



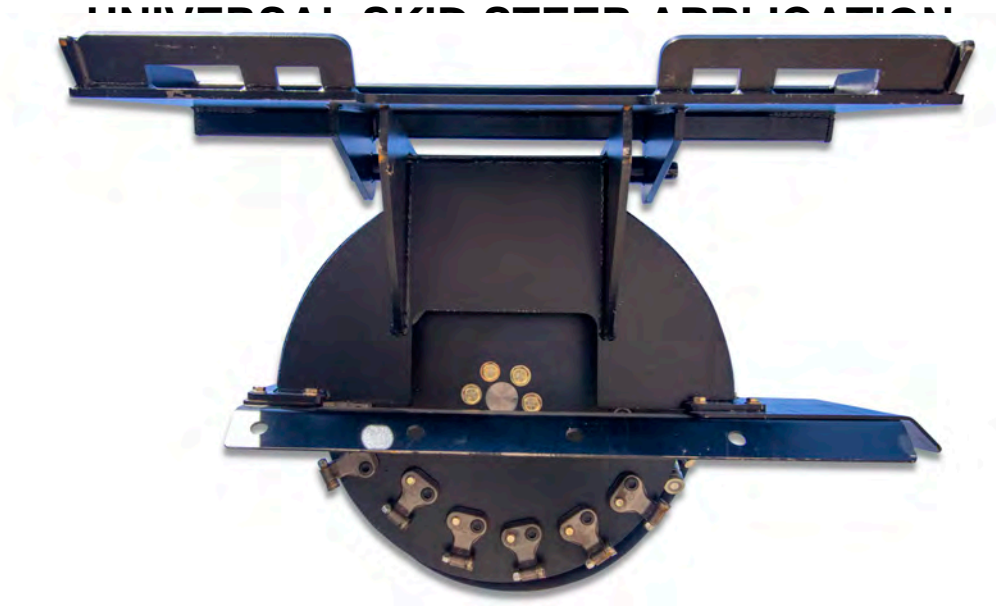
# OPERATORS MANUAL

## MTL X-Series Stump Grinder

16 - 25 GPM Standard Flow

20-40 GPM Mid/High Flow

30-45 GPM High Flow - (uses 3/4 couplers)



SERIAL NUMBER: \_\_\_\_\_

Manual Number: SG24-MTL

Part Number: 14710000

## READ ENTIRE OPERATOR'S & PARTS MANUAL BEFORE OPERATING!

DANGER!



ROTATING WHEEL HAZARD! STAY BACK!

OBJECTS CAN BE THROWN!

DO NOT operate near bystanders.

DO NOT place hands or feet under deck while in operation or with engine running.



WARNING! Before leaving the operator's seat: Lower the lift arms against frame and place unit on skid shoes. Disengage auxiliary hydraulics. Stop Engine. Engage parking brake. Remove key.

DANGER!



FLYING DEBRIS HAZARD. CLEAR AREA OF BYSTANDERS AND LIVE-STOCK BEFORE OPERATING. THE STUMP GRINDER IS CAPABLE OF PRODUCING LARGE AMOUNTS OF FLYING DEBRIS IN ALL DIRECTIONS.

WARNING! MTL Stump Grinder should never be



operated while tilted toward operator or with rear of attachment more than 24" off the ground.

If there is any portion of this manual or function you do not understand, contact your local authorized dealer or North American Implements.

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# PREFACE

## GENERAL COMMENTS

Congratulations on the purchase of your new MTL Attachments X-Stump Grinder. 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 Stump Grinder and on any equipment on which the attachment is mounted.

This manual has been designed to help you do a better, safer job. Read this manual carefully and become familiar with its contents.



**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 Stump Grinder as may be necessary without notification.**

## BEFORE OPERATION

The primary responsibility for safety with this 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 the manufacturer to obtain further assistance. Keep this manual available for reference. Provide the manual to any new owners and/or operators.

## 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 for the safety of others working with you.

## SERVICE

Use only MTL 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.

# SAFETY STATEMENTS



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.



## **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.

## GENERAL SAFETY PRECAUTIONS

### **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 skid steer, loader or tractor thoroughly before beginning installation, operation, or maintenance.

#### **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 ensure 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.

## GENERAL SAFETY PRECAUTIONS

### WARNING!



#### PROTECT AGAINST FLYING DEBRIS

Always wear proper safety glasses, goggles, or a face shield when driving pins in or out, or when any 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.

### 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!**

## GENERAL SAFETY PRECAUTIONS

### WARNING!



#### DO NOT MODIFY MACHINE OR ATTACHMENTS

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

### 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 tools 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.



#### 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 Stump Grinder or machine it is connected to.
- Do not operate the equipment from anywhere other than the correct operator's position.
- Never leave equipment unattended with the engine running, or with this attachment in a raised position.
- Do not alter or remove any safety feature from the skid steer, loader, tractor, or this Stump Grinder.
- 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.

# STUMP GRINDER SAFETY PRECAUTIONS

Block off work area from bystanders, livestock, etc. Flying debris can cause severe injury or death. The Stump Grinder is capable of producing large amounts of flying debris in all directions.

Let others know when and where you will be working. Make sure no one is behind the equipment or for several hundred feet in any direction around the equipment when in operation.

Never allow anyone to approach the Stump Grinder when in operation.

Do not raise the attachment when the Stump Grinder wheel is rotating.

## **WARNING!**



Do NOT operate without a shatterproof (demolition) cab door or front shield in-stalled on the loader.

Operate only from the operator's station.

Do not exceed rated operating capacity of loader.

Be sure all covers and the side deflector are properly installed before operating unit.

When mounted onto a skid steer loader, do not operate the Stump Grinder with the rear of the attachment over 24" above the ground.

Do not lift loads in excess of the capacity of the loader. Lifting capacity decreases as the loader is moved further away from the unit.

Never try to board or exit equipment while it is running.

Test all controls before your begin operation.



# EQUIPMENT SAFETY PRECAUTIONS



## OPERATING THE ATTACHMENT

When operating on slopes, drive up and down, not across. Avoid steep hillside operation, which could cause the equipment to overturn.

Reduce speed when driving over rough terrain, on a slope, or turning, to avoid overturning the vehicle.

An operator must not use drugs or alcohol, which can change his or her alertness or coordination. An operator taking prescription or over-the-counter drugs should seek medical advice on whether or not he or she can safely operate equipment. Never leave the attachment unattended when in the raised position. Always make sure both skids are on the ground, parking brake is engaged, engine is turned off and the keys are removed before exiting the vehicle.



## TRANSPORTING THE ATTACHMENT

Travel only with the attachment in a safe transport position to prevent uncontrolled movement. Drive slowly over rough ground and on slopes.

