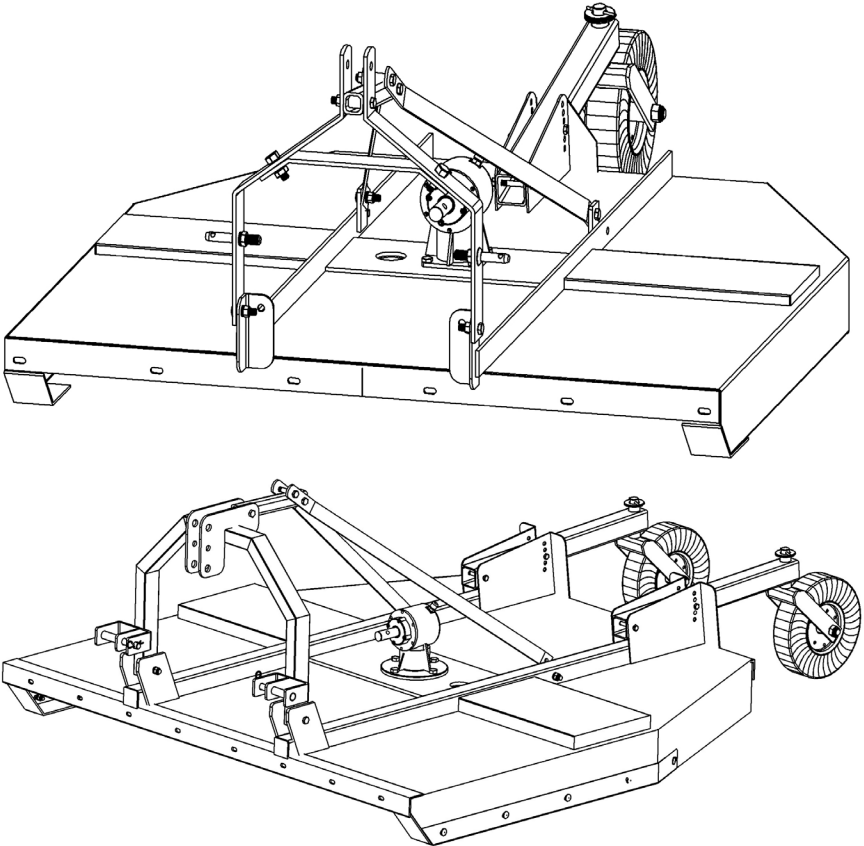




OPERATOR'S MANUAL

ROTARY CUTTER AGRI X and MDX Series



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READ ENTIRE OPERATOR'S & PARTS MANUAL BEFORE OPERATING!

DANGER!



**ROTATING BLADE 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.

DANGER!



FLYING DEBRIS HAZARD. CLEAR AREA OF BYSTANDERS AND LIVESTOCK BEFORE OPERATING. THE BRUSH CUTTER IS CAPABLE OF PRODUCING LARGE AMOUNTS OF FLYING DEBRIS IN ALL DIRECTIONS.

WARNING!



Before leaving the operator's seat: Lower the lift arms and place unit on the ground. Disengage PTO. Turn off engine. Engage parking brake. Remove key and wait for all blade rotation to stop.

WARNING!



All rotating parts must be shielded. Do not operate without all PTO driveline, tractor and rotary cutters guards in place.

WARNING!



These rotary cutters should not be operated with the back of the unit more than 12" (305 mm) above the ground.

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

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PREFACE

GENERAL COMMENTS

Congratulations on the purchase of your new product! 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.

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 forward.

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 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 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 not possible to get precise machine and operator sound pressure levels or vibration levels for this attachment.

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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 INDICATES A HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.



WARNING

THIS SIGNAL WORD INDICATES A HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.



CAUTION

THIS SIGNAL WORD INDICATES A HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN MINOR OR MODERATE INJURY.

NOTICE

NOTICE IS USED TO ADDRESS PRACTICES NOT RELATED TO PHYSICAL INJURY.

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 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 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



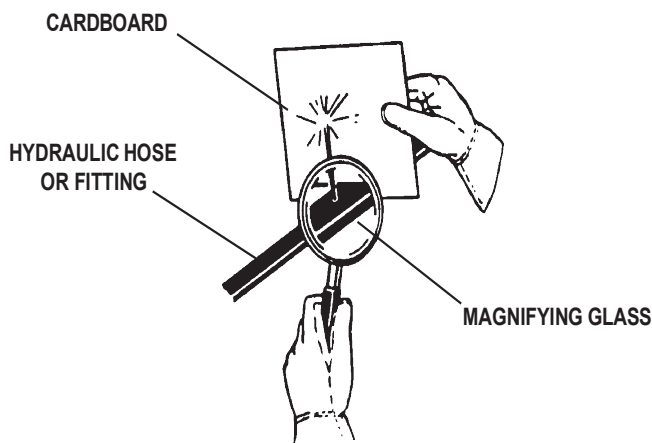
Do not work under raised booms without supporting them. Do not use support material made of concrete blocks, logs, buckets, barrels, or any other material that could suddenly collapse or shift positions. Make sure support material is solid, not decayed, warped, twisted, or tapered. Lower booms to ground 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!** SEE ILLUSTRATION.



GENERAL SAFETY PRECAUTIONS

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 Protective Structure) 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 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 attachment or the prime mover.
- 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 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! CALIFORNIA PROPOSITION 65 WARNING



This product may contain a chemical known to the state of California to cause cancer, or birth defects or other reproductive harm. www.P65Warnings.ca.gov

EQUIPMENT SAFETY PRECAUTIONS

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.

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.



OPERATING THE ATTACHMENT

- PTO Operated Attachment: Rotating driveline contact can cause death. Do not operate without all driveline, tractor and equipment shields in place.
- Check driveline shields turn freely on driveline.
- Block off work area from bystanders, livestock, etc. Flying debris can cause severe injury or death.
- 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 ride on or approach the rotary cutter when in operation.
- Check driveline connections before operation. Be sure quick disconnect locks are operating and locked.
- Do not stand between prime mover and cutter during installation.
- Keep hands, feet and clothing away from power driven parts while tractor engine is running. Failure to do so will result in serious injury or death from rotating blades or PTO shaft.
- Clear work area of all objects that could be thrown or picked up by the cutter.
- Do not raise the attachment when the blades are rotating.
- Set tractor lift control stop at a position that will prevent the drive shaft from contacting the front edge of the cutter when at full lift (if required).
- Operate only from the operator's station.
- Do not exceed specified RPM of your cutter.
- Be sure all guards, shields, covers & deflector chains are properly installed before operating unit.

EQUIPMENT SAFETY PRECAUTIONS



OPERATING THE ATTACHMENT

- Never try to board or exit equipment while it is running.
- Test all controls before you begin operation.
- Keep mower deck clear of debris. There is a risk of fire when dry material accumulates and contacts heat generated from rotating blades.
- Always keep the blade carrier and blade bolts tight. Loose blades could easily penetrate a quarter inch steel plate and/or seriously injure personnel.
- When operating on slopes, drive up and down, not across. Avoid steep hillside operation, which could cause the prime mover to overturn and increases the chance for thrown objects.
- 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 all rotation has stopped, both skids are on the ground, PTO is disengaged, parking brake is engaged, engine is turned off and the keys are removed before exiting the prime mover.



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.
- Disengage PTO before transporting.
- When transporting on a trailer: Secure attachment using tie down accessories that are capable of maintaining attachment stability.
- Use extra care when loading or unloading the attachment onto a truck or trailer.
- 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., cave in could result.
- Do not smoke when refueling the prime mover. Allow room in the fuel tank for expansion. Wipe up any spilled fuel. Secure cap tightly when done.



MAINTAINING THE ATTACHMENT

- Before performing maintenance, lower the attachment to the ground, disengage the PTO, apply the brakes, turn off the engine and remove the key. Be sure all rotation has stopped before approaching the cutter. Disengage the PTO shaft 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 manual's 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 Paladin.
- Never work under a raised attachment unless PTO has been disengaged and cutter is securely blocked.

