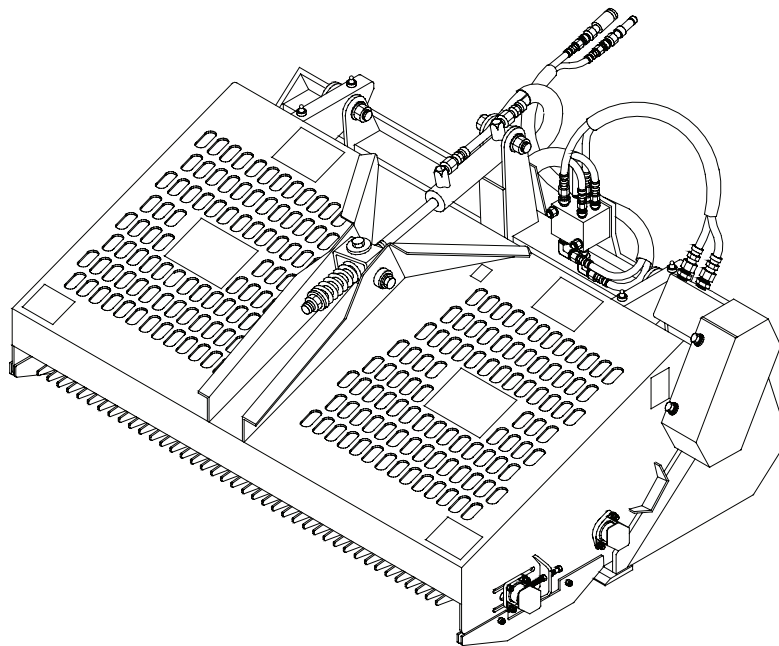




AUTORAKE®



PALADIN LIGHT CONSTRUCTION



FFC SERIAL NUMBER: _____

MACHINE SERIAL NUMBER: _____

Manual Number: MR25595

Models: LAF6864, LAF6874
With serial numbers greater than B011498

Release Date: December 20, 2005

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INTRODUCTION

Congratulations on your purchase of a new FFC Attachments **AutoRake®**. This product has been designed and built to remove small rocks (less than 6" maximum dimension) and debris from loose soil and the sifting of the surface layer of that soil. You or any other person who will be assembling, operating, maintaining, or working with this product are required to read and completely understand the information and instructions contained in this manual. If anyone does not fully understand every part of this manual, please obtain further assistance by contacting the dealer from which this product was purchased or by contacting FFC Attachments at the telephone number or address listed on the cover of this manual. Keep this manual available for reference whenever this product is being handled or used. Provide this manual to any new owners and/or operators.

This manual covers model(s) **LAF6864** and **LAF6874**. The difference between the models is the width of the product, details of which are covered on the parts list and specifications page(s).

GENERAL INFORMATION

The purpose of this manual is to assist in assembling, mounting, operating, and maintaining your **AutoRake®**. Read this manual carefully to obtain valuable information and instructions that will help you achieve years of safe and dependable service.

The illustrations and data used in this manual were current at the time of printing, but due to possible engineering and/or production changes, this product may vary slightly in detail. FFC Attachments reserves the right to redesign and/or change components as may be necessary without notification to anyone.

Throughout this manual, references may be made to:

Power Unit	The engine-driven machine to which this product must be attached.
Right, Left, Front, Rear	Directions that are determined in relation to the operator of the equipment when seated in the normal operating position.
IMPORTANT NOTICE	Precautions that must be followed to prevent damage to the equipment.
	Precautions that must be followed to prevent substandard performance.

SERIAL NUMBER LOCATION

Always refer to the model and serial number when ordering parts or requesting information from your dealer. The serial number plate for this product is located **on the top left side of the bucket portion of your AutoRake®**.

Reference Information	
Model Number	Loader Make
Serial Number	Loader Model
Date Purchased	Loader Serial Number

DEFINITION OF SAFETY TERMS AND SYMBOLS

Throughout this manual, the terms **DANGER**, **WARNING**, and **CAUTION** are used to indicate the degree of hazard to personnel if proper safety procedures are not followed. These words will be used in conjunction with the Safety Alert Symbol: a dark triangle containing a white exclamation mark.



DANGER

WARNING

CAUTION

The Safety Alert Symbol means:

ATTENTION!

BECOME ALERT!

YOUR SAFETY IS INVOLVED!

Indicates an imminently hazardous situation which, if not avoided,
WILL result in death or serious injury.

Indicates a potentially hazardous situation which, if not avoided,
could result in death or serious injury.

Indicates a potentially hazardous situation which, if not avoided,
may result in minor or moderate injury;
OR

may also be used to alert against unsafe practices that may result in personal injury.

ACCIDENTS CAN BE PREVENTED WITH **YOUR HELP !**

No accident prevention program can be successful without the wholehearted cooperation of the person who is directly responsible for the operation of the equipment.

To read equipment accident reports from all over the country is to be convinced that a large number of accidents can be prevented only by operators who consistently anticipate the results of their actions and thus prevent accidents from ever occurring. No power-driven equipment, whether it is on the highway, in a farm field, or in an industrial plant, can be any safer than is allowed by the person who is at the controls.

If accidents are to be prevented (and accidents can be prevented), that prevention will come from equipment operators who accept their complete responsibility.

The designer, the manufacturer, and the safety engineer all help create a safe product, but the operator of that product can wipe out their combined efforts with a single careless act.

The best safety device is a careful operator. FFC Attachments and your dealer ask that **YOU** be that careful, responsible equipment operator.

YOU ARE THE KEY TO SAFETY BECAUSE:

YOU are responsible for the SAFE operation and maintenance of **YOUR** AutoRake®.

YOU are responsible to familiarize yourself, and anyone else who will assemble, operate, maintain, or work around this product, with the SAFETY information contained in this manual.

YOU are responsible to read ALL information contained in this manual to any operators or maintenance personnel who are not fully able to read the written English language. Whether **YOU** read the manual as written or translate it into another language, **YOU** must make certain that all operators and maintenance personnel have a complete understanding of the full and exact contents of this manual. Translations of this manual into other languages are available by submitting a written request to FFC Attachments.

YOU can reduce the risk of injury or death by following all safety precautions and by using good safety practices.

SAFETY INSTRUCTIONS

WORK SAFELY - A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST ACCIDENTS !!