When transporting on a trailer, secure the attachment using tie down accessories that are capable of maintaining attachment stability.

Use extra care when loading or unloading the Stump Grinder onto a truck or trailer. Disconnect hydraulic couplers during transporting. When driving on public roads use safety lights, reflectors, Slow Moving Vehicle signs etc., to prevent accidents. Check local government regulations that may affect you. Do not drive close to ditches, excavations, etc., a cave in could result.

Do not smoke when refueling the vehicle. Allow room in the fuel tank for expansion. Wipe up any spilled fuel. Secure cap tightly when done.



## MAINTAINING THE ATTACHMENT

Before performing maintenance, disengage auxiliary hydraulics, lower the Stump Grinder to the ground, turn off the engine, remove the key and apply the brakes. Be sure all rotation has stopped before making any adjustments or repairs. Never perform any work on the attachment unless you are authorized and qualified to do so. Always read the operator's manual before any repair is made. After completing maintenance or repair, check for correct functioning of the attachment. If not functioning properly, always tag "DO NOT OPERATE" until all problems are corrected.

If attachment must be left raised for maintenance or any other reason, block the unit securely to prevent accidental release of the lifting mechanism. Serious damage or personal injury could result.

Worn, damaged, or illegible safety decals must be replaced. New safety decals can be ordered from North American Implements.

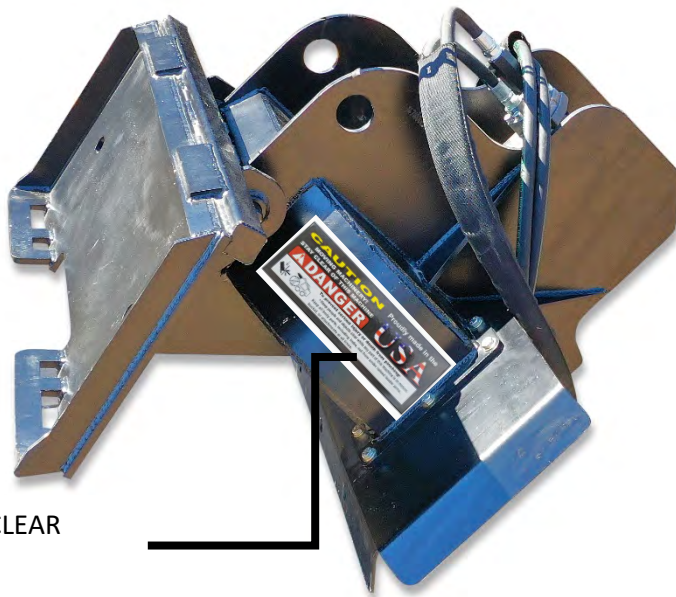
Never make hydraulic repairs while the system is under pressure. Serious personal injury or death could result.

Never work under a raised attachment.

## GENERAL INFORMATION

The diagram on this page shows the location of all the decals used on the Stump Grinder. The decals are identified by their part numbers, with reductions of the actual decals located on the following pages. Use this information to order replacements for lost or damaged decals. Be sure to read all decals before operating the attachment. They contain information you need to know for both safety and attachment longevity.

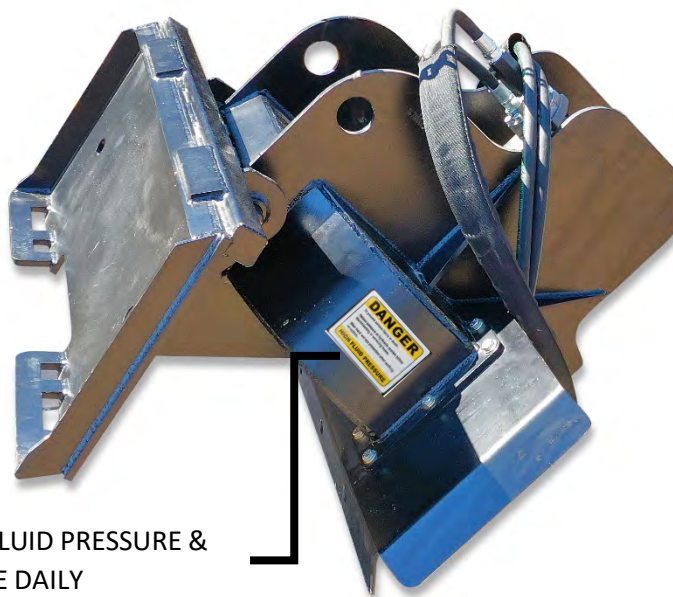
### STUMP GRINDER RIGHT SIDE VIEW



DANGER STAY CLEAR

PT# 1004211

### STUMP GRINDER LEFT SIDE VIEW



HIGH FLUID PRESSURE &  
GREASE DAILY

PT#1004212

## DECALS



## PREOPERATION

### GENERAL INFORMATION

The MTL Attachments X- Stump Grinder is operated by the skid steer or other vehicle's auxiliary hydraulics and mounts to the Universal quick attach mechanism for easy operator hook-up.

