

Farm King

OPERATOR AND PARTS MANUAL

Rotary Tiller 25 Series

Model TL236, TL245, TL254

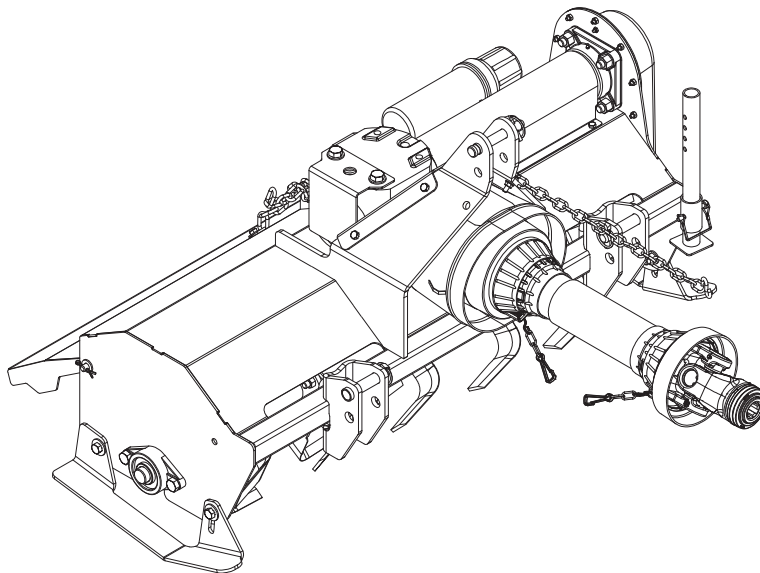


Table Of Contents

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

- Warranty Registration Form.....1
- Introduction.....3
 - Owner’s Information.....5
 - Equipment Identification.....6
- Safety.....9
 - Safety Instructions.....11
 - Fire Prevention.....14
 - Safety Signs (Decals).....16
 - Equipment Decals And Signs.....17
 - Safety Sign-Off Form.....18
- Operation.....19
 - Pre - Operation Checklist.....21
 - Entering The Operator’s Position.....21
 - Leaving The Operator’s Position.....21
 - Tractor Requirements.....22
 - Connecting To Tractor.....22
 - Connecting The PTO Driveline.....24
 - Adjusting Skid Shoe Height.....28
 - Adjusting Drag Shield.....29
 - Adjusting Support Stand.....29
 - Theory Of Operation.....30
 - Transporting.....32
- Maintenance.....33
 - Troubleshooting.....35
 - Service Schedule Chart.....36
 - Lubrication.....37
 - Gearbox.....40
 - Tine Replacement.....41
 - Slip Clutch.....42
 - Safety Sign (Decal) Installation.....43
 - Storage And Return To Service.....43

Parts Identification..... 45

 General Parts Information..... 47

 Deck Components..... 47

 Drive Components..... 50

 Pto Driveline..... 52

Specifications And Shipping Kit Numbers..... 55

 Specifications..... 57

 Shipping Kit And Bundle Numbers..... 57

 Hardware Torque Values..... 58

Warranty..... 61

 Farm King Base Limited Warranty..... 63

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:
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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
- Chain Tension Checked
- Check Gear Box Oil Level
- Tines Properly Oriented
- Fasteners Tight
- Lubricate Machine
- Skid Shoes Properly Adjusted
- Slip Clutch (If equipped) Is Properly Adjusted

Safety

- Safety Chain On Hitch
- All Decals Installed
- Guards And Shields Installed And Secure
- Review Operating And Safety Instructions
- Check Gear Box And Chain Case For 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 Signature:
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Remove this Warranty Registration Form from the Operator And Parts Manual. Make two copies of the form. Send original Warranty Registration Form to Farm King. Give one copy to the customer and the dealer will keep one copy.

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Introduction

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

Owner's Information.....	5
Serial Number Location.....	5
Manual Storage.....	5
Equipment Identification.....	6
Component Location - Front View.....	6
Component Location - Rear View.....	7

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Owner's Information

Thank you for your decision to purchase a Farm King 25 Series Rotary Tiller. 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.

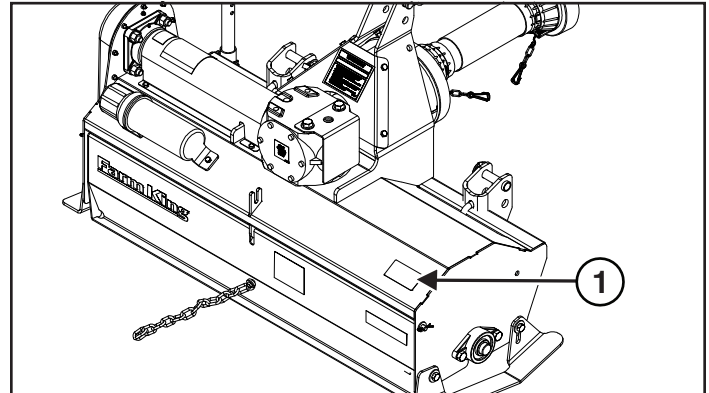
Keep this manual available for frequent reference. All new operators or owners must review the manual before using the equipment and annually thereafter. Contact your Farm King Dealer if you need assistance, information, or additional copies of the manual. Visit our website at www.farm-king.com for a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

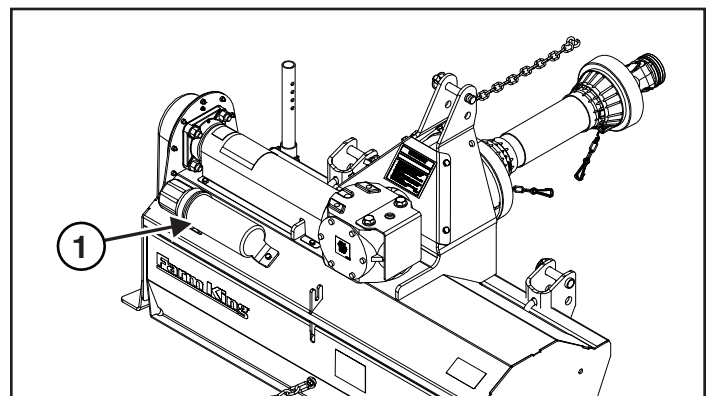
Serial Number: _____

The serial number plate (Item 1) [Figure 1] is located on the top corner of the main frame.

