PALADIN™
POWERFUL ATTACHMENT TOOLS

# OPERATOR'S HANDBOOK

## PREPARATOR®
## PATENTED


**Serial Number: _____**

**Model Number: _____**

**Original**
**Manual Number: MR95512-X**
**Models: LAF3554, LAF3566 & LAF3576**

CE

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10/12/12

# NOTES

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# PREFACE

## GENERAL INFORMATION

This product was carefully designed and manufactured to give you many years of dependable service. Only minor maintenance (such as cleaning and lubricating) is required to keep it in top working condition. Be sure to observe all maintenance procedures and safety precautions in this manual and on any safety decals located on the product and on any equipment on which the attachment is mounted.

**WARNING!**  **Never let anyone operate this unit without reading the "Safety Precautions" and "Operating Instructions" sections of this manual. Always choose hard, level ground to park the vehicle on and set the brake so the unit cannot roll.**

Unless noted otherwise, right and left sides are determined from the operator's control position when facing the attachment.

**NOTE: The illustrations and data used in this manual were current (according to the information available to us) at the time of printing, however, we reserve the right to redesign and change the attachment as may be necessary without notification.**

## BEFORE OPERATION

The primary responsibility for safety with equipment falls to the operator. Make sure the equipment is operated only by trained individuals that have read and understand this manual. If there is any portion of this manual or function you do not understand, contact your local authorized dealer or manufacturer to obtain further assistance. Keep this manual available for reference. Provide this manual to any new owners and/or operator's

## SAFETY ALERT SYMBOL

This is the "Safety Alert Symbol" used by this industry. This symbol is used to warn of possible injury. Be sure to read all warnings carefully. They are included for your safety and the safety of others working with you.

## SERVICE

Use only manufacturer replacement parts. Substitute parts may not meet the required standards.
Record the model and serial number of your unit on the cover of this manual. The parts department needs this information to insure that you receive the correct parts.

## SOUND AND VIBRATION

"Sound pressure levels and vibration data for this attachment are influenced by many different parameters; some items are listed below (not inclusive):

- prime mover type, age, condition, with or without cab enclosure and configuration
- operator training, behavior, stress level
- job site organization, working material condition, environment

Based on the uncertainty of the prime mover, operator, and job site, it is impossible to get precise machine and operator sound pressure levels, or vibration levels for this attachment."

NOTE: A list of all Paladin Patents can be found at http://www.paladinattachments.com/patents.asp.

# SAFETY STATEMENTS

**DANGER!** **THIS SIGNAL WORD IS USED WHERE SERIOUS INJURY OR DEATH WILL RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.**

**WARNING!** **THIS SIGNAL WORD IS USED WHERE SERIOUS INJURY OR DEATH COULD RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.**

**CAUTION!** **THIS SIGNAL WORD IS USED WHERE MINOR INJURY COULD RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.**

**NOTICE!** **NOTICE INDICATES A PROPERTY DAMAGE MESSAGE.**

**THIS SYMBOL BY ITSELF OR WITH A WARNING WORD THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY OR THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.**

# GENERAL SAFETY PRECAUTIONS

**WARNING!** **READ MANUAL PRIOR TO INSTALL**

Improper installation, operation, or maintenance of this equipment could result in serious injury or death. Operators and maintenance personnel should read this manual as well as all manuals related to this equipment and the prime mover thoroughly before beginning installation, operation, or maintenance. **FOLLOW ALL SAFETY INSTRUCTIONS IN THIS MANUAL AND THE PRIME MOVER'S MANUAL(S).**

**READ AND UNDERSTAND ALL SAFETY STATEMENTS**

Read all safety decals and safety statements in all manuals prior to operating or working on this equipment. Know and obey all OSHA regulations, local laws and other professional guidelines for your operation. Know and follow good work practices when assembling, maintaining, repairing, mounting, removing or operating this equipment.

**KNOW YOUR EQUIPMENT**

Know your equipment's capabilities, dimensions and operations before operating. Visually inspect your equipment before you start, and never operate equipment that is not in proper working order with all safety devices intact. Check all hardware to assure it is tight. Make certain that all locking pins, latches, and connection devices are properly installed and secured. Remove and replace any damaged, fatigued or excessively worn parts. Make certain all safety decals are in place and are legible. Keep decals clean, and replace them if they become worn or hard to read.

**WARNING!** **PROTECT AGAINST FLYING DEBRIS**

Always wear proper safety glasses, goggles or a face shield when driving pins in or out, or when operation causes dust, flying debris, or any other hazardous material.

**WARNING!** **LOWER OR SUPPORT RAISED EQUIPMENT**

Do not work under raised booms without supporting them. Do not use support material made of concrete blocks, logs, buckets, barrels or any other material that could suddenly collapse or shift positions. Make sure support material is solid, not decayed, warped, twisted, or tapered. Lower booms to ground level or on blocks. Lower booms and attachments to the ground before leaving the cab or operator's station.

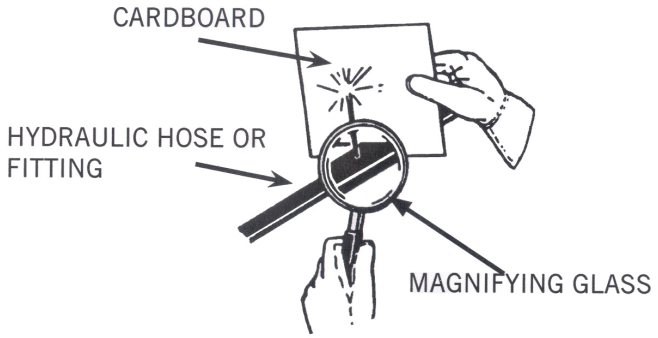
# GENERAL SAFETY PRECAUTIONS

**WARNING!** **USE CARE WITH HYDRAULIC FLUID PRESSURE**

Hydraulic fluid under pressure can penetrate the skin and cause serious injury or death. Hydraulic leaks under pressure may not be visible. Before connecting or disconnecting hydraulic hoses, read your prime mover's operator's manual for detailed instructions on connecting and disconnecting hydraulic hoses or fittings.

- Keep unprotected body parts, such as face, eyes, and arms as far away as possible from a suspected leak. Flesh injected with hydraulic fluid may develop gangrene or other permanent disabilities.
- If injured by injected fluid, see a doctor at once. If your doctor is not familiar with this type of injury, ask him to research it immediately to determine proper treatment.
- Wear safety glasses, protective clothing, and use a piece of cardboard or wood when searching for hydraulic leaks.