SECTION 1



WARNING

Obey all the safety instructions listed in this section and throughout this manual. Failure to obey instructions in this section could result in death or serious injury.

BEFORE ATTEMPTING ANY TYPE OF ASSEMBLY, OPERATION, MAINTENANCE, OR OTHER WORK ON OR NEAR THIS PRODUCT:

- **READ AND COMPLETELY UNDERSTAND THIS MANUAL.**
- **READ AND COMPLETELY UNDERSTAND THE MANUALS PROVIDED WITH YOUR POWER UNIT, LOADER and QUICK-ATTACH.**
- Read and understand all safety signs on this product and on your power unit, loader, and quick-attach.
- Know all your controls and know how to quickly stop all power unit movement, the AutoRake[®] movement, and the engine in case of an emergency.
- Know and obey all applicable government rules, O.S.H.A. regulations, local laws and other professional guidelines for your operation.
- Make sure that anyone who will be assembling, mounting, maintaining, repairing, removing, and/or storing this product:
 - has been instructed in the safe operation of this product and of the power unit, loader, and quick-attach to which this product is attached.
 - is physically and mentally capable of the safe operation of this type of equipment.
 - is not under the influence of drugs or alcohol.
 - is carefully supervised from a safe distance, especially if such person is inexperienced.
 - wears appropriate protective equipment (i.e. hardhat, safety glasses, work gloves, protective shoes, respirator, ear protection, etc.).
 - does not wear loose fitting clothing, loose or uncovered hair, or any accessories (jewelry, necktie, scarf, wrist watch, etc.) that can catch in moving parts.
 - has annually reviewed all safety instructions.
- Know and follow good work practices when assembling, mounting, maintaining, repairing, removing, and storing this product:
 - Work on a level surface in a well-lit area.
 - Keep the area clean and dry.
 - Use properly grounded electrical outlets & tools.

- Use the right tool for the job at hand.
- Make sure that your tools are in good condition for performing the desired function.
- When using tools, wear the protective equipment specified by the tool manufacturer. (i.e. hardhat, safety glasses, work gloves, protective shoes, etc.)

WHEN YOUR POWER UNIT IS USED DURING ANY TYPE OF ASSEMBLY, OPERATION, MAINTENANCE, OR OTHER WORK ON OR NEAR THIS PRODUCT:

- Before leaving the operator's station or before beginning any type of work on this product, lower this product to the ground, apply your power unit's parking brake, stop the engine, remove the starter key, wait for all moving parts to stop, and then relieve all pressure in the hydraulic lines. Refer to your power unit's operator's manual for instructions on how to relieve hydraulic pressure in lines.
- Know your loader's safe lifting and operating capacity and the weight of this product. See the specifications in this manual for the weight of this product and refer to your power unit's and your loader's operator's manuals for safe operating limits. Lift capacity may be reduced if using a quick-attach.
- Never allow anyone, except the operator, to be around the power unit or this product when either is in motion. Do not startup unless others are clear of the work area.
- Do not allow riders on this product or the power unit.
- Do not stand or climb on this product when raised.
- Never lift the lowest portion of the attachment plate higher than 5'-0" above the ground.
- Do not place any part of your body under any part of this product unless this product is securely resting on adequate blocking or on the ground.
- Do not use blocking made of concrete blocks, logs, buckets, barrels or any other material that could suddenly collapse or shift positions. Do not use wood or steel blocking that shows any signs of material decay. Do not use blocking that is warped, twisted, or tapered.
- Never operate controls from the ground. Operate the controls only from the operator's station.
- Never leave equipment unattended with the engine running or with this product raised on the loader.
- Be aware of the added weight and width of this product. Reduce travel speeds accordingly, especially when traveling over rough ground.
- Keep this product close to the ground and under control when transporting.

SAFETY INSTRUCTIONS

WORK SAFELY - A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST ACCIDENTS !!

SECTION 1 (CONTINUED)



WARNING

Obey all the safety instructions listed in this section and throughout this manual. Failure to obey instructions in this section could result in death or serious injury.

WHEN DEALING WITH HYDRAULICS DURING ANY TYPE OF ASSEMBLY, OPERATION, MAINTENANCE, OR OTHER WORK ON OR NEAR THIS PRODUCT:

- Hydraulic fluid under pressure can penetrate the skin and cause serious injury or death. Hydraulic leaks under pressure may not be visible!
- If any fluid penetrates the skin, GET IMMEDIATE MEDICAL ATTENTION!!
- Wear safety glasses, protective clothing, and use a sound piece of cardboard or wood when searching for hydraulic leaks. **DO NOT USE YOUR HANDS!**
- Before connecting or disconnecting hydraulic hoses, read your power unit's operator's manual for detailed instructions on connecting and disconnecting hydraulic attachments.
- Make certain that all parts meet the specifications for this product when installing or replacing hydraulic hoses or fittings.
- After connecting hydraulic lines:
 - Slowly and carefully raise the loader and cycle the rollback / dump cylinders to check hose clearances and to check for any interference.
 - Operate the hydraulics on this product to check hose clearances and to check for any interference.
 - Make certain that the hoses cannot interfere with or actuate the quick-attach mechanism.
 - Make certain that hoses will not be pinched, or get tangled, in any equipment.
- Do not lock the auxiliary hydraulics of your power unit in the "ON" position.
- Refer to your power unit's operator's manual and this manual for procedures and intervals, then inspect and maintain the entire hydraulic system to insure that the fluid remains clean, that all devices function properly, and that there are no fluid leaks.

WHEN MOUNTING THIS PRODUCT TO YOUR POWER UNIT:

- Refer to the operator's manuals of your power unit, your loader, and your quick-attach for special or detailed mounting instructions.

- This product should fit onto the quick-attach or loader arms of your power unit the same as the original products that were designed by your loader / quick-attach manufacturer.
- If this product does not fit properly, contact FFC Attachments before operating.
- Never place your finger into the mounting plate or loader holes. A slight movement of the power unit or this product could cause serious injury.

BEFORE EACH USE, THOROUGHLY INSPECT THIS PRODUCT AND:

- Make certain that all safety signs are in place and legible. Refer to the safety sign page in this manual for the placement of safety signs for this product.
- Replace all damaged or excessively worn parts and hardware only with genuine FFC Attachments parts or with properly rated fasteners, hydraulic hoses, or fittings.
- Make certain that all locking pins, latches, and connection devices are properly installed and secured.
- Make certain that all protective guards, canopies, doors, etc. are in place and secure.