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

Manual Storage

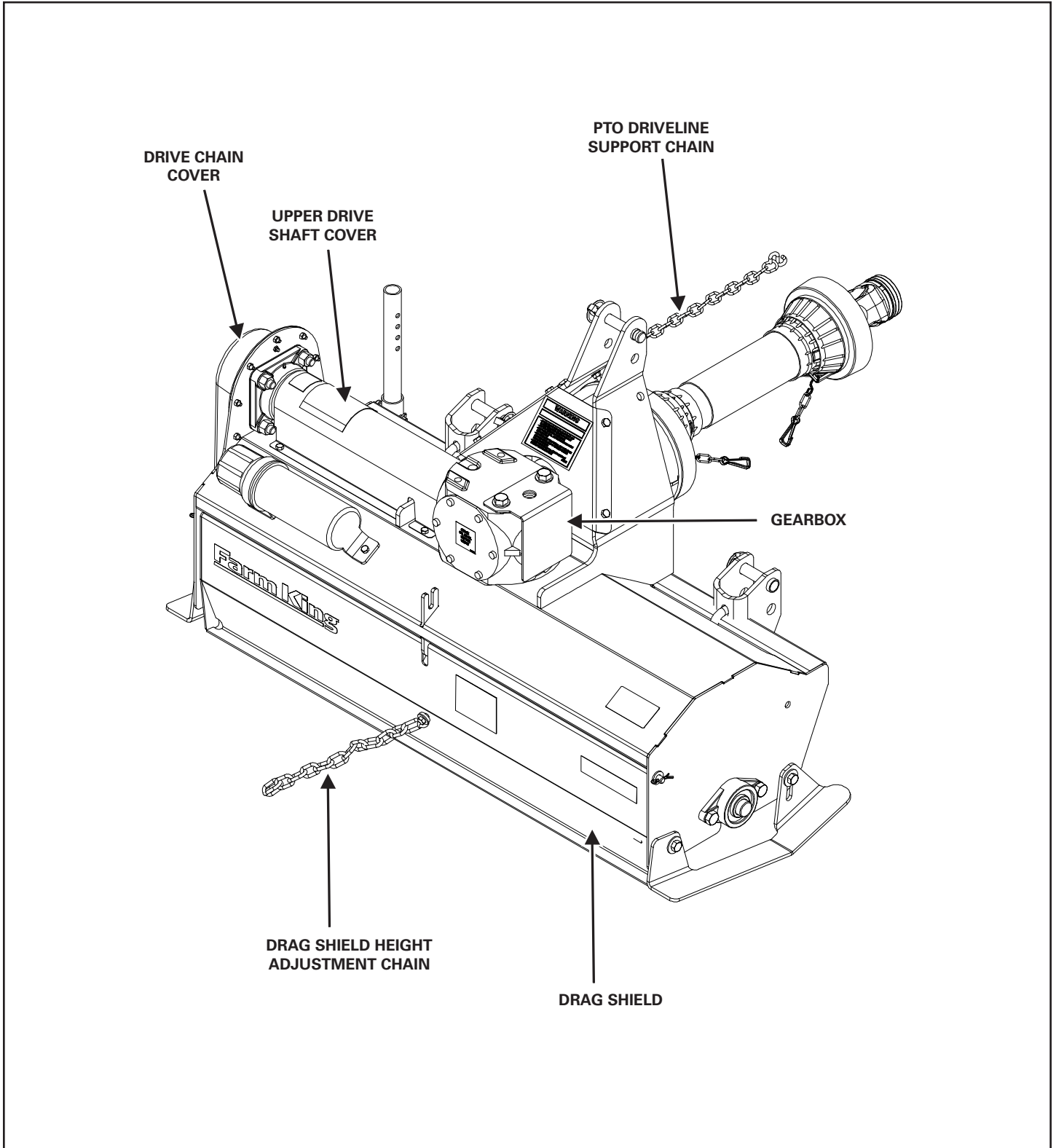
Figure 2



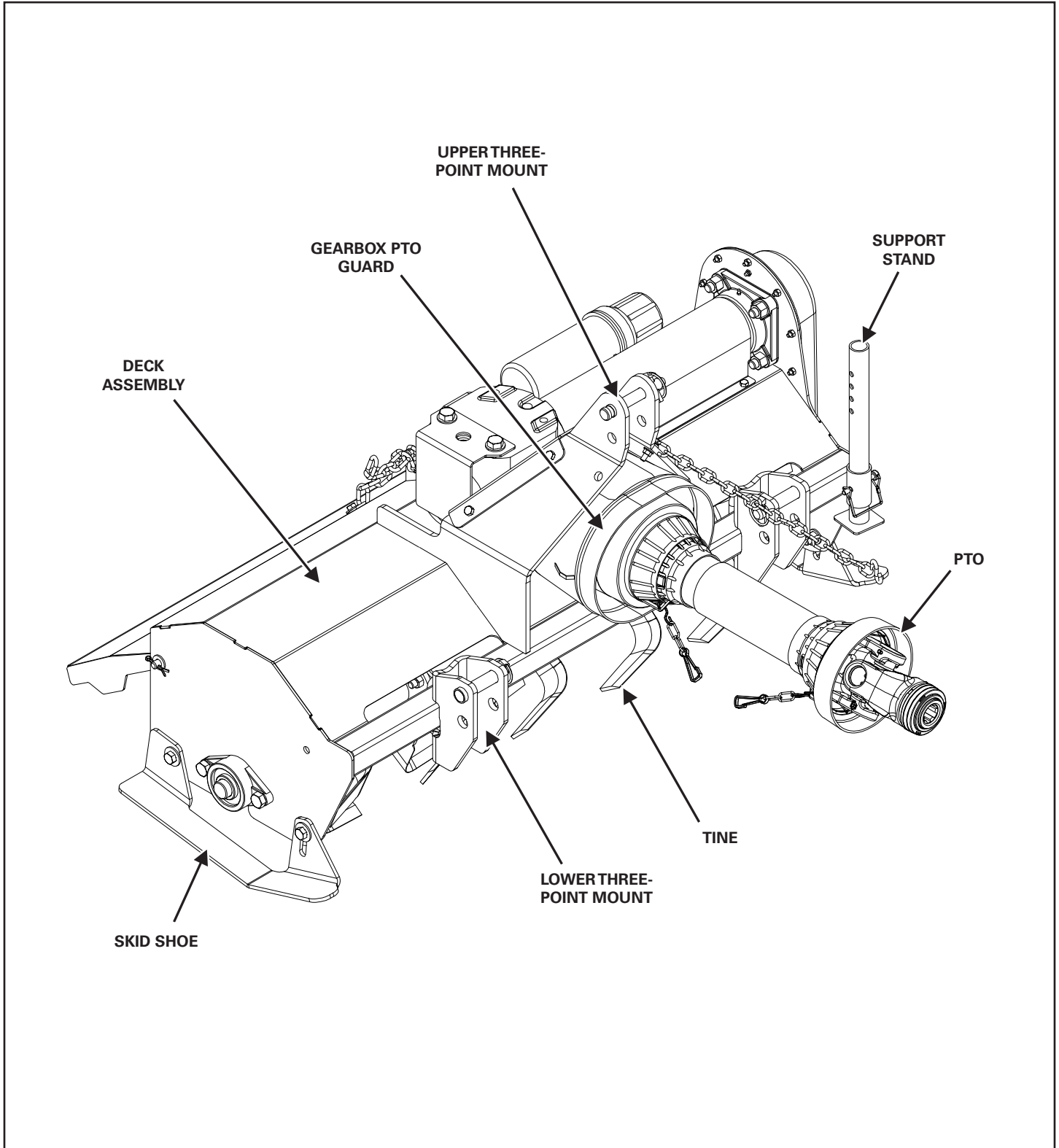
The operator and parts manual and other documents can be stored in the canister (Item 1) [Figure 2].

Equipment Identification

Component Location - Front View



Component Location - Rear View



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Safety


- Safety Instructions.....11
 - Safe Operation is The Operator’s Responsibility.....11
 - Safe Operation Needs A Qualified Operator.....11
 - Use Safety Rules.....12
 - Safety Rules For Power Take-Off (PTO) Driven Equipment.....12
 - Machine Requirements And Capabilities.....13
 - Transport Safety.....13
- Fire Prevention.....14
 - Maintenance.....14
 - Operation.....14
 - Starting.....14
 - Electrical.....14
 - Hydraulic System.....14
 - Fueling.....14
 - Welding And Grinding.....15
 - Fire Extinguishers.....15
 - Call Before You Dig.....15
- Safety Signs (Decals).....16
- Equipment Decals And Signs.....17
- Safety Sign-Off Form.....18


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Safety Instructions

Safe Operation is The Operator's Responsibility

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


	CAUTION
<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>	

	DANGER
<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>	

	WARNING
<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>	

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

Safe Operation Needs A Qualified Operator

	WARNING
<p>Operators must have instructions before operating the machine. Untrained operators can cause injury or death.</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.
- Check for overhead and / or underground lines before operating equipment (if applicable).
- In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.
- Check that the equipment is securely fastened to the tractor / towing vehicle.
- Make sure all the machine controls are in the NEUTRAL position before starting the machine.
- Operate the equipment only from the operator's position.
- Operate the equipment according to the Operator And Parts Manual.
- When learning to operate the equipment, do it at a slow rate in an area clear of bystanders, especially small children.
- DO NOT permit personnel to be in the work area when operating the equipment.
- The equipment must be used ONLY on approved tractors / transport vehicles.
- DO NOT modify the equipment in any way. Unauthorized modification may impair the function and / or safety and could affect the life of the equipment.
- 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.

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.
- Never operate over 540 rpm.
- 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 raising PTO driven equipment.
- Excessive driveline angle can cause driveline damage.
- Recommended rotary tiller driveline angle is 15 degrees.

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

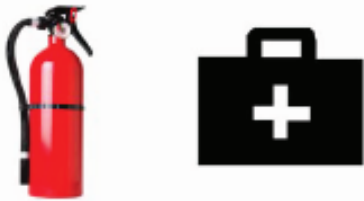


- Stop the engine and let it cool before adding fuel. No smoking! Do not refuel a machine near open flames or sparks. Fill the fuel tank outdoors.

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.

Call Before You Dig



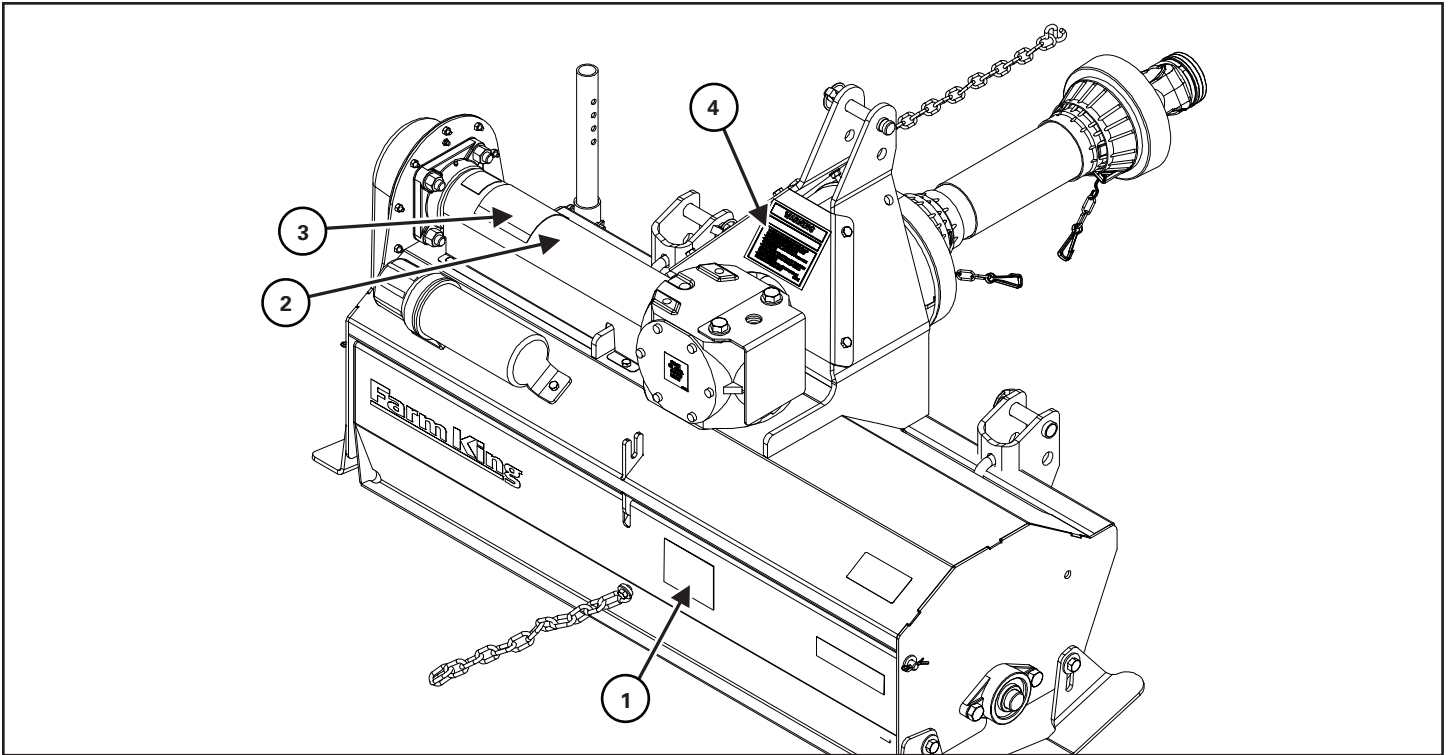
**Call Before You Dig
Dial 811 (USA Only)
1-888-258-0808 (USA & Canada)**

When you call, you will be directed to a location in your state / province, or city for information about buried lines (telephone, cable TV, water, sewer, gas, etc.).

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



967383 (Item 1) [Figure 3]



915861 (Item 2) [Figure 3]



967382 (Item 3) [Figure 3]



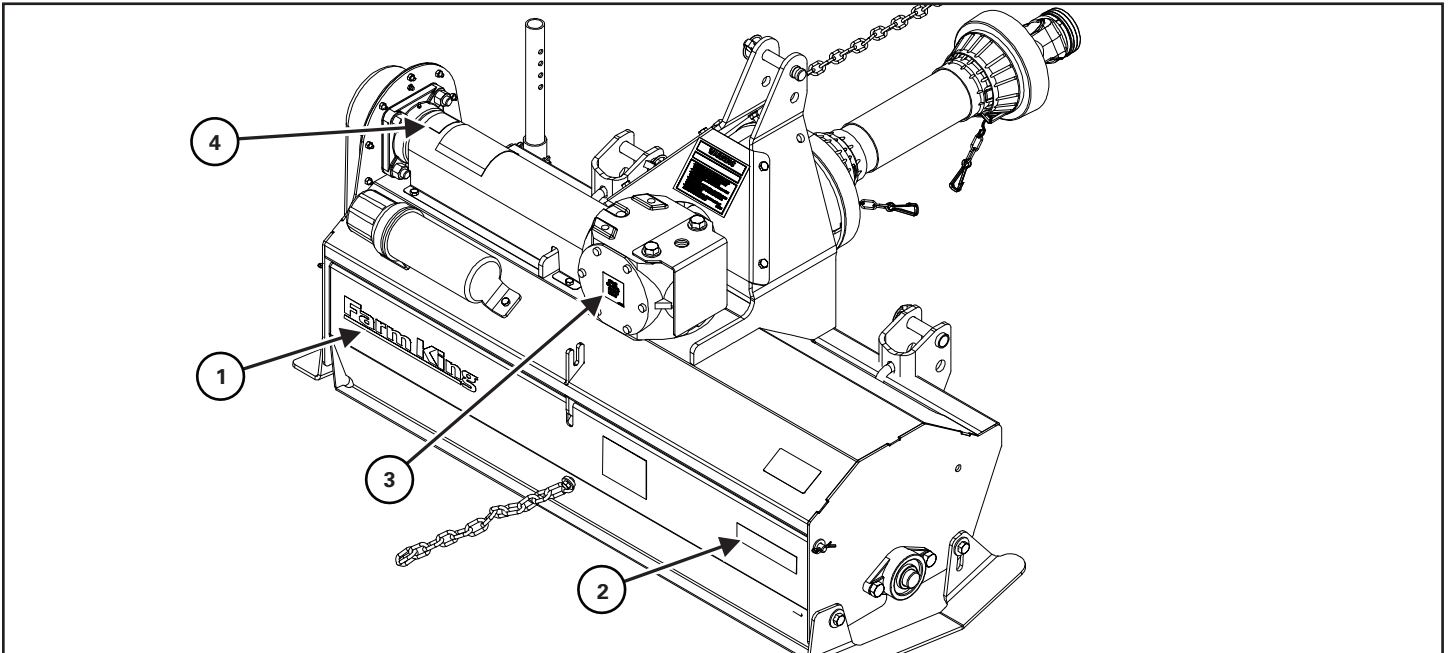
966701 (Item 4) [Figure 3]



