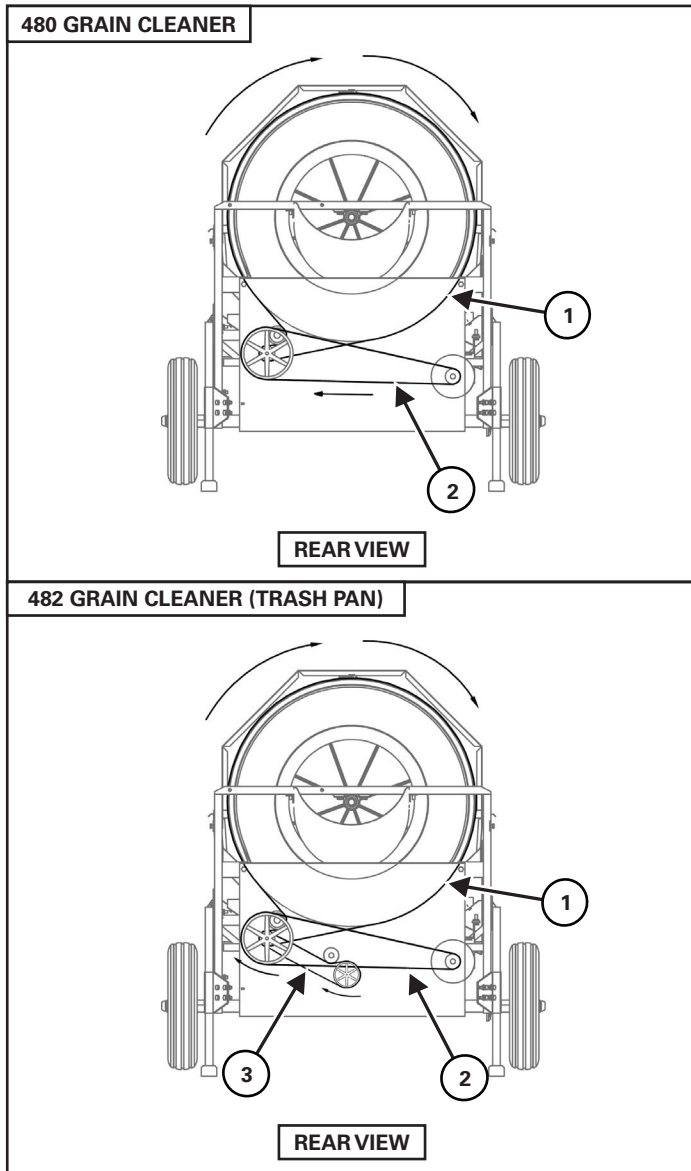


Apply two to three pumps of grease (Item 1) to the driveline pillow bearings [Figure 12].

Grease every **40 hours** of use.

## Belt Tension

Figure 13



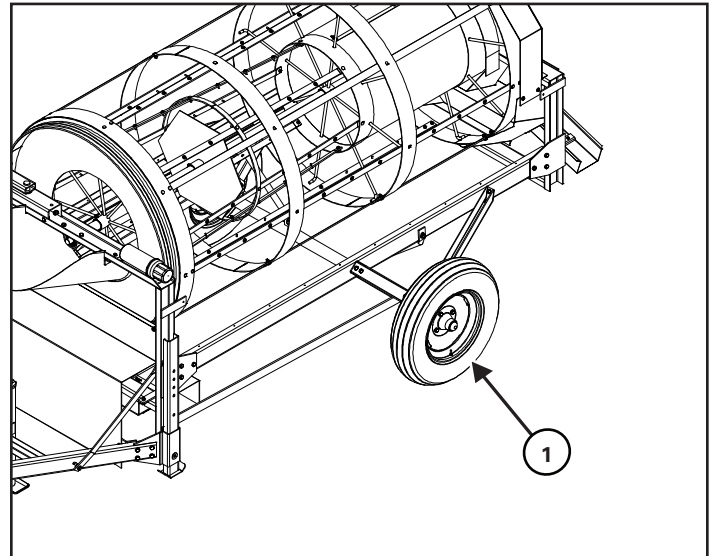
Check tension of belts:

- B-164 V-belts (Item 1) around the outer drum assembly, the 3" pulley, and idler pulley. Tighten belts using tightener springs connected to idler arm [Figure 13].
- B-87 V-belts (Item 2) around the motor pulley and 12" pulley. Tighten belts using belt tightener rod connected to motor mount [Figure 13].
- B-37 V-belt (Item 3) around trash pan 6" pulley, trash pan idler pulley, and 3" pulley [Figure 13].

Check every **8 hours** of use.

## Tire Pressure

Figure 14



Fill tires (Item 1) to a maximum of 60 psi (400 kPa) [Figure 14].

Check every **8 hours** of use.

## Safety Sign (Decal) Installation



- Remove all portions of the damaged safety sign (decal).
- Thoroughly clean the area with adhesive remover and glass cleaner. Remove 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 the equipment for an extended period of time. Below is a list of items to perform before storage.



- 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.
- Place the equipment in a dry protected shelter.

**Note:** If a dry protected shelter is not available, cover with a waterproof tarp and tie down securely.

- Place the equipment flat on the ground.
- Support the jack / frame with planks if required.

### Return To Service

After the equipment 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.
- Operate equipment, verify all functions operate correctly. Repair as needed.