WHEN OPERATING THIS PRODUCT IN ACCORDANCE WITH DESIGN INTENTIONS:

- Keep everyone at least nine feet away from the unit when operating.

WHEN ADJUSTING, SERVICING OR REPAIRING THIS PRODUCT:

- Make no modifications to your AutoRake®.
- When making repairs, use only genuine FFC Attachments parts or, for fasteners, hydraulic hoses, or hydraulic fittings, use only properly rated parts.
- Replacement parts, for parts with safety signs attached, must also have safety signs attached.

SECTION 2

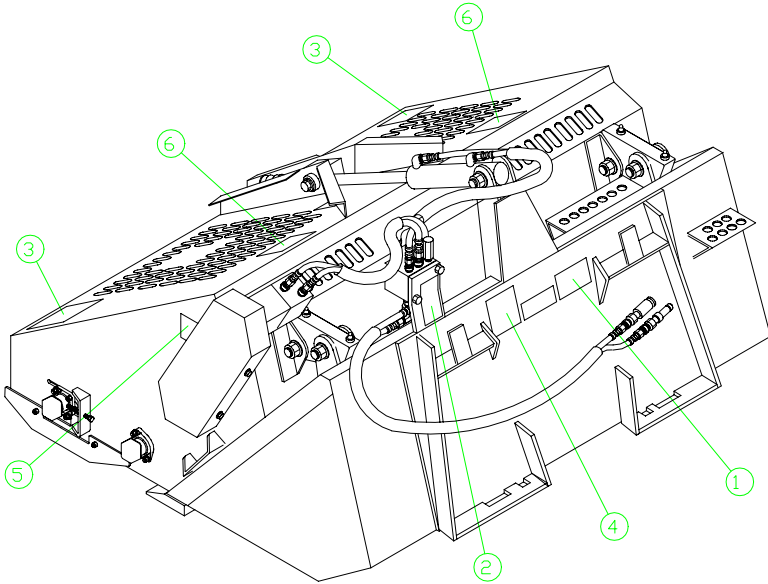
CAUTION

Obey all the safety instructions listed in this section and throughout this manual. Failure to obey instructions in this section may result in personal injury.



- Do not use the top of this product as a step. Under certain conditions, this area can be slippery.

SAFETY SIGN LOCATIONS



ITEM	QTY.	PART # - DESCRIPTION
1	1	50-0723 – Read Manual
2	1	50-0724 – Hydraulics
3	2	RDL3100 – Stand Clear
4	1	RDL3101 – Roll Over Hazard
5	1	RDL3102 – Shields
6	2	RDL3178 – No Step

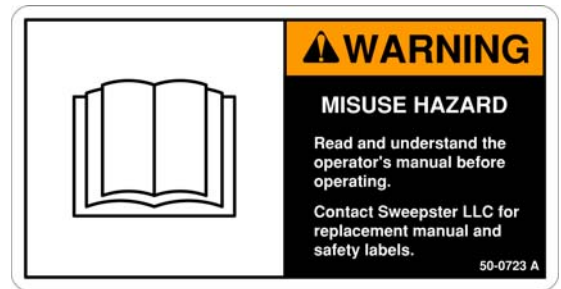
INSTRUCTIONS

- Keep all safety signs clean and legible.
- Replace all missing, illegible, or damaged safety signs.
- Replacement parts for parts with safety signs attached must also have safety signs attached.
- Safety signs are available, free of charge, from your dealer or from FFC Attachments.

PLACEMENT OR REPLACEMENT OF SAFETY SIGNS

1. Clean the area of application with non-flammable solvent, and then wash the same area with soap and water.
2. Allow the surface to fully dry.
3. Remove the backing from the safety sign, exposing the adhesive surface.
4. Apply the safety sign to the position shown in the diagram above and smooth out any bubbles.

ITEM 1



ITEM 2



ITEM 3



ITEM 4



ITEM 5



ITEM 6



POWER UNIT SPECIFICATIONS

IMPORTANT Exceeding any of the recommended power unit specifications **CAN** result in damage to this product and **WILL** void all FFC Attachments warranties.

DESCRIPTION	SPECIFICATIONS
Weight of Power Unit without Autorake	11,000 lbs. maximum
Hydraulic Pressure Output	4,000 psi. maximum
Rear or Front Ballast	As required to maintain full power unit stability. (Note the Shipping Weight on specifications page, then see the operators manual(s) for your power unit, loader, and quick-attach for ballasting needs.)

AUTORAKE[®] MOUNTING



SAFETY FIRST!! READ AND UNDERSTAND THE SAFETY INSTRUCTIONS (pages 2-5 of this manual) BEFORE BEGINNING ANY AUTORAKE[®] MOUNTING

Loaders

1. Place this product on a firm, level surface that is large enough to safely accommodate this product, your power unit and all workers involved in the mounting process.
2. Refer to the operator's manual(s) for your power unit, loader, and quick-attach and follow the mounting instructions contained therein.
3. Carefully raise the loader and cycle the tilt cylinders to check clearances and to verify that all mounting procedures have been successfully completed.

IMPORTANT Lubricate all grease fittings before connecting this product to your power unit's hydraulic system. Refer to **AUTORAKE[®] MAINTENANCE** page and follow the instructions.

3 Point Hitch Category 1 or 2

1. Place this product on a firm, level surface that is large enough to safely accommodate this product, your tractor, and all workers involved in the mounting process. Making sure this product is in the operating position and level will facilitate in selecting the proper mounting holes.
2. Read and understand the Operation and Maintenance manual for your tractor before installing this product.
3. Remove the top link on your tractors' 3 point and drive the tractor backwards in to position to connect the lower links to the attachment mounting ears. The ears have a combination category 1 & 2 hitch pin installed so you need to make sure the outer pin matches your tractors' category. Select a hole position on the mounting ears that aligns or is a little above the lower link points with the tractor link arms fully lowered and connect the arms.
4. The upper link cylinder provided with this product requires a category #2, 1" diameter pin to attach to the tractors' upper link point. If you have a category #1 tractor you will have to bush the pin up to category #2. **It is important that when you pin the rod end of the cylinder to the tractors' upper link point there is between 4" and 5" of exposed cylinder rod.** If you have less the bucket will not roll back enough and if you have more the bucket will not dump properly. Move the cylinder pin hole position on the mounting ears until you attain the recommended amount of exposed cylinder rod.