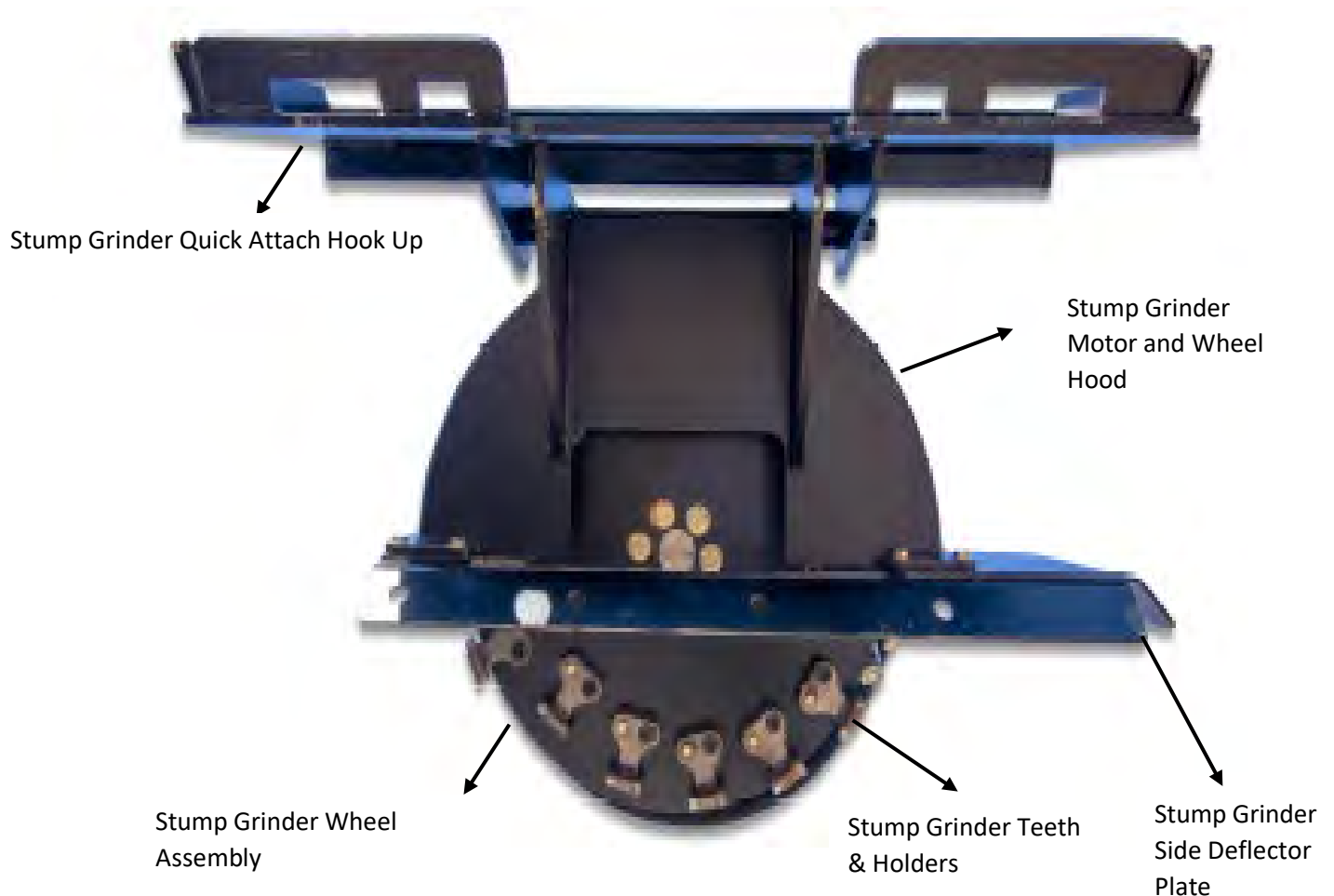
Your skid steer loader must have an auxiliary hydraulic system and a shatterproof door or front shield to operate the Stump Grinder.

To AVOID SERIOUS PERSONAL INJURY OR DEATH THE MTL STUMP GRINDER

MUST NOT BE ATTACHED TO ANY POWER UNIT THAT DOES NOT HAVE A SHATTERPROOF DOOR (OR FRONT SHIELD) INSTALLED.

### NOMENCLATURE

The purpose of this diagram is to acquaint you with the various names of the Stump Grinder components. This knowledge will be helpful when reading through this manual or when ordering service parts.



# INSTALLATION INSTRUCTIONS

## GENERAL INFORMATION

The following instructions will help you to mount your Stump Grinder onto your skid steer loader. The Stump Grinder uses the quick-attach system for ease of installation. Therefore, if you know how to attach your loader bucket, attaching the Stump Grinder should prove no problem.

Remember to read all safety warnings, decals and operating instructions before operating the attachment. If there is any portion of this manual that you do not understand, contact your dealer.

**DANGER!**



**TO AVOID SERIOUS PERSONAL INJURY OR DEATH THE MTL STUMP GRINDER MUST NOT BE ATTACHED TO ANY POWER UNIT THAT DOES NOT HAVE A SHATTERPROOF DOOR (OR FRONT SHIELD) INSTALLED.**

## ATTACHING TO SKID STEER / LOADER

**NOTE: Before attaching the Stump Grinder to your loader, make sure a shatterproof door (or front shield) has been installed onto the front of your skid steer loader.**

1. Remove any attachments from the front of the loader.
2. Following all standard safety practices and the instructions for installing an attachment in your skid steer operator's manual, install the brush cutter onto your skid steer loader.

**NOTE: It is important to make sure the locking mechanism on your quick-attach is engaged, therefore locking the attachment onto the skid steer.**

3. The rear of the Stump Grinder should never be more than 2 foot off the ground for proper and safe grinding.
4. Lower the unit to the ground and remove the key.
5. After making sure that there is not any foreign matter on the hydraulic couplers, connect the couplers to the auxiliary hydraulic system of your skid steer loader.

## DETACHING FROM SKID STEER / LOADER

1. On firm, level ground, lower the attachment so it rest on the ground, parking brake is engaged, engine is turned off and the keys are removed.
2. Follow your skid steer/loader operator's manual to relieve pressure in the hydraulic lines.
3. Disconnect couplers and either connect them together or install dust caps and plugs to prevent contaminants from entering the hydraulic system. Store hoses on attachment, off the ground.
4. Follow your skid steer loader operator's manual for detaching (removing) an attachment.

# OPERATING INSTRUCTIONS

**INTENDED USE:** The Stump Grinder is intended to grind and mulch stumps no higher than 24" tall, grinding the stump level or slightly below ground surface.

## GENERAL INFORMATION

The Stump Grinder attaches to the Universal quick-attach mechanism of your skid steer loader. Due to this arrangement, thorough knowledge of the skid-steer controls is necessary for machine operation. Read and understand your skid steer operator's manual for information regarding skid steer operation before attempting to use the Stump Grinder.

Follow all installation instructions for the proper installation of the unit onto your skid steer before attempting to operate your Stump Grinder.

## OPERATING TIPS

Continuous rotation of the wheel is required during operation to prevent overheating of the hydraulic system. If the Stump Grinder stalls, disengage auxiliary hydraulics, and remove grinder from debris before restarting.

**WARNING! Before leaving the operator's seat: Lower the lift arms against frame and place attachment on the ground. Disengage auxiliary hydraulics. Stop Engine. Engage parking brake. Remove the key.**

**DANGER!**



**ROTATING wheel HAZARD! STAY BACK!**

**OBJECTS CAN BE THROWN!**

**DO NOT** operate near bystanders.

**DO NOT** place hands or feet under wheel while in operation or with engine running.

**DO NOT** operate without a shatterproof door (or front shield) installed on loader.

# OPERATING INSTRUCTIONS

## CUTTING OPERATION

1. Attach the Stump Grinder to your skid steer (see attachment & Detaching section for instructions)
2. Inspected the stump prior to starting, determine if the stump is smooth on top or at a grade. If stump is at a grade position the grinder to the highest area of the stump. This will allow for more stable and efficient cutting.
3. Once you have determined the grade of the stump you are cutting, move over the stump. This will put the back of the attachment in front of the stump. When grinding the attachment is moved backward over the stump. This motion allows the weight of the unit will ensure even and stable cutting with out binding.
4. Engage the wheel, lowering slowly to desired cutting depth. Always lower the stump grinder beside the stump and not directly into the stump. This may result in binding or damage to the wheel or teeth.
5. Slowly begin to move into the stump.
6. If for any reason the grinder stalls or stops. Immediately raise the grinder from the stump.
7. Now you are ready to return to home position to begin measuring depth of next cut.
8. Continue making passes till the stump is removed or level with the ground.