Equipment Decals And Signs

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

Figure 4



910625 (Item 1) [Figure 4]

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916750 (Item 2) [Figure 4]

TL236

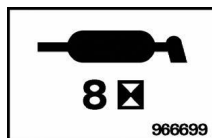
967388 (Item 3) [Figure 4]



916751 (Item 2) [Figure 4]

TL245

966699 (Item 4) [Figure 4]



916752 (Item 2) [Figure 4]

TL254

Operation


Pre - Operation Checklist.....	21
Entering The Operator's Position.....	21
Leaving The Operator's Position.....	21
Tractor Requirements.....	22
Connecting To Tractor.....	22
Connecting The PTO Driveline.....	24
PTO Driveline Length Check.....	25
PTO Driveline Bottoming Out Check.....	25
Reducing The PTO Driveline Length.....	26
PTO Driveline Engagement Check.....	27
Adjusting Skid Shoe Height.....	28
Skid Shoe Settings.....	28
Adjusting Drag Shield.....	29
Drag Shield Settings.....	29
Adjusting Support Stand.....	29
Support Stand Settings.....	29
Theory Of Operation.....	30
Call Before You Dig.....	30
Starting Operation.....	31
Tilling Process.....	31
Finishing Operation.....	31
Work Site Recommendations.....	31
Transporting.....	32

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Pre - Operation Checklist

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

	WARNING
AVOID INJURY OR DEATH	
<ul style="list-style-type: none"> • Disengage the PTO, engage the machine's parking brake, stop the engine and make sure all rotating components are completely stopped before connecting, disconnecting, adjusting or cleaning any PTO driven equipment. • Always keep PTO shields and all guards in place when using PTO driven equipment. • Disengage PTO for road travel. • Keep hands, feet and clothing away. 	

1. Lubricate the equipment per the schedule outline in the Maintenance Section.
2. Check the rotary tiller three-point mounts 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 that the equipment is properly attached to the tractor. Be sure retainers are used on the mounting pins.
5. Check the tines. Remove any twine, wire or other material that has become entangled.
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.
8. To engage the clutch, fully turn out the four socket set screws on the inside of the PTO clutch assembly.
9. Check that the PTO driveline telescope easily and turns freely.
10. Check the oil level in the gearbox as outlined in the Maintenance Section.

Entering The Operator's Position

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

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

Leaving The Operator's Position

Always perform the following steps when leaving the operator's position:

	WARNING
AVOID INJURY OR DEATH	
Before you leave the operator's position:	
<ul style="list-style-type: none"> • 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. 	

Tractor Requirements

The tractor must satisfy the following requirements, depending on model.

TL236 Models:

- 12 - 18 HP w/ Cat. I hitch, 6 - spline 1-3/4 in. (44.5 mm) PTO shaft


TL245 Models:

- 14 - 22 HP w/ Cat. I hitch, 6 - spline 1-3/4 in. (44.5 mm) PTO shaft

TL254 Models:

- 18 - 25 HP w/ Cat. I hitch , 6 - spline 1-3/4 in. (44.5 mm) PTO shaft

	WARNING
	
<ul style="list-style-type: none"> • Do NOT exceed 540 RPM PTO. • Keep PTO shields and all guards in place. • Keep away from moving parts. • Keep bystanders away. 	

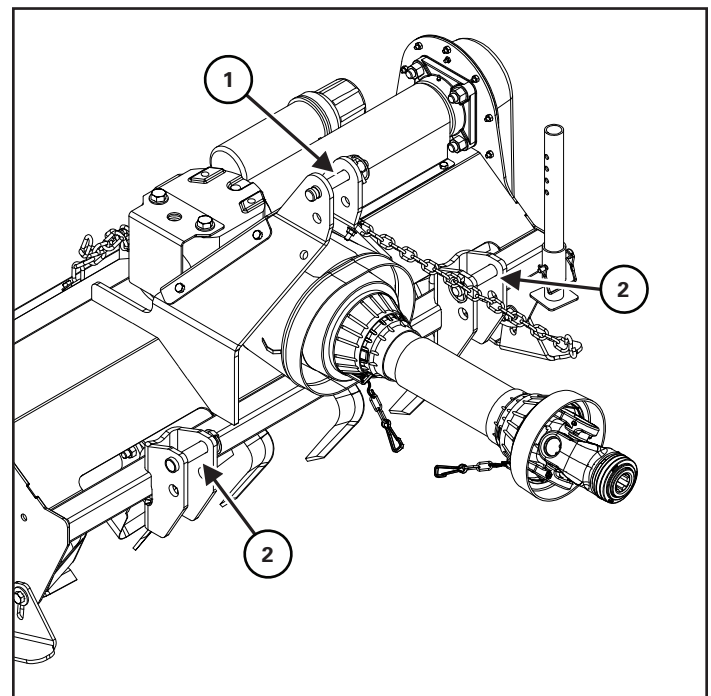
	IMPORTANT
<p>Install the correct front ballast on the tractor before connecting the rotary tiller to the tractor. See your tractor's operation manual for ballast information.</p>	

Connecting To Tractor

Always inspect the tractor's three-point hitch and rotary tiller three-point mounts before connecting. See the tractor's owner's manual.

Move the tractor drawbar into the storage position or remove (if necessary) to prevent interference with operation. (See the tractor's operator's manual for the correct procedure.)

Figure 5



Remove the top implement mounting pin (Item 1) [Figure 5] and lynch pin from the equipment.


Remove the lynch pins from the left and right lower mounts (Item 2) [Figure 5].

Enter the operator's position (See Entering The Operator's Position in Operation section).

Move the tractor into position in front of the equipment.

Move the tractor backwards, aligning the tractor's three-point hitch and equipment's three-point mounts.

Leave the operator's position (See Leaving The Operator's Position in Operation section).

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

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

Install the left and right lower three-point mounts of the tractor to the equipment's left and right lower mounting pins.

Reinstall the lynch pins.

Note: Always use implement mounting pins of adequate size and strength and a retaining pin with a locking device.

Lower the top link of the three-point hitch until it aligns with the equipment's upper mount.

Reinstall the mounting pin and lynch pin.


Note: It may be necessary to lengthen or shorten the top link to align it with the equipment's mounting hole. (See the tractor's operator's manual for the correct procedure.)

The equipment can be leveled front to back by adjusting the top link. (See the tractor's operator's manual for the correct procedure.)


Adjust the lower link sway chains or blocks on the tractor to restrict side movement of the equipment when operating.

Connecting The PTO Driveline

Stop the engine and leave the operator’s position (See “Leaving The Operator’s Position” in Operator’s section).

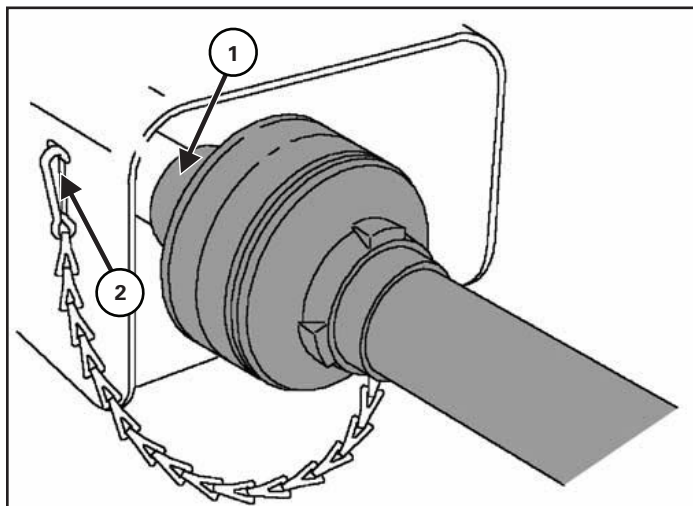
	WARNING
AVOID INJURY OR DEATH	
<p>Warnings on the machine and in the manuals are for your safety. Failure to obey warnings can cause serious injury or death.</p>	

Note: Clean and grease tractor’s PTO shaft and PTO driveline coupling each time driveline is connected.

	IMPORTANT
<p>Improper hitch installation can cause PTO driveline damage.</p> <ul style="list-style-type: none"> • Do not modify the three point 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 6




Retract the collar (Item 1) [Figure 6] and slide the PTO driveline onto the tractor PTO shaft. Release the collar and the driveline will lock onto the shaft. Push and pull the PTO driveline back and forth several times and make sure it is securely attached to the PTO shaft.

Install PTO driveline safety chain (Item 2) [Figure 6].

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

	WARNING
	
<ul style="list-style-type: none"> • Do NOT exceed 540 RPM PTO. • Keep PTO shields and all guards in place. • Keep away from moving parts. • Keep bystanders away. 	

	IMPORTANT
<p>Excessive driveline angle can cause driveline damage.</p> <p>Recommended rotary tiller driveline angle is 15 degrees.</p>	

PTO Driveline Length Check


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.

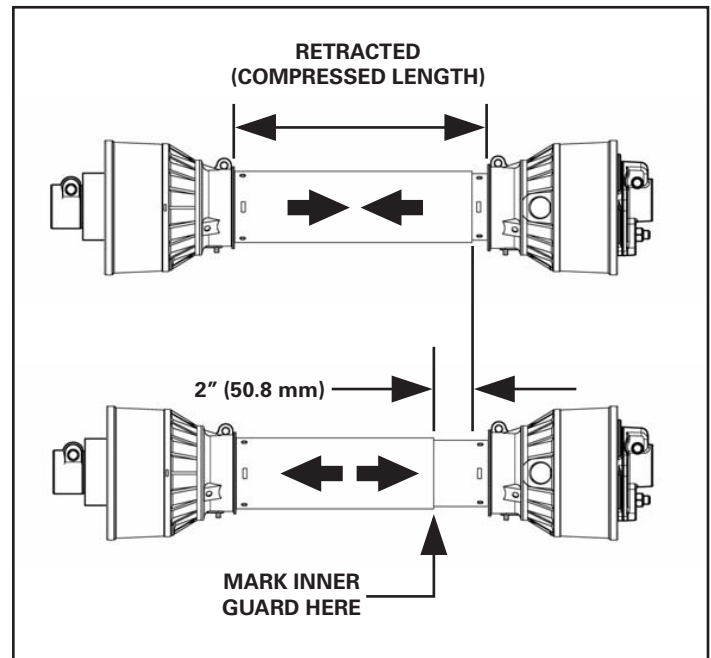
	<h2 style="margin: 0;">WARNING</h2>
<h3 style="margin: 0;">AVOID INJURY OR DEATH</h3>	
<ul style="list-style-type: none"> • Do NOT exceed the rated implement PTO speed. • Stay clear of rotating driveline. • Keep bystanders away. • Keep hands, feet, clothing and long hair away. • Keep PTO shields and 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” in Operation section).

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


Figure 7



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 7].
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 7].
4. Reattach the PTO driveline to the tractor PTO shaft.
5. Enter the operator’s position. 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" in the Operation section). Make sure the PTO driveline and all rotating components have come to a complete stop before leaving the operator's position.