**DO NOT USE YOUR HANDS! SEE ILLUSTRATION.**




**WARNING!** **DO NOT MODIFY MACHINE OR ATTACHMENTS**

Modifications may weaken the integrity of the attachment and may impair the function, safety, life and performance of the attachment. When making repairs, use only the manufacturer's genuine parts, following authorized instructions. Other parts may be substandard in fit and quality. Never modify any ROPS (Roll Over Protection System) or FOPS (Falling Object Protective Structure) equipment or device. Any modifications must be authorized in writing by the manufacturer.

**WARNING!** **SAFELY MAINTAIN AND REPAIR EQUIPMENT**

- Do not wear loose clothing, or any accessories that can catch in moving parts. If you have long hair, cover or secure it so that it does not become entangled in the equipment.
- Work on a level surface in a well-lit area.
- Use properly grounded electrical outlets and tools.
- Use the correct tool for the job at hand. Make sure they are in good condition for the task required.
- Wear the protective equipment specified by the tool manufacturer.

# EQUIPMENT SAFETY PRECAUTIONS

**Obey all the safety instructions listed in this section and throughout this manual.**

**WARNING! SAFELY OPERATE EQUIPMENT**

- Do not operate equipment until you are completely trained by a qualified operator in how to use the controls, know its capabilities, dimensions, and all safety requirements. See your machine's manual for these instructions.
- Keep all step plates, grab bars, pedals, and controls free of dirt, grease, debris, and oil.
- Never allow anyone to be around the equipment when it is operating.
- Do not allow riders on the attachment or the prime mover.
- Do not operate the equipment from anywhere other than the correct operators position.
- Never leave equipment unattended with the engine running or with this attachment in a raise position.
- Do not alter or remove any safety feature from the prime mover or this attachment.
- Know your work site safety rules as well as traffic rules and flow. When in doubt on any safety issue, contact your supervisor or safety coordinator for an explanation.

**WARNING! EXPOSURE TO RESPIRABLE CRYSTALLINE SILICA DUST ALONG WITH OTHER HAZARDOUS DUSTS MAY CAUSE SERIOUS OR FATAL RESPIRATORY DISEASE.**

It is recommended to use dust suppression, dust collection and if necessary personal protective equipment during the operation of any attachment that may cause high levels of dust.

**WARNING! REMOVE PAINT BEFORE WELDING OR HEATING.**

Hazardous fumes/dust can be generated when paint is heated by welding, soldering or using a torch. Do all work outside or in a well ventilated area and dispose of paint and solvent properly. Remove paint before welding or heating.

When sanding or grinding paint, avoid breathing the dust. Wear an approved respirator. If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

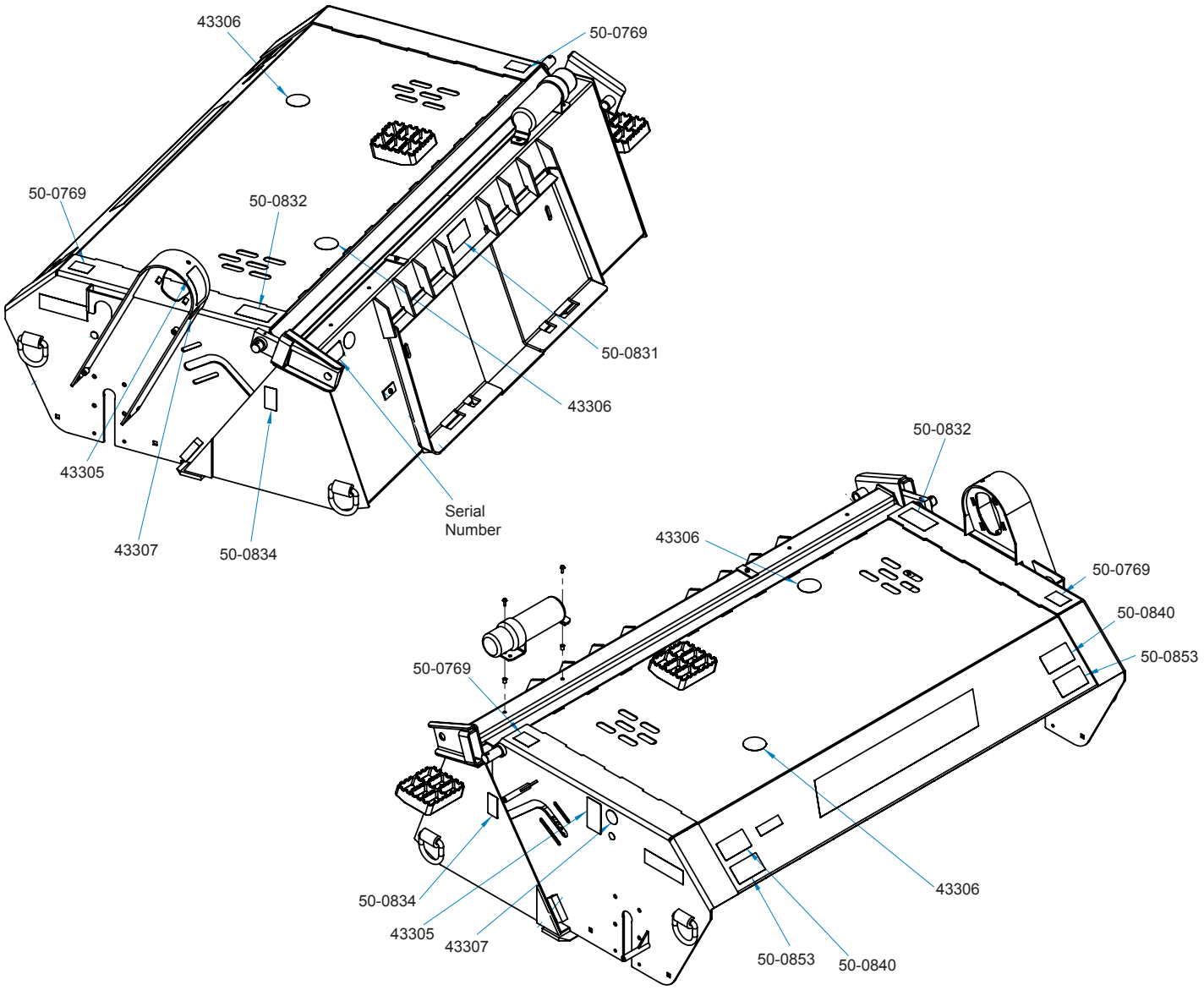
**WARNING! END OF LIFE DISPOSAL.**

At the completion of the useful life of the unit, drain all fluids and dismantle by separating the different materials (rubber, steel, plastic, etc.). Follow all federal, state and local regulations for recycling and disposal of the fluid and components.