# OPERATING INSTRUCTIONS

**AVOID STALLING STUMP GRINDER:** Continuous rotation is required to prevent overheating of the hydraulic system. Overheating of the hydraulic system is caused if hydraulic oil is repeatedly forced over the relief valve setting on either the skid steer or Stump Grinder (whichever is less).

**TO RESTART WHEEL ROTATION:** Disengage auxiliary hydraulics. Remove Stump Grinder from debris. Engage auxiliary hydraulics to start Wheel rotation. (Be sure the Stump Grinder is operating smoothly and at full speed, and then start forward travel again.)

**REPEATED STALLING OF ROTATING WHEEL:** Disengage auxiliary hydraulics. Remove Stump Grinder from debris. Review operating conditions and the size/density of material being cut. Make necessary corrections. Engage auxiliary hydraulics to start wheel rotation.



## STORAGE

The following storage procedure will help you to keep your Stump Grinder in top condition. It will also help you get off to a good start the next time your cutter is needed. We therefore strongly recommend that you take the extra time to follow these procedures whenever your unit will not be used for an extended period of time.

- Clean the unit thoroughly, removing all mud, dirt, wood shavings, and grease.
- Replace all missing or damaged teeth as needed and do not try to weld or straighten damaged teeth; This will result in loss of integrity of attachment.
- Inspect for visible signs of wear, breakage, or damage. Order any parts required, and make the necessary repairs to avoid delays when starting next season. **NOTE: Purchase only approved replacement parts from MTL Attachments.**
- Tighten all loose nuts, cap screws, and hydraulic connections.
- Check the drive bearing housing for proper lubricant level.
- Seal hydraulic system from contaminants and secure all hydraulic hoses off the ground to help prevent damage.
- Replace decals if damaged, or in unreadable condition.
- Apply a rust-preventive spray to all moving parts.
- Store the 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 and exposed areas with paint, to prevent rust.

## REMOVING FROM STORAGE

- Remove all protective coverings.
- Check hydraulic hoses for deterioration, and replace if necessary.
- Check all nuts and bolts for proper tightness, especially those securing the motor, bearing housing and teeth.

# LUBRICATION

## GENERAL INFORMATION

Economical and efficient operation of any machine is dependent upon regular and proper lubrication of all moving parts. Neglect leads to reduced efficiency, wear, breakdown, and needless replacement of parts.

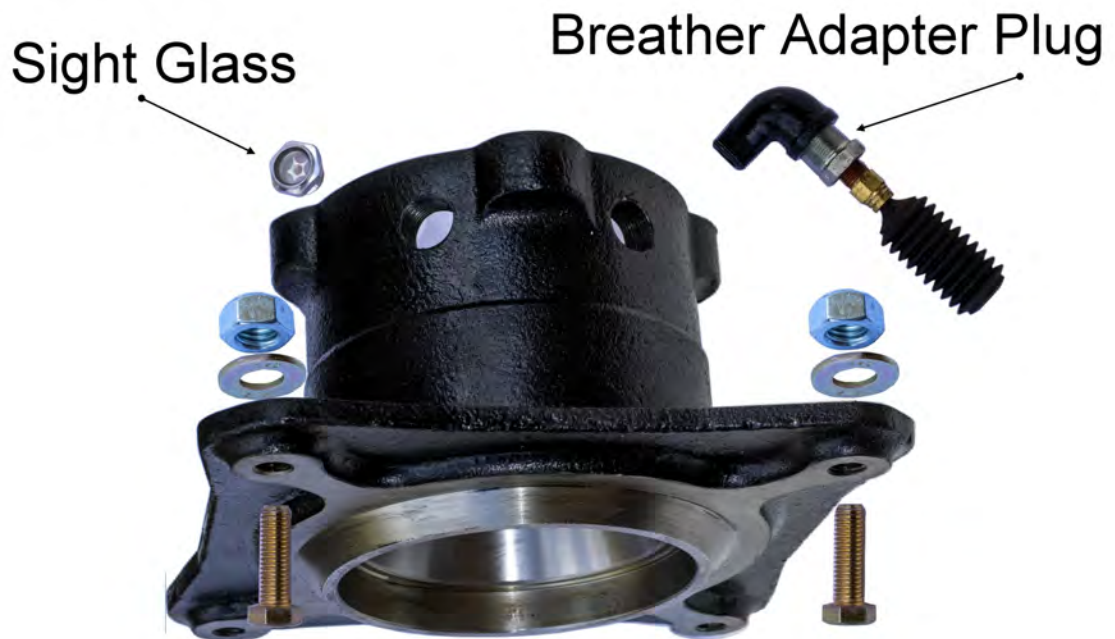
## WEEKLY

The fluid level in the drive bearing housing should be checked once a week. Fill as necessary with hydraulic fluid. Hydraulic fluid maintains its lubrication properties better than gear oil when under high heat and pressure.

**TO CHECK:** View fluid level through the sight glass.

**TO ADD:** Remove breather adapter plug from elbow on the drive bearing housing and add hydraulic fluid until full. Replace breather adapter plug.

## DRIVE BEARING HOUSING



# MAINTENANCE

## GENERAL INFORMATION

Regular maintenance is the key to long equipment life and safe operation. Maintenance requirements have been reduced to an absolute minimum. However, it is very important that these maintenance functions be performed as described.

PROCEDURE	DAILY	40 HOURS	1200 HOURS
Check skid steer loader hydraulic system fluid level.	✓		
Check mounting hardware on teeth and tighten if necessary. See Bolt Torque Specifications	✓		
Check all other hardware and tighten if necessary. See bolt torque specifications.	✓		
Check Hydraulic system for fluid leaks.	✓		
Check teeth and holder to ensure there are no missing or damaged teeth.	✓		
Check for missing or illegible safety and warning decals.	✓		
Check fluid level in drive bearing housing and add if necessary.		✓	
Change hydraulic fluid in drive bearing house.			✓



**WARNING!** Avoid serious injury. Lower the Stump Grinder so the attachment rest on the

ground, set the parking brake, stop the skid steer engine, and remove the key before leaving the operator's seat. If unit must be left raised for maintenance,

block the unit securely to prevent accidental release of the lifting mechanism. Disconnect the hydraulic couplers.