PREOPERATION

TRACTOR REQUIREMENTS

Tractor horsepower (HP) and hitch category should be within the range noted below. Tractors outside the horsepower (HP) range must not be used on these cutters.

| ROTARY CUTTER | TRACTOR HP | HITCH CATEGORY | PTO SPEED |
|------------------------------------|------------|----------------|-----------|
| 4' STANDARD DUTY CUTTER (AGRI X 4) | 25-35 | CAT I | 540 |
| 5' STANDARD DUTY CUTTER (AGRI X 5) | 30-40 | CAT I | 540 |
| 6' STANDARD DUTY CUTTER (AGRI X 6) | 40-60 | CAT I | 540 |
| MDX 585 | 30-40 | CAT I & II | 540 |
| MDX 685 | 40-60 | CAT I & II | 540 |
| MDX 785 | 50-70 | CAT I & II | 540 |

WARNING! Ballast weights may need to be added to your tractor to maintain 20% weight on front axle. Refer to your tractor operator's manual to determine proper ballast requirements.



Always refer to the tractor operator's manual to ensure compatibility and maximum safety.

ADDITIONAL TRACTOR REQUIREMENTS

Tractor must be equipped with:

- Approved Roll-Over Protective Structure (ROPS) or ROPS cab. Keep ROPS locked in the UP position.
- Seatbelt.
- Slow Moving Vehicle (SMV) emblem
- PTO master shield.

WARNING! Do not use a PTO drive adapter to attach your cutter driveline to a non-matching tractor PTO. Serious personal injury and/or equipment failure can result. Consult an authorized dealer for assistance if the cutter PTO does not match the tractor PTO.



INSTALLATION

GENERAL INFORMATION

The following instructions will help you set up and install the rotary cutter onto your tractor. Read all safety warnings, decals and operating instructions before operating the cutter. If there is any portion of this manual that you do not understand, contact your dealer.

REMOVE ROTARY CUTTER FROM SHIPPING STAND:

Place the cutter on a flat, hard surface in a suitable work area with a hoist available.

1. Attach a hoist to the top of the cutter assembly to prevent the cutter from inadvertently falling.
2. Remove the hardware securing the cutter to the shipping stand and carefully lift and lower the cutter assembly to the ground. Remove all shipping ties. **NOTE: Shipping stand is for shipping purposes only. Do not store cutter vertically.**

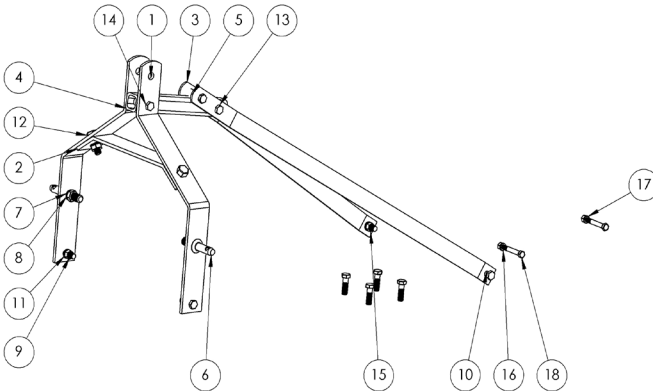
WARNING! Keep hands and feet from under the cutter deck and stand back while placing the cutter flat on the ground.



NOTICE: If installing a Pull-Type hitch you will need to securely place the cutter on 4" blocks.

LIFT-TYPE CUTTER SET UP:

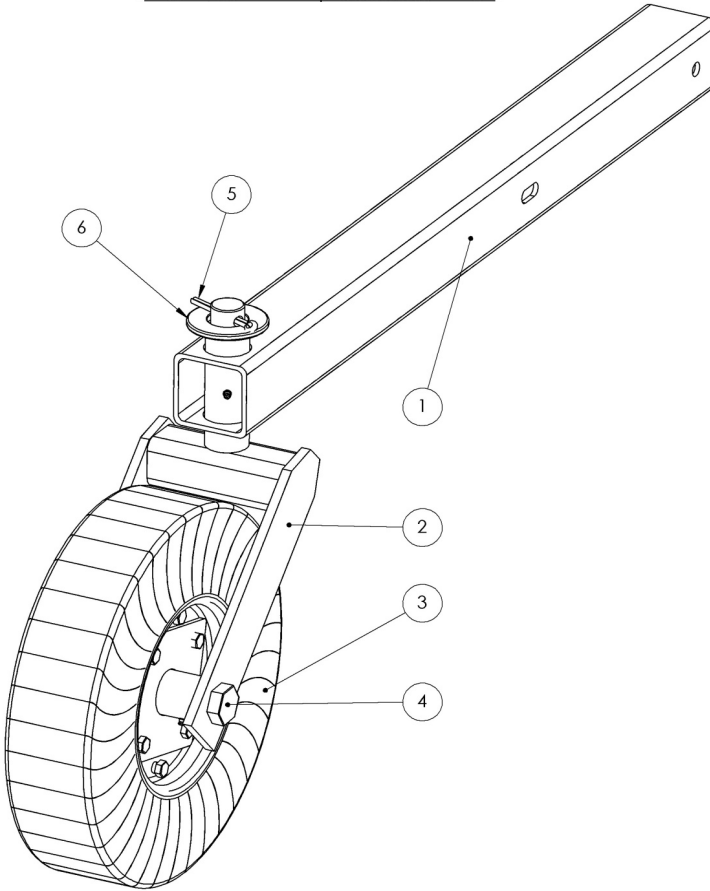
1. Install the A-frame, knuckle and A-frame braces using the hardware provided with your rotary cutter assembly. Install the capscrews loosely to allow for adjusting. **NOTE: knuckle must be installed to A-frame in the front hole location.** See Figure #1



| ITEM NO. | PART NUMBER | DESC RIPTION | QTY. |
|----------|-------------|--------------------------------|------|
| 1 | ACD380331 | AGRILINE A FRAME | 2 |
| 2 | ACD380320 | AGRILINE CROSS BRACE | 1 |
| 3 | ACD250247 | AGRI X BACK BRACE | 2 |
| 4 | ACD2X2HL | 2X2 HITCH LINK | 1 |
| 5 | ACD75P02 | HITCH SPACERS | 3 |
| 6 | A_CAT1HP | CATEGORY 1 HITCH PIN | 2 |
| 7 | 75LW | 3_4 LOCK WASHER | 4 |
| 8 | 75HN | 3_4 HEX NUT | 4 |
| 9 | 62HB4 | 5_8-11X4_HEX_HEAD_BOLT | 8 |
| 10 | 62LW | 5_8_LOCK_WASHER | 7 |
| 11 | 62HN | 5_8-11_HEX_NUT | 6 |
| 12 | 75HB2_00 | 3_4-10X2_HEX_HEAD_BOLT | 2 |
| 13 | 62HB4 | 5_8-11X4_HEX_HEAD_BOLT | 2 |
| 14 | 62HB4 | 5_8-11X4_HEX_HEAD_BOLT | 1 |
| 15 | 62HNWN | 5_8-11_HEX_NUT_W NYLON_INSE RT | 1 |
| 16 | 50LW | 1_2in_LOCK_WASHER | 2 |
| 17 | 50HN | 1_2in_hex_nut | 2 |
| 18 | 50HB4 | 1_13 X 4 HEX HEAD BOLT | 2 |

INSTALLATION

| | | | |
|---|-----------|-----------------------|---|
| 2 | ACD08030 | AGRI LINE CROSS BRACE | 1 |
| 3 | ACD080247 | AGRI X BACK BRACE | 2 |
| 4 | ACD022HL | 2X2 HITCH LINK | 1 |
| 5 | ACD27F02 | HITCH SPACERS | 1 |
| 6 | A_CAT1HP | CATEGORY 1 HITCH PIN | 2 |



| ITEM NO. | PART NUMBER | DESC RIPTION | QTY. |
|----------|----------------------|-------------------------------|------|
| 1 | ACD030336 | TAIL WHEEL ARM ASSEMBLY | 1 |
| 2 | ACD TW FA | AG TAIL WHEEL FORK ASSEMBLY | 1 |
| 3 | ACD AGR NOTAT | NOTAT TIRE | 1 |
| 4 | 1-8 HEX BOLT X 7-1_2 | | 1 |
| 4 | 100HNWN | 1-8 HEX NUT WITH NYLON INSERT | 1 |
| 5 | 25CP3 | 3 IN COTTER PIN | 1 |
| 6 | 112FW | 1-1_2 FLAT WASHER | 1 |