**WARNING! KNOW WHERE UTILITIES ARE**

Observe overhead electrical and other utility lines. Be sure equipment will clear them. When digging, call your local utilities for location of buried utility lines, gas, water, and sewer, as well as any other hazard you may encounter.

# SAFETY SIGN LOCATIONS




## 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 Paladin.

## PLACEMENT OR REPLACEMENT OF SAFETY SIGNS

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

# SAFETY SIGNS

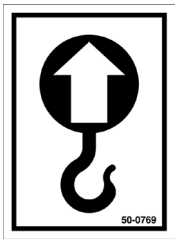
**43307**
***READ MANUALS*:**
**MANDATORY ACTION**
**Read manuals for important information.**

50-0831

***HAZARD*: GENERAL WARNING.**

***AVOIDANCE*: READ HANDBOOK - DO NOT OPERATE OR SERVICE UNLESS YOU HAVE READ AND UNDERSTAND THE INSTRUCTIONS AND SAFETY INFORMATION IN THE OPERATOR'S HANDBOOK AND ALL PRIME MOVER MANUALS.** *Failure to follow the instructions or heed the warnings could result in serious injury or death.*

**43306**
***CAUTION*! NOT A STEP**



**50-0769**
**LIFT POINT (HOOK)**

50-0832

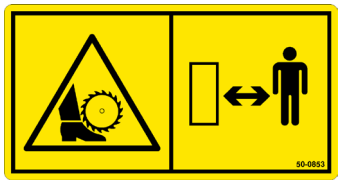
***HAZARD:* WARNING! HIGH PRESSURE FLUID HAZARD. ESCAPING HYDRAULIC FLUID CAN HAVE ENOUGH PRESSURE TO PENETRATE SKIN.** Consult physician immediately if skin penetration occurs.

***AVOIDANCE:* KEEP SAFE DISTANCE AWAY FROM HAZARD. RELIEVE PRESSURE BEFORE DISCONNECTING LINES. DO NOT** use hands to check for leaks. *Failure to heed this warning could result in serious injury or death.*

43305

***HAZARD*: WARNING! GUARD COVERING MOVING PARTS.**

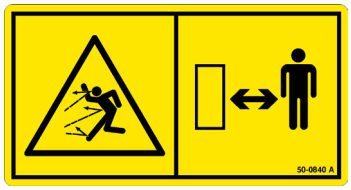
***AVOIDANCE*: READ OPERATOR'S MANUAL**



50-0853

***HAZARD*: DANGER! ENTANGLEMENT HAZARD**

***AVOIDANCE*: KEEP SAFE DISTANCE AWAY FROM HAZARD. Failure to heed this warning will result in serious injury or death.**



50-0840

***HAZARD*: WARNING! FLYING OBJECTS HAZARD.**

***AVOIDANCE*: KEEP SAFE DISTANCE AWAY FROM HAZARD. REMOVE ALL PEOPLE, ANIMALS AND PROPERTY THAT COULD BE INJURED OR DAMAGED BY FLYING DEBRIS FROM THE AREA.** *Failure to heed this warning could result in serious injury or death.*

# INSTALLATION & SETUP

**WARNING! READ MANUAL PRIOR TO INSTALLATION**

Improper installation, operation, or maintenance of this equipment could result in serious injury or death. Operators and maintenance personnel should read this manual, as well as all manuals related to this equipment and the prime mover thoroughly before beginning installation, operation, or maintenance. **FOLLOW ALL SAFETY INSTRUCTIONS IN THIS MANUAL AND THE PRIME MOVER'S MANUAL(S).**

**Loaders**

1. Place Preparator® on a firm, level surface.
2. Refer to the operator's manual(s) for prime mover, loader, and quick-attach and follow mounting instructions.
3. Carefully raise loader and cycle rollback/dump cylinders to check clearances and to verify all mounting procedures have been completed.

***NOTICE!*** ***Lubricate all grease fittings before connecting Preparator® to prime mover's hydraulic system. Refer to MAINTENANCE page and follow instructions.***

**3 Point Hitch Category 1 or 2**

1. Place Preparator® on a firm, level surface. Make sure it is in operating position and level to facilitate in selecting proper mounting holes.
2. Read and understand the Operation and Maintenance manual for your tractor before installing this product.
3. Remove top link on tractors' 3 point and drive tractor backwards into position to connect lower links to attachment mounting ears. Ears have a combination category 1 & 2 hitch pin installed, make sure outer pin matches tractors' category. Select a hole position on mounting ears that aligns or is a little above lower link points with tractor link arms fully lowered and connect arms.
4. Upper link cylinder provided requires a category #2, 1 inch diameter pin to attach to tractors' upper link point. If you have a category #1 tractor put a bushing on the pin up to make it a 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 inches (10.2 cm) and 5 inches (12.7 cm) 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 cylinder pin hole position on mounting ears until you attain recommended amount of exposed cylinder rod.

# INSTALLATION & SETUP

## HYDRAULIC CONNECTION

**READ AND UNDERSTAND ALL SAFETY STATEMENTS**
Read all safety decals and safety statements in all manuals before beginning any Preparator® hydraulic connection. Know and obey all OSHA regulations, local laws, and other professional guidelines for your operation. Know and follow good work practices when assembling, maintaining, repairing, mounting, removing, or operating this equipment.

**Loaders**

1. Disconnect hydraulic hose quick couplers from one another and attach quick couplers to prime mover per instructions in prime mover's operator's manual.
2. Carefully raise loader and cycle tilt cylinders to check hose clearances and check for interference.

**3 Point Hitch Category 1 or 2**

1. This product requires two sets of auxiliary hydraulics. Purchase proper couplers and hoses for upper link cylinder locally and attach to tractor per instructions in tractors' operators manual.
2. Carefully raise link arms and cycle upper link cylinder to check hose clearances, interferences, and acceptable range of motion to roll back and dump bucket.