## MAINTENANCE



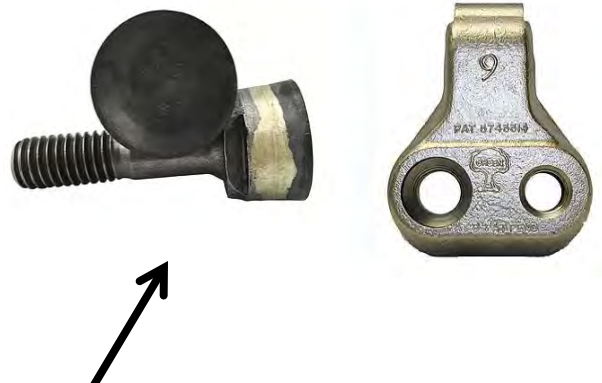
**WARNING!** Avoid serious injury. Lower the Stump Grinder attachment on the ground, set the parking brake, stop the skid steer engine, and remove the key before leaving the operator's seat. Be sure all rotation has stopped before making any adjustments or repairs. If unit must be left raised for maintenance, block the unit securely to prevent accidental release of the lifting mechanism. Disconnect the hydraulic couplers.

### REPLACING TEETH

When replacing or sharpening the blades, the unit does not require blocking. Place unit firmly on the ground and disconnect the hydraulic couplers.

The Teeth should be inspected regularly (every 8 hours) to ensure they are sharp, tightened correctly and intact. NEVER try to weld or straighten damaged teeth, as loss of teeth integrity may result.

Please use Manufacturing instructions when replacing teeth. The following pages are from the Green Teeth MFG Company and Intel the info needs to replace teeth. Please see Specification page for bolt torque and grade.



Green Tooth MFG

Cutting Wheel



# Installation Instructions

LoPro®  
Series



If you have any questions or concerns, *please call 1-800-473-3683*



## BEFORE YOU BEGIN

*Read these instructions completely and carefully*

- **Note to installer** – Be sure to leave these instructions for the consumer's use
- **Note to consumer** – Keep these instructions with your Owner's Manual for future reference
- **Skill level** – Installation of these teeth requires basic mechanical skills. Proper installation is the responsibility of the installer. Product failure due to improper installation is not covered under any warranty

**IMPORTANT** - Before you continue, please check the packing list to make sure it matches the contents of the boxes.



## Disconnect Power

to machine to prevent cutting wheel from rotating before proceeding. Failure to do so could result in death or serious injury.

**FOR YOUR SAFETY** read and observe all **CAUTIONS** and **WARNINGS** shown throughout these instructions. While performing installations described in this booklet, gloves & safety glasses or goggles should be worn at all times.

## Installation Preparation

### TOOLS SUPPLIED:

½" Drive, ½" 6pt Impact Allen Wrench Socket

### TOOLS YOU WILL NEED:

<i><b>500 Series Greenteeth® Red/Green</b></i>	<i><b>700 Series Greenteeth® Wearsharp®</b></i>	<i><b>700 Series Greenteeth® Red/Green</b></i>	<i><b>900 Series Greenteeth® Red/Green</b></i>
1/2" Socket Wrench	1/2" Socket Wrench	9/16" Socket Wrench	5/8" Socket Wrench

½" Drive Torque Wrench

Wire Brush

**Green-Seize™**

### TORQUE SETTINGS:

<i><b>500 Series Nut Red/Green</b></i>	<i><b>700 Series Nut Wearsharp®</b></i>	<i><b>700 Series Nut Red/Green</b></i>	<i><b>900 Series Nut Red/Green</b></i>
20ft. lbs. (27 Nm)	20ft. lbs. (27 Nm)	25ft. lbs. (34 Nm)	35ft. lbs. (47 Nm)

**LoPro®** Bolt (lubricated with **Green-Seize™**): 180ft. lbs.

**LoPro®** Bolt (dry): 240ft. lbs.

Green Manufacturing, Inc.  
9650 Packard Rd  
Morenci, MI 49256  
Phone 800.473.3683 • Fax 517.458.1550



# Greenteeth® LoPro® Installation Instructions

*Here are some tips to guide you through the installation process.*

1. Locate the pocket set with reverse (over center) pockets on your wheel. If you don't use reverse (over center) pockets, locate the straight pocket sets.
2. Remove one set of reverse (over center) or straight pockets.
3. Using a wire brush, clean both sides of the wheel where it will come in contact with the pockets. Be sure to remove all dirt and debris so the pocket is seated tightly against the wheel.
4. Apply **Green-Seize™** to the threaded end of two **LoPro®** bolts.

5. Starting with the reverse (over center) or straight pocket install a **LoPro®** bolt into the counter-bored hole and then do the same of adjacent pocket of that set.
6. Slide the **LoPro®** bolts through the empty holes in the wheel and thread them into the adjacent pocket's threaded holes. For now, firm up the **LoPro®** bolts until pockets are seated. (Figure 1.1)

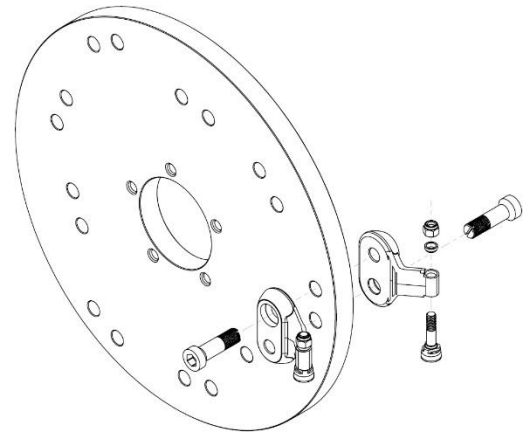


Figure 1.1

7. Rotate the wheel until you come to the next set of reverse (over center) or straight pockets. Repeat steps 2 – 6 until all reverse (over center) and/or straight pockets are installed.
8. Now it is just a matter of replacing standard angle pockets (angle occurs away from the wheel). You can do this by removing one set at a time or removing all the old standard angle pockets at once then repeat steps 2 – 6 for the angle pocket sets.