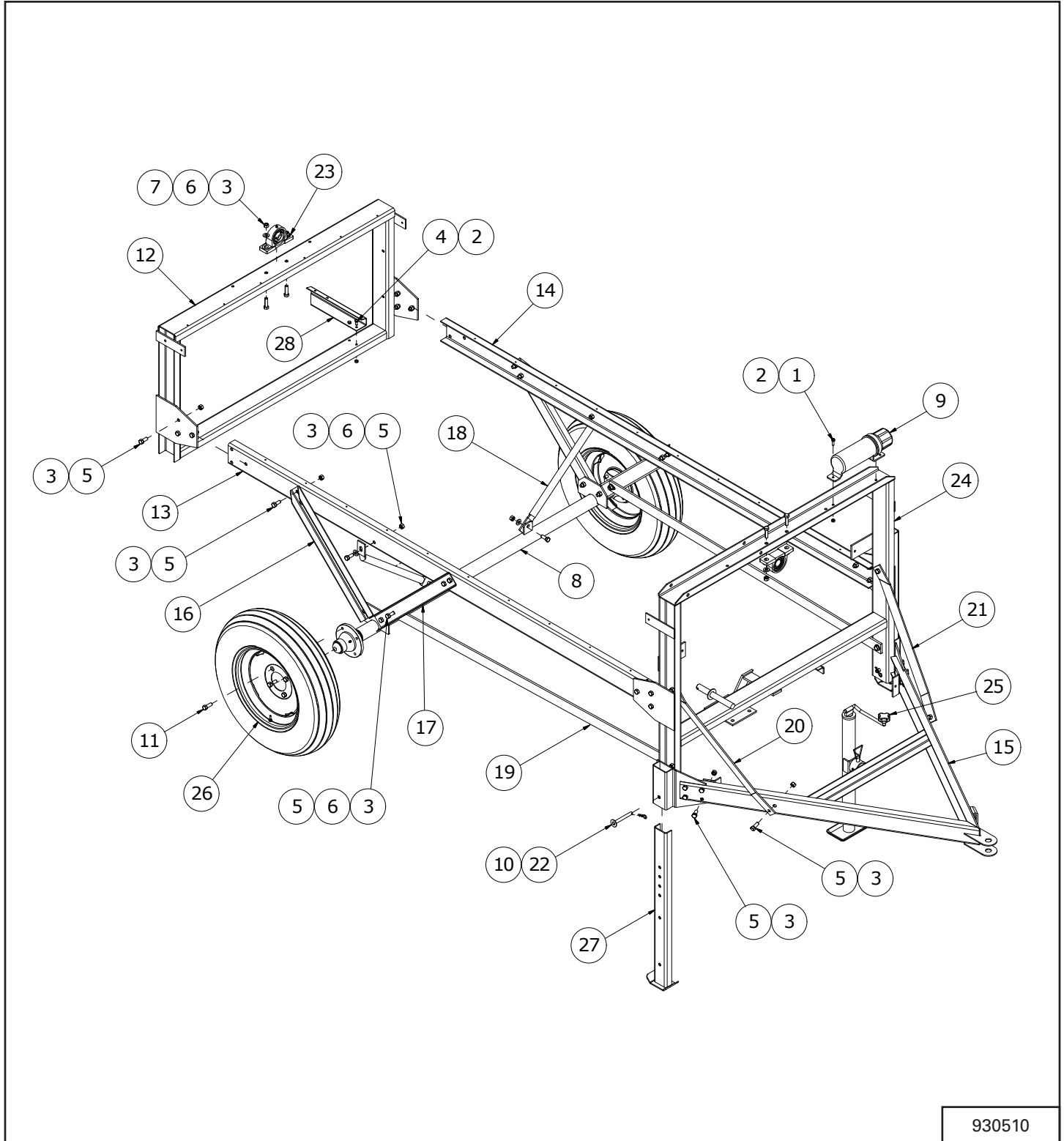
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## General Parts Information

The parts identification section list descriptions, part numbers and quantities for all North America Base Model 480 Grain Cleaners. Contact your Farm King dealer for additional parts information.