IMPORTANT Lubricate all grease fittings before connecting this product to your power unit's hydraulic system. Refer to **AUTORAKE[®] MAINTENANCE** page and follow the instructions.

AUTORAKE[®] HYDRAULIC CONNECTION



SAFETY FIRST!! READ AND UNDERSTAND THE SAFETY INSTRUCTIONS (pages 2-5 of this manual) BEFORE BEGINNING ANY AUTORAKE[®] HYDRAULIC CONNECTION

Loaders

1. Disconnect the hydraulic hose quick couplers from one another and attach the quick couplers to your power unit as per the instructions in your power unit's operator's manual.
2. Carefully raise the loader and cycle the tilt cylinders to check hose clearances and to check for any interference. Operate the hydraulic cylinder(s) on this product to make the same checks.
3. Cycle the hydraulic cylinder(s) on this product several times from fully retracted to fully extended until all air has been completely removed from the cylinder(s).

3 Point Hitch Category 1 or 2.

1. This product requires two sets of auxiliary hydraulics. Purchase proper couplers and hoses for the upper link cylinder locally and attach to the tractor per the instructions in your tractors' operators manual.
2. Carefully raise the link arms and cycle the upper link cylinder to check hose clearances, interferences, and acceptable range of motion to roll back and dump the bucket. Operate the hydraulic cylinder on the attachment to make the same checks.
3. Cycle the hydraulic cylinder(s) on this product several times from fully retracted to fully extended until all air has been completely removed from the cylinder(s).

NOTICE

When shipped, the hydraulic cylinder(s) on this product contained air or an air-fluid mixture. The orifices beneath the port(s) of the cylinder barrels will restrict the exit of that air. Failure to remove all the air from the hydraulic cylinder(s) can cause uneven, jerky cylinder movement when the hydraulic controls are being operated and unwanted cylinder movement when the controls are not being operated.



WARNING

Do not lock the auxiliary hydraulics of your power unit in the "ON" position. Failure to obey this warning could result in death or serious injury.



SAFETY FIRST!! READ AND UNDERSTAND THE SAFETY INSTRUCTIONS (pages 2-5 of this manual) BEFORE BEGINNING ANY AUTORAKE® OPERATION



WARNING

Failure to obey the following procedures could result in death or serious injury.

- Never lift this product above (a) the operator’s eye level or (b) to a height where visibility is obstructed, whichever is lower.
- Do not roll back this product so far that the load falls off toward or on the operator.
- Do not lock the auxiliary hydraulics of your power unit in the “ON” position.
- Keep everyone at least nine feet away from this product when operating.



CAUTION

Failure to obey the following procedures may result in personal injury.

- Do not use the top of this product as a step. Under certain conditions, this area can be slippery.

IMPORTANT Attempting to pick up large rocks, large tree branches, etc. **CAN** result in damage to this product and **WILL** void all FFC Attachments warranties.

IMPORTANT Using this product to till compacted soil **CAN** result in damage to this product and **WILL** void all FFC Attachments warranties.

Before using this product on an area, make sure that:

- the area is free of all boulders larger than 6” in diameter, all logs and large tree branches, all wire, all lumber, and any other item that is too large for the bucket or could get wrapped around the rake chain, and
- the soil is relatively loose and any compacted areas have been tilled with another piece of equipment to a depth of 2” or deeper.

Loader Raking

Keeping in mind that **all raking must be done while moving backward**, position your power unit and this product on the area to be raked. To begin raking:

1. Activate the auxiliary hydraulics for operating the rake chain, (If the rake chain does not move but the hydraulic cylinder begins to retract, then activate the auxiliary hydraulics in the opposite direction to get the rake chain to operate.)
2. Lower the loader arms completely and set the loader arm control in the float position,
3. Tilt this product forward until the weight of the rake portion is resting on the depth adjustment plates, and
4. Move your power unit slowly backward.

3 Point Hitch Raking.

As a three point attachment **all raking must be done while moving forward**. Position this product appropriately on the area to be raked. To begin raking:

1. Activate the auxiliary hydraulics for operating the rake chain, (If the rake chain does not move but the hydraulic cylinder begins to retract, then activate the auxiliary hydraulics in the opposite direction to get the rake chain to operate.)
2. Lower the 3 point link arms completely.
3. Tilt this product backward by extending the upper link cylinder until the weight of the rake portion is resting on the depth adjustment plates, and
4. Move your tractor slowly forward.



**SAFETY FIRST!! READ AND UNDERSTAND THE SAFETY INSTRUCTIONS
(pages 2-5 of this manual) BEFORE BEGINNING ANY AUTORAKE® OPERATION**

To achieve the best possible results, please keep in mind that:

- If the rake is throwing too much soil into the bucket, then the depth adjustment plates should be placed in a lower hole on the main housing.
- If the rake is slipping over items that should be collected, then the depth adjustment plates should be placed in a higher hole on the main housing.
- Multiple passes may be needed to achieve the desired results depending on what those results are and what the initial conditions are.
- The wide variety of soil types, moisture conditions, compaction levels, foliage densities, and rock and debris quantities that can be encountered mean that the operator may need to make adjustments based upon the operator's experience.

IMPORTANT **Opening the main housing and using the bucket for standard bucket operations
CAN result in damage to this product and
WILL void all FFC Attachments warranties.**

DUMPING

1. Shut off the auxiliary hydraulics.
2. Move to the dump site and park on firm, level ground.
3. Activate the auxiliary hydraulics in the direction opposite of what was used to operate the rake chain. This will retract the hydraulic cylinder and open the main housing.
4. Raise this product about four feet above the ground.
5. Dump the bucket and reverse the process so that you are ready to resume raking.



**SAFETY FIRST!! READ AND UNDERSTAND THE SAFETY INSTRUCTIONS
(pages 2-5 of this manual) BEFORE BEGINNING ANY AUTORAKE® MAINTENANCE**

BEFORE EACH USE

- Make sure that all nuts and bolts are in place and properly tightened.
- Make sure that all other fasteners are in place and are performing their specified function.
- Make sure that all hydraulic fittings are tightened and that there are no leaks in any fittings or hoses.
- Make sure that all safety signs are in place, are clean, and are legible.
(SEE THE SAFETY SIGN SECTION ON PAGE 5.)
- Replace any damaged parts and excessively worn parts. Replace the rake chain when the raking action has been reduced to an inefficient level.