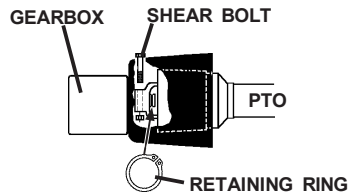
FIGURE #2

INSTALLATION

NOTE: The height of the tailwheels will help in determining cutting results. Positioning the front of the cutter slightly lower (up to 1" (25.4mm)) will decrease HP while increasing ground speed for heavier cutting applications. Positioning the front of the cutter slightly higher than the back will increase HP while decreasing ground speed for a more finished result.

level is visible. (Gearbox must contain grease/oil before starting although an accurate grease/oil level cannot be checked until the unit has been operated for 15-20 minutes.)

4. Install the PTO/Gearbox guard onto the face of the gearbox using the hardware
SHEAR PIN APPLICATIONS: Remove the retaining ring from the gearbox shaft and install the shear pin end of the PTO shaft onto the gearbox. Install .50" UNC X 3.50" Grade 2 shear bolt and nut supplied and reinstall the retaining ring back onto the gearbox shaft. **NOTE:** Failure to install the drive shaft retaining ring can result in damage to cutter and driveline.



WARNING! Failure to install retaining ring onto the gearbox shaft will allow driveline to swing freely if bolt is sheared, resulting in serious injury or death.



LIFT-TYPE CUTTER INSTALLATION

1. Either remove or place the tractor drawbar in its shortest position. Move the tractor into position in front of the rotary cutter. Back up slowly and carefully with the lower 3-point hitch arms positioned at the same height and to the outside of the hitch pins located on the A-frame. Do not allow anyone between the tractor and the cutter.
2. Turn off tractor engine.
3. Attach the two lower 3-point hitch lift arms on the tractor to the cutter using the hitch pins provided. Secure in place.
4. Attach the top link to the upper hitch point of the A-frame. **NOTE: Verify the top link is not extended enough to allow the PTO to contact the front of the cutter when raised.**
5. Adjust the lower link sway chains to prevent the cutter from swaying side to side and contacting the tractor tires.
6. Attach the PTO from the cutter to the tractor: Slide the front section of the PTO into the back section and attach to the PTO shaft at the rear of the tractor. (Pull back on the driveline yoke collar and align the splines of the yoke with the PTO shaft. Push yoke onto the PTO shaft releasing the locking collar.) **NOTE: Push and pull the driveline back and forth until locked in place.**

WARNING! The locking collar must slide freely and the locking balls seated in the groove on the tractor PTO shaft before operating. A driveline not attached correctly could come loose from the tractor resulting in personal injury and damage to the attachment.



INSTALLATION

7. Attach front and back driveline chains to the cutter and tractor to prevent shields from turning. **NOTE: If chains are damaged or missing replace before operating cutter.**

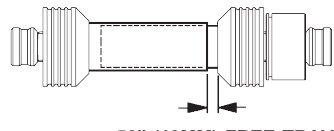
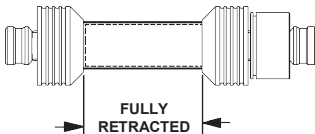
NOTICE: The PTO is customized for your specific application. If the PTO shaft is too long, severe PTO and gearbox damage is possible. DO NOT FORCE THE PTO TO FIT. Warranty is void if the correct PTO is not installed. There should never be less than 5" of overlap within the PTO.

WARNING! Do not use a PTO adapter to attach your cutter to a non-matching tractor PTO. Serious personal injury and/or equipment failure can result. Consult an authorized dealer for assistance if the cutter PTO does not match the tractor PTO.



POWER (PTO) SHAFT ADJUSTMENT

Confirm the minimum and maximum working lengths of the driveshaft. The telescoping tubes must overlap by at least 1/3 of their length while in use. The (PTO) drive assembly may need to be shortened to fit up to your tractor correctly and to prevent the drive assembly from "bottoming out" and causing extensive damage to the tractor PTO drive assembly.

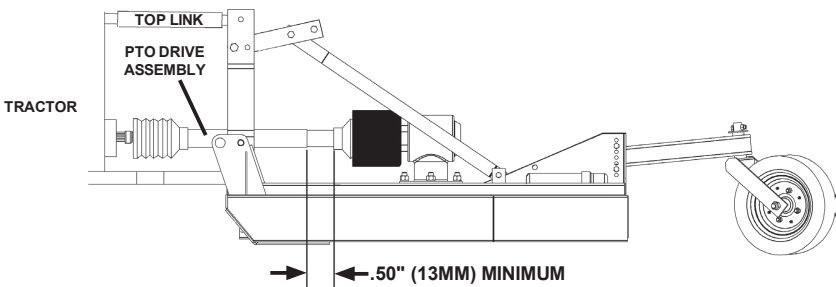


The shaft assembly is shortest when the shaft is straight in line with the attachment. There should be a minimum of .50" (13mm) of free travel before the shaft is fully retracted. To check:

- Lower the attachment until the shaft is parallel to the ground and is straight in line with the attachment gearbox.
- Check to see if there is a minimum of .50" free travel.

If there is not at least .50" (13mm) of free travel **DO NOT OPERATE ATTACHMENT.**

NOTICE: IF THE DRIVE SHAFT "BOTTOMS OUT" BEFORE IT IS STRAIGHT IN LINE WITH THE ATTACHMENT, STOP AND CALL YOUR NEAREST DEALER OR THE ATTACHMENT MANUFACTURER BEFORE OPERATING.



CAUTION



FAILURE TO HAVE THE REQUIRED DISTANCE OF CLEARANCE WILL DAMAGE THE POWER TAKE OFF (PTO) OF YOUR TRACTOR.

OPERATION

INTENDED USE: The Standard Duty Rotary Cutters are designed for cutting grass, weeds, and light brush trees up to 1.50" (38mm) in diameter while still maintaining a 12" (305mm) maximum ground clearance. The Medium Duty Rotary Cutters are designed for cutting grass, weeds, and light brush trees up to 2" (51mm) in diameter while still maintaining a 12" (305mm) maximum ground clearance. Use in any other way is considered contrary to the intended use.

GENERAL INFORMATION

Simplicity of operation is one of the key features of your attachment. There are only a few adjustments to check. It is important however to be familiar with, and know the controls and adjustments on both the attachment and the tractor. Such knowledge is crucial for safe, efficient operation of equipment. Take the time to learn how they operate now.

THE TRACTOR

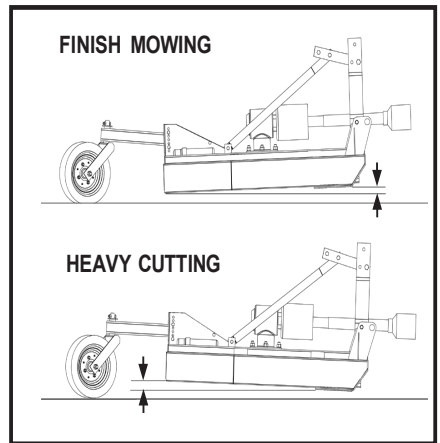
Your attachment mounts to the drawbar or 3-point hitch system of the tractor. Due to this arrangement, thorough knowledge of the tractor and all of its controls is necessary for attachment operation. Read your tractor owner's manual for information regarding tractor operation before attempting to use the attachment.

