



SUPER HEAVY DUTY FLAIL SHD62, SHD74, SHD88, SHD96

FLAIL MOWER

Published 05/13

Part No. 803211C

OPERATOR'S MANUAL



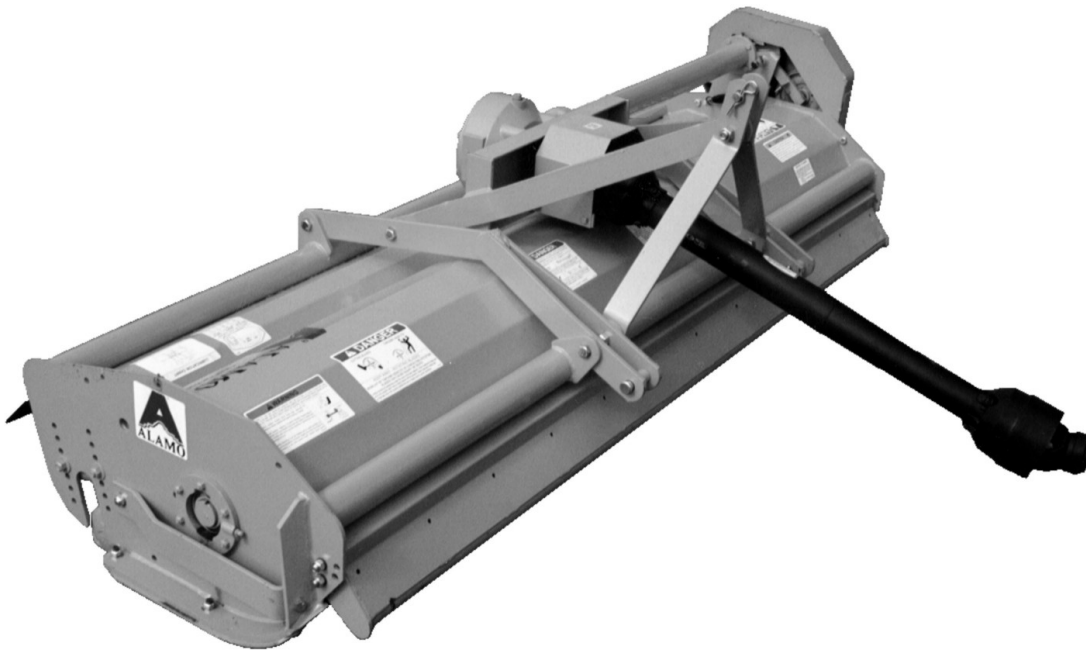
This Operator's Manual is an integral part of the safe operation of this machine and must be maintained with the unit at all times. **READ, UNDERSTAND, and FOLLOW** the Safety and Operation Instructions contained in this manual before operating the equipment. C01-Cover_A

Important Operating and Safety Instructions are found in the Mower Safety Video that can be instantly accessed on the internet at: www.algqr.com/ave

Safety Video



www.algqr.com/ave



FCP-FL-0002

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Alamo Industrial
Web Page



www.algqr.com/awe




¡ATENCIÓN!
LEA EL INSTRUCTIVO



Si No Lee Ingles, Pida
Ayuda a Alguien
Que Se Lo Lea Para Que le
Traduzca Las
Medidas de Seguridad

**MEMBER OF THE
ALAMO GROUP**
ALWAYS ON THE CUTTING EDGE®

⚠ PELIGRO	⚠ DANGER
<p>Si no puede leer inglés: antes de poner en funcionamiento este equipo, solicite que alguien le traduzca los mensajes de seguridad o vaya al sitio web para consultar los mensajes de seguridad y las etiquetas ya traducidos.</p>	<p>Si vous ne savez pas lire le français: avant d'utiliser l'équipement, demandez à une personne de vous traduire les messages de sécurité ou allez sur le site Internet pour voir la traduction des autocollants et des messages de sécurité.</p>
<p>El Manual del Operador Seguridad video</p> <div style="display: flex; align-items: center;">  <div style="margin-left: 10px;">   </div> </div> <p> www.algqr.com/afs www.algqr.com/avs </p>	<p>Manuel de l'Opérateur</p> <div style="display: flex; align-items: center;">  <div style="margin-left: 10px;">  </div> </div> <p> www.algqr.com/aff </p>

⚠ PERIGO	⚠ GEFAHR
<p>Caso você não leia inglês: antes de operar o equipamento, peça para alguém traduzir as mensagens de segurança ou visite a web e obtenha tais mensagens ou os decalques traduzidos.</p>	<p>Falls Sie Deutsch nicht lesen können: Lassen Sie sich, bevor Sie das Gerät in Betrieb nehmen, die Sicherheitshinweise von einer geeigneten Person in Ihre Sprache übersetzen. Oder suchen Sie auf unserer Website nach Übersetzungen von Schilderaufschriften und Sicherheitshinweisen.</p>
<p>Manual do Operador</p> <div style="display: flex; align-items: center;">  <div style="margin-left: 10px;">  </div> </div> <p> www.algqr.com/afp </p>	<p>Benutzerhandbuch</p> <div style="display: flex; align-items: center;">  <div style="margin-left: 10px;">  </div> </div> <p> www.algqr.com/afg </p>