AFTER EVERY 10 HOURS OF USE

- Grease 11 fittings: one on each of the six bearings (one on each end of the two idler shafts and one on each end of the drive shaft),
two on each of the two swing arms where the main housing pivots on the bucket, and
one on the barrel end of the hydraulic cylinder.

AFTER EVERY 30 HOURS OF USE

- Check the drive chain and the rake chain tension and adjust if necessary. (See AUTO-RAKE SERVICE page)
 - The proper tension on the drive chain results in the longest run of chain having a 3/8" to 1/2" midpoint deflection.
 - The proper tension on the rake chain results in the top run of chain (i.e. from the front idler shaft to the drive shaft) having a 3/4" to 1" midpoint deflection. (Note: For this chain, the combined up and down midpoint deflection of 1-1/2" to 2" may be easier to measure.)
- Check the rake chain travel to make sure that the chain is centered on the idlers. Adjust the front idler if centering is necessary.

AFTER EVERY 250 HOURS OF USE

- Check the drive chain, the drive and driven sprockets, the drive shaft, and the idler shafts for excessive wear and replace if necessary.

IMPORTANT Using heat to straighten bent rake chain teeth
**CAN result in damage to this product and
WILL void all FFC Attachments warranties.**

- Check for bent rake chain teeth and cold straighten those teeth.

BEFORE EXTENDED STORAGE (More than 2 month)

- Oil the drive chain and all 3 rake chains.



SAFETY FIRST!! READ AND UNDERSTAND THE SAFETY INSTRUCTIONS (pages 2-5 of this manual) BEFORE BEGINNING ANY AUTORAKE® MAINTENANCE

1. Park your power unit on a level surface with this product properly attached.
2. Place your power unit's transmission in "Park" and engage the parking brake.
3. Lower this product onto a level surface.
4. Shut off your power unit's engine, remove the starter key, wait for all moving parts to come to a stop, and relieve all pressure in the hydraulic lines.

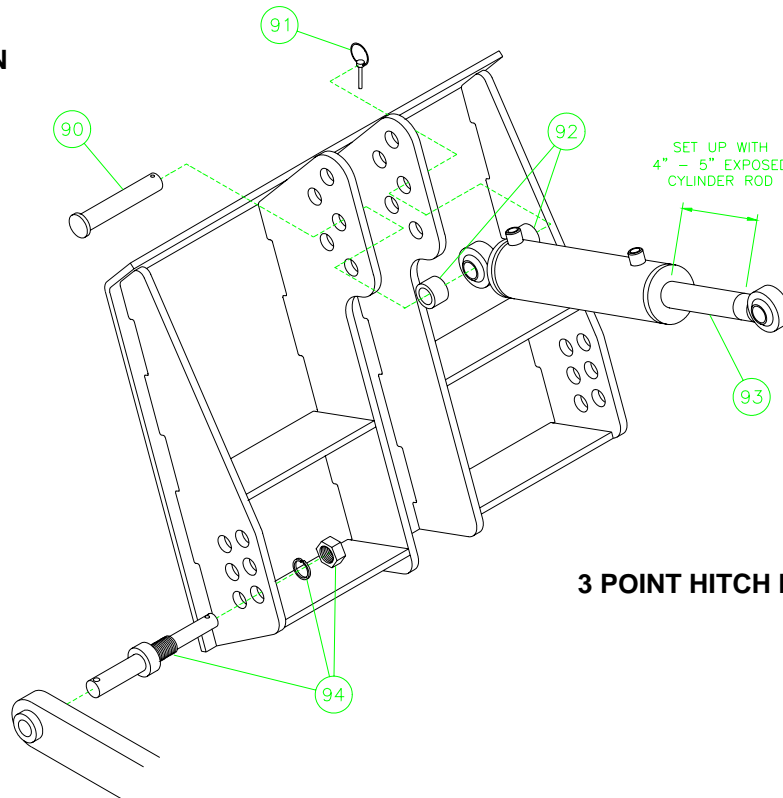
DRIVE CHAIN ADJUSTMENT

5. Remove four bolts from the drive chain shield. (Two from the top-front face and two from the bottom-rear face.)
6. Remove the shield by pulling straight out to the left.
7. Loosen the nut on the idler sprocket and push the sprocket toward the chain until the opposite chain run (i.e. the longest) has a midpoint deflection of 3/8" to 1/2".
8. Retighten the idler sprocket nut to 304 ft. lbs., + or - 22 ft. lbs.
9. Recheck the chain deflection and repeat steps 7 and 8 if the deflection is not within the above specified range.
10. Replace the drive chain shield and bolts. Tighten the bolts to 20 ft. lbs., + or - 2.0 ft. lbs.