**WARNING! Do not lock auxiliary hydraulics of prime mover in "ON" position. Failure to obey this warning could result in death or serious injury.**

## SKID SHOE ADJUSTMENT

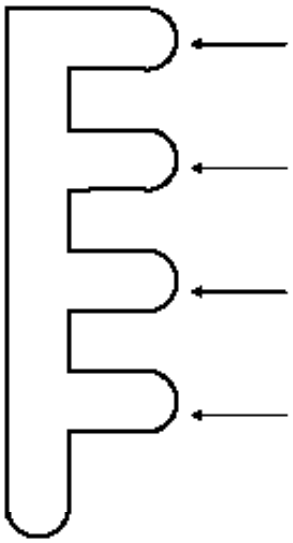
Before adjusting skid shoes, determine what soil conditions are and what type of operation is to be performed. Each time soil conditions or operation changes, skid shoes may need to be repositioned.

Soil Conditions

- HARD: This is highly compacted soil, usually inorganic (clay). Any soil that has been subject to vehicle or construction traffic.
- MEDIUM: This is untilled soil that has not been subject to compaction devices or traffic.
- LOOSE: This soil that has received a rough tillage pass of some type, but is still lumpy and coarse.
- VERY LOOSE: This soil that has been tilled to a fine texture.

Operation Type

- ROCK COLLECTION: Collecting large rocks and debris that are resting on soil surface.
- FOLIAGE REMOVAL: Uprooting and collecting foliage that is growing or has been growing on soil surface.
- SOIL TILLAGE: Tilling soil to create a looser soil condition.
- ROUGHING: Scarifying, raking rocks, debris, & foliage, and filling depressions in tilled or untilled soil.
- FLAT MODE ROUGHING: Roughing with shroud parallel to ground.
- ANGLED MODE ROUGHING: Roughing with shroud at an angle to ground surface.
- FINISHING PASS: Collecting small rocks and debris that are in or on soil surface.

| **Skid Shoe Adjustment Slots** | **Rotor Tooth Depth Below Skid Shoe** | **Operation on Soil Condition** (Initial settings only. Workability, moisture, experience, etc. affect settings.) |
|---|---|---|
|  | (-).63 inch (1.6 cm) | Finishing Pass on Very Loose soil.<br>Foliage Collection |
| | .25 inch (.64 cm) | Flat Mode Roughing on Medium or Loose soil.<br>Finishing Pass on Loose soil. |
| | 1.13 inch (2.87 cm) | Rock Collection on Hard or Medium soil.<br>Soil Tillage on Medium soil.<br>Flat Mode Roughing on Hard soil.<br>Finishing Pass on Medium soil. |
| | 2 inch (5.1 cm) | Foliage Uprooting on Hard or Medium soil.<br>Angled Mode Roughing on Hard, Medium, or Loose soil.<br>Soil Tillage on Hard soil. |

**Adjust skid shoes as follows:**

1. Park prime mover on level surface with Preparator® properly attached.
2. Place prime mover's transmission in "Park" and engage parking brake.
3. Lower Preparator® onto pre-placed blocking.

**WARNING!** 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. Failure to obey this warning could result in death or serious injury.

4. Shut off prime mover's engine, remove starter key, wait for all moving parts to stop and relieve pressure in hydraulic lines.
5. Loosen two .5 inch hex nuts that secure shoe.
6. Move shoe to proper slot for appropriate soil conditions and for operation being preformed. See chart on previous page for recommended starting points for various soil and operating combinations.

***NOTICE!*** ***After conducting test passes, the operator determines the best skid shoe setting for conditions is between two of those listed, then the rear skid shoe may be set one slot above the front of the skid shoe.***

7. Re-tighten the two .5 inch hex nuts to 84 ft. lbs (114 N-m) + or - 6.0 ft. lbs (8 N-m) of torque.
8. Repeat SKID SHOE ADJUSTMENT steps 5 through 7 for other skid shoe.

## TRACK SCRATCHER SPRING ADJUSTMENT

1. With Preparator® positioned by steps 1 through 4 for SKID SHOE ADJUSTMENT, loosen two 3/8 inch hex nuts that secure track scratcher to skid shoe.
2. Slide track scratcher down until tips of lowest spring are .25 inch below lowest surface of skid shoe when skid shoe is at selected operating angle.

***NOTICE!*** ***Operating Preparator® with the spring tips extending more than .25 inch into soil CAN result in damage to this product and <u>WILL</u> void all Paladin warranties.***

3. Re-tighten two .38 inch hex nuts to 34 ft. lbs (46 N-m) + or - 2.0 ft. lbs (3 N-m) of torque.
4. Loosen single .38 inch hex nut that secures front spring to track scratcher.
5. Slide spring outward until outer tine of spring is .5" beyond outer edge of skid shoe. (Specific soil conditions may require an increase or a decrease in that distance.)
6. Retighten 3/8 inch hex nut to 34 ft. lbs (46 N-m) + or - 2.0 ft. lbs (3 N-m) of torque.
7. Repeat TRACK SCRATCHER SPRING ADJUSTMENT steps 1 through 6 for other track scratcher.

# OPERATION

## Intended Use

This **Preparator® has been designed to** separate rocks and other debris from the soil while leveling and smoothing to prepare the soil for seeding or sod**.** Use in any other way is considered contrary to the intended use. Compliance with and strict adherence to operation, service and repair conditions as specified by the manufacturer, are also essential elements of the intended use.

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

- Never lift lowest portion of attachment plate higher than 5 ft (1.5 m) above ground.
- Do not lock auxiliary hydraulics of prime mover in “ON” position.
- Keep everyone at least nine feet away from Preparator® when operating.

**CAUTION! NOT A STEP!**
**Failure to obey this warning MAY result in personal injury.**

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

***NOTICE! Operating this product continuously at hydraulic pressures greater than 2,500 psi (172 bar)***
***CAN result in damage to this product and***
***<u>WILL</u> void all Paladin warranties.***

**NOTICE! On certain prime movers equipped with counter weights, use of "float" position on loader arm lift control can affect overall performance.**

Descriptions on next page are for different operations that can be performed with this product.
Keep in mind that:

- Before using this product, application area must be free of all boulders larger than 20 inches (50.8 cm) in diameter, all logs and branches, all wire, all lumber, and any other item that is too large for bucket or could get wrapped around rotor.
- Other equipment must be used to obtain a reasonable starting grade. That means removing any large mounds of soil and filling in any large or deep holes.
- Multiple passes requiring different skid shoe settings, different rotor speeds and rotation directions, and different ground speeds and directions may be needed to achieve desired results depending on what those results are and what initial conditions are.
- 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 from descriptions on next page based upon operator’s experience.