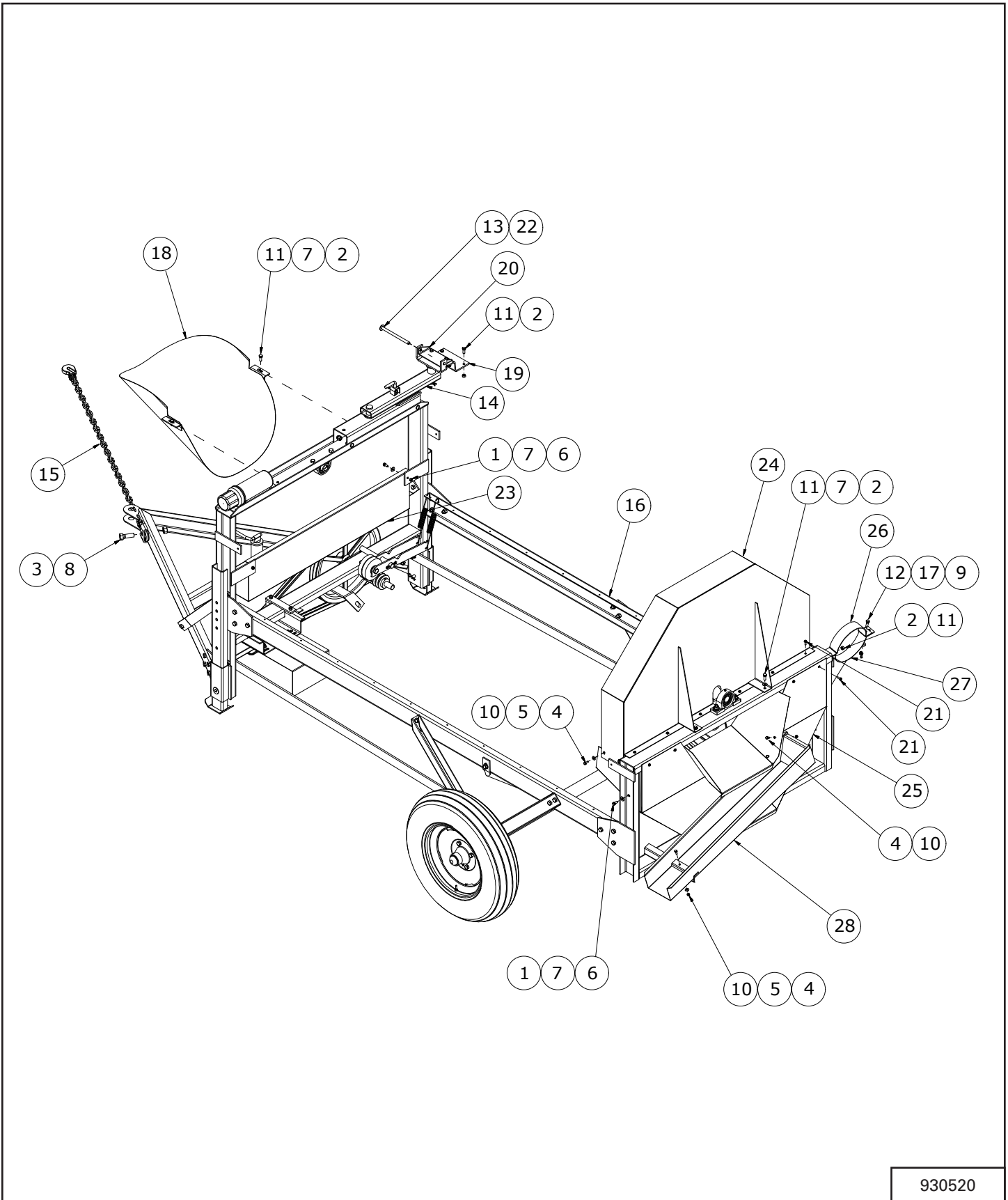
## Frame Assembly



930510

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	812026	5/16" X 1" HEX BOLT (PL)	2
2	812362	5/16" LOCK NUT (PL)	4
3	812364	1/2" LOCK NUT (PL)	48
4	81549	5/16" X 3/4" HEX BOLT (PL)	2
5	81620	1/2" X 1 1/4" HEX BOLT PL	44
6	84048	1/2" SAE FLAT WASHER (PL)	12
7	87553	1/2" X 1.75" HEX BOLT UNC GR5 (PL)	4
8	900266	AXLE ASSY GC	1
9	909277	MANUAL HOLDER 3 1/2" X 12"	1
10	961012	#16 HAIR PIN CLIP	2
11	968404	WHEEL BOLT 1/2" X 1 1/4" (PL)	8
12	973202	REAR FRAME WELDT	1
13	973203	FRAME SIDE - RIGHT HAND	1
14	973204	FRAME SIDE - LEFT HAND	1
15	973205	HTCH WELDT	1
16	973207	REAR AXLE BRACE	2
17	973208	AXLE BRACE 10GA X 5" X 26"	2
18	973209	AXLE BRACE 11GA X 01.250" X 25"	2
19	973210L	FRAME BRACE	2
20	973211	HTCH BRACE - RH	1
21	973212	HTCH BRACE - LH	1
22	973214	FRONT LEG PIN WELDMENT	2
23	973223	1 1/4" PILLOW BRG W/ COLLAR	2
24	973269	FRT FRAME WELDT	1
25	F3260	JACK SB & GC	1
26	F7110	WHEEL-15" X 4.5" X 4 BOLT	2
27	SZ000472	FRONT LEG ASSY	2
28	SZ000490	BRKT -TRASH DSCHG CHUTE MOUNTING	1