ADJUSTING CUTTER HEIGHT AND PITCH

LIFT-TYPE ROTARY CUTTERS

Adjust the height of the front of the cutter by adjusting the lower 3-point hitch arms on your tractor. The 3-point lift arms will also be used to adjust side to side leveling. **NOTE: Set the 3-point control lever stop on the tractor to maintain your height adjustment when raising and lowering the cutter.**

Adjust the rear of the cutter by adjusting the top link on the tractor and the tailwheel height. The top link should be adjusted so when the mower is lifted the front of the mower will leave the ground a couple inches before the rear to allow for uneven terrain.




OPERATION

The blades contacting the ground can result in excessive slipping of the slip clutch and increased thrown objects from under the cutting deck.


BEFORE OPERATING

Before operating your attachment, ensure that the attachment is in good working condition. Perform all routine maintenance and check that driveline is properly attached, chains attached to cutter and tractor and locked onto the PTO shaft by pushing and pulling the yoke several times.


DANGER!  **All safety guards, shields and devices must be installed and inspected daily for missing or broken components. Replace broken, missing or worn items at once to reduce personal injury or death from thrown objects, entanglement, or blade contact.**

Visually verify that there is nothing under the cutter and all parts are assembled correctly. Inspect the work site, removing all foreign objects, rocks and debris that the blades could come into contact with. If objects are too big to remove, mark the area clearly and avoid blade contact. If the grass/weeds are too high to find the smaller debris that could be struck by the blades, it is recommended to mow the area high, keep all bystanders completely out of the area, then remove the smaller debris and mow again at a lower height.

NOTICE: *We recommend installing debris deflecting chains onto the cutter before operating.*

DANGER!  **ROTATING BLADE 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.**

DANGER!  **Do not allow riders on the attachment or tractor.**

WARNING!  **Before leaving the operator's seat: Lower the attachment. Never leave the attachment in the raised position. Make sure all rotation has stopped, both skids are on the ground, PTO is disengaged, parking brake is engaged, engine is turned off and the keys are removed before exiting the prime mover.**

CUTTING OPERATION

Ground speed will depend on the terrain, grass type and density along with height of vegetation. The PTO should be at full rated RPM to maintain a clean cut but do not exceed the rated 540 RPM for the attachment. For most cutting operations we recommend a ground speed of 3-5 MPH (5-8 K/H). Adjust ground speed to maintain the rated PTO speed to prevent overloading the cutter and tractor.

OPERATION

Follow your tractor operator's manual and safety precautions for operating a rear mounted attachment. Operate only from the operator's seat with seatbelt securely fastened. Your tractor must be equipped with ROPS or an enclosed cab.

We recommend that you plan your driving pattern in advance to minimize turning and approach ditches at an angle to prevent over-collapse of the driveline.

WARNING! Exceeding the rated PTO speed for your attachment (540 RPM) can result in serious injury or death along with driveline and attachment damage.



1. Position the height and pitch of the cutter for your terrain, grass type and density.
2. Block off the work area from all bystanders, children, livestock and vehicles. Never operate the cutter in populated areas where thrown objects could injure people or damage property.

WARNING! Never engage the PTO with the mower deck raised, exposing yourself or anyone else to the rotating blades. If blades are visible then the unit is raised too high.



3. Following your tractor operator's manual for starting procedures, start the tractor and set the engine speed at idle (approximately 1000 RPM) before engaging the tractor PTO.
4. Slowly increase engine speed until the PTO is running at the rated speed (540 RPM).

WARNING! Initial start up vibration is normal and should stop after approximately 3-5 seconds. If you encounter unusual or excessive vibration or noise disengage the PTO immediately. Inspect the attachment to determine the cause and repair or tag "DO NOT OPERATE" until all problems are corrected.



5. Slowly proceed forward into the work area adjusting ground speed to accommodate the terrain and vegetation height and density.


IMPORTANT: Grease level in the gearbox must be checked after 15-20 minutes of initial operation. Grease should be level with pipe plug.

6. **LIFT- TYPE CUTTER:** When you get to the end of a pass be sure to leave additional clearance for the added length of the tractor with cutter. Slightly raise the cutter before turning but do not raise the cutter entirely while the blades are turning. If the cutter must be raised higher than 12" (305mm) from the ground, disengage the tractor PTO and wait for all blade rotation to stop before proceeding to raise cutter.
7. When done mowing for the day, Disconnect PTO shaft and check the blade pan (stumpjumper) to make sure it is tight on the gearbox output shaft. If loose, torque the castle nut to **200-210** ft. lbs. (271-285 N.m) and replace cotter pin. Check blade hardware for tightness or excessive blade wear. Tighten or replace as required.

OPERATION

TROUBLESHOOTING OPERATING CONDITIONS:

Below are listed a few operating conditions and suggestions on how to possibly correct them.

DANGER!  Rotary cutters are capable of throwing objects a great distance causing serious injury or death. Keep all bystanders several hundred feet away from mowing area.

GRASS TOO LONG OR THICK: If cutting heavy vegetation, you may need to slow travel speed or make smaller passes (less than full cut).


BRUSH TOO BIG IN DIAMETER: The rotary cutter is NOT designed to cut trees larger than the specifications indicated in the Intended Use.

CUTTING LARGE BRUSH AND SMALL TREES: If brush is within recommendations and the cutter is not cutting satisfactorily, check sharpness of the blades (see “Maintenance”) and cut by approaching the area with the brush or tree to the right side of center. This will bend the tree in such a fashion that the cutting blades will cut from the top (outside) of the bend and not the bottom (inside) for a cleaner cut. **DO NOT BACK OVER LARGE BRUSH OR SMALL TREES.**

BRUSH TOO THICK OR HEAVY: If cutting heavy or thick brush, you may need to slow travel speed or make smaller passes (less than full cut), to prevent overloading. If the blades seem to be unable to handle the volume of brush, slow down the travel speed until the unit reaches full speed before proceeding. If still not obtaining a uniform cut see “CUTTING LARGE BRUSH AND SMALL TREES”.

SCALPING THE GROUND or BOTTOMING OUT: Be aware of changes in the terrain. Stay alert for drop-offs and holes. Check the terrain and the deck position before proceeding to cut.

CROSSING DITCHES AND/OR STEEP INCLINES: Cut ditches and inclines at an angle. DO NOT travel up and down ditches or steep inclines that will allow the main driveline inner profile to penetrate into the outer housing until the assembly becomes solid (driveline at its extreme shortest length). This can cause serious damage to the tractor and cutter by pushing the PTO into the tractor, through the support bearings or downward breaking the PTO shaft.

WARNING!  Damage caused by over-collapsing the driveline may allow the driveline to come loose from the tractor which could result in severe personal injury to the operator or bystanders and/or extensive damage to the tractor or attachment.

STRIKING FOREIGN OBJECTS: Stay alert for rocks, fencing, abandoned wells, septic tanks or other foreign objects. If the cutter comes into contact with a foreign object, stop the unit, shut off the engine and disconnect the PTO. Inspect the unit and repair any damage before restarting and continuing cutting. (Never try to weld or straighten damaged blades.) Inspect the work area for any other items, and if they are too large to be removed from the area, they should be clearly flagged.

OPERATION

STORAGE

The following storage procedure will help you to keep your attachment in top condition. It will also help you get off to a good start the next time your rotary 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, and grease.
- Sharpen or replace blades. Replace all blades at the same time and do not try to weld or straighten damaged blades; loss of integrity may result.
- 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.**
- Tighten all loose capscrews and nuts.
- Check the drive bearing housing for proper lubricant level.
- Replace decals if damaged, or in unreadable condition.
- Apply a rust-preventive spray to all moving parts and to the bottom of the deck.
- Place the driveline / yoke off the ground and away from water, dirt or other contaminants.
- 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 all nuts and bolts for proper tightness, especially those securing the motor, bearing housing and blades.
- Inspect slip clutch lining plates to ensure they are not seized from rust or corrosion. See Maintenance section and correct before operating.