9. Install your teeth with the carbide facing down. The shoulder of the tooth will meet the flat indent of the pocket and the tooth will not rotate. Insert the spacer over the shank, with the chamfer down, then thread one of the lock nuts onto the top portion of the tooth. Hand tightening is good for now. Repeat until all teeth are installed. (Figure 1.2)

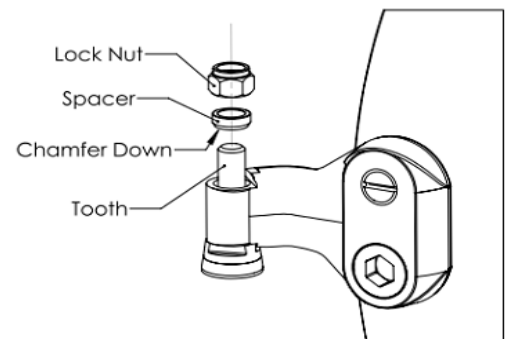


Figure 1.2

10. Make sure the pockets are seated on the wheel and the bolts are seated in the pockets. Continue tightening your **LoPro®** bolts until they are all torqued to 180ft. lbs. (240ft. lbs., if you didn't use any anti-seize)

11. Before torquing your tooth down, first make sure that the tooth is seated properly in the pocket. Then tighten the top nut until the tooth is firmly seated and torqued to the appropriate specification for the series; 500 - 20 ft. lbs. (27 Nm), 700 - 25 ft. lbs. (34 Nm), or 900 - 35 ft. lbs. (47 Nm). You may need to hold the tooth in place. Repeat until all teeth are properly torqued.



*Over-tightening the nut will stretch the threads and degrade the fasteners ability to retain the tooth.*

12. Once all pockets and teeth are torqued properly manually rotate the cutter wheel to ensure there is adequate clearance for the newly installed setup. If any teeth are rubbing or hitting on any part of the machine, do not proceed further. Remove the obstructed tooth/teeth and call Green Manufacturing, Inc. right away.
13. If determined that there are no obstructions, start the machine engine and engage the wheel.
14. Ensure there are no unusual noises emanating from the machine.

Please note that all fasteners, whether they are nuts or bolts, will loosen up from time to time due to vibration. Be diligent and check your bolts weekly.

If you dull or damage a cutting edge, you can rotate your tooth by following these steps:

- Loosen the nut with a standard wrench
- Tap the tooth down
- Rotate the tooth a third of a turn
- Reposition the tooth in its seat
- Retighten the nut to the proper torque specifications



## **GREENTEETH® GUARANTEE**

If you purchase a **Greenteeth®** setup and are not completely satisfied with its performance, please contact Green Manufacturing at 800.473.3683 to request a return authorization within 30 days of purchase date for a product refund or exchange.

### **WARRANTY:**

If you are not completely satisfied with your purchase, please contact Green Manufacturing, Inc. at 800.473.3683 to request a return authorization within 30 days of purchase date for a product refund or exchange. We strive to provide exceptional quality products. Our products undergo a stringent quality control process, however if you feel that there is an issue with the quality of your product, please contact Green Manufacturing, Inc. immediately. We will accept unused parts for return or exchange for up to 30 days from the date of purchase with proof of purchase included with the return.

Seller's warranties against defects and non-conformities and defects shall continue to apply only so long as the Goods: (i) have been installed, maintained and used in conformity with instructions furnished by Seller from time to time, if any, and otherwise in conformity with the highest industry practices; (ii) have been subjected to normal use for the purpose for which the Goods were designed; (iii) have not been subjected to misuse, negligence or accident; (iv) have not been altered or repaired by persons other than Seller or Seller authorized warranty service providers in any respect which, in the judgment of Seller, adversely affects the condition or operation of the Goods; and (v) have been fully paid for. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY SPECIAL, INDIRECT, EXEMPLARY, INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE LOSSES OR DAMAGES (INCLUDING, WITHOUT LIMITATION, BUSINESS INTERRUPTION, REVENUE OR PROFITS, FEES OR FINES), EVEN IF SELLER HAS BEEN ADVISED OR MADE AWARE OF THE POSSIBILITY OF ANY SUCH LOSSES OR DAMAGES AND REGARDLESS OF WHETHER THE CLAIM IS BASED ON CONTRACT, TORT, STRICT LIABILITY, OR OTHER THEORY OF LIABILITY. Seller's cumulative liability for all losses and damages under these General Terms and Conditions or under any of the Related Agreements (including, without limitation, those arising out of contract tort (including negligence), strict liability, warranty, or other theory of liability) shall not exceed (a) in the case of any services provided or to be provided by Seller, the amount of the fees payable by Buyer for such services under the applicable Related Agreement, and (b) in the case of any products or devices provided or to be provided by Seller, the amount of Seller's labor services associated with the product sale. Seller reserves the right to make, without notice to Buyer, alterations to a product that do not materially affect agreed specifications or the product's form, fit or function.

***The Greenteeth® are proudly manufactured in the USA by Green Manufacturing, Inc.***

Green Manufacturing, Inc.  
9650 Packard Rd  
Morenci, MI 49256  
Phone 800.473.3683 • Fax 517.458.1550



# MATERIAL SAFETY DATA SHEET

## I - PRODUCT IDENTIFICATION

**Trade Name:** Tungsten Carbide **Chemical Family:** Refractory Metal Alloy

**Chemical Formula:** WC **CAS#:** 12070-12-1

## II - HAZARDOUS INGREDIENTS

**Hazardous Components % OSHA/PEL ACGIH/TLV Sec. 302 Sec. 304 Sec. 313**

Tungsten Carbide 0-100 N/E N/E No No No

Tungsten compounds 0-100 5 mg/m<sup>3</sup> C - 1 0 mg/m<sup>3</sup> No No No

**HM IS Ratings (0-4): Health:** 3 **Flammability:** 0 **Reactivity:** 0

**HM IS Protective Equipment:** H: glasses, gloves, clothing, combo respirator

## III - PHYSICAL DATA

**Boiling Point:** 6000 oC **Melting Point:** 2820 - 2940 oC

**Evaporation Rate:** N/A **% Volatiles:** N/A

**Solubility in H<sub>2</sub>O:** Insoluble **Vapor Pressure:** N/A

**Vapor Density:** N/E **Specific Gravity:** 13.6 gm/cc at 18 oC

**Appearance and Odor:** Grey to black powder, odorless **Molecular Weight:** 195.86

## IV - FIRE AND EXPLOSION HAZARDS DATA

**Flash Point:** N/A **Flammability:** Non-Flammable

**Explosive Limits: Lower:** N/A **Upper:** N/A

**Extinguishing Media:** Use suitable extinguishing media for surrounding materials and type of fire.

**Special Fire Fighting Procedures:** Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

**Unusual Hazard:** Dusts may present a fire or explosion hazard under rare favoring conditions of particle size, dispersion, and strong ignition source. However, this is not expected to be a problem under normal handling conditions.

## V - HEALTH HAZARD INFORMATION

**Routes of Entry:** Inhalation, ingestion, skin or eye contact (for dusts, mists, powder, and fume).

**Effects of Overexposure:** Industrially tungsten does not constitute an important health hazard. Exposure is related chiefly to the dust arising out of the crushing and milling operations. Chronic inhalation of the dust may cause lung damage in humans. Heavy exposure to the dust or the large amounts of the soluble compounds produces changes in body weight, behavior, blood cells, choline esterase activity and sperm in experimental animals.