# Guard Assembly

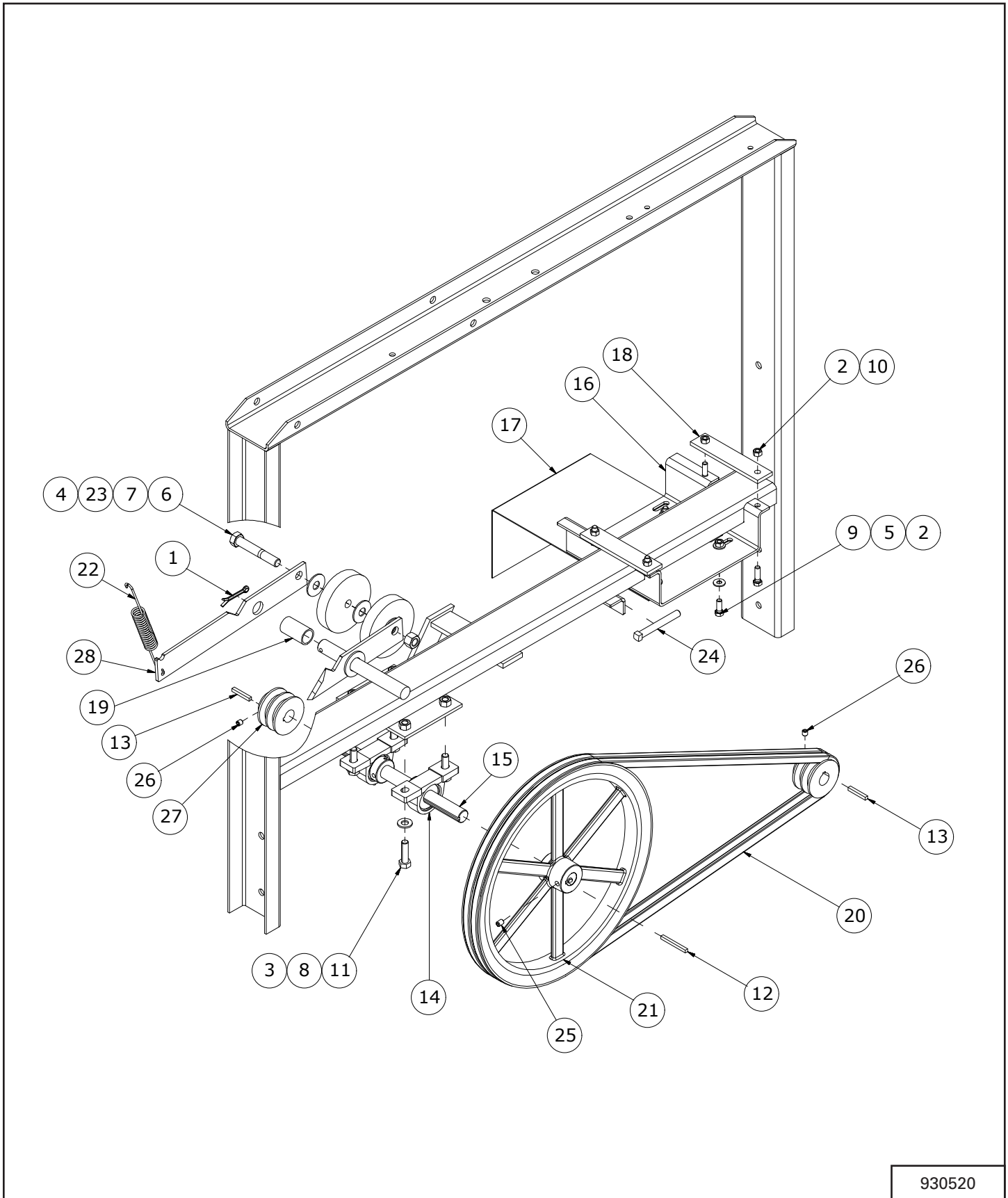


930520



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	812362	5/16" LOCK NUT (PL)	6
2	812363	3/8" LOCK NUT (PL)	9
3	812365	3/4" LOCK NUT (PL)	1
4	81525	1/4" X 3/4" HEX BOLT (PL)	8
5	81546	5/16" FLAT WASHER (PL)	6
6	81549	5/16" X 3/4" HEX BOLT (PL)	6
7	81570	WASHER - 5/16" STD FLAT (PL)	10
8	81684	3/4" X 2 1/4" HEX BOLT (PL)	1
9	84217	3/8" WING NUT (PL)	1
10	84498	1/4" LOCK NUT (PL)	8
11	86170	3/8" X 1" HEX BOLT GR.5 (PL)	9
12	86171	3/8" X 1 1/4" HEX BOLT (PL)	1
13	902996	INTAKE AUGER SWIVEL PIN	1
14	908532	SWIVEL ARM ASSY INT GC	1
15	910287	HOOK & SAFETY CHAIN ASSEMBLY	1
16	930510	ASSY-GC480 FRAME	1
17	964001	1" X 7/16" X 10GA FLAT WASHER (PL)	1
18	973247	INTAKE PAN WLDT, GC	1
19	973291	INT AUG OFFSET CONN 0.25" X 7" X 8"	1
20	973629	INTAKE AUGER CONNECTOR PLATE	1
21	9812392	SCREW SELFTAP 0.25UNC X 0.75(F)	10
22	9812430	1/8" X 1" COTTER PIN (PL)	1
23	F4508	FRT PULLEY GUARD 16GA X 42" X 44"	1
24	SZ000491	REAR DRUM SHIELD WELDMENT	1
25	SZ000492	DISCHARGE PAN WELDMENT	1
26	SZ000601	HALF CLAMP	1
27	SZ000603	ASSY, AUGER SUPPORT	1
28	SZ000606	TRASH DISCHARGE CHUTE	1