LUBRICATION

GENERAL INFORMATION

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

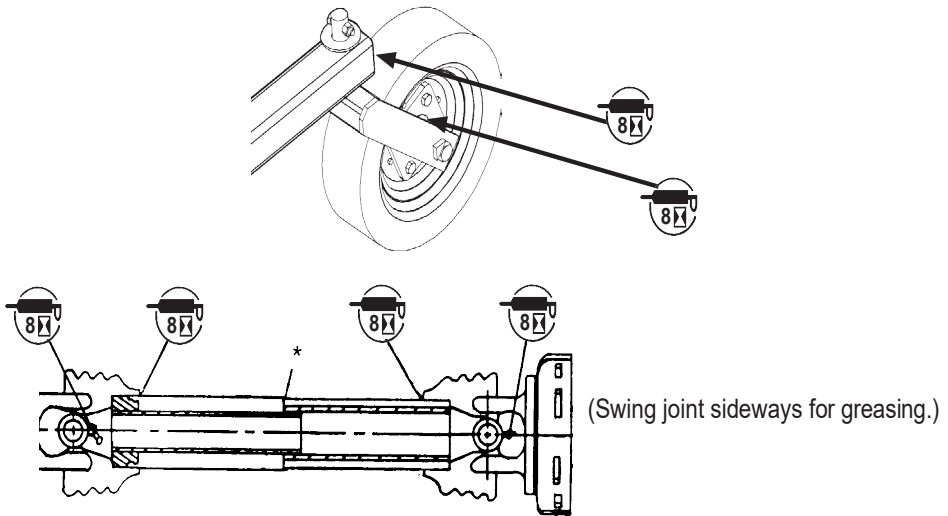
All parts provided with grease fittings should be lubricated as indicated. If any grease fittings are missing, replace them immediately. Clean all fittings thoroughly before using grease gun.

IMPORTANT: Avoid excessive greasing. Dirt collects on exposed grease and greatly increases wear. After greasing, wipe off excessive grease from fittings.

LUBRICATION

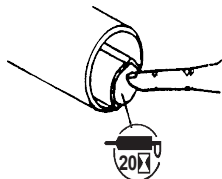
Lubricate grease fittings every (8) eight hours. (PTO driveline U-joints and shield bearings. Tailwheel hub and spindle tube.)

Grease PTO driveline inner tube before putting attachment into operation and every 20 hours thereafter.



*** When used in winter the outer tube must be greased to prevent it freezing solid!**

**GREASE INSIDE OF OUTER
TELESCOPING TUBE (EVERY
20 HOURS)**



LUBRICATION

WEEKLY

The grease/oil level in the gear box should be checked once a week. Proper level of lubricant in the gear box is approx. 20 oz (.59L) in the 40 HP (standard duty) gearbox and 26 oz (.77L) in the 90 HP (medium duty) gearbox. Fill as necessary with EP-0 or equivalent grease.

TO CHECK:

Remove pipe plug from end of gearbox. Lubricant should be at the same level as the plug.

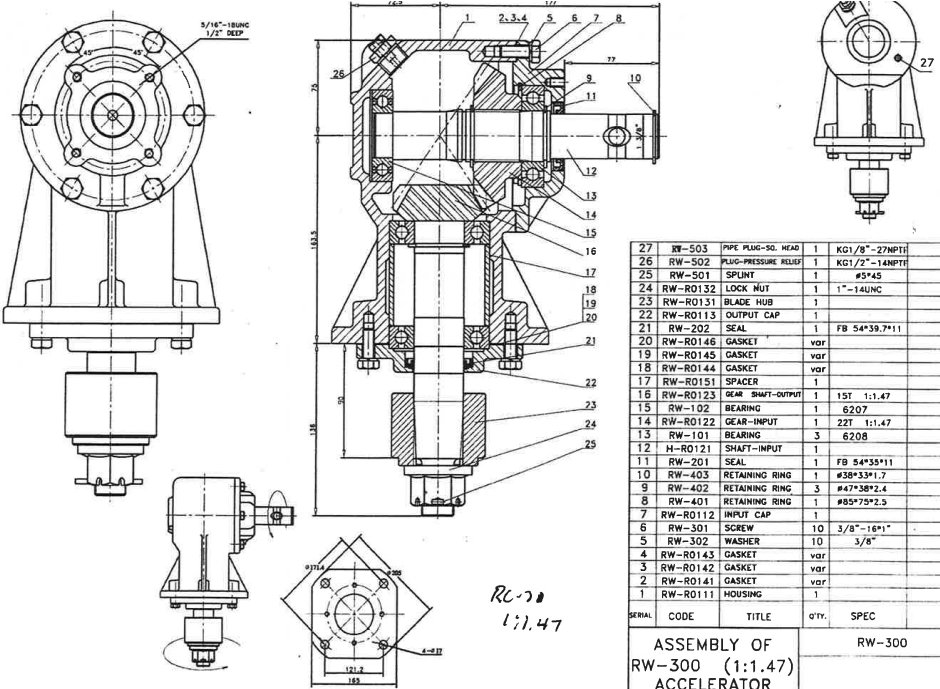
TO ADD:

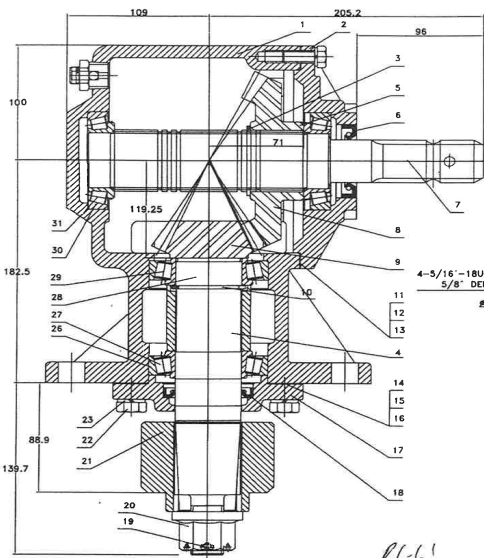
Remove pipe plug from end of gearbox. Remove filler plug (pressure relief plug) from top end of gearbox and add EP-0 or equivalent grease up to the same level as the pipe plug. Replace pipe plug and filler plug.

IMPORTANT: DO NOT OVERFILL, AS TOO MUCH LUBRICANT MAY RUPTURE THE GEAR BOX SEALS.

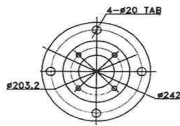
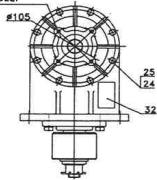
GEARBOX IDENTIFICATION

CURRENT PRODUCTION CHINA GEARBOX HAS A ROUND SMOOTH BACK MOLDING. THE OLDER OMNI GEARBOX HAS RAISED RINGS IN THE MOLDING WITH A FLAT BACK. (OMNI GEARBOX IS SHOWN)