WARNING

AVOID INJURY OR DEATH

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

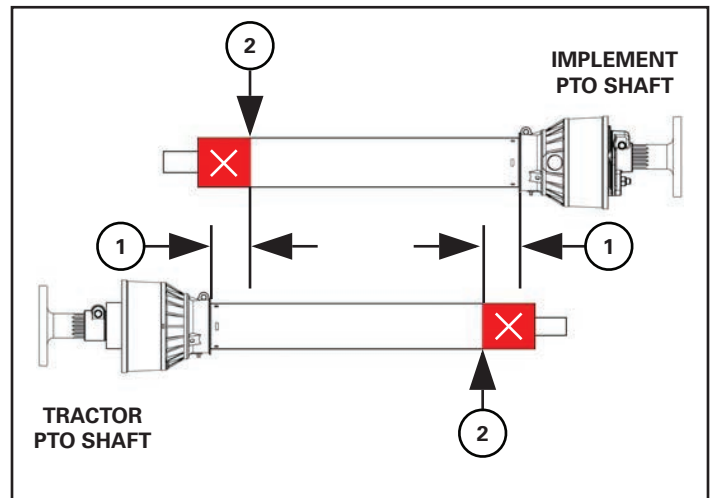
Remove the PTO driveline from the tractor and place in storage position (if equipped).

Enter the operator's position (See "Entering The Operator's Position" in the Operation section). Start the engine.

Raise or lower the three-point implement to get the shortest distance between the tractor PTO shaft and three-point implement gearbox PTO shaft. Stop the engine and leave the operator's position.

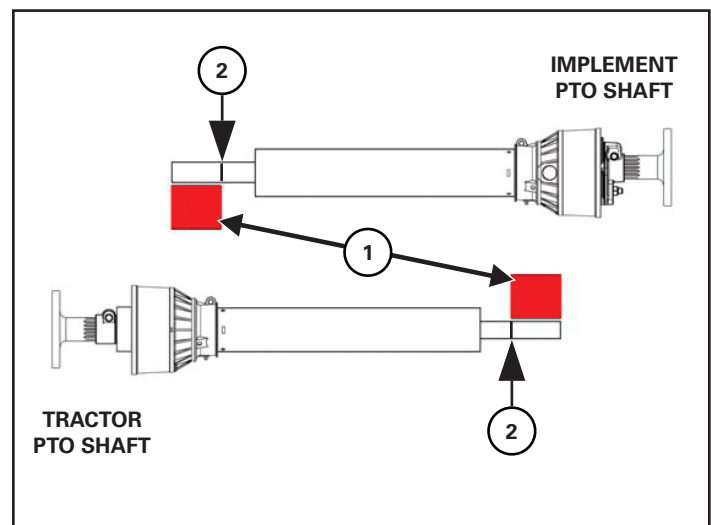
Pull the PTO driveline apart and reinstall each individual section; one half to the tractor PTO shaft and one half to the implement gearbox PTO shaft.

Figure 8



1. Hold PTO driveline sections parallel to one another and measure back 2 in. (50.8 mm) (Item 1) [Figure 8] from the yoke of each section and place mark on opposite section. Cut the plastic shield at this length (Item 2) [Figure 8].

Figure 9




2. Using the plastic guard lengths that were cut off in [Figure 8], align the cut off lengths (Item 1) [Figure 9] with the end of the inner & outer shafts. Place a mark (Item 2) [Figure 9] 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" in the Operation section).

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

	<h2 style="margin: 0;">WARNING</h2>
<h3 style="margin: 0;">AVOID INJURY OR DEATH</h3>	
<ul style="list-style-type: none"> • 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. 	

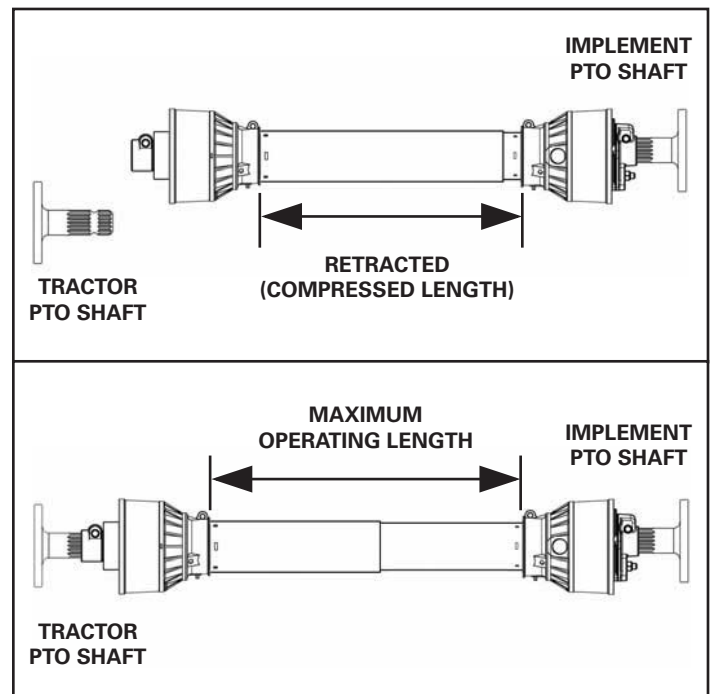
1. Disconnect the PTO driveline from the tractor and fully slide the driveline sections together (retracted).
2. Measure the retracted (compressed) length of the PTO driveline between the bases of the plastic guards [Figure 10].
3. Multiply the retracted driveline length by 1.667 to determine the PTO 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" in the Operation section)

6. With the PTO driveline attached, position the three-point implement to where the telescoping PTO driveline is at its maximum operating extension.
7. Stop the engine and leave the operator's position. Make sure the PTO driveline and all rotating components have come to a complete stop before leaving the operator's position.
8. Measure the length of the PTO driveline between the bases of the plastic shields [Figure 10] to determine the maximum operating length.

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

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.

Figure 10



Adjusting Skid Shoe Height

	IMPORTANT
<p>The rotary tiller is shipped with the skid shoes mounted on the inside of the deck assembly. The skid shoes must be removed and reinstalled on the outside of the deck assembly (if required).</p>	

	WARNING
<p>AVOID INJURY OR DEATH</p> <p>Before you leave the operator's position:</p> <ul style="list-style-type: none"> 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. 	

	WARNING
<p>AVOID INJURY OR DEATH</p> <p>Securely block up the implement before working underneath.</p>	

Park the tractor and implement on a flat level surface.

Fully raise the rotary tiller.

Stop the engine and leave the operator's position. (See Leaving The Operator's Position in the Operation section). Make sure the PTO driveline and all rotating components have come to a complete stop before leaving the operator's position.

Place blocking under the equipment. Position blocking away from skid shoes, allowing access to skid shoe mounting bolts and nuts.

Enter the operator's position (See Entering The Operator's Position in the Operation section). Start the engine.

Lower the equipment onto the blocking.

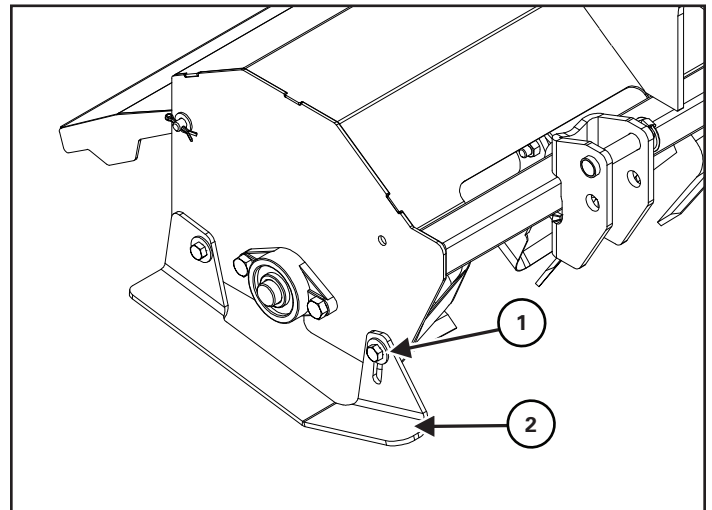
Stop the engine and leave the operator's position.

Skid Shoe Settings

Decrease Working Depth: Lower skid shoes.

Increase Working Depth: Raise skid shoes.

Figure 11



Loosen bolts and nuts (Item 1) on the skid shoe (Item 2) [Figure 11]. Raise or lower the skid shoe to the desired depth. Reinstall bolts and nuts to secure the skid shoe in position.

Note: Skid shoes must be level from front to back.

Left and right skid shoes must be set at the same working depth.

Repeat procedure on opposite skid shoe.

Verify both skid shoes are set at the same depth.

Adjusting Drag Shield

	WARNING
<p>AVOID INJURY OR DEATH</p> <p>Before you leave the operator's position:</p> <ul style="list-style-type: none"> • 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 and implement on a flat level surface.

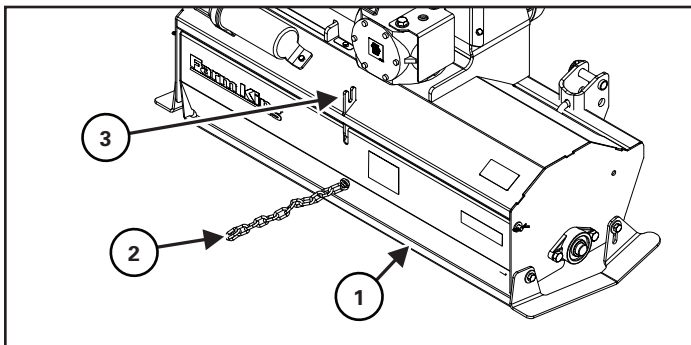
Stop the engine and leave the operator's position (See Leaving The Operator's Position in Operation Section). Make sure the PTO driveline and all rotating components have come to a complete stop before leaving the operator's position.

Drag Shield Settings

Compact / Smooth Tilled Soil: Adjust the drag shield according to the skid shoe / working depth of the rotary tiller.

Non-Compacted Tilled Soil: Fully raise the drag shield.

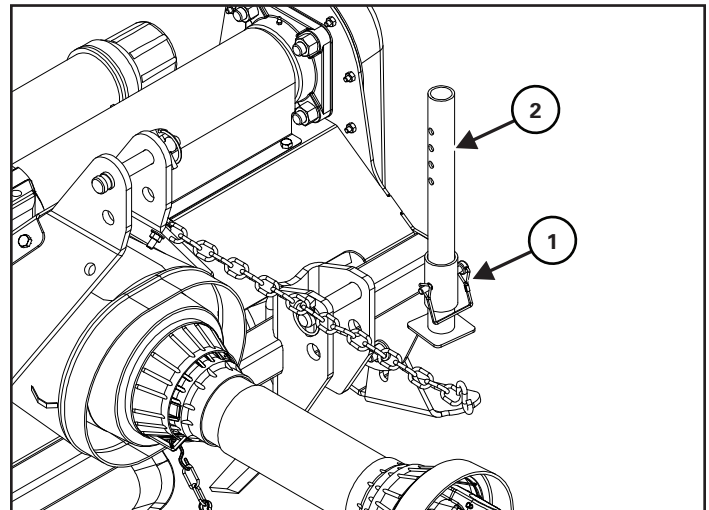
Figure 12



Lift up on the drag shield (Item 1), remove the height adjustment chain (Item 2) from the lock (Item 3) [Figure 12]. Place the drag shield at the desired height and reinstall the chain on the lock.

Adjusting Support Stand

Figure 13



Remove the lynch pin (Item 1) and move the support stand (Item 2) [Figure 13] to the desired position. Align the mounting holes and reinstall the lynch pin.

Support Stand Settings


Operating Position: Fully raise the support stand.

Storage Position: Lower the support stand to the ground.