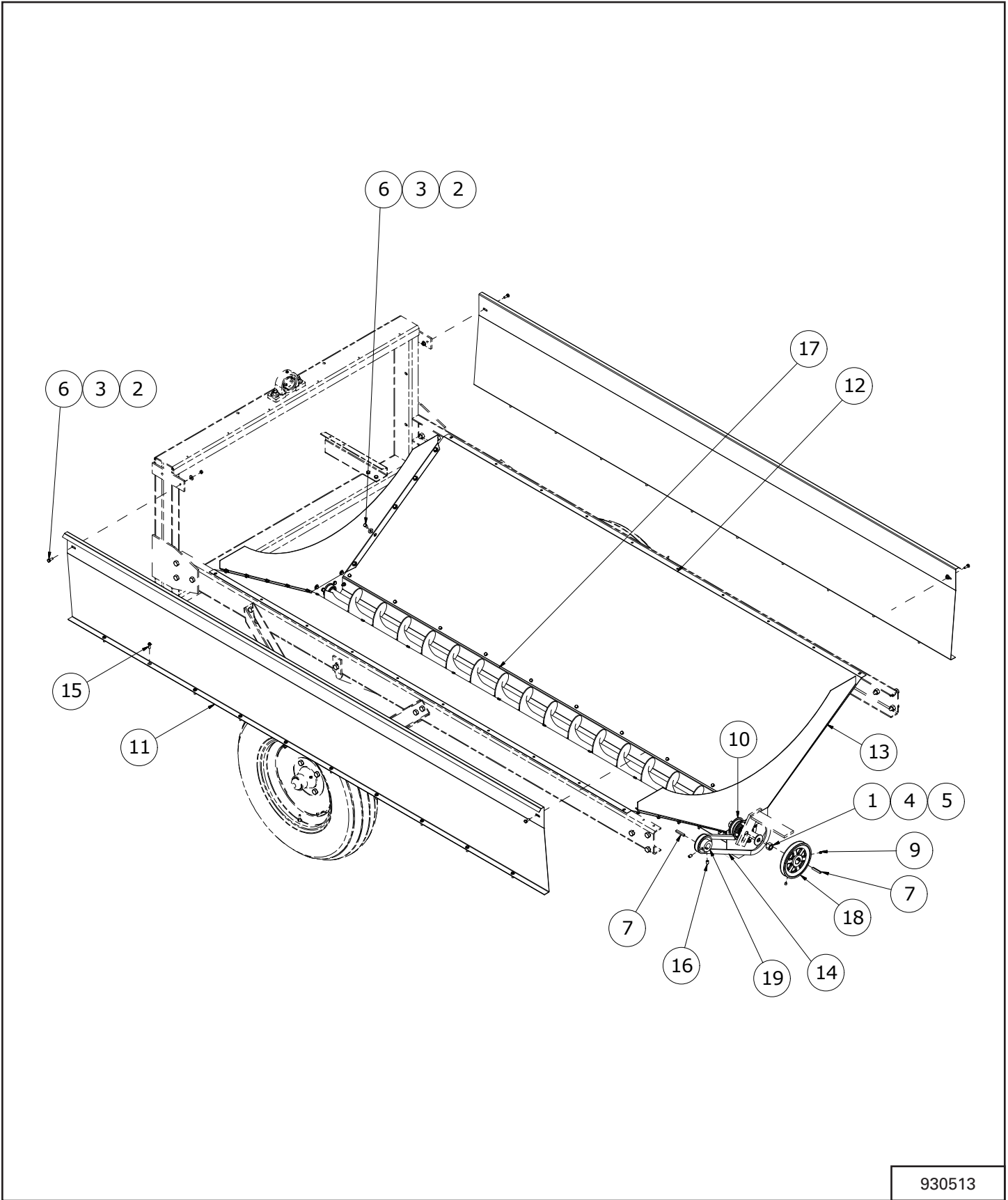
# Pulley Assembly



930520

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	81210	1/4" X 2" COTTER PIN (PL)	1
2	812363	3/8" LOCK NUT (PL)	8
3	812364	1/2" LOCK NUT (PL)	4
4	812482	5/8" LOCK NUT (PL)	1
5	81570	WASHER - 5/16" STD FLAT (PL)	8
6	81671	5/8" X 4" HEX BOLT (PL)	1
7	81678	5/8" FLAT WASHER STD (PL)	3
8	84048	1/2" SAE FLAT WASHER (PL)	4
9	86170	3/8" X 1" HEX BOLT GR.5 (PL)	4
10	86171	3/8" X 1 1/4" HEX BOLT (PL)	4
11	87553	1/2" X 1.75" HEX BOLT UNC GR5 (PL)	4
12	900286	KEY PULLEY, 0.25" SQ X 2.50" GC	1
13	901550	KEY	2
14	961792	HOUSING W/BEARING PILLOW (P205)	2
15	973240	REDUCER SHFT 01" X 14 1/2"	1
16	973241	MOTOR MOUNT 0.188" X 9.5" X 18"	1
17	973242	MM GUARD 16GA X 10" X 22"	1
18	973243	MM CLAMP 0.313" X 1.5" X 6.875"	2
19	973245	REDUCER SHFT BUSH 1.250"OD X W 11GA	1
20	973248	B-87 BELT	2
21	973287	12" DBL SHEAVE	1
22	973618	BELT TIGHTENER SPRING	2
23	973645	IDLER PULLEY	2
24	9812380	1/2" X 4" SQ. HD. SET SCREW (PL)	1
25	985639	03/8" X 1/2" SOCKET SET SCREW (BR)	2
26	967141	SETSCREW SCKTCUP .313NC X 025BR	4
27	SZ000614	3" DOUBLE PULLEY	1
28	SZ001250	IDLER ARM PLATE, 2016 & UP	2