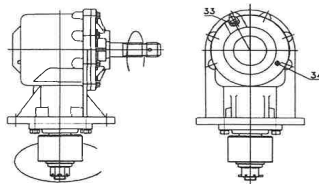




4-5/16" - 18UNC TAB
5/8" DEEP



RC-61
1.1.93



| | | | | | |
|--|----------|----------------------|------|-----------------|-------|
| 34 | RW-503 | PIPE PLUG-SQ HEAD | 1 | KG1/8 -27NPTF | |
| 33 | RW-502 | PLUG-PRESSURE RELIEF | 1 | KG1/2 -14NPTF | |
| 32 | RW-R0552 | TAC | 1 | 50P25 | |
| 31 | RW-108 | BEARING CONE | 2 | LM603049 | |
| 30 | RW-107 | BEARING CUP | 2 | LM603014 | |
| 29 | RW-105 | BEARING CUP | 1 | 362A | |
| 28 | RW-106 | BEARING CONE | 1 | 368A | |
| 27 | RW-104 | BEARING CONE | 1 | 368 | |
| 26 | RW-103 | BEARING CUP | 1 | 362 | |
| 25 | RW-302 | WASHER | 8 | 3/8 | |
| 24 | RW-301 | SCREW | 8 | 3/8 -14UNC*1 | |
| 23 | RW-304 | WASHER | 4 | 1/2" | |
| 22 | RW-303 | SCREW | 4 | 1/2 -13UNC* 1/2 | |
| 21 | RW-R0431 | BLADE HUB | 1 | | |
| 20 | RW-R0132 | LOCK NUT | 1 | 1"-14UNC | |
| 19 | RW-501 | SPLINT | 1 | #5*45 | |
| 18 | RW-203 | SEAL | 1 | #50.8*#68.5*12 | |
| 17 | RW-R0513 | OUTPUT CAP | 1 | | |
| 16 | RW-R0546 | GASKET | verf | | |
| 15 | RW-R0545 | GASKET | verf | | |
| 14 | RW-R0544 | GASKET | verf | | |
| 13 | RW-R0543 | GASKET | verf | | |
| 12 | RW-R0542 | GASKET | verf | | |
| 11 | RW-R0541 | GASKET | verf | | |
| 10 | RW-R0555 | RETAINING RING | 1 | #58*#48*2.5 | |
| 9 | RW-R1022 | GEAR SHAFT-OUTPUT | 1 | 15T 1:1.93 | |
| 8 | RW-R1021 | GEAR-INPUT | 1 | 29T 1:1.93 | |
| 7 | RW-R0621 | SHAFT-INPUT | 1 | 3/8"-63LINE | |
| 6 | RW-204 | SEAL | 1 | #35*#60*11 | |
| 5 | RW-R0551 | SPACER | 1 | | |
| 4 | RW-R0556 | SPACER | 1 | | |
| 3 | RW-404 | RETAINING RING | 1 | #58*#48*2.5 | |
| 2 | RW-R0512 | INPUT CAP | 1 | | |
| 1 | RW-R0511 | HOUSING | 1 | | |
| SERIAL | CODE | TITLE | QTY | SPEC | PRICE |
| ASSEMBLY OF RW-610-6S (1:1.93) ACCELERATOR | | | | RW-610-6S | |

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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.

WARNING! Before leaving the operator's seat: Lower the attachment. Never leave the attachment in the raised position. Make sure all rotation has stopped, both skids are on the ground, PTO is disengaged, parking brake is engaged, engine is turned off and the keys are removed before exiting the prime mover.



| PROCEDURE | DAILY | EVERY 40 HOURS |
|---|-------|----------------------|
| Check mounting hardware on blades and tighten to 450 ft. lbs. (610 N.m). | ✓ | |
| Check all other hardware and tighten, if necessary. See Bolt Torque Specifications. | ✓ | |
| Check blades and blade pan (stumpjumper) for damage and replace or sharpen as required. | ✓ | |
| Check all Safety Guards and Devices are installed correctly. | ✓ | |
| Replace any missing or damaged bolts or nuts with approved replacement parts. | ✓ | |
| Inspect attachment for any worn parts or cracked welds. Repair as required. | ✓ | |
| Check for missing or illegible Safety / Warning Decals. | ✓ | |
| Check oil level in gearbox and add if necessary. See Lubrication Section | | ✓ |

INSPECT BLADES FOR DAMAGE:

Inspect blades for abnormal wear. Check for cracks, notches or chipped areas, bent or deformed blades or if the cutting edge has been excessively worn (more than .50" or 13mm). Always replace all of the blades at the same time and all blades must have the same offset.

INSPECT BLADE PAN (STUMPJUMPER) FOR DAMAGE:

Inspect blade pan for damage caused by contacting an immovable object. This could cause excessive vibration and/or noise. Replace as required.

SLIP CLUTCH

Perform a slip clutch operational check and adjustment if attachment has been in storage for 30 days or longer. See Maintenance Section.

MAINTENANCE

SLIP CLUTCH OPERATIONAL CHECK AND ADJUSTMENT

The slip clutch serves as overall protection for the tractor, driveline, and gearbox. Even though new clutch assemblies are “run-in” and checked for proper torque before shipment, re-adjustment may be advisable if the clutch has been exposed to weather for an extended period of time. The clutch facing and plates should be inspected for rust and/or corrosion. After attachment has been stored for 30 days or more, perform an operational check.

OPERATIONAL CHECK

1. Make a trial run in the heaviest operating conditions expected. If clutch slips noticeable, tighten the 8 adjusting bolts, no more than 1/2 turn, between trial runs until the clutch slippage is reduced.
2. Scribe a mark across the clutch facing. When subjected to shock loads, a separation of the marks will assure that the clutch setting is correct. **NOTE: Check the clutch periodically during the first hour of operation for excessive heat build-up.**

REBUILT CLUTCH

If the clutch is being rebuilt (new facing and/or plates), it is necessary to “run-in” these parts prior to final adjustment. The plates should be thoroughly cleaned and free of foreign material as well as being checked with a straight edge for warping. Warped plates cannot be adjusted properly and will not hold adjustment. Perform the following “run-in” for rebuilt clutch.

1. Tighten all adjusting bolts evenly until the clutch cannot be slipped by hand.
2. With the blade carrier locked in a stationary position, operate with the PTO at idling speed (approximately 100 RPM) until evidence of heating is noted. **IMPORTANT: DO NOT ALLOW OVERHEATING OF THE CLUTCH.**
3. Discontinue operation and it is very important to allow the clutch to cool completely.
4. After the clutch has cooled, tighten all the adjusting bolts down evenly and proceed with operational check and clutch adjustment.

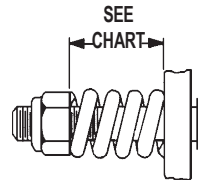
SLIP CLUTCH ADJUSTMENT

The slip clutch is factory preset to the correct torque for protecting attachment and tractor. Periodic check and adjustment is recommended. If adjustment is needed:

1. Check to verify all spring lengths are the same.

INITIAL SPRING LENGTH


| PTO PART NUMBER | SPRING DIAMETER | SPRING LENGTH |
|-----------------|-----------------|-----------------|
| KDK03-0004 | .236" (6 mm) | 1.06" (27 mm) |
| KDK03-0006 | .236" (6 mm) | 1.12" (28.5 mm) |
| KDK03-0007 | .236" (6 mm) | 1.12" (28.5 mm) |



2. Adjust nut on any spring that is unequal.
3. Adjust all eight spring retaining nuts 1/3 of a turn (2 flats on a nut).
4. Check clutch slippage.
5. If further adjustment is required, do so in 1/3 turn increments. **IMPORTANT: Adjust only to provide sufficient torque to prevent slippage under normal conditions.** Occasional slippage for drive train protection is normal. If satisfactory results cannot be obtained, contact your nearest Kodiak dealer.

NOTICE: DO NOT OVERTIGHTEN NUT AND CAUSE SPRING TO BECOME “SOLID”. THIS WILL CAUSE SHAFT FAILURE.

MAINTENANCE

WARNING!  Avoid serious injury. Lower the rotary cutter to the ground, set the parking brake, shut off the engine, remove the key and wait for all blade rotation to stop 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 PTO.

REPLACING OR SHARPENING BLADES

When replacing, or sharpening the blades, the unit must be blocked securely off the ground to gain access to the blades.

The blades should be inspected regularly (every 8 hours) to ensure they are sharp, tightened correctly, and intact. Always replace all blades at the same time and NEVER try to weld or straighten damaged blades, as loss of blade integrity may result.

Removing Blades:

1. Remove blades with unit securely blocked off the ground and PTO disconnect from tractor and cutter.
2. Remove PTO shield to gain access to blade bolt access hole.
3. Rotate until one of the blades is positioned under the access hole on the top of the deck and using a 1-11\16" socket, remove the special nut and lock washer. (Blade bolt is keyed and will not turn freely.) You can now remove the blade mounting bolt and the blade.
4. Repeat step #3 for the remaining blade.

Sharpening Blades:


- Be sure to sharpen both blades and at the same angle as the original edge to maintain proper balance.
- Do not remove more material than necessary.
- Do not heat and pound out a cutting edge.
- Do not grind to a razor edge. Leave a blunt cutting edge approximately 1/16" (2mm) thick.
- Always grind so end of blade remains square to the cutting edge.
- Do not sharpen back side of any single edge cutting blade.
- Both blades should weigh the same after sharpening with no more the 1.5 oz. (.68kg) difference.