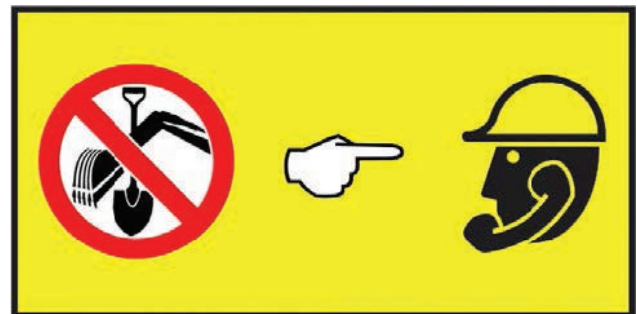
Theory Of Operation

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

	<h1>WARNING</h1>
	
<h3>ROTATING DRIVELINE HAZARD</h3>	
<ul style="list-style-type: none"> • Do NOT exceed 540 RPM PTO. • Keep PTO shields and all guards in place. • Keep away from moving parts. • Keep bystanders away. 	

	<h1>WARNING</h1>
	
<h3>ROTATING BLADE HAZARD</h3>	
<p>To prevent serious injury or death from rotating blades:</p> <ul style="list-style-type: none"> • Stop engine, set brake, remove key and wait for all moving parts to stop before opening rear door. • Do not place hands or feet under frame when the engine is running. • Keep others away. 	

Call Before You Dig



**Call Before You Dig
Dial 811 (USA Only)
1-888-258-0808 (USA & Canada)**

When you call, you will be directed to a location in your state / province, or city for information about buried lines (telephone, cable TV, water, sewer, gas, etc.).

Starting Operation

1. Connect the rotary tiller to the tractor.
2. Place the support stand into the operating position.
3. Adjust skid shoe height.
4. Adjust drag shield.
5. Level the rotary tiller (front to back) using the link connected to the upper three-point mount (See the tractor's operator's manual for the correct procedure).
6. Move the tractor and rotary tiller to work area.
7. Adjust engine speed to low idle.
8. Lower the rotary tiller until the tines are just above the ground.
9. Slowly engage the tractor PTO to start rotor rotation.
10. Slowly increase engine speed to 540 RPM. Do not exceed 540 RPM.

Tilling Process

NOTE: Depending on ground compaction, additional passes may be required to reach desired working depth.

1. Slowly lower the rotary tiller until the skid shoes contact the ground.
2. Start driving forward at the desired speed. Watch for and avoid obstructions and obstacles that may cause damage to the rotary tiller.
3. When approaching the end of the work area, stop the tractor and raise the rotary tiller slightly above the ground.
4. Move tractor and position the rotary tiller at the starting point (along side end of previous pass), overlapping the tilled area approximately four inches.
5. Slowly lower the rotary tiller until the skid shoes contact the ground.
6. Start driving forward at the desired speed. Continue operating the tractor and rotary tiller until the desired work area is complete.



CAUTION

Do not fully raise the implement when the PTO is engaged. Damage to the tractor and implement may occur.

Finishing Operation

1. When the desired work area has been tilled, stop the tractor, lower the engine speed and disengage the tractor PTO.
2. Fully raise the rotary tiller into the transport position and move the tractor and rotary tiller to next work site.

Work Site Recommendations




IMPORTANT


Wet soil will "ball-up" in the rotor and tines making tilling extremely difficult. It is recommended to wait for the soil to dry out before starting to work the soil.


1. Determine the moisture content of the soil before starting.
2. Sandy soils normally can be worked better than heavy clay or loam soils.
3. When tilling hard or compacted soils, it is recommended that additional passes be used when working.
4. Always remove heavy crop cover, all grass and weeds to prevent rotor plugging.
5. The rotation of the Tines propel the machine in the forward direction. Always use the tractor transmission to control the speed of forward travel.
6. Always disengage the PTO control and raise the machine out of the ground before depressing the master clutch on the tractor.
7. Use low gear on the tractor to start the job. Increase the ground speed of forward travel only as the quality of the job and power available will allow.
8. If PTO slip clutch begins slipping, reduce the ground speed or slightly raise the implement of the ground.

Transporting

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

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

	IMPORTANT
Never exceed 20 mph (32 kph).	

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

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

Troubleshooting.....	35
Service Schedule Chart.....	36
Lubrication.....	37
Recommendations.....	37
Locations.....	38
Gearbox.....	40
Check Oil.....	40
Change Oil.....	40
Tine Replacement.....	41
Slip Clutch.....	42
Slip Clutch Lining Replacement.....	42
Slip Clutch Maintenance.....	42
Safety Sign (Decal) Installation.....	43
Storage And Return To Service.....	43
Storage.....	43
Return To Service.....	43

Farm King



Troubleshooting

	<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.

PROBLEM	CAUSE	CORRECTION
Rotor won't turn.	Slip clutch slipping.	Check that clutch is engaged or replace friction plates.
	PTO clutch slipping.	Set PTO clutch. See tractor manual.
	Broken drive chain.	Repair or replace chain.
Poor soil tilling.	3-point hitch system not in float.	Place 3-point hitch in float. See tractor's operator's manual.
	Travel speed too fast.	Reduce travel speed.
	Hard soil	Reduce travel speed and make additional passes.
	Machine not level.	Adjust three-point upper link and level rotary tiller.
	Worn tines.	Replace tines as needed.
	Loose or missing tines.	Tighten or replace tines as needed.
Uneven soil tilling.	Travel speed too fast.	Reduce travel speed.
	Machine not level.	Adjust three-point upper link and level rotary tiller.
	Drag shield not adjust properly.	Adjust drag shield.

Service Schedule Chart


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
Daily Maintenance (or every 8 hours)							
1	PTO Cross and Bearings	✓		✓			
BI-Weekly (or every 20 hours)							
2	PTO Telescoping Tubes			✓			
3	Slip Clutch Connector			✓			
4	PTO Quick Disconnect			✓			
5	PTO Guard Bushings			✓			
Weekly (or every 40 hours)							
6	Gearbox Oil Level	✓		✓			
7	Chain Case			✓			
Annually (or every 500 hours)							
8	Rotor Bearings			✓			
9	Chain Drive Bearing			✓			
10	Gearbox Oil				✓		✓

Lubrication

Recommendations

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

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

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

Locations

Note: Use a multipurpose lithium-based grease.


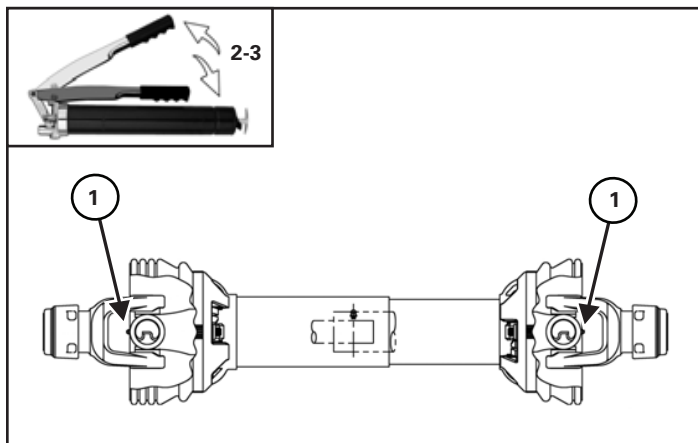
	<h1 style="margin: 0;">IMPORTANT</h1>
<p>Fluid such as engine oil, hydraulic fluid, coolants, grease, etc. must be disposed of in an environmentally safe manner. Some regulations require that certain spills and leaks on the ground must be cleaned in a specific manner. See local, state and federal regulations for the correct disposal.</p>	

Figure 14

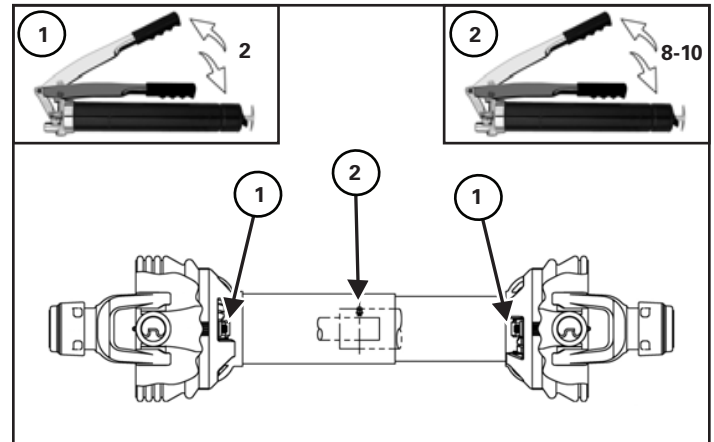


Apply two to three pumps of grease to the cross and bearings (Item 1) [Figure 14] on the PTO driveline.

Grease every **8 hours**.

Note: Images may not show your exact PTO driveline but the procedure is correct.

Figure 15

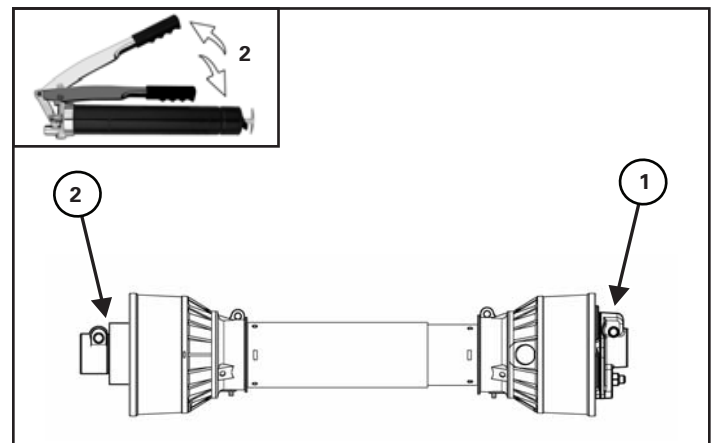


Apply two pumps of grease to the guard bushings (Item 1) [Figure 15].

Apply eight to ten pumps of grease to the telescoping member (Item 2) [Figure 15].

Grease every **20 hours**.

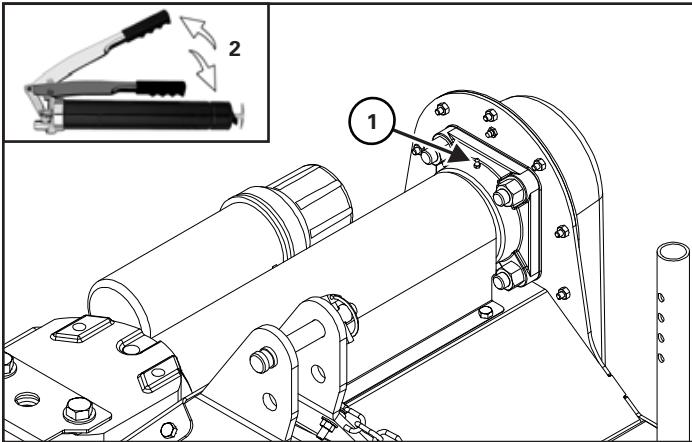
Figure 16



Apply two pumps of grease to the slip clutch (Item 1) [Figure 16] and PTO quick disconnect (Item 2) [Figure 16].

Grease every **20 hours**.