RAKE CHAIN ADJUSTMENT

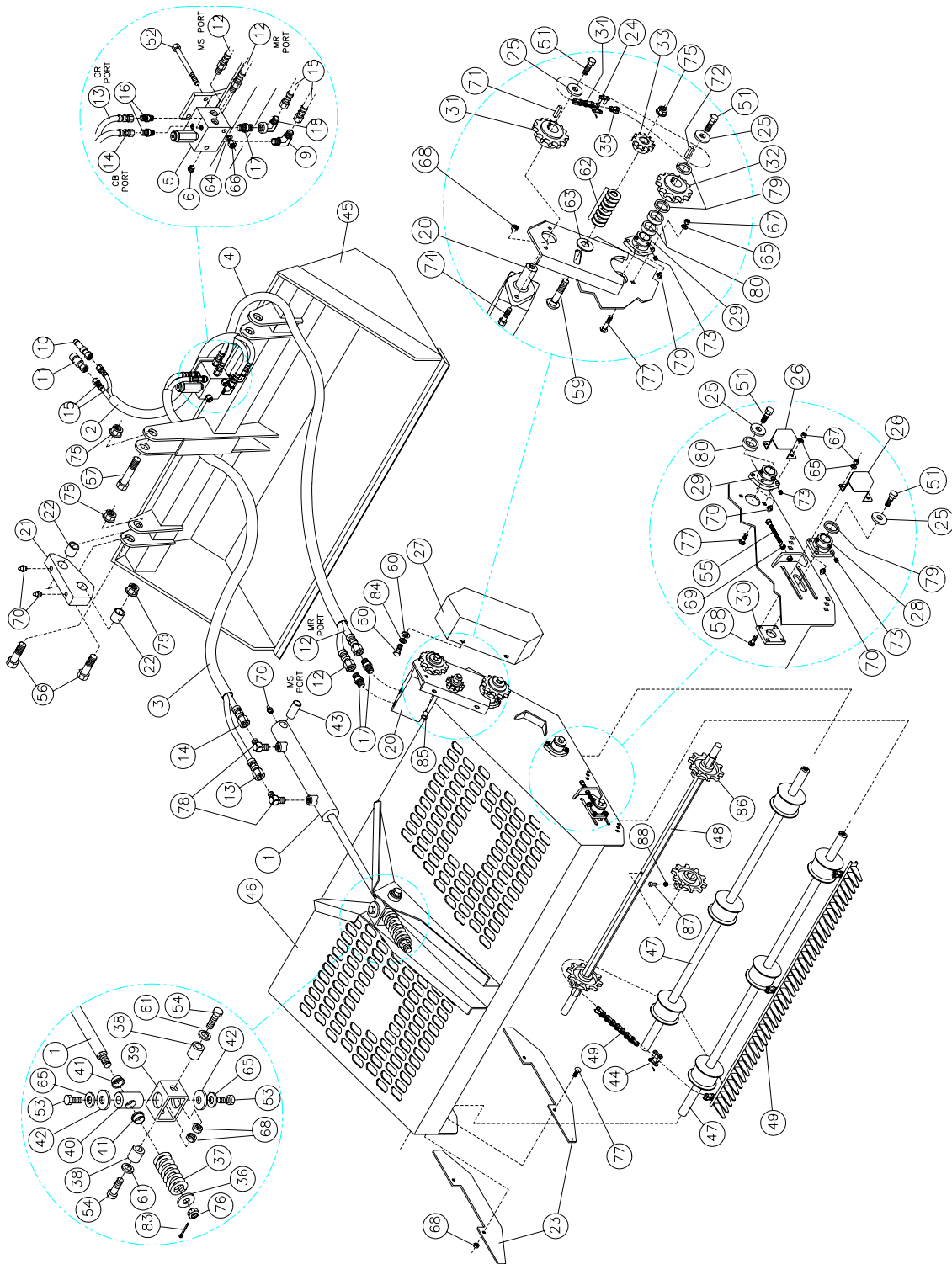
5. Loosen the four nuts that secure the bearing on one end of the front idler shaft. Repeat this process for the other end of the front idler shaft.
6. For each of the two front idler shaft bearings, loosen the jam nut on the 5/8" dia. x 6" long tightener bolt.
7. Tighten the tightener bolts until a midpoint deflection of 3/4" to 1" between the idler shaft and the drive shaft has been achieved for each of the roller chain portions of the rake chain. (By utilizing a tape measure and a long, slender hook device, the combined up and down midpoint deflection of 1-1/2" to 2" may be easier to measure.)
8. Retighten the four nuts on each of the two bearings to 84 ft. lbs., + or - 6.0 ft. lbs. and retighten the jam nut on the two tightener bolts to 169 ft. lbs., + or - 12 ft. lbs.
9. Recheck the chain deflection for compliance with the above specifications and check the chain travel to make sure that the chain is centered on the idlers. Repeat steps 5 to 8 until both the specified deflection and desired line of travel has been attained.

PARTS ILLUSTRATION



3 POINT HITCH MOUNTING PARTS

PARTS ILLUSTRATION



AUTORAKE® PARTS LIST

ITEM	QTY.	LAF6864 66"	LAF6874 76"	DESCRIPTION
1	1		LAF4216	Hydraulic Cylinder: 2" x 8-1/2"
2	1		LAF4033	Hydraulic Hose Sheathing: 1-7/8" x 72"
3	1		LAF4245	Hydraulic Hose Sheathing: 1-7/8" x 34"
4	1		LAF4082	Hydraulic Hose Sheathing: 1-7/8" x 26"
5	1		LAF4532	Hydraulic Block Assembly
6	2		LAF4252	Hydraulic Plug: Allen Head, 6MB
9	1		LAF4278	Hydraulic Elbow: 90°, 10MB – 10MJ
10	1	Contact FFC to obtain the correct item		Hydraulic Quick Coupler: Male (and adapter if required)
11	1	Contact FFC to obtain the correct item		Hydraulic Quick Coupler: Female (and adapter if required)
12	2		LAF4360	Hydraulic Hose: 1/2" x 30", 10FJ – 10MB
13	1		LAF4307	Hydraulic Hose: 3/8" x 44", 6FJ – 6FJ
14	1		LAF4311	Hydraulic Hose: 3/8" x 34", 6FJ – 6FJ
15	2		LAF4514	Hydraulic Hose: 1/2" x 93", 10MB – 10FJ
16	2		LAF4406	Hydraulic Adapter: 6MB – 6MJ
17	3		LAF4414	Hydraulic Adapter: 10MB – 10MJ
18	1		LAF4417	Hydraulic Elbow: 90°, 10MJ – 10FJ
20	1		LAF4584	Hydraulic Motor
21	2		LAF6801	Swing Arm
22	4		LAF6802	Pivot Bushing
23	4		LAF6803	Rake Depth Guide
24	1		LAF3517	Connecting Link: #80H
25	7		LAF6805	Washer
26	5		LAF6806	Shaft End Guard
27	1		LAF6807	Drive Chain Guard
28	2		LAF6808	Flange Mount Bearing: 1-7/16" ID, 4 Bolt
29	4		LAF6809	Flange Mount Bearing: 1-7/16" ID, 2 Bolt
30	2		LAF6810	Bearing Backplate
31	1		LAF6811	Drive Sprocket: 13 Tooth, #80 with 1-1/4" Keyed Bore
32	1		LAF6812	Drive Sprocket: 13 Tooth, #80 with 1-7/16" Keyed Bore
33	1		LAF6813	Idler Sprocket: 12 Tooth, #80 with 3/4" ID Bearing
34	1		LAF6814	Roller Chain: #80H, 40"
35	2		LAF3518	Connecting Link: #80H, Offset
36	1		LAF9965	Sprocket Retainer
37	1		LAF6817	Spring: 1-3/4" x 4", Coil Compression
38	2		LAF6818	Cylinder Rod Support Block Bushing
39	1		LAF6819	Cylinder Rod Support Block
40	1		LAF6820	Cylinder Rod Guide Tube
41	2		LAF6821	Cylinder Rod Wiper: 1" ID
42	2		LAF6822	Washer
43	1		LAF6823	Cylinder Cross Tube Sleeve
44	3		LAF6828	Connecting Link: for CA550HD Chain
45	1	LAF6867	LAF6877	Bucket
46	1	LAF6868	LAF6878	Shroud
47	2	LAF6869	LAF6879	Idler Shaft
48	1	LAF6829	LAF6830	Drive Shaft
49	1	LAF6831	LAF6832	Rake Chain Weldment
50	4		RHW1105	Grade 5 Hex Head Cap Screw: 5/16" x 1"
51	7		RHW1205	Grade 5 Hex Head Cap Screw: 3/8" x 1"
52	2		RHW1218	Grade 5 Hex Head Cap Screw: 3/8" x 3-3/4"
53	2		RHW1403	Grade 5 Hex Head Cap Screw: 1/2" x 1"
54	2		RHW1406	Grade 5 Hex Head Cap Screw: 1/2" x 1-3/4"
55	2		RHW1666	Grade 5 Hex Head Cap Screw: 5/8" x 6" (full thread)