MAINTENANCE

Installing Blades:

Carefully check blade orientation to ensure correct blade placement. Blade rotation is counter-clockwise, leading with the cutting edge and blade lift towards the top of the deck.

1. Install blades with unit securely blocked off the ground and PTO disconnect from tractor and cutter.
2. Position the blade with the key of the mounting bolt in alignment with the keyway, and either prop up in place or have an assistant hold in place while the special nut and lock washer is installed onto the bolt through the blade access hole. Torque nut to 450 ft. lbs. (610 N.m).
3. Repeat step #1 and #2 for the remaining blade.

WARNING!  Avoid serious injury. Lower the rotary cutter to the ground, set the parking brake, shut off the engine, remove the key and wait for all blade rotation to stop 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 PTO.

REPLACING GEARBOX

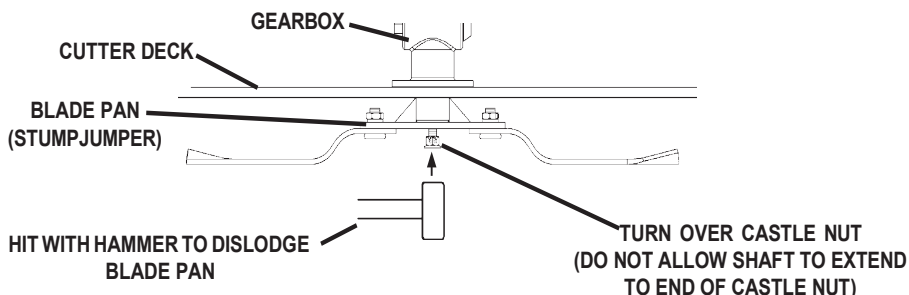
When replacing the gearbox, the unit must be blocked securely off the ground to gain access to the castle nut holding the blade pan (stumpjumper) to the lower end of the gearbox.

1. With unit securely blocked off the ground and PTO disconnected from the tractor and cutter, remove the cotter pin and castle nut holding the blade pan (stumpjumper) to the lower end of the gearbox.

NOTE: Be prepared for the weight of the blade pan (stumpjumper) with the blades attached to fall when the castle nut is removed.

2. If the blade pan (stumpjumper) does not fall when the castle nut is removed it may be necessary to turn the castle nut around and partially thread the nut back onto the gearbox shaft. Tap the end of the **nut** to dislodge the pan from the shaft. Take care that the shaft does not extend past the end of the nut as shaft damage will occur if it comes into contact with the hammer. (Blade pan will drop to the castle nut once it is free from the shaft.)

MAINTENANCE



3. With the blade pan dislodged from the shaft, hold in place while you remove the castle nut. Be prepared for the weight of the blade pan to fall once the castle nut is removed.
4. Remove the four capscrews securing the gearbox to the cutter deck, and lift the gearbox off the cutter.
5. Install the new gearbox with the existing hardware removed in step #4.
6. Position the blade pan (with blades) onto the lower shaft of the gearbox and reinstall the castle nut and torque to 200-210 ft. lbs. (271-285 N.m) Reinstall cotter pin.
7. Check grease level in the gearbox is visible and add EP-0 or equivalent grease as required. RECHECK grease level after 15 - 20 minutes of operation. See Lubrication section.

REPLACING GEARBOX SEALS

1. Following steps #1 through #4 under "REPLACING GEARBOX", remove the gearbox from the cutter. The unit must be blocked securely off the ground to gain access to the castle nut holding the blade pan (stumpjumper) to the lower end of the gearbox.
2. Remove the old input seal and replace with the new seal.
3. The output shaft seal requires removal of the bottom cap to gain access to the seal.
4. Re-install the gearbox following steps #5 through #7 under "REPLACING GEARBOX".

Further disassembly or field replacement of gearbox components will void warranty.

MAINTENANCE & SERVICE

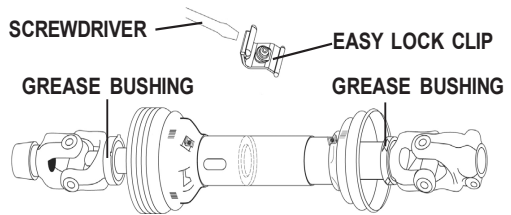
PTO DRIVE ASSEMBLY

The following instructions will assist in replacing the safety shields on your PTO drive assembly. Keep all PTO guards and shields in place at all times.

IMPORTANT: Cutter maintenance does not require you to go between the tractor and the cutter with the driveline installed. Before replacing, servicing or removing the cutter from the tractor, shut off the tractor, set the parking brake and remove the keys.

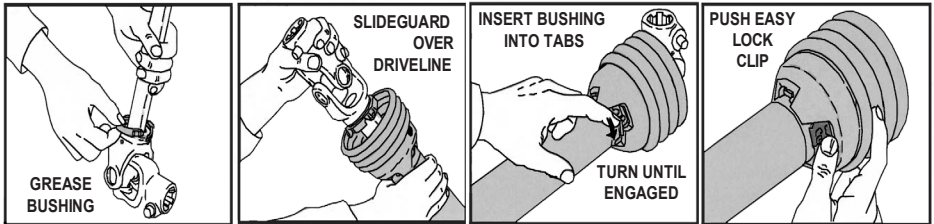
When replacing damaged or missing PTO shields, disconnect the rotary cutter from the tractor and remove the driveline from the cutter.

1. To remove damaged guards, use a screwdriver to release the “easy lock” clip on the driveline. Turn the bushing to disengage and remove the guard.



IMPORTANT: Check that the “*Guard Missing*” decal on the steel tube under the inner guard and “*Rotating Driveline*” decal on the outer guard are both firmly affixed and legible. If not, replace them before re-connecting the driveline to the cutter.

2. Clean and grease the bushing groove before installing the bushing. Grease any remaining bushings in the guard.
3. Slide the new guard half over the driveline and insert bushing tabs into the openings in the guard.

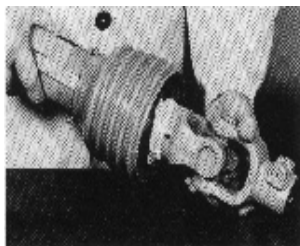


4. Turn the bushing until it engages into the guard.
5. Push the “easy lock” clip into position. The bushing and guard are now secure.

MAINTENANCE

SAFETY SHIELD

DISASSEMBLY

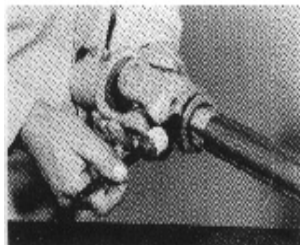


Use special tool SW21 to release bearing locking tabs and remove the shield from PTO drive shaft half.



Or, clamp the PTO yoke in the vise as shown to create pressure on the locking tabs and use a flat bladed screw driver to release one tab at a time to remove shield.

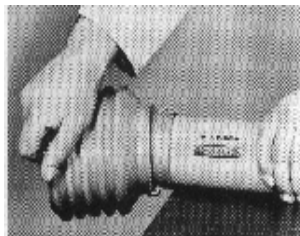
ASSEMBLY



Grease the shield bearing groove on the yoke and the telescoping tube before assembly.



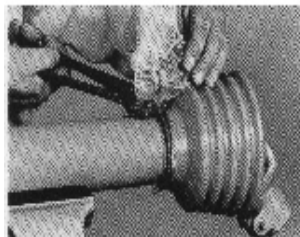
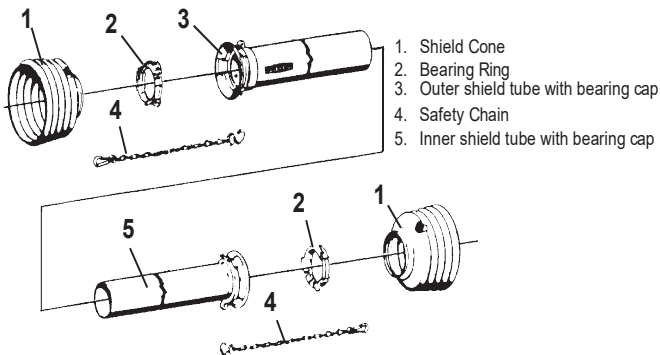
Place bearing ring in groove with the locking tabs nearest the telescoping tube side.