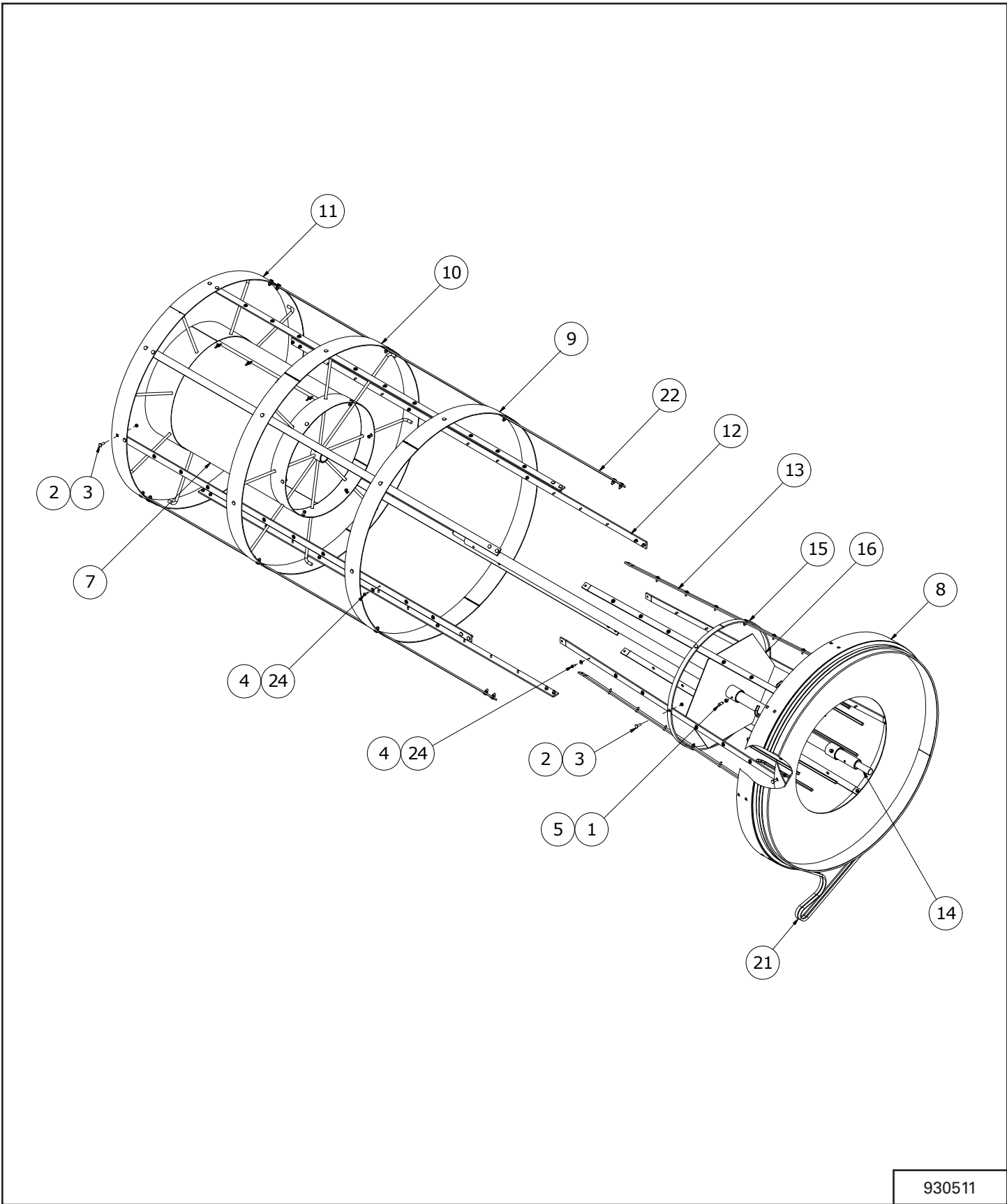
# Trash Pan Assembly (GC482 Option)



930513

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	812482	5/8" LOCK NUT (PL)	1
2	81525	1/4" X 3/4" HEX BOLT (PL)	48
3	81546	5/16" FLAT WASHER (PL)	48
4	81678	5/8" FLAT WASHER STD (PL)	8
5	84289	5/8" X 3" HEX BOLT GR.5 (PL)	1
6	84498	1/4" LOCK NUT (PL)	48
7	901550	KEY	2
8	963153	CTN 8 X 15 X 10.5 WAX	1
9	967141	5/16" X 1/4" SOCKET SET SCREW (BR)	2
10	968892	PULLEY BELT TGHNR	1
11	973253	TRASH PAN SIDE PANEL (OPT) 16GA X 19" X 105"	2
12	973254	TRASH PAN SIDE (OPTION) 16GA X 28" X 92"	2
13	973255	TRASH PAN END (OPT)	2
14	973259	B-37 V-BELT	1
15	9812392	SCREW SELFTAP 0.25UNC X 0.75(F)	20
16	967141	SETSCREW SCKTCUP .313NC X 0.25BR	2
17	F4522	TRASH PAN TROUGH BUNDLE (OPT)	1
18	SZ000613	SINGLE SHEAVE 6"	1
19	SZ000615	3" SINGLE SHEAVE	1