### **Acute Effects:**

**Inhalation:** Toxic by inhalation. May cause irritation to the mucous membranes, coughing, dyspnea, soreness in the chest, weight loss, hemoptysis, bronchitis, asthma, pulmonary fibrosis and radiological changes in the lungs.

**Ingestion:** May cause irritation to the gastrointestinal tract and diarrhea.

**Skin:** May cause irritation.

**Eye:** May cause irritation.

### **Chronic Effects:**

**Inhalation:** May cause damage to the lungs.

**Ingestion:** No chronic health effects recorded.

**Skin:** May cause dermatitis, sensitization and eczema.

**Eye:** May cause conjunctivitis.

**Medical Conditions Generally Aggravated by Exposure:** Pre-existing respiratory and skin disorders.

**Target Organs:** May affect the respiratory system.

**Carcinogenicity:** NTP: No IARC: No OSHA: No

**EMERGENCY AND FIRST AID PROCEDURES:**

**INHALATION:** Remove victim to fresh air. Keep warm and quiet, give oxygen if breathing is difficult and seek medical attention.

**INGESTION:** If conscious, give 1-2 glasses of milk or water and induce vomiting (Never induce vomiting or give anything by mouth to an unconscious person). Seek medical attention.

**SKIN:** Remove contaminated clothing from affected area, brush material off skin. Wash affected area with mild soap and water. Seek medical attention if symptoms persist.

**EYE:** Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

**VI - REACTIVITY DATA**

**Stability:** Stable

**Conditions to Avoid:** None

**Incompatibility (Material to Avoid):** Chlorine, fluorine, nitrogen dioxide, nitrous oxide, iodine pentafluoride and lead oxide.

**Hazardous Decomposition Products:** None recorded.

**Hazardous Polymerization:** Will not occur

**VII - SPILL OR LEAK PROCEDURES**

**Steps to Be Taken in Case Material Is Released or Spilled:** Wear appropriate respiratory and protective equipment specified in Section VIII. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

**Waste Disposal Method:** Dispose of in accordance with all local, state, and federal regulations.

**VIII - SPECIAL PROTECTION INFORMATION**

**Respiratory Protection:** NIOSH approved dust, mist, and vapor cartridge respirator.

**Ventilation:** Use local exhaust ventilation which is adequate to limit personal exposure to airborne dust levels which do not exceed the appropriate PEL or TLV. If such equipment is not available, use respiratory protection as specified above.

**Protective Gloves:** Rubber gloves.

**Eye Protection:** Safety glasses.

**Other Protective Clothing or Equipment:** Protective gear suitable to prevent contamination.

**IX - SPECIAL PRECAUTIONS**

**Precautions to Be Taken in Handling and Storage:** Store in a tightly sealed container in a cool, dry, well-ventilated area. Wash thoroughly after handling.

**Other Precautions:** Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. Green Manufacturing, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

## REPLACING THE HYDRAULIC MOTOR

When replacing the hydraulic motor the unit should be setting firmly on the ground with the hydraulic couplers disconnected. Be sure all rotation has stopped before making any adjustments or repairs.

NOTE: Replacement of the internal motor seals without prior authori ation from factory voids the warranty.

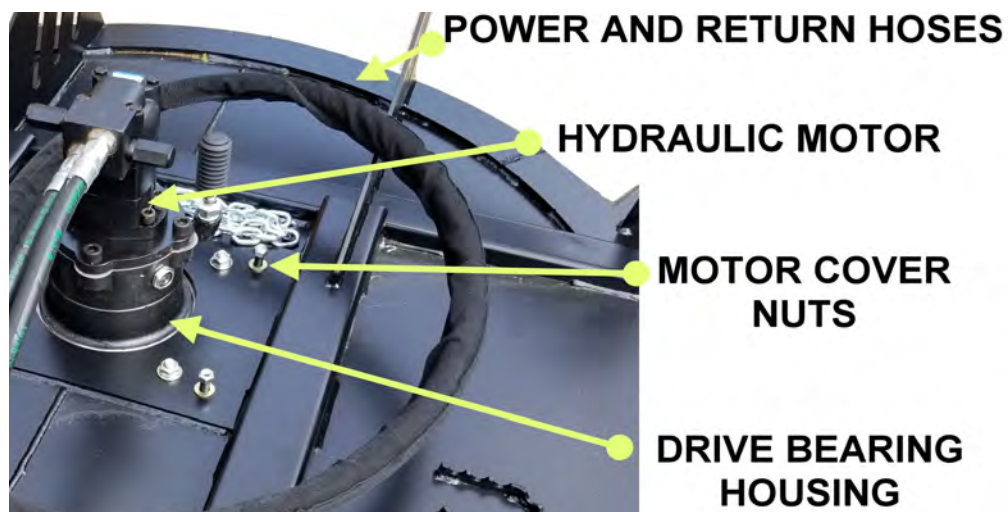
1. Remove motor cover. (four nuts, two on each side of motor housing.)

NOTE: Set cover aside taking extra care to not put any strain on the hoses.

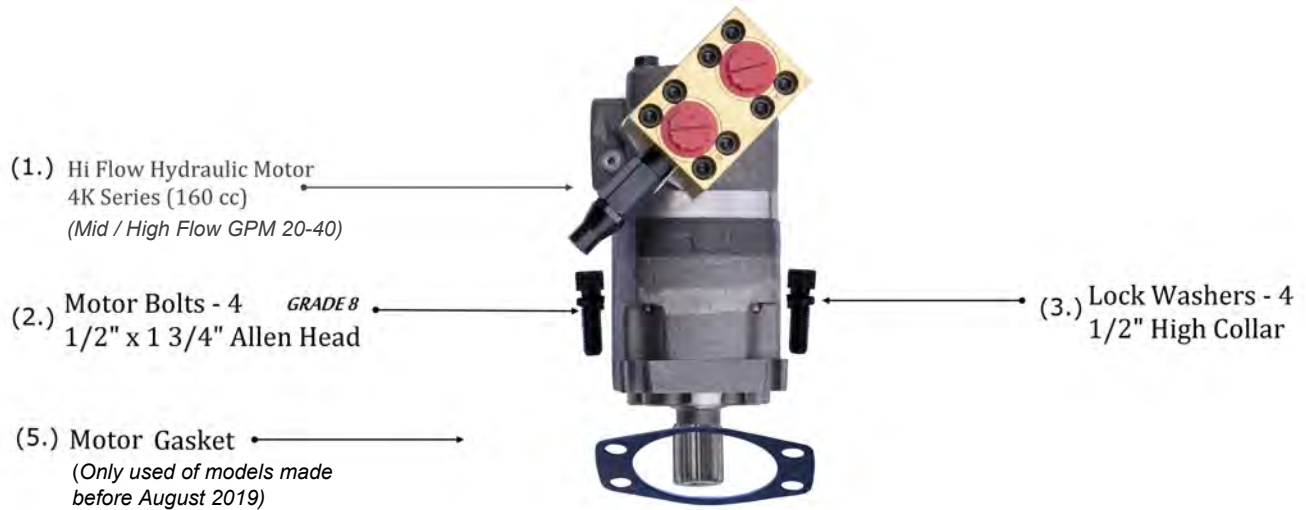
2. Remove hoses from the existing hydraulic motor and place in a clean container.