NOTE: All parts are the same as the LAF6876 except for those parts numbered under the other models.

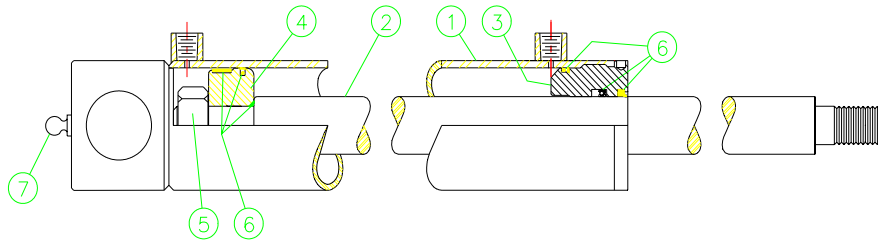
AUTORAKE® PARTS LIST (Continued)

ITEM	QTY.	LAF6864 66"	LAF6874 76"	DESCRIPTION
56	4		RHW1707	Grade 5 Hex Head Cap Screw: 3/4" x 2-1/2"
57	1		RHW1715	Grade 5 Hex Head Cap Screw: 3/4" x 5"
58	8		RHW2406	Grade 5 Carriage Bolt: 1/2" x 1-3/4"
59	1		RHW2709	Grade 5 Carriage Bolt: 3/4" x 3"
60	4		RHW5162	Grade 5 Flat Washer: 5/16", USS
61	2		RHW5462	Grade 5 Flat Washer: 1/2", USS
62	16		RHW5732	Grade 5 Flat Washer: 3/4", SAE
63	1		RHW5932	Grade 5 Flat Washer: 1", SAE
64	2		RHW6202	Grade 5 Lock Washer: 3/8"
65	18		RHW6402	Grade 5 Lock Washer: 1/2"
66	2		RHW7201	Grade 5 Hex Nut: 3/8"
67	16		RHW7401	Grade 5 Hex Nut: 1/2"
68	8		RHW7403	Grade 5 Lock Nut: 1/2"
69	2		RHW7601	Grade 5 Hex Nut: 5/8"
70	4		RHW8090	Grease Zerk: 1/4", self-tapping (28 tpi)
71	1		RHW8119	Square Key: 5/16" x 5/16" x 1-1/2"
72	1		RHW8071	Square Key: 3/8" x 3/8" x 1-1/2"
73	12		RHW8226	Set Screw: 5/16" x 1/4", 24 tpi.
74	2		RHW8236	Socket Head Cap Screw: 1/2" x 1-1/2", 13 tpi.
75	6		RHW8604	Grade 8 Lock Nut: 3/4", Flange Top
76	1		RHW7606	Grade 5 Slotted Nut: 5/8"
77	12		RHW2405	Grade 5 Carriage Bolt: 1/2" x 1-1/2"
78	2		LAF4298	Hydraulic Elbow: 6MB – 6MJ
79	4		RHW5970	Machinery Bushing: 2-1/4" OD x 1-1/2" ID, 10 ga.
80	4		LAF9526	Spacer: 1-7/8" OD x 1-1/2" ID, 10 ga.
83	1		RHW8017	Grade 2 Cotter Pin: 3/16" x 2"
84	4		RHW6102	Grade 5 Lock Washer: 5/16"
85	4		RHW8642	Rivet Nut: 5/16"
86	3		LAF6827	Hex Bore Sprocket
87	2		RHW2237	Square Head Set Screw: 3/8" x 1"
88	2		RHW7205	Grade 5 Jam Nut: 3/8"
3 Point Hitch Mountings				
90	1		RHW8048	Clevis Pin: 1" x 6"
91	1		RHW8042	Lynch Pin: 3/16" x 1-9/16"
92	2		ILA1032	Bushing:
93	1		LAF4515	Hydraulic Cylinder: 3" x 1-3/4"
94	2		RHW8401	Draw Pin: Category 1 & 2

NOTE: All parts are the same as the LAF6876 except for those parts numbered under the other models.