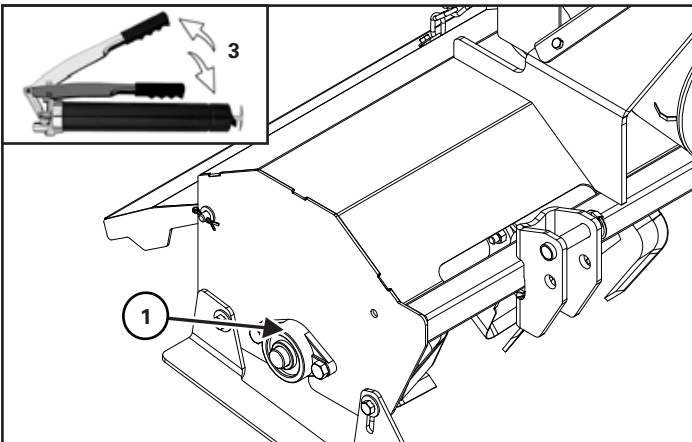
Figure 17



Apply two pumps of grease to the chain drive bearing (Item 1) [Figure 17].

Grease every **500 hours**.

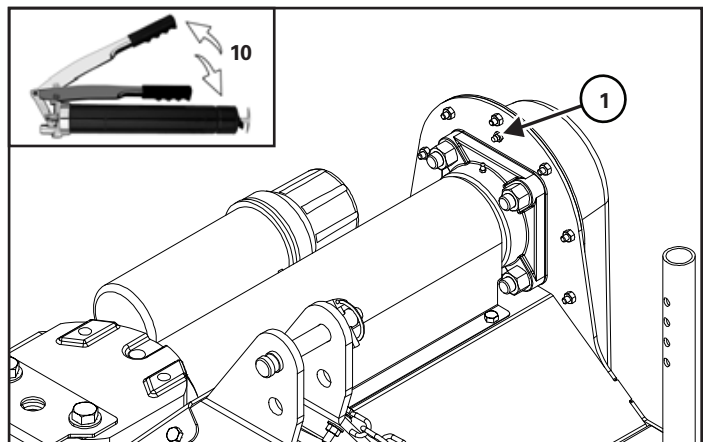
Figure 18



Apply 3 pumps of grease to the rotor bearing (Item 1) [Figure 18] (both ends).

Grease every **500 hours**.

Figure 19



Apply ten pumps of grease to the chain case (Item 1) [Figure 19].

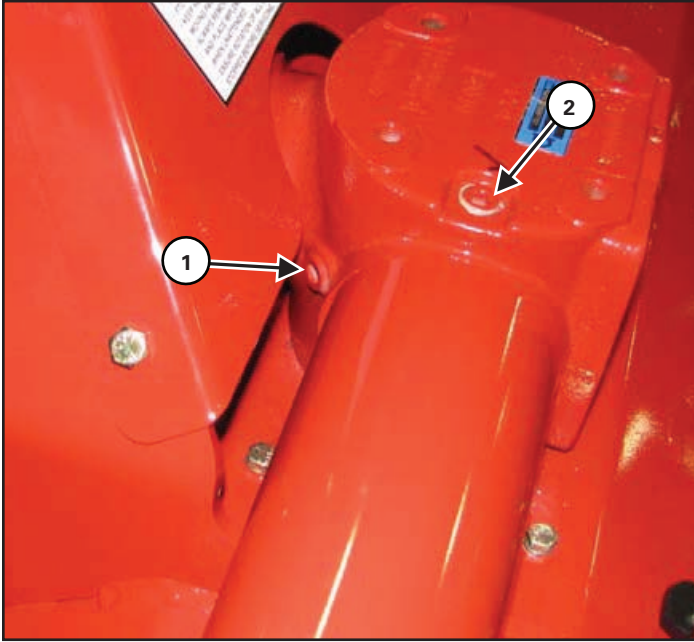
Grease every **40 hours**.

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

Gearbox

Check Oil

Figure 20



Remove the side plug (Item 1) [Figure 20] and check gear box oil level. The oil level should be at the bottom of the plug opening.

NOTE: Add 80W-90 gear oil if level is low.

If the oil level is low, remove the top plug (Item 2) [Figure 20]. Add oil until the oil starts to run out of the side plug opening. Install plugs.

NOTE: If oil level is low look for signs of a leak and repair as necessary.

Check every **40 hours**.

Change Oil

Fully raise the rotary tiller and position blocking under skid shoes, allowing access to the underside of the tiller.

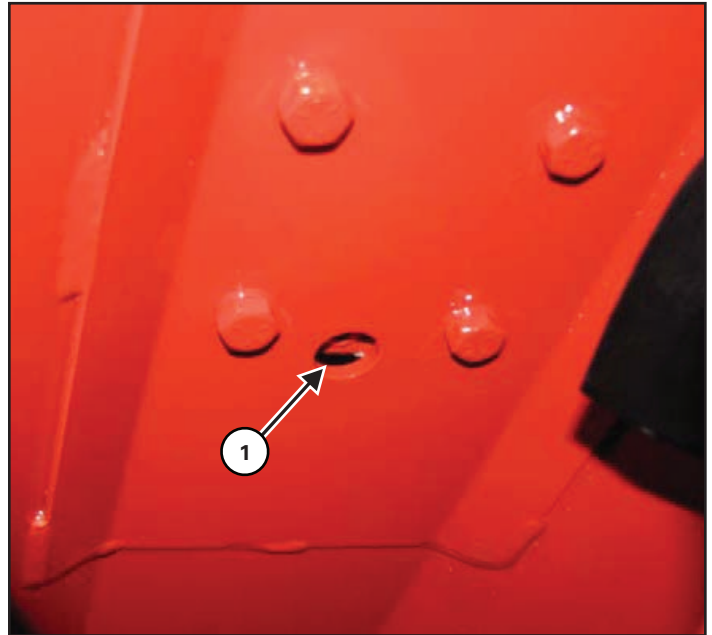
Fully raise and lock the drag shield in the raised position.



IMPORTANT

Always use lifting devices, vehicles, chains, or straps of adequate size and strength when unloading and assembling components.

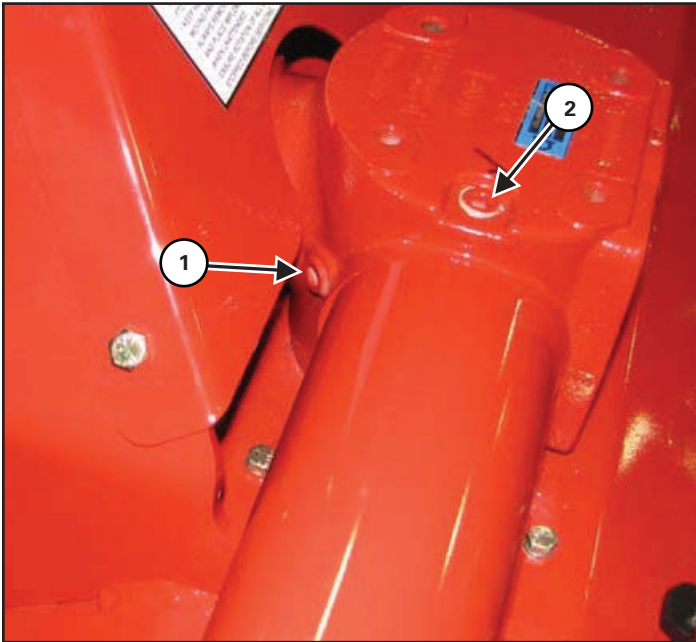
Figure 21



Locate the drain plug (Item 1) [Figure 21] under the gearbox. Remove the plug and drain the oil into a collection container.

Once the oil is drained, reinstall the drain plug.

Figure 22



Remove the fill plug (Item 1) [Figure 22].

Remove the plug (Item 2) [Figure 22] on the side of the gearbox.

Add one qt. (0.95 L) of 80W-90 to the gearbox or until the oil begins to flow out of the hole on the side of the gearbox.

Install the plug on the side of the gearbox.

Install the fill plug.

Change every **500 hours**.

Tine Replacement

Fully raise the rotary tiller and position blocking under skid shoes, allowing access to tines.

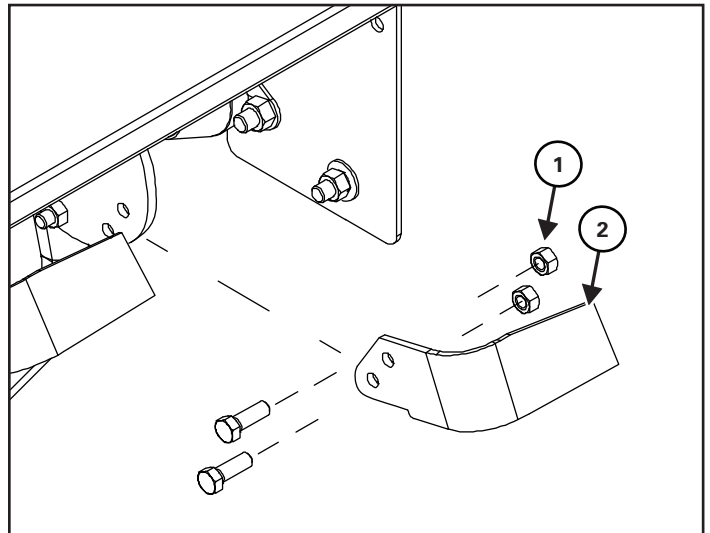
Fully raise and lock the drag shield in the raised position.



IMPORTANT

Always use lifting devices, vehicles, chains, or straps of adequate size and strength when unloading and assembling components.

Figure 23



Remove the two 1/2" x 1-1/2" hex bolts and 1/2" lock nuts (Item 1). Remove the tine (Item 2) [Figure 23].

Position the replacement tine in proper orientation of the tine removed.

Reinstall two hex bolts and lock nuts.

Repeat procedure as needed until all desired tines have been replaced.

Lower the drag shield.

Slip Clutch

Slip Clutch Lining Replacement

NOTE: The PTO shafts are shipped with the slip clutch disengaged.

There are four socket set screws on the inside of the clutch assembly, which are turned out as far as they go to engage the clutch.

Turn the four socket set screws on the inside of the clutch assembly all the way in to disengage the clutch.

Remove the outside bolts from the clutch assembly and replace the clutch linings.

NOTE: When re-tightening the bolts, stop when the clutch spacer starts to touch the clutch plates. You should be able to just move the spacer by hand when you have the correct bolt torque.

Turn the four socket set screws on the inside of the clutch assembly all the way out to engage the clutch.

Slip Clutch Maintenance

NOTE: Before first use or after storage of more than one month, the clutch should be checked.

1. Turn the four socket set screws on the inside of the clutch assembly all the way in to disengage the clutch.
2. Enter the operator's position (See Operation Section). Start the engine.
3. Run the PTO at low idle to slip the clutch linings. This will help remove the dirt, corrosion, and surface gloss from the clutch plates and also ensure that the linings are loose.
4. Stop the engine and leave the operator's position (See Operation Section). Make sure the PTO driveline and all rotating components have come to a complete stop before leaving the operator's position.
5. Turn the four socket set screws on the inside of the clutch assembly all the way out to engage the clutch

NOTE: Normally the clutch will slip at a 20% higher torque after the "run in" than before.

6. Check the temperature of the clutch after running for 20 minutes and every 8 hours after that.

NOTE: If the clutch is hot to the touch or smokes, check that the outside bolts are correctly tightened as explained in slip clutch section. If clutch still slips, linings may have to be replaced.

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 and change gear box oil.
- 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.
- Connect to a tractor and operate equipment, verify all functions operate correctly. Repair as needed.