To remove the old shield cone, cut the cone near the bearing cap being careful not to damage the cap. Heat the new shield cone by placing the contact portion in water heated to approximately 180° F. until it is very flexible. Then, pull it over the tube and on to the bearing cap. As it cools, the cone will return to its natural size and become secure for normal function.



To mount the shield on to the half shaft, place it over the telescoping member, align the locking tabs on the bearing in the appropriate channels of the bearing cap and push the shield into place or apply light blows until all three locking tabs are visible in the openings.



MAINTENANCE

U-JOINT

DISASSEMBLY



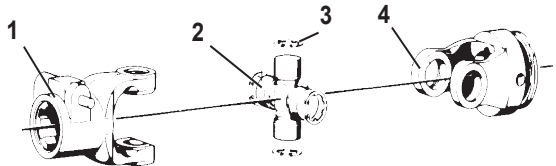
Remove retaining rings (3).



Place joint in the vise as illustrated (do not clamp tight) and with light hammer blows, drive up the bearing bushing.

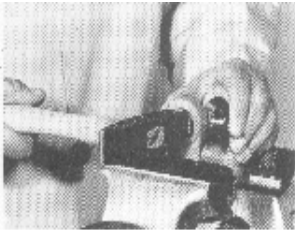


Use special tool SW23 or SW27 to clamp the bearing bushing in the vise. Using either light hammer blows or by twisting the yoke, remove the bearing bushing.



1. Quick-disconnect yoke coupling
2. Cross and bearing kit coupling
3. Retaining ring
4. Inboard yoke

ASSEMBLY



Clamp the yoke in the vise as illustrated. Remove the bearing bushing from the cross kit and place the cross into one of the yokes. Begin mounting the bearings by extending the cross journal out through the bearing bore. Place a bearing on it and holding the cross with one hand to position the bearing, tap with light hammer blows until you notice resistance. Do the same for the opposite bearing.



Using a flat surfaced drift punch or special tool SW28 drive the bearing in until the annular groove is visible.



Replace the retaining ring, make sure it is properly seated.



When installing the second yoke and bearings, make sure the grease zerk is positioned on the proper side for easy access when lubricating. Replace the bearings as described previously using the cross journal to help guide the bearings into the bore.



Relieve the stress from the bearings and yoke by applying several sharp hammer blows to the yoke ears.



Grease the joint. Note that all four bearings are properly purged and rotate to make sure the U-joint will move freely.

TROUBLESHOOTING

| PROBLEM | POSSIBLE CAUSE | POSSIBLE SOLUTION |
|-------------------------------|---|--|
| EXCESSIVE VIBRATION | Blades damaged or worn. | Replace worn blades as a set. |
| | Blades not swinging freely. | Check for obstructions, bolt torque or blade damage. Make adjustment or replace blades to ensure blade movement. |
| | Bearing failure. (To diagnose bearing failure; rotate blade carrier slowly and listen for bearing noise.) | Replace Drive Bearing Housing. |
| UNUSUAL NOISE | Loose blade bolts. | Tighten bolts. |
| | Bent blade carrier or blades. | Replace blade carrier or blades. |
| | Deck bent causing contact with blades. | Straighten deck. |
| | Gearbox grease insufficient. | Check seals in gearbox and fill to proper level. |
| POOR CUTTING | Not maintaining proper PTO speed. | Check PTO speed with tachometer and operate at proper RPM. |
| | Improper clutch adjustment. | Adjust according to Operator's Manual. |
| | Forward travel exceeds blade speed for material type. | Adjust forward speed. |
| | Blades dull. | Sharpen or replace blades. |
| MACHINE STREAKING | Cutting height too high, leaving wheel tracks. | Adjust for shorter cut height and decrease forward travel speed. |
| | Not maintaining proper RPM speed. | Maintain proper RPM speed. |
| | Excessive travel speed. | Decrease forward travel speed. |
| PTO WILL NOT TELESCOPE | Improper lubrication. | Separate and fill female tube half full of grease. |
| | PTO twisted. | Replace twisted portion. Caution operator not to ground out machine. |
| | Bent PTO. | PTO too long. Size to tractor according to manual. |
| | Shields damaged. | Replace. |
| PTO TWISTED | Over torqued. | Do not allow blades to come into contact with the ground. |
| | Not maintaining correct PTO speed. | Maintain proper PTO speed. |
| EXCESSIVE CLUTCH | Improper clutch adjustment. | Adjust according to Operator's Manual. |

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LIMITED WARRANTY

Atlas Manufacturing (the "Manufacturer") warrants, only to the original Purchaser, this equipment will be free from defects in materials and workmanship, under normal use and service, for one (1) year from the date of purchase providing this equipment is purchased for individual use only. **Commercial use of this equipment is not covered under any warranty.** This warranty does not apply to any equipment which has been damaged or which has been subjected to change, misuse, negligence, abnormal wear and tear, alterations, tampering, or failure to follow operating instructions. This warranty does not cover any product or parts not manufactured by Atlas Manufacturing. **Rotary cutters have a two (2) year Limited Warranty* on gearbox components provided they have been properly maintained** and have not been subjected to abuse or misuse except as limited below.**

***Gearbox warranty limitations:**

- i. Warranty is one (1) year for seals unless seals are damaged from debris wrapped around the input and or output shaft of the gearbox. After one year, seals are considered to be wearing parts, and the replacement is the owner's responsibility.
- ii. Gearboxes that are subject to warranty may be replaced with new or rebuilt gearboxes at the discretion of Atlas Manufacturing.
- iii. **Shearbolts must be approved Grade 2, ½" x 3" shearbolts.**

****NOTE: "properly maintained" specifically includes, but not limited to:**

- i. Running gearboxes with the proper amount or correct lubricant.
- ii. Adjusting slip clutches correctly to provide proper protection for gearbox components and drive line.

Under this warranty, the Manufacturer will repair or replace any part the Manufacturer determines has failed during the period of the warranty due to defects in material or workmanship. After written approval by the Manufacturer, the equipment or defective part must be returned to Atlas Manufacturing.

Warranty coverage and performance is expressly conditioned upon the return of the completed registration form to Atlas Manufacturing, 51 Dow Drive, Tremont, MS 38876.

Atlas Manufacturing reserves the right to make improvements and changes in specifications without notice or obligation to modify previously sold units. The Owner's Manual describes the proper assembly procedures for your implement and furnishes operating and maintenance recommendations to help you obtain long and satisfactory service.

All labor for performing repairs must be completed within 30 days of the warranty event. When qualified, labor will be reimbursed at a maximum rate of \$85.00 per hour.

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WARRANTY REGISTRATION FORM ROTARY CUTTERS

THIS REGISTRATION FORM MUST BE ON FILE WITH ATLAS MANUFACTURING WITHIN 30 DAYS OF DELIVERY TO PURCHASER, OR WARRANTY CLAIMS WILL NOT BE HONORED.

PLEASE COMPLETE REGISTRATION AND RETURN COMPLETED FORM BY EMAIL OR MAIL TO:

E-MAIL: warrantyatlas@gmail.com

MAIL: ATLAS MANUFACTURING
51 DOW DRIVE
TREMONT, MS 38876

MODEL: _____

SERIAL #: _____

DELIVERY DATE: _____

TRACTOR MAKE & MODEL BEING
USED WITH ABOVE UNIT: _____

PURCHASER'S NAME: _____

ADDRESS: _____

CITY: _____

STATE: _____

ZIP: _____

SELLING DEALER'S NAME: _____

CITY: _____

STATE: _____

ZIP: _____

I have read all warranties and agree with these conditions. I agree to read and follow all safety instructions outlined in this manual before operating this rotary cutter.

X

Purchaser's Signature

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