# Drum And Screen Assembly



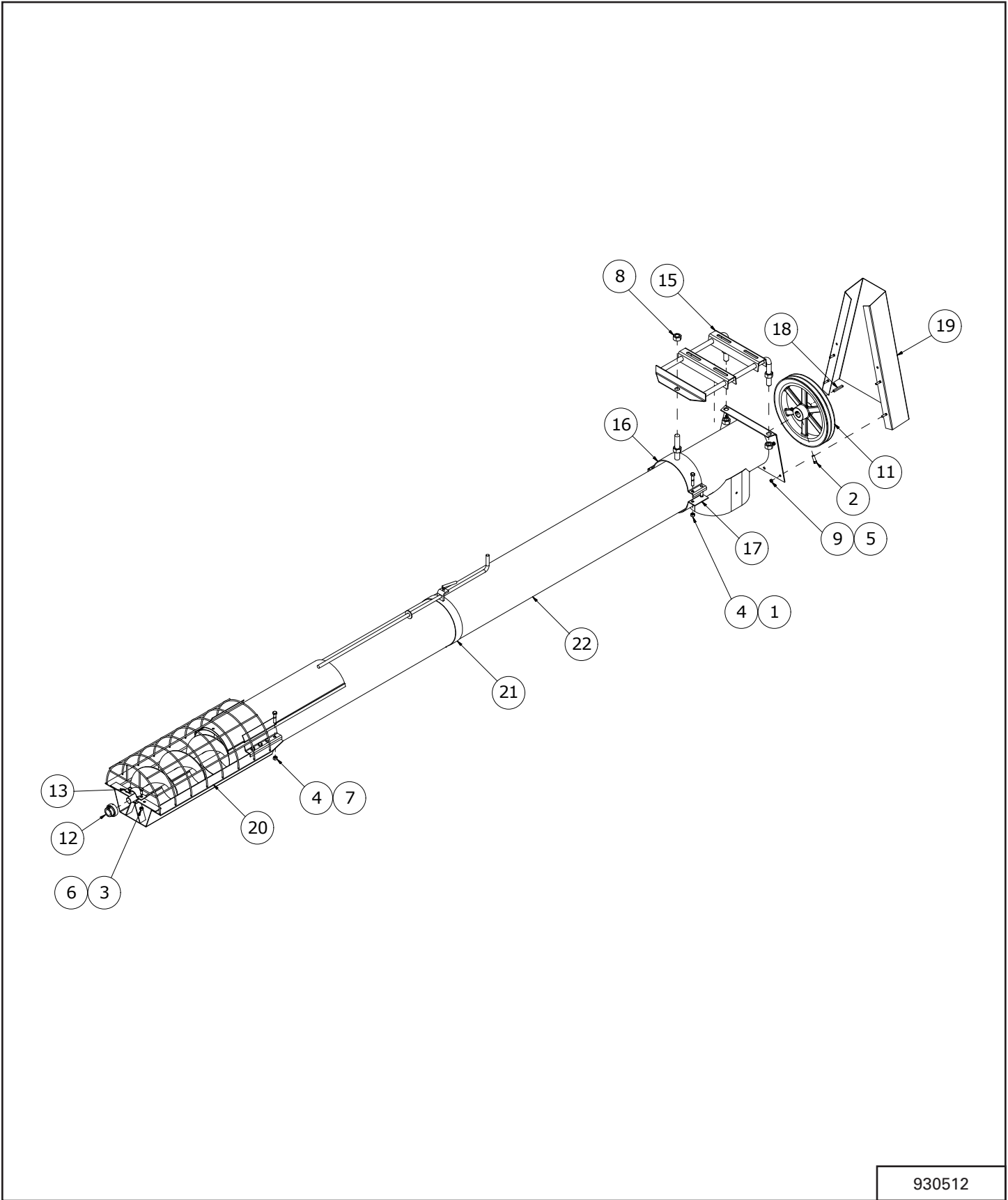
930511

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	812037	Ø3/8" X 3/4" SQHDCUP SETSCREW (PL)	4
2	812362	5/16" LOCK NUT (PL)	66
3	812626	BOLT CARR 0.313NC X 1.00GR5PL	66
4	81546	5/16" FLAT WASHER (PL)	72
5	81592	3/8" HEX NUT (PL)	4
6	84498	1/4" LOCK NUT (PL)	7
7	930523	ASSY-CONE EXTENSIONTUBE	1
8	973215	FRT DRUM RING WELDT	1
9	973216	WELDT - CENTERR DRUM RING	1
10	973217	REAR CENTER DRUM RING (#480 GC)	1
11	973218	REAR DRUM RING WELDT	1
12	973220	OUTER DRUM SCREEN SUPPORT 0.25" X 1 1/2" X 96"	4
13	973221	CONE SCREEN SUP 0.25" X 1.25" X 62.75"	6
14	973222	DRUM SHFT WELDT	1
15	973224	CONE SCREEN SUP RING	1
16	973225	CONE FLOW CTRL WELDT	1
17	973226	DRUM STRAP 148.25" 480 GC	4
18	973227	CONE STRAP 92-1/4" (#480 GC)	1
19	973228	CONE STRAP- 82" (#480 GC)	1
20	973229	CONE STRAP - 73 1/2" (#480 GC)	1
21	973270	B-164 V-BELT	2
22	973288	OUTER DRUM SCREEN SUPPORT 0.25"X1.5"X96"	4
23	973289	SPRING, SCREEN (GRAIN CLEANER)	2
24	9812392	SCREW SELFTAP 0.25UNC X 0.75(F)	72
25	9812398	BOLT STOVE 0.25 UNC X 2.50 RDHD	7

-	903522	5 X 5 CONE SCREEN	3
-	973238	4 X 4 CONE SCREEN	3
-	973237	3 X 3 CONE SCREEN	3
-	924032	2 X 2 CONE SCREEN	3
-	973236	5/8 X 5/8 CONE SCREEN	3

-	911904	10 X 10 DRUM SCREEN	3
-	911902	8 X 8 DRUM SCREEN	3
-	911901	6 X 6 DRUM SCREEN	3
-	911903	5 X 5 DRUM SCREEN	3
-	911900	4 X 4 DRUM SCREEN	3

# Utility Auger Assembly





ITEM	PART NUMBER	DESCRIPTION	QTY.
1	811795	3/8" X 2" HEX BOLT (PL)	4
2	81213	SETSCREW SQHDCUP 0.375NC X 1 PL	2
3	812362	5/16" LOCK NUT (PL)	2
4	812363	3/8" LOCK NUT (PL)	12
5	81527	1/4" X 1" HEX BOLT (PL)	4
6	81549	5/16" X 3/4" HEX BOLT (PL)	2
7	81578	3/8" X 1 3/4" HEX BOLT (PL)	8
8	81700	3/4" HEX NUT (PL)	6
9	84498	1/4" LOCK NUT (PL)	4
10	907458	UTILITY AUGER MANUAL	1
11	961567	12" DBL SHEAVE	1
12	961627	1" BEARING W/COLLAR	1
13	961913	INTAKE GUARD BEARING CAP	1
14	963154	12" X 16" X 9.5" CARTON WAX	1
15	963707	MOTOR MOUNT WELDMENT	1
16	963808	MM CLP WELDT - TOP	1
17	963809	MOTOR MOUNT CLAMP - BOTTOM 12GA	1
18	968811	1/4" SQ X 2" KEY	1
19	F1307	BELT GUARD PLATE	1
20	F1405	INT GUARD ASSY BNDL	1
21	F1413	FEED CONTROL ASSY	1
22	F1419	AUG TUBE ASSY	1