Farm King



Parts Identification

General Parts Information.....	47
Deck Components.....	47
Drive Components.....	50
Pto Driveline.....	52

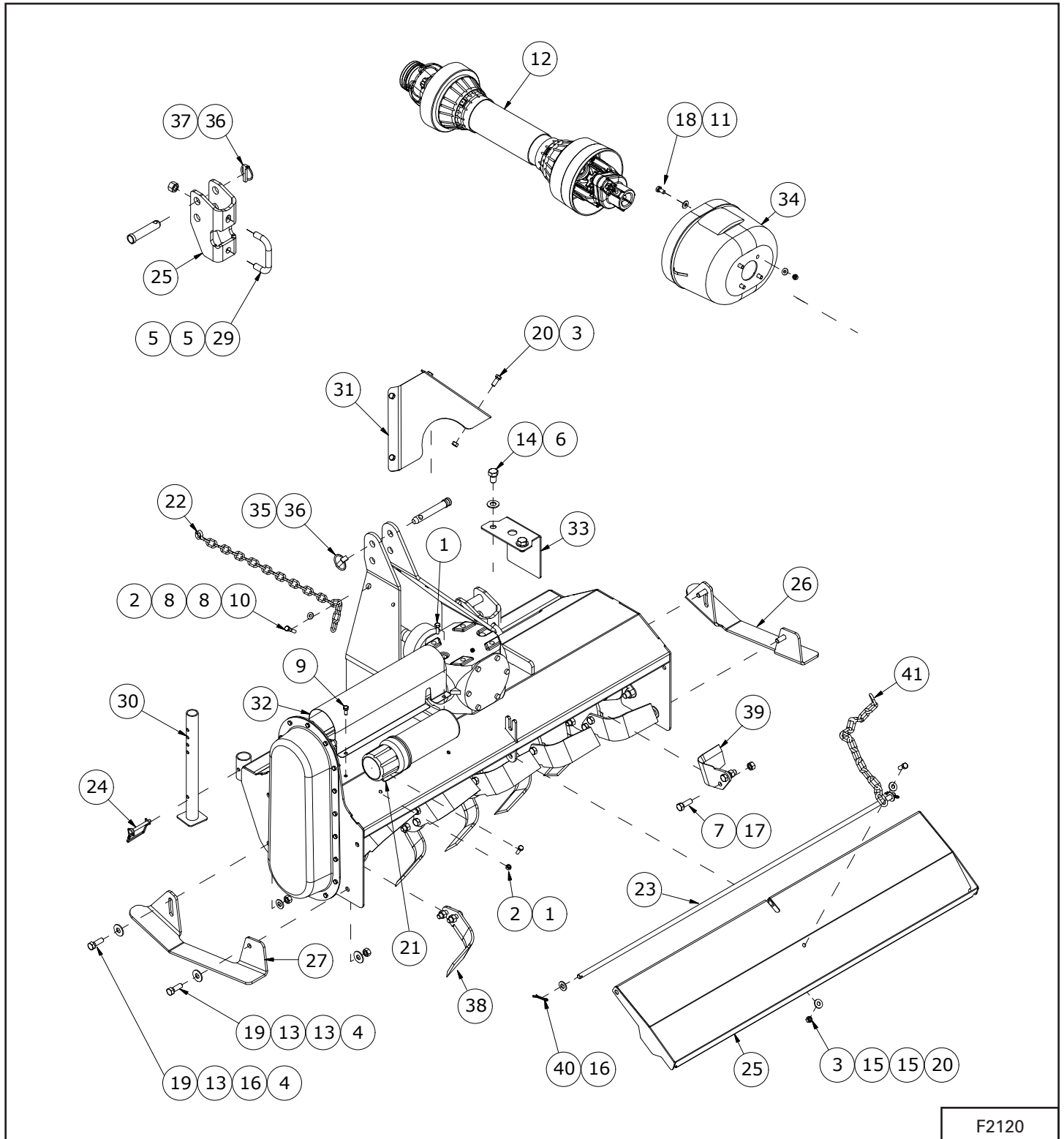
Farm King



General Parts Information

The parts identification section list descriptions, part numbers and quantities for all North America Base Model 25 Series Rotary Tillers. Contact your Farm King dealer for additional parts information.

Deck Components

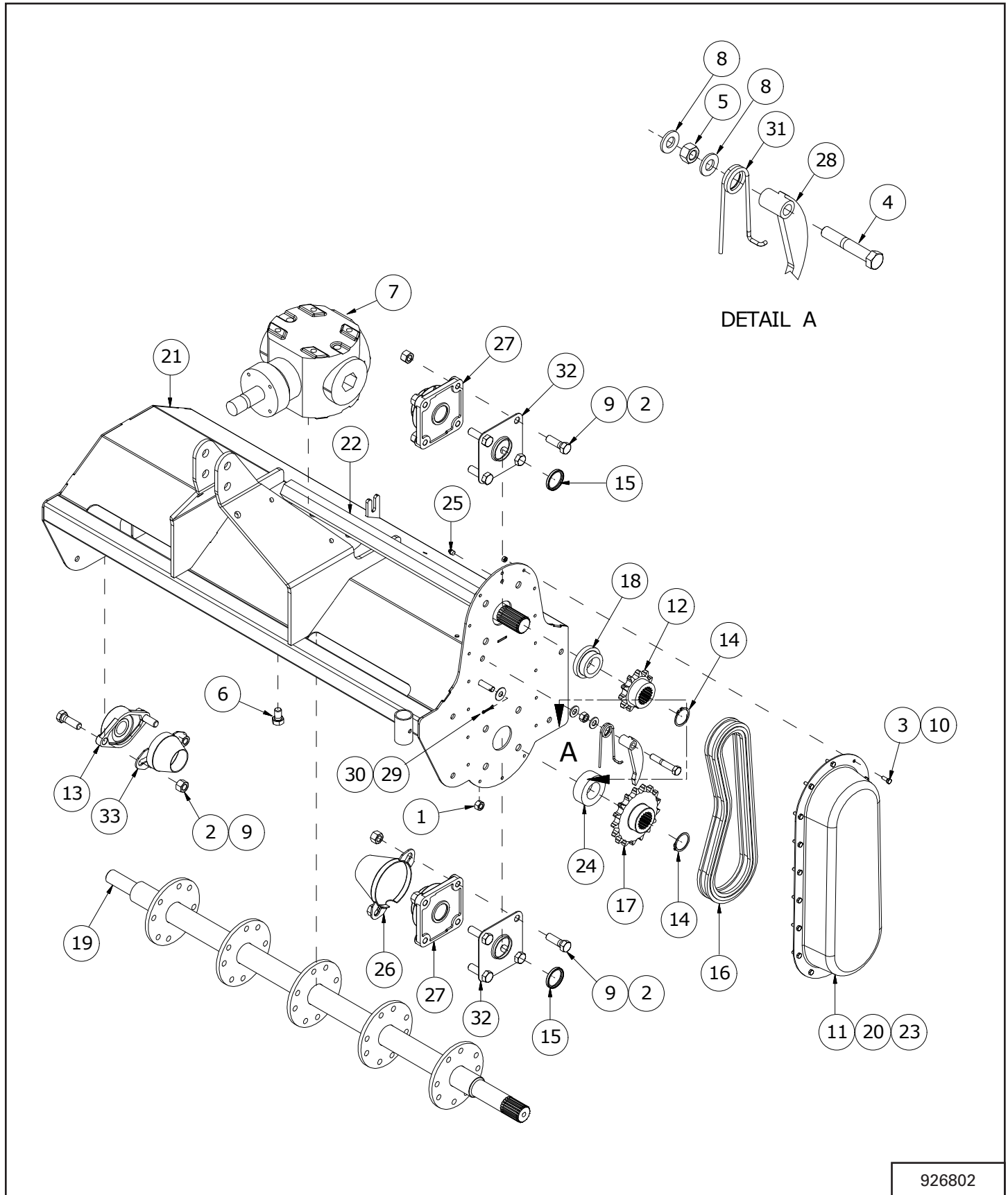


F2120

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	812026	5/16" X 1" HEX BOLT (PL)	4
2	812362	5/16" LOCK NUT (PL)	3
3	812363	3/8" LOCK NUT (PL)	5
4	812364	1/2" LOCK NUT (PL)	4
5	812482	5/8" LOCK NUT (PL)	4
6	812639	WASHER 0.625 SAE FLAT BS PL	2
7	812763	BOLT HEX 0.500NF X 1.50GR8 PL	40
8	81546	5/16" FLAT WASHER (PL)	2
9	81549	5/16" X 3/4" HEX BOLT (PL)	2
10	81553	5/16" X 1 1/2" HEX BOLT (PL)	1
11	81570	WASHER - 5/16" STD FLAT (PL)	4
12	F2136	PTO DRIVELINE - 25/45 SERIES RT	1
13	81638	1/2" BS FLAT WASHER (PL)	6
14	81659	5/8" X 1" HEX BOLT (PL)	2
15	84000	7/16" FLAT WASHER (PL)	2
16	84048	1/2" SAE FLAT WASHER (PL)	4
17	84064	1/2" FINE THREAD LOCK NUT (PL)	40
18	84072	3/8" X 3/4" HEX BOLT (PL)	4
19	84277	1/2" X 1 1/2" HEX BOLT (PL)	4
20	86170	3/8" X 1" HEX BOLT GR.5 (PL)	5
21	909277	MANUAL HOLDER 3 1/2" X 12"	1
22	909703	PTO HOLDER CHAIN ASSY	1
23	909710	DRAG SHIELD HINGE ROD - 36" TILLER	1
	909711	DRAG SHIELD HINGE ROD - 45" TILLER	1
	909712	DRAG SHIELD HINGE ROD - 54" TILLER	1
24	912301660	SNAPPER CLIP	1
25	914232	WELDMENT - DRAG SHIELD - 36" TILLER	1
	913910	WELDMENT - DRAG SHIELD - 45" TILLER	1
	913999	WELDMENT - DRAG SHIELD - 54" TILLER	1
26	913951	SHOE-DEPTH GAUGE, RH	1
27	913956	SHOE-DEPTH GAUGE, LH	1
28	913977	BRKT-THREE HITCH LOWER	2
29	913980	U-BOLT-0.62X1.81X3.62	2
30	913990	WELDT-STAND	1
31	926363	BRKT - HITCH SUPPORT 25 SERIES TILLER	1
32	926586	GUARD - UPPER SHAFT - 36" TILLER	1
	926587	GUARD - UPPER SHAFT - 45" TILLER	1
	926588	GUARD - UPPER SHAFT - 54" TILLER	1
33	926760	GUARD - END 25 SERIES TILLER	1
34	928147	GEARBOX PTO SHIELD - 25/45 SERIES TILLER	1
35	965807	CAT. 1 TOP LINK PIN	1

ITEM	PART NUMBER	DESCRIPTION	QTY.
36	965911	7/16" LINCH PIN	3
37	967361	7/8" X 4" CLEVIS PIN	2
38	967483	TINE - RIGHT	10
39	967484	TINE - LEFT	10
40	9812433	3/16" X 1 1/2" COTTER PIN	2
41	982000471	CHAIN 1/4" X 14 LINK	1