# OPERATION

**To operate this product:**

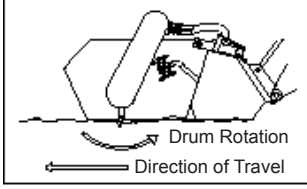
1. Make sure that skid shoes are in correct position. (See SETUP for recommended settings.)
2. Make sure that track scratchers are in correct position. (See SETUP for recommended settings.)
3. Use hydraulics on prime mover to properly position rotor and bucket. (See next page for recommended positions and float/non-float loader arm settings.)
4. Activate auxiliary hydraulics on prime mover to rotate rotor in correct direction. (See next page for recommended direction.)
5. Increase engine speed to desired level and slowly move prime mover in correct direction. (See next page for recommended direction.)
6. Gradually increase ground speed until desired balance between operating results and efficiency is achieved.

# OPERATION

ROCK COLLECTION (Fig. 1)
This operation is where surface rocks (5 in [12.7 cm] to 20 in [5.08 cm) diameter] are collected in bucket.

- Teeth should move toward bucket when contacting soil.
- Prime mover should move in a forward direction when mounting the attachment in front of prime mover and backward for 3 point mountings.
- The larger the rocks, slower the ground speed.
- Loader should be in float position. (Dumping of bucket is required.)

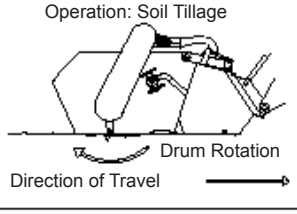
figure 1
Operation: Rock Collection




SOIL TILLAGE & FOLIAGE UPROOTING (Fig. 2)
This operation is for loosening undisturbed soil and uprooting foliage.

- Teeth should move away from bucket when contacting soil.
- Prime mover should move in a reverse direction when mounting the attachment in front of prime mover and forward for 3 point mountings.
- Loader should not float. (Dumping of bucket is not required.)

figure 2
Operation: Soil Tillage

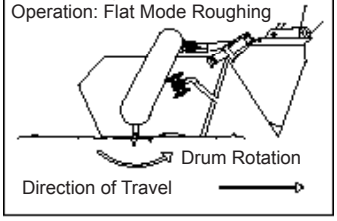



FLAT MODE ROUGHING (Fig. 3) or ANGLED MODE ROUGHING (Fig. 4)
These operations scarify, rake materials into piles or windrows and fill depressions.

- Teeth should move toward bucket when contacting soil.
- Prime mover should move in a reverse direction when mounting the attachment in front of prime mover and forward for 3 point mountings.
- Loader should not float. (Dumping of bucket is not required.)

(If bucket is closed at end of a Flat Mode pass, dumping is required.)

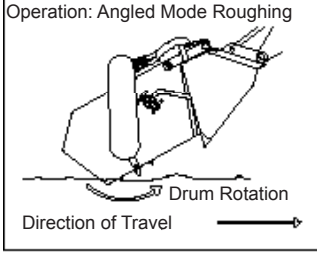
figure 3
Operation: Flat Mode Roughing




FOLIAGE COLLECTION (Fig. 5)
This operation is where foliage is uprooted and collected in bucket.

- Teeth should move toward bucket when contacting soil.
- Prime mover should move in a reverse direction when mounting the attachment in front of prime mover and forward for 3 point mountings.
- Loader should be in float position. (Dumping of bucket is required.)

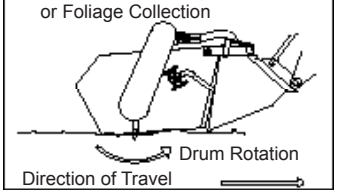
figure 4
Operation: Angled Mode Roughing




FINISHING PASS (Fig.5)
This operation is for collection of rocks (less than 5 in [12.7 cm] diameter) and debris in soil.

- Teeth should move toward bucket when contacting soil.
- Prime mover should move in a reverse direction when mounting the in front of prime mover and forward for 3 point mountings.
- Loader should be in float position. (Dumping of bucket is required.)

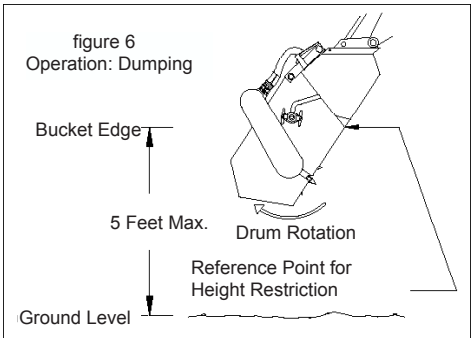
figure 5
Operation: Finishing Pass
or Foliage Collection




DUMPING OF BUCKET (Fig.6)

1. Shut off auxiliary hydraulics.
2. Raise unit about four feet above ground.
3. Dump bucket.
4. If some materials do not slide out, engage auxiliary hydraulics so the teeth on bottom of rotor move away from bucket.

figure 6
Operation: Dumping




ADDITIONAL OPERATING TIPS

- If rotor carries rocks past brush and drops them back on the ground, reduce rotor speed.
- Bucket will hold more material if, when bucket starts to get full, bucket is rolled back to shift material further back into bucket. Some unwanted soil can also be removed at this time if roll-back/ dump cylinder(s) on loader are used to “shake” unit.

## General Storage:

Storage:

- Clean the unit thoroughly, removing all snow, dirt and grease.
- Inspect for visible signs of wear, breakage or damage. Order any parts required and make the necessary repairs to avoid delays upon removal from storage.
- Tighten loose nuts, capscrews and hydraulic connections.
- Coat exposed portions of the cylinder rods with grease.
- Lubricate grease fittings.
- Seal hydraulic system from contaminants and secure all hydraulic hoses off the ground to help prevent damage.
- Store unit in a dry and protected place. Leaving the unit outside will materially shorten its life.

Additional Precautions for Long Term Storage:

- Touch up all unpainted surfaces with paint to avoid rust.
- Inflate tires to recommended tire pressure.
- Fill fuel tank and hydraulic oil tank to maximum.
- Check antifreeze properties and drain fluids as appropriate.

Removal from Storage:

- Remove cover.
- Wash unit and replace any damage and/or missing parts.
- Lubricate grease fittings.
- Check hydraulic hoses for damage and replace as necessary.