NOTE: Placing the container "higher" than the couplers should result in minimal fluid loss.

IMPORTANT: If couplers were not disconnected prior to removing the hoses, fluid will drain from the skid steer causing extensive hydraulic fluid loss.



3. Remove the four motor bolts holding the motor to the drive bearing housing, and remove the motor. Motor gasket must be replaced when replacing or servicing the hydraulic motor.
4. Install the new motor with new gasket onto the drive bearing housing using the existing four motor bolts. Bolts should have Loctite® applied before tightening. Torque to specifications. See Bolt Torque Specifications.
5. Re-install motor cover using existing hardware and torque to specification. See Bolt Torque Specifications.



## HUB REPLACEMENT

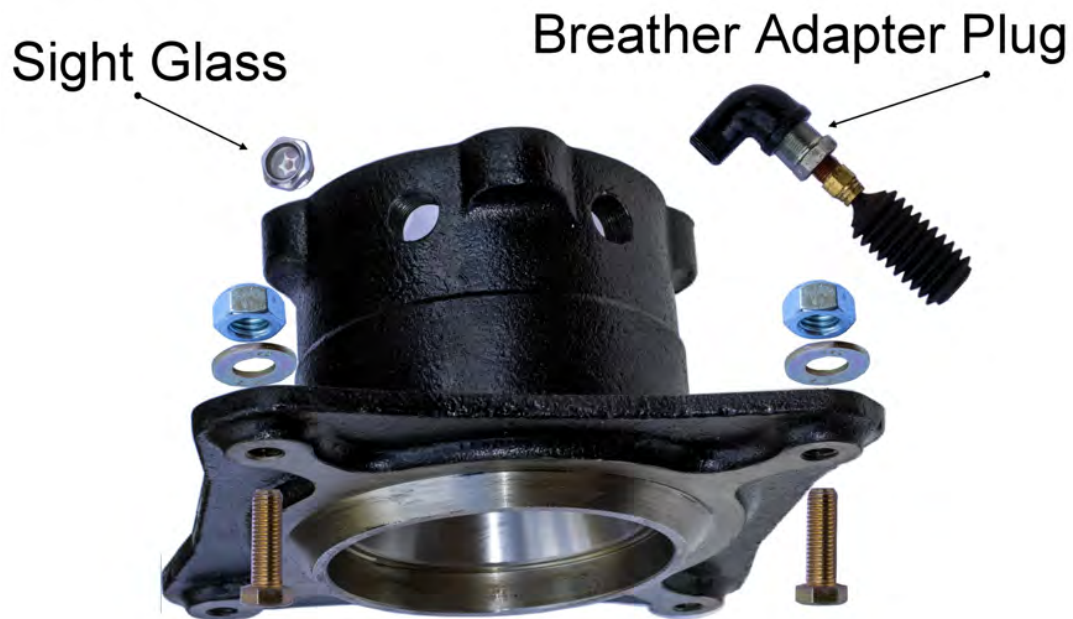
Contact MTL for hub replacement special instructions or to obtain an RMA.

## MAINTENANCE

### CHANGING OIL IN DRIVE BEARING HOUSING

When changing the oil in the drive bearing housing the unit should be sitting firmly on the ground with the hydraulic couplers disconnected. We recommend removing the existing oil with a fluid removal pump.

1. Remove the breather adapter plug in the drive bearing housing and place the extraction hose into the housing so that it reaches the bottom.
2. Place the output hose into an approved container or drum that will hold the waste fluid.
3. Following the instructions for your fluid removal pump, remove all fluid from the drive bearing housing.
4. Once the fluid has been drained from the housing, remove the pump and refill the housing with approximately one quart (0.946 liter) of hydraulic fluid.
5. Replace breather adapter plug and hand tighten.









# SPECIFICATIONS

## STUMP GRINDER

**14710000**

A. Overall Height.....	28"
B. Overall Width.....	49"
C. Overall Length.....	34.5"
D. Cutting Width.....	16"

Cutting Capacity (Maximum Tree Diameter).....	27"
Deck Type.....	A-36 Steel
Maximum Operating Pressure.....	3000 PSI std 4000 PSI HF
Recommended Flow Rate (Standard Flow) .....	16-26 GPM (Max - 28)
Recommended Flow Rate (High Flow).....	20-40GPM (Max - 42)
Weight.....	750 to 785LBS.
Required Skid Steer Lifting Capacity.....	min 790 LBS.

**SPECIFICATIONS AND DESIGN SUBJECT TO CHANGE WITHOUT NOTICE**

October 10th 2019

## **MTL ATTACHMENTS LIMITED WARRANTY**

### **1 Year Limited Warranty**

MTL Attachments, a manufacturer of quality skid steer attachments offers a 1 year limited warranty on all our attachments.

MTL Attachments' liability for any defect with respect to accepted goods shall be limited to repairing the goods at MTL Attachments location or replacing them as MTL Attachments shall elect. The above shall be in accordance with MTL Attachments adjustment policies. MTL Attachments obligation shall terminate twelve (12) months after the delivery of the attachment to original purchaser. This warranty shall not apply to any machine or attachment which shall have been repaired or altered outside MTL Attachments. It will be MTL Attachments judgment, to affect its stability or reliability, nor which has been misuse, negligence or accident beyond the manufacturer recommended machine rated capacity. If you have any questions in regards to this limited warranty please contact MTL Attachments.

### **Warranty Claim**

To submit a warranty claim, authorization from MTL Attachments must be obtained. This warranty does not include freight or delivery charges incurred when returning attachment for servicing. Pickup/delivery charges are the customer's responsibility.

### **Exclusions of Warranty**

Except as otherwise expressly stated herein, MTL Attachments makes no representation or warranty of any kind, expressed or implied, AND MAKES NO WARRANTY OF MERCHANTABILITY IN RESPECT TO IF ATTACHMENTS ARE FIT FOR ANY PARTICULAR PURPOSE. MTL Attachments is not liable for any inconvenience, rental or replacement equipment, loss of profits or other commercial loss. Buyer assumes all liability for all personal injury and property resulted from the handling, possession or use of the attachment by the buyer.