# Farm King



## Specifications And Shipping Kit Numbers

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# Farm King



## Specifications

Model	GC360
Height	78.6" (1996.4 mm)
Width	76.1" (1932.9 mm)
Length	176.7" (4488.2 mm)
Motor	3 HP

**Note:** Dimensions are approximate measurements.

## 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.

Qty.	Bundle	Description
GC480 GRAIN CLEANER W/ HITCH, TIRES, TILT ADJ.		
1	Y480	480 GRAIN CLEANER
GC482 GRAIN CLEANER W/ HITCH, TIRES, TILT ADJ., SHROUD AND FINES AUGER		
1	Y482	482 GRAIN CLEANER
OPTIONAL EQUIPMENT		
1	Y811S	8" X 11' UTILITY AUGER W/FLOW CONTROL AND BOLT-ON SPOUT
1	F211	BIG DADDY HOPPER
1	F210	STANDARD FLEX HOPPER
SCREEN KITS		
1	F4519	10 x 10 DRUM SCREEN (3)
1	F4518	8 x 8 DRUM SCREEN (3)
1	F4517	6 x 6 DRUM SCREEN (3)
1	F4516	5 x 5 DRUM SCREEN (3)
1	F4515	4 x 4 DRUM SCREEN (3)
1	F4319	5 x 5 CONE SCREEN (3)
1	F4514	4 x 4 CONE SCREEN (3)
1	F4513	3 x 3 CONE SCREEN (3)
1	F4511	2 x 2 CONE SCREEN (3)
1	F4512	5/8 x 5/8 CONE SCREEN (3)

# Hardware Torque Values

## Metric Chart

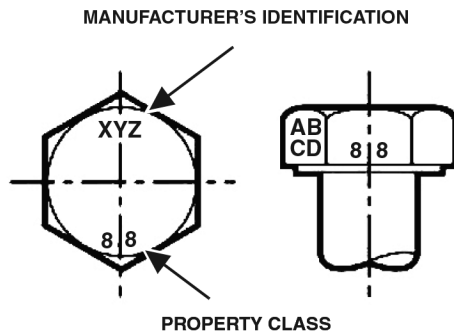
**NOTE: Do not use the values listed in the charts if a different torque value or tightening procedure is specified in this manual for a specific application. Torque values listed are for general use only.**

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

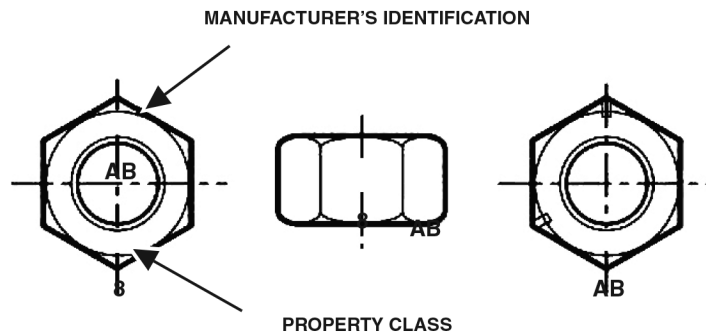
Nominal Size	Class 5.8		Class 8.8		Class 10.9		Lock nuts
	Unplated	Plated W / ZnCr	Unplated	Plated W / ZnCr	Unplated	Plated W / ZnCr	CL.8 w/ CL. 8.8 Bolt
M4	1.7 (15*)	2.2 (19*)	2.6 (23*)	3.4 (30*)	3.7 (33*)	4.8 (42*)	1.8 (16*)
M6	5.8 (51*)	7.6 (67*)	8.9 (79*)	12 (102*)	13 (115*)	17 (150*)	6.3 (56*)
M8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

**NOTE: Torque values shown with \* are inch pounds.**

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



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



**Imperial Chart**

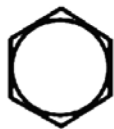
**NOTE: Do not use the values listed in the charts if a different torque value or tightening procedure is specified in this manual for a specific application. Torque values listed are for general use only.**

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

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

**NOTE: Torque values shown with \* are inch pounds.**

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



SAE GRADE 2 BOLTS



SAE GRADE 5 BOLTS



SAE GRADE 8 BOLTS



SAE GRADE 2 NUTS

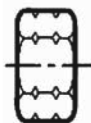


SAE GRADE 2 NUTS



SAE GRADE 2 NUTS

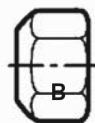
**Identification of Hex Nuts and Lock Nuts**



Grade A - No Notches

Grade B - One Circumferential Notch

Grade C - One Circumferential Notches



Grade A - No Mark

Grade B - Letter B

Grade C - Letter C



Grade A - No Marks

Grade B - Three Marks

Grade C - Six Marks

(Marks not always located at corners)

# Farm King





# Warranty

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# Farm King



## **Farm King 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 one (1) year. 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.

## **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.



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

# Farm King

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