# OPERATION

## LIFT POINTS

Lifting points are identified by lifting decals where required. Lifting at other points is unsafe and can damage attachment. Do not attach lifting accessories around cylinders or in any way that may damage hoses or hydraulic components. See diagram:

- Attach lifting accessories to unit at recommended lifting points.
- Bring lifting accessories together to a central lifting point.
- Lift gradually, maintaining the equilibrium of the unit.

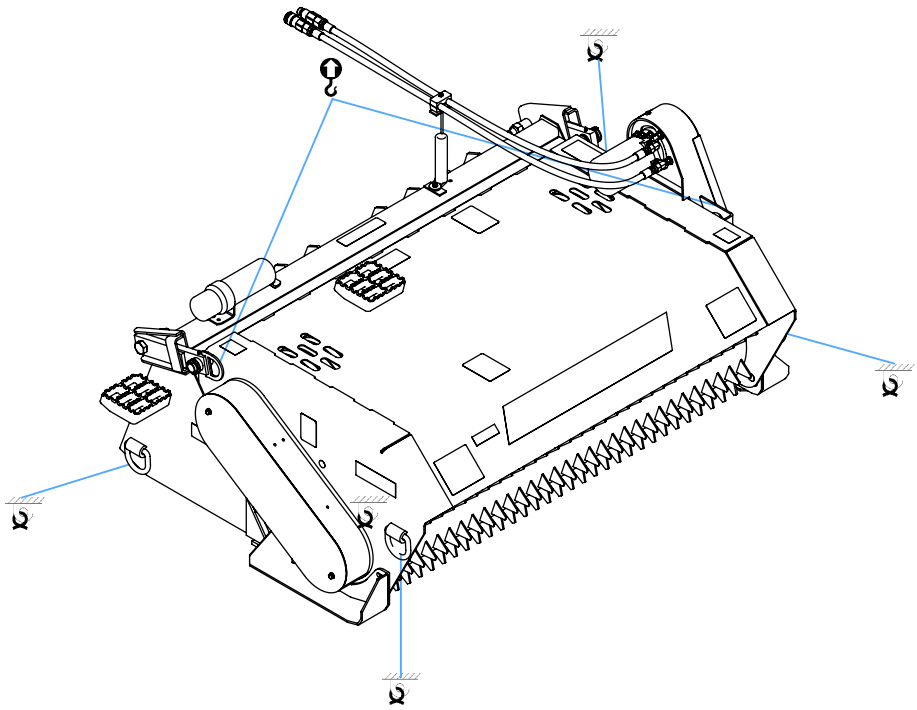
**WARNING!** **USE LIFTING ACCESSORIES (CHAINS, SLINGS, ROPES, SHACKLES AND ETC.) THAT ARE CAPABLE OF SUPPORTING THE SIZE AND WEIGHT OF YOUR ATTACHMENT. Secure all lifting accessories in such a way to prevent unintended disengagement. Failure to do so could result in the attachment falling and causing serious personal injury or death.**

## TIE DOWN POINTS

Tie down points are identified by tie down decals where required. Securing to trailer at other points is unsafe and can damage attachment. Do not attach tie down accessories around cylinders or in any way that may damage hoses or hydraulic components. See diagram:

- Attach tie down accessories to unit as recommended.
- Check unit stability before transporting.

**WARNING!** **VERIFY THAT ALL TIE DOWN ACCESSORIES (CHAINS, SLINGS, ROPES, SHACKLES AND ETC.) ARE CAPABLE OF MAINTAINING ATTACHMENT STABILITY DURING TRANSPORTING and are attached in such a way to prevent unintended disengagement or shifting of the unit. Failure to do so could result in serious personal injury or death.**



# MAINTENANCE

| Procedure | Before Each Use | Every 10 Hours | Every 40 Hours |
|---|---|---|---|
| Check and tighten all hardware and fasteners | ✓ | | |
| Tighten all hydraulic fittings and check for leaks | ✓ | | |
| Check all safety decals that they are clean and legible | ✓ | | |
| Replace any damaged and excessively worn parts | ✓ | | |
| Make sure radius plate is level when blade is in operating position | ✓ | | |
| Grease all fittings | | ✓ | |
| Make sure rollar chains are tight ( After 1st 10 hours, every 40 hours) | | ✓ | ✓ |
| Make sure the 4 taper lock adapter assemblies are tight | | | ✓ |

# MAINTENANCE

***NOTICE!*** ***When replacing parts use only factory approved replacement parts. Manufacturer will not claim responsibility for use of unapproved parts or accessories and/or other damages as a result of their use.***

## BEARING LOCK ADJUSTMENT

If a taper lock adapter assembly needs to be tightened:

1. Bend the locking tang of each bearing lock washer out to free bearing locknut.
2. Loosen bearing locknut with spanner wrench included with product.
3. Re-tighten bearing locknut until finger tight.
4. Use spanner wrench to tighten locknuts an additional 1-1/4 turns and, if necessary, continue tightening until first time when one tang of the bearing lock washer is aligned with a notch on locknut.
5. Bend that tang of bearing lock washer back into notch on locknut.
6. Replace and properly secure appropriate drive shield(s).

## CHAIN TENSION ADJUSTMENT

If chain needs to be tightened:

1. Shut off prime mover's engine, remove starter key, wait for all moving parts to stop, relieve all pressure in hydraulic lines.
2. Remove cover over rotor drive chain.
3. Check chain to see if adjustment is needed: Remove (1) link if possible (It may be necessary to add back in 1/2 link). There should be at least .25 inches (.635 cm) of movement in chain. Height of the motor mount weldment may also be adjusted to change chain tension.
4. Replace and properly secure appropriate drive shield(s).

**Brush Drive Side**

1. Shut off prime mover's engine, remove starter key, wait for all moving parts to stop, relieve all pressure in hydraulic lines.
2. Remove cover over brush drive chain and completely remove snap idler.
3. Check chain to see if adjustment is needed: Remove (1) link if possible (It may be necessary to add back in 1/2 link).
4. Adjust brush leaving a 1/4 inch (.635 cm) of movement in the chain and a maximum of .31 inch (.79 cm) between brush and drum. If the is more than .31 inch (.79 cm) between brush and drum, then remove a 1/2 link from chain. Be sure to adjust both ends of brush so it remains parallel to drum.
5. Replace and properly secure appropriate drive shield(s).