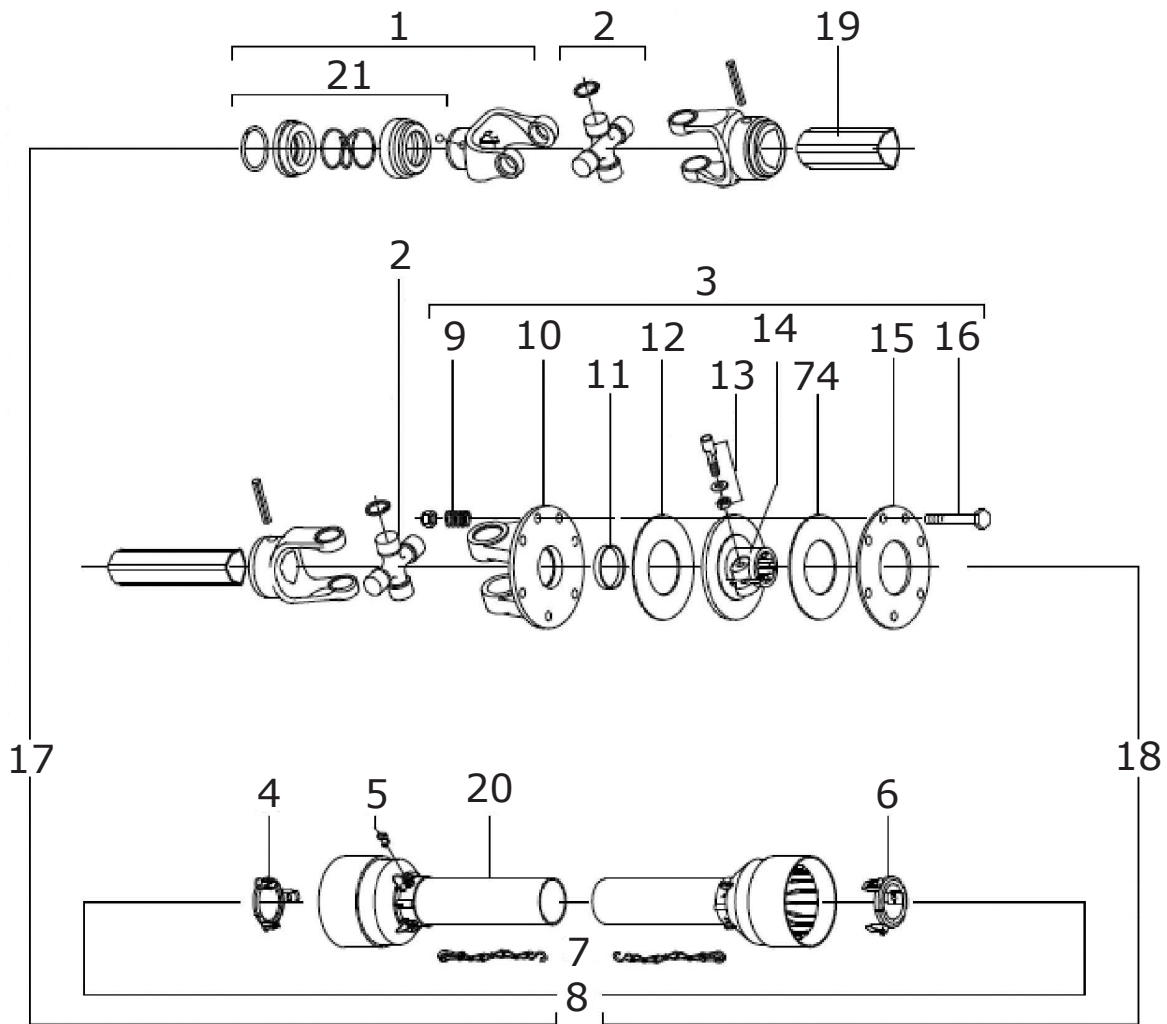
Drive Components



926802

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	812364	1/2" LOCK NUT (PL)	1
2	812482	5/8" LOCK NUT (PL)	10
3	81525	1/4" X 3/4" HEX BOLT (PL)	18
4	81627	1/2" X 3" HEX BOLT (PL)	1
5	81636	1/2" HEX NUT (PL)	1
6	81659	5/8" X 1" HEX BOLT (PL)	4
7	817704	GEARBOX - 1.50:1 (54HP)	1
	908725	SAE 80W-90 GEAR OIL	0.95 L
8	84048	1/2" SAE FLAT WASHER (PL)	2
9	84299	5/8" X 2" HEX BOLT GR.5 (PL)	10
10	84498	1/4" LOCK NUT (PL)	18
11	903209	CHAIN GUARD	1
12	906845	SPROCKET-H80B11	1
13	912300131	FLANGE BEARING 2 BOLT - 1 1/4"	1
14	912301557	RETAINER RING 1 5/8"	2
15	912303601	OIL SEAL (CR16046)	2
16	913835	ROLLER CHAIN-80H X 42 PITCHES	1
17	913836	SPROCKET-H80B17	1
18	914332	SPACER-TOP SPROCKET	1
19	914337	WELDT-ROTOR SHAFT 40" - 36" TILLER	1
	914333	WELDT-ROTOR SHAFT 48" - 45" TILLER	1
	914330	WELDT-ROTOR SHAFT 60" - 54" TILLER	1
20	916342	GREASE- NLGI GRADE 00	1.0 KG
21	926367	WELDMENT - DECK - 36" TILLER	1
	926368	WELDMENT - DECK - 45" TILLER	1
	926369	WELDMENT - DECK - 54" TILLER	1
22	926742	HEX SHAFT - 36" TILLER	1
	926743	HEX SHAFT - 45" TILLER	1
	926744	HEX SHAFT - 54" TILLER	1
23	927743	SEALANT-GASKET MAKER	0.1 L
24	959220	TOP SPROCKET SPACER 1.07"LG X 1.645"ID X 03"OD	1
25	967164	DRIVE-IN GREASE ZERK	1
26	967353	BEARING COVER 3.5"LG X 04.63"OD	1
27	967363	FLANGE BEARING 4-BOLT - 01 5/8"	2
28	967377	CHAIN TENSIONER WELDMENT .375"	1
29	9812430	1/8" X 1" COTTER PIN (PL)	1
30	981616	WASHER-1/2" STD FLAT PL	1
31	982005711	TENSION SPRING	1
32	982006422	OIL SEAL PLATE	2
33	983006300	BEARING COVER WELDMENT 03.5" X 2.38"	1

Pto Driveline



F2136

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	818445	COMPLETE COLLARYOKE C12	1
2	818446	CROSS JOURNAL SET	2
3	818447	COMPLETE DISC CLUTCH F16 (950 NM)	1
4	-	GUARD RETAINING COLLAR, OUTERTUBE	1
5	-	BOLT	6
6	-	GUARD RETAINING COLLAR, INNERTUBE	1
7	818437	SAFETY CHAINS	2
8	818448	COMPLETE GUARD W/ INSTRUCTION MANUAL	1
9	-	SPRING	8
10	-	FLANGED YOKE	1
11	-	BUSH	1
12	-	LINING RING	2
13	-	TAPERED PIN SET 1-3/8"	1
14	-	CLUTCH SUPPORT F16	1
15	-	PRESSURE PLATE	1
16	-	BOLT & NUT M10 X 80	8
17	-	HALF FEMALE SHAFT W/ GUARDING	1
18	-	HALF MALE SHAFT W/ GUARDING	1
19	818443	DANGER LABEL, OUTERTUBE	1
20	818444	DANGER LABEL, OUTER GUARDTUBE	1
21	-	KIT COLLAR, YOKE 1-3/8"	1

Farm King



Specifications And Shipping Kit Numbers

Specifications.....	57
Shipping Kit And Bundle Numbers.....	57
Hardware Torque Values.....	58
Metric Chart.....	58
Imperial Chart.....	59

Farm King



Specifications

Model	TL236	TL245	TL254
Height	34 in. (866 mm)	34 in. (866 mm)	34 in. (866 mm)
Overall Width	46.5 in. (1181 mm)	54.5 in. (1384.3 mm)	66.5 in. (1689 mm)
Tillage Width	36 in. (914.4 mm)	45 in. (1143 mm)	54 in. (1371.6 mm)
Tractor HP	12 - 18	14 - 22	18 - 25
Weight	385 lb. (175 kg)	418 lb. (190 kg)	477 lb. (190 kg)
Max. PTO Speed	540 rpm	540 rpm	540 rpm
PTO Shaft	Slip Clutch	Slip Clutch	Slip Clutch
Drive Chain	#80H	#80H	#80H
Three-Point Hitch	Category I	Category I	Category I
Rotor Speed	239 rpm	239 rpm	239 rpm
Flanges / Tines	4 / 16	5 / 20	6 / 24
Tines Per Flange	4	4	4
Tine Size	0.25 x 2.25 in. (6.35 x 57.2 mm)	0.25 x 2.25 in. (6.35 x 57.2 mm)	0.25 x 2.25 in. (6.35 x 57.2 mm)
Gearbox Oil Capacity (85W-90)	128 oz. (1 US qt.) (0.85 l)	128 oz. (1 US qt.) (0.85 l)	128 oz. (1 US qt.) (0.85 l)

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
TL236 36 in. Tiller C/W Slip Clutch PTO		
1	F2119	Complete Assembly
TL245 45 in. Tiller C/W Slip Clutch PTO		
1	F2120	Complete Assembly
TL254 54 in. Tiller C/W Slip Clutch PTO		
1	F2121	Complete Assembly

Note: Dimensions are approximate measurements.

Hardware Torque Values

Metric Chart

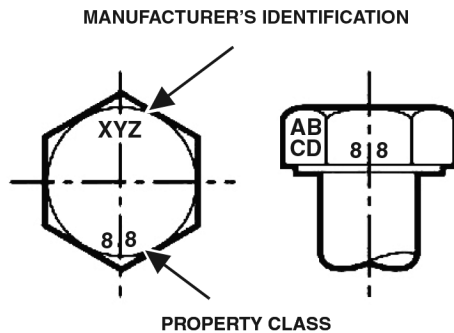
NOTE: Do not use the values listed in the charts if a different torque value or tightening procedure is specified in this manual for a specific application. Torque values listed are for general use only.

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.**

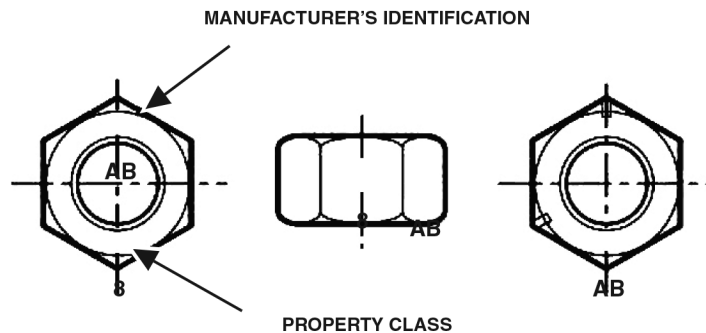
Nominal Size	Class 5.8		Class 8.8		Class 10.9		Lock nuts
	Unplated	Plated W / ZnCr	Unplated	Plated W / ZnCr	Unplated	Plated W / ZnCr	CL.8 w/ CL. 8.8 Bolt
M4	1.7 (15*)	2.2 (19*)	2.6 (23*)	3.4 (30*)	3.7 (33*)	4.8 (42*)	1.8 (16*)
M6	5.8 (51*)	7.6 (67*)	8.9 (79*)	12 (102*)	13 (115*)	17 (150*)	6.3 (56*)
M8	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

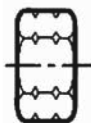


SAE GRADE 2 NUTS



SAE GRADE 2 NUTS

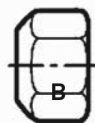
Identification of Hex Nuts and Lock Nuts



Grade A - No Notches

Grade B - One Circumferential Notch

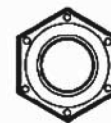
Grade C - One Circumferential Notches



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

Farm King Base Limited Warranty.....	63
Repair Parts Limited Warranty.....	63
What Is Not Covered.....	63
Authorized Dealer And Labor Costs.....	63
Warranty Requirements.....	64
EXCLUSIVE EFFECT OF WARRANTY AND LIMITATION OF LIABILITY.....	64

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.

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