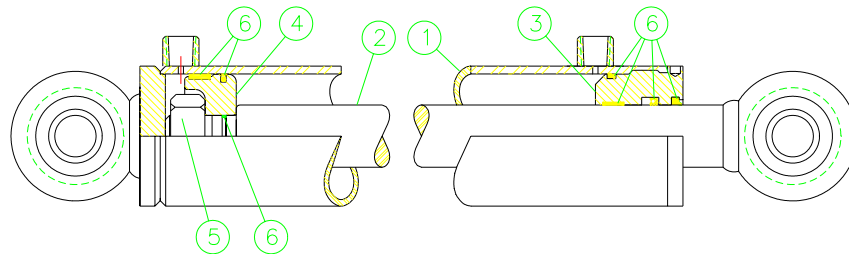
NUMBERS FROM HYDRAULIC CYLINDER ILLUSTRATION (LAF4216)			
ITEM	QTY.	PART #	DESCRIPTION
1	1	LAF4105	Barrel: 2" x 8-1/2" Stroke with Internal Cross Tube End
2	1	LAF4106	Shaft: 1" diameter with Turned Down 5/8" – 18 Threaded End
3	1	LAF4107	Head: 1" ID, Nominal
4	1	LAF4108	Piston: 2" OD x 5/8" ID, Nominal
5	1	RHW8605	Nut: 5/8" 18 tpi.
6	1	LAF4109	Seal Kit (includes all seals, o-rings, etc.)
7	1	RHW8090	Grease Zerk: 1/4", 28 tpi., self-tapping

HYDRAULIC CYLINDER
LAF4216 ILLUSTRATION



NUMBERS FROM HYDRAULIC CYLINDER ILLUSTRATION (LAF4515)			
ITEM	QTY.	PART #	DESCRIPTION
1	1	LAF4688	Barrel: 3" ID x 13" Stroke with Ball End
2	1	LAF4687	Shaft: 1-3/4" diameter
3	1	LAF4610	Head: 1-3/4" ID, Nominal
4	1	LAF4609	Piston: 3" OD x 1-18" ID, Nominal
5	1	LAF4608	Nut: 1-1/8", 12 tpi, Top Lock
6	1	LAF4607	Seal Kit (includes all seals, o-rings, etc.)

HYDRAULIC CYLINDER
LAF4515 ILLUSTRATION



AUTORAKE® SPECIFICATIONS

Model Number	Overall Width	Overall Height	Overall Depth	Working Width	Quantity of Teeth	Bucket Capacity*	Shipping Weight
LAF6864	74"	40"	64"	63-1/2"	396	13 cu. ft.	1,092 lbs.
LAF6874	84"	40"	64"	73-1/2"	462	15 cu. ft.	1,200 lbs.

All replacement hydraulic hoses and fittings must have a minimum rated working pressure of 4,000 psi.

TORQUE SPECIFICATION FOR STANDARD MACHINE HARDWARE

Bolt Size	SAE Grade Bolt	Torque Ft./Lbs.	Bolt Size	SAE Grade Bolt	Torque Ft./Lbs.
5/16" - 24	5	19	5/8" - 11	5	150
3/8" - 16	5	30	5/8" - 18	5	180
1/2" - 13	5	75	3/4" - 10	5	260



PALADIN LIGHT CONSTRUCTION

Warranty Registration Form and Delivery Inspection Report

IMPORTANT! Warranty **Void** if card is not returned with 10 days.
All Applicable sections **must** be filled in.

This section to be filled out and signed by Dealer at time of delivery.

Warranty Registration

Customer's Name _____	Dealer's Name _____
Address _____	Address _____
City _____ State _____ Zip _____	City _____ State _____ Zip _____
Phone _____	CHECK ONE:
Loader / Tractor Model _____	Construction Use _____
Delivery Date _____	Agricultural Use _____
Model or Part # _____	Landscape Use _____
Serial # _____	Other: _____

Dealer Inspection (check items applicable)

- | | |
|---|---|
| <input type="checkbox"/> All Decals installed (see operator's manual) | <input type="checkbox"/> Review Operating and Safety Instructions |
| <input type="checkbox"/> Hydraulic fittings tight and free of leaks | <input type="checkbox"/> Guards and covers in place and secure |
| <input type="checkbox"/> Fasteners tight | <input type="checkbox"/> Does Product Function Properly |

I have thoroughly instructed the buyer on the above described equipment. This review included: The Operator's manual content, equipment care, adjustments, safe operation and applicable warranty policy.

Date _____ Dealer's Rep. signature _____

This section to be completed and signed by the customer

	1 Excellent	2 Good	3 Average	4 Unsatisfactory	5 Poor
QUALITY ASSURANCE RATING					
Question:		FFC		Local Dealer	
Quality of Product: Appearance		_____		_____	
Construction		_____		_____	
Quality of Service		_____		_____	
Value (Priced Fairly)		_____		_____	
Does it perform as claimed		_____		_____	

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

Date: _____ Owner's signature _____

NOTE! Make one copy each for the dealer's and owner's records. Mail original to FFC Attachments.



PALADIN LIGHT CONSTRUCTION

FFC LIMITED 12 MONTH WARRANTY

Thank you for purchasing a FFC product. Warranty protection is valid only when this Warranty Registration is completed and signed by the customer and dealer, and mailed to FFC. I hereby acknowledge that I have received a copy of the owners Limited Warranty and I accept the terms therein.

For a period of 12 months from date of delivery of product to the original user, FFC, warrants each product to be free from manufacturing defects, subject to the limitations contained in this policy.

This warranty does not apply to defect caused, in whole or in part, by unreasonable use while in the possession of the user, including, but not limited to: failure to properly set up product; failure to provide reasonable and necessary maintenance; normal wear; routine tune ups or adjustments; improper handling or accidents; operation at speed or load conditions contrary to published specification; improper or insufficient lubrication; improper storage. This warranty is also not a guarantee that the performance of each product will meet the expectations of the purchaser.

FFC shall not be liable for consequential damages of any kind, including, but not limited to: consequential labor costs or transportation charges in connection with the replacement or repair of defective parts; lost time or expense which may have accrued because of said defects. In no event shall FFC, Inc.'s total liability hereunder exceed the product purchase price.

FFC makes no warranty with respect to trade accessories or any component or accessory of the product which was not manufactured by FFC, including any purchased components on any kind. These are subject to the warranties of their respective manufacturers. The warranty will be considered void if the product or any part of the product is modified or repaired in any way not expressly authorized by FFC, or if closed components are disassembled prior to return. Closed components include, but are not limited to: gearboxes, hydraulic pumps, motors, cylinders, and actuators.

Our obligation under the warranty is expressly limited, at our option, to the replacement or repair at FFC, of Lee, Illinois, or at a service facility designated by us, or such part or parts as inspection shall disclosed to have been defective. We are not responsible for unauthorized repairs or replacements. Any implied or statutory warranties, including any warranty of merchantability or fitness for a particular purpose, are expressly limited to the duration of this written warranty. We make no other express or implied warranty, nor is anyone authorized to make any in our behalf. This warranty cannot be extended, broadened, or changed except in writing by an authorized officer of FFC.