# TROUBLESHOOTING

| PROBLEM | POSSIBLE CAUSE | POSSIBLE REMEDY |
|---|---|---|
| Rotor does not turn. | Rotor drive chain is loose. | Adjust chain tension. |
| | Rotor drive chain is broken. | Repair or replace drive chain. |
| | Rotor drive sprocket is off shaft. | Re-install drive sprocket. |
| | Rotor idler sprocket is off shaft. | Re-install idler sprocket. |
| | Rotor bearing is seized. | Replace bearing. |
| | Obstruction (rock, etc.) is lodged against rotor. | Remove obstruction. Make sure all safety procedures are followed. |
| | Hydraulic fluid in the prime mover is low. | Add hydraulic fluid to prime mover. |
| | Defective hydraulic valve on prime mover. | Repair or replace hydraulic valve on prime mover. |
| | Defective hydraulic pump on prime mover. | Repair or replace hydraulic pump on prime mover. |
| Loss of power to rotor. | Hydraulic fitting is leaking. | Tighten or replace hydraulic fitting. |
| | Hydraulic motor seal is leaking. | Replace hydraulic motor seal. |
| | Hydraulic fluid in the prime mover is low. | Add hydraulic fluid to prime mover. |
| | Air in prime mover's hydraulic system. | Bleed prime mover's hydraulic system. |
| Rotor turns erratically. | Air in prime mover's hydraulic system. | Bleed prime mover's hydraulic system. |
| | Rotor drive chain is slipping on sprocket. | Adjust chain tension. |
| Brush does not sweep against the rotor. | Brush drive chain is loose. | Adjust chain tension. |
| | Brush drive chain is broken. | Repair or replace drive chain. |
| | Sprocket square key is missing or broken. | Replace sprocket square key. |
| Skid shoes dig in or slide with excessive resistance on ground. | Float circuit on prime mover is not activated or not properly operating. | Activate or repair, prime mover's hydraulic controls. |

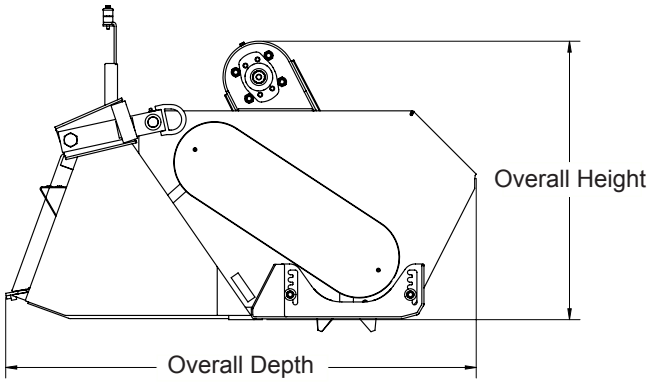
# PRIME MOVER SPECIFICATIONS

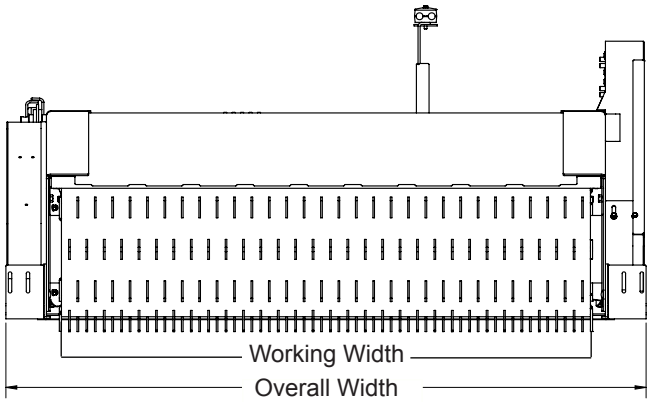
***NOTICE!*** ***Exceeding any of the maximum recommended prime mover specifications CAN result in damage to this product and <u>WILL</u> void all Paladin warranties.***

| DESCRIPTION | SPECIFICATIONS |
|---|---|
| Hydraulic Flow Output | 25 gpm (94.6 lpm) maximum |
| Hydraulic Pressure Output | 2,500 psi (172 bar) maximum (continuous)<br>3,500 psi (241 bar) maximum (intermittent: no more than 6 seconds per minute) |
| Rear Ballast | As required to maintain full prime mover stability.<br>(Note the Shipping Weight on the specifications page, then see the operator's manual(s) for your prime mover, loader, and quick-attach for ballasting needs.) |

# PREPARATOR® SPECIFICATIONS

| Model Number | Overall Width | Overall Height | Overall Depth | Working Width | Quantity of Teeth | Bucket Capacity | Shipping Weight |
|---|---|---|---|---|---|---|---|
| LAF3554 | 63.25 in (160.66 cm) | 34.88 in (88.60 cm) | 53 in (134.6 cm) | 54 in (137.2 cm) | 250 | 8.86 cu. ft. (.25 cu. m) | 1,031 lbs (468 kg) |
| LAF3566 | 75.25 in (191.14 cm) | 34.88 in (88.60 cm) | 53 in (134.6 cm) | 66 in (167.6 cm) | 300 | 10.32 cu. ft. (.29 cu. m) | 1,340 lbs (608 kg) |
| LAF3576 | 85.25 in (216.54 cm) | 34.88 in (88.60 cm) | 53 in (134.6 cm) | 76 in (193 cm) | 340 | 12.5 cu. ft. (.35 cu. m) | 1,520 lbs (689 kg) |
| All replacement hydraulic hoses must have a minimum rated working pressure of 4,000 psi (276 bar). | | | | | | | |



# BOLT TORQUE SPECIFICATIONS

## GENERAL TORQUE SPECIFICATION TABLES

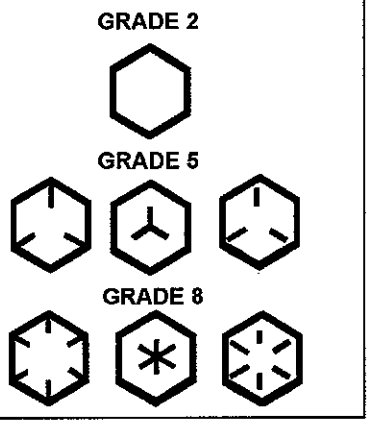
Use the following charts when determining bolt torque specifications when special torques are not given. Always use grade 5 or better when replacing bolts.

## SAE BOLT TORQUE SPECIFICATIONS

**NOTE: The following torque values are for use with extreme pressure lubricants, plating or hard washer applications Increase torque 15% when using hardware that is unplated and either dry or lubricated with engine oil.**

| Bolt Size | | SAE GRADE 5 TORQUE | | | | SAE GRADE 8 TORQUE | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Pounds Feet | | Newton-Meters | | Pounds Feet | | Newton-Meters | |
| Inches | Millimeters | UNC | UNF | UNC | UNF | UNC | UNF | UNC | UNF |
| 1/4 | 6.35 | 8 | 9 | 11 | 12 | 10 | 13 | 14 | 18 |
| 5/16 | 7.94 | 14 | 17 | 19 | 23 | 20 | 25 | 27 | 34 |
| 3/8 | 9.53 | 30 | 36 | 41 | 49 | 38 | 46 | 52 | 62 |
| 7/16 | 11.11 | 46 | 54 | 62 | 73 | 60 | 71 | 81 | 96 |
| 1/2 | 12.70 | 68 | 82 | 92 | 111 | 94 | 112 | 127 | 152 |
| 9/16 | 14.29 | 94 | 112 | 127 | 152 | 136 | 163 | 184 | 221 |
| 5/8 | 15.88 | 128 | 153 | 174 | 207 | 187 | 224 | 254 | 304 |
| 3/4 | 19.05 | 230 | 275 | 312 | 373 | 323 | 395 | 438 | 536 |
| 7/8 | 22.23 | 340 | 408 | 461 | 553 | 510 | 612 | 691 | 830 |
| 1 | 25.40 | 493 | 592 | 668 | 803 | 765 | 918 | 1037 | 1245 |
| 1-1/8 | 25.58 | 680 | 748 | 922 | 1014 | 1088 | 1224 | 1475 | 1660 |
| 1-1/4 | 31.75 | 952 | 1054 | 1291 | 1429 | 1547 | 1700 | 2097 | 2305 |
| 1-3/8 | 34.93 | 1241 | 1428 | 1683 | 1936 | 2023 | 2312 | 2743 | 3135 |
| 1-1/2 | 38.10 | 1649 | 1870 | 2236 | 2535 | 2686 | 3026 | 3642 | 4103 |

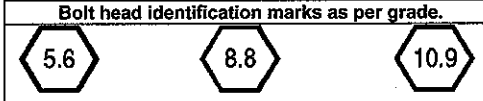
Bolt head identification marks as per grade.
NOTE: Manufacturing Marks Will Vary




## METRIC BOLT TORQUE SPECIFICATIONS

**NOTE: The following torque values are for use with metric hardware that is unplated and either dry or lubricated with engine oil. Reduce torque 15% when using hardware that has extreme pressure lubricants, plating or hard washer applications.**

Bolt head identification marks as per grade.




| Size of Bolt | Grade No. | Pitch (mm) | Pounds Feet | Newton-Meters | Pitch (mm) | Pounds Feet | Newton-Meters |
|---|---|---|---|---|---|---|---|
| M6 | 5.6 | 1.0 | 3.6-5.8 | 4.9-7.9 | - | - | - |
| | 8.8 | | 5.8-.4 | 7.9-12.7 | | - | - |
| | 10.9 | | 7.2-10 | 9.8-13.6 | | - | - |
| M8 | 5.6 | 1.25 | 7.2-14 | 9.8-19 | 1.0 | 12-17 | 16.3-23 |
| | 8.8 | | 17-22 | 23-29.8 | | 19-27 | 25.7-36.6 |
| | 10.9 | | 20-26 | 27.1-35.2 | | 22-31 | 29.8-42 |
| M10 | 5.6 | 1.5 | 20-25 | 27.1-33.9 | 1.25 | 20-29 | 27.1-39.3 |
| | 8.8 | | 34-40 | 46.1-54.2 | | 35-47 | 47.4-63.7 |
| | 10.9 | | 38-46 | 51.5-62.3 | | 40-52 | 54.2-70.5 |
| M12 | 5.6 | 1.75 | 28-34 | 37.9-46.1 | 1.25 | 31-41 | 42-55.6 |
| | 8.8 | | 51-59 | 69.1-79.9 | | 56-68 | 75.9-92.1 |
| | 10.9 | | 57-66 | 77.2-89.4 | | 62-75 | 84-101.6 |
| M14 | 5.6 | 2.0 | 49-56 | 66.4-75.9 | 1.5 | 52-64 | 70.5-86.7 |
| | 8.8 | | 81-93 | 109.8-126 | | 90-106 | 122-143.6 |
| | 10.9 | | 96-109 | 130.1-147.7 | | 107-124 | 145-168 |
| M16 | 5.6 | 2.0 | 67-77 | 90.8-104.3 | 1.5 | 69-83 | 93.5-112.5 |
| | 8.8 | | 116-130 | 157.2-176.2 | | 120-138 | 162.6-187 |
| | 10.9 | | 129-145 | 174.8-196.5 | | 140-158 | 189.7-214.1 |
| M18 | 5.6 | 2.0 | 88-100 | 119.2-136 | 1.5 | 100-117 | 136-158.5 |
| | 8.8 | | 150-168 | 203.3-227.6 | | 177-199 | 239.8-269.6 |
| | 10.9 | | 175-194 | 237.1-262.9 | | 202-231 | 273.7-313 |
| M20 | 5.6 | 2.5 | 108-130 | 146.3-176.2 | 1.5 | 132-150 | 178.9-203.3 |
| | 8.8 | | 186-205 | 252-277.8 | | 206-242 | 279.1-327.9 |
| | 10.9 | | 213-249 | 288.6-337.4 | | 246-289 | 333.3-391.6 |

PALADIN™
CONSTRUCTION GROUP

CE

# EU DECLARATION OF CONFORMITY

***I, the undersigned, on behalf of:***

Manufacturer/Technical Document Holder

Paladin Construction Group
2800 N. Zeeb Road
Dexter, MI 48130 USA
Phone: 734-996-9116
Fax: 734-996-9014

***hereby declare that the following product:***

Description of Equipment: **Hydraulically driven Preparator® for loader applications. Used for separation of rocks and other debris from the soil.**

Attachment Model: **LAF3554, LAF3566, LAF3576**

Serial Number: _____

*Conforms to:* **2006/42/EC Machinery Directive**

**EN982; EN ISO 474-1; EN ISO 12100-1; EN ISO 12100-2; EN ISO 1412-1; EN ISO 2860; ENISO 2867**

*Certification method:* **Self-certified, per Annex V of the Directive**

Name and address of the person in the Community authorized to compile the technical construction file:

GENESIS GmbH
Alpenstrasse 71
Memmingen, GERMANY D – 87700

At Dexter, Signature, Title, Date

Signature: _____

Title: _____

Date: _____

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3-28-11-2