Safety Video



www.algqr.com/ave

Operator's & Parts Manuals



www.algqr.com/apm

General Safety

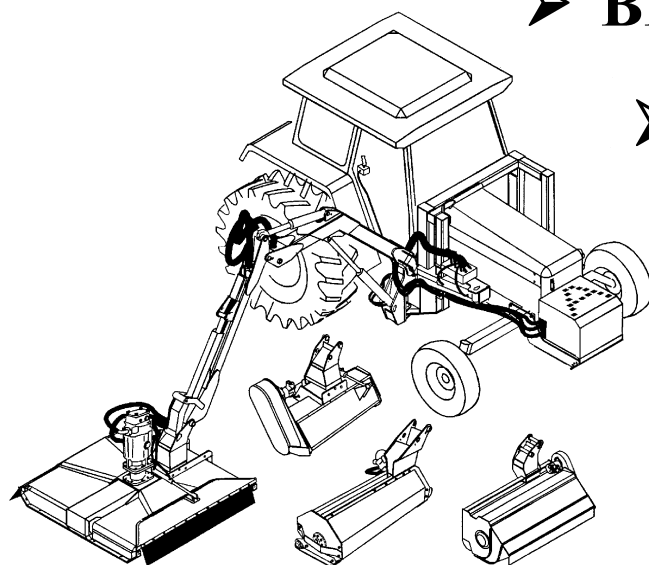


www.algqr.com/afe

Safety Video



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➤ **BE SAFE!**

➤ **BE ALERT!**

➤ **BE ALIVE!**

➤ **BE TRAINED**
before operating
the Mower!



*Safety Training
Makes the Difference*

In order to reduce accidents and enhance the safe operation of mowers, *Alamo Industrial*, in cooperation with other industry manufacturers has developed the AEM/FEMA Industrial and Agricultural Mower Safety Practices video and guide book.

The video will familiarize and instruct mower-tractor operators in safe practices when using industrial and agricultural mowing equipment. It is important that Every Mower Operator be educated in the operation of their mowing equipment and be able to recognize the potential hazards that can occur while operating a mower. This video, along with the mower operator's manual and the warning messages on the mower, will significantly assist in this important education.

Your Authorized *Alamo Industrial* Dealer may have shown this video and presented you a DVD Video when you purchased your mower. If you or any mower operator have not seen this video, **Watch the Video, Read this Operator's Manual, and Complete the Video Guidebook** before operating your new mower. If you do not understand any of the instructions included in the video or operator's manual or if you have any questions concerning safety of operation, contact your supervisor, dealer or *Alamo Industrial*.

If you would like a VHS video tape of the video, please email AEMVideo@alamo-group.com or Fax AEM VHS Video at (830) 372-9529 or mail in a completed copy of the form on the back of this page to AEM VHS Video 1502 E Walnut Street, Seguin, TX 78155. and request the VHS video version. Please include your name, mailing address, mower model and serial number.

Every operator should be trained for each piece of equipment (Tractor and Mower), Understand the intended use, and the potential hazards before operating the equipment.

The information and material listed above along with this Operator's Manual can assist you in meeting the OSHA requirement for Operator annual training.

OSHA TRAINING REQUIREMENTS

The following training requirements have been taken from Title 29, Code of Federal Regulations Part 1928.57 (a)(6). www.osha.gov

Operator Instructions. At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee who operates an agricultural tractor or implement in the safe operating practices and servicing of equipment with which they are or will be involved, and of any other practices dictated by the work environment.

**Alamo Industrial Division is willing to provide
one (1) AEM Mower Safety Practices Video**

Please Send Me: ☐ VHS Format – AEM/FEMA Mower Operator Safety Video
☐ DVD Format – AEM/FEMA Mower Operator Safety Video
☐ Mower Operator's Manual
☐ AEM Mower Operator's Safety Manual

Requester Name: _____ Phone: _____

Requester Address: _____

City: _____

State : _____

Zip Code: _____

Mower Model: _____ Serial Number: _____

Date Purchased: _____ Dealer Salesperson: _____

Dealership Name: _____ Dealership Location: _____

Mail to:

AEM Video Services

1502 E. Walnut Street

Seguin, TX 78155

Or Fax to:

(830) 372-9529

Or Email to:

AEMVideo@alamo-group.com

To the Owner/Operator/Dealer

This Operator's Manual is an integral part of the safe operation of this machine and must be maintained with the implement at all times. A Manual canister is provided on the implement where this manual can be properly stored. If you lose or damage this manual a free replacement manual can be obtained from an authorized *Alamo Industrial* dealer or by down loading the manual from the *Alamo Industrial* website www.alamo-industrial.com

BEFORE YOU START!! READ, UNDERSTAND, and FOLLOW the information provided in this manual, the AEM Mower Safety manual and the tractor operator's manual carefully to learn how to operate and service your machine properly. Failure to do so could result in personal injury to you and bystanders. All implements with moving parts are potentially hazardous. Every effort has been made to ensure that the machine is safe but operators must avoid engaging in unsafe practices and follow the written instructions provided. The manufacturer has designed this implement to be used with all its safety equipment properly attached to minimize the chance of accidents.

SAFETY FIRST. Completely read and understand the safety section of this manual before operating this equipment. Do not allow anyone to operate this equipment who has not fully read and understood this manual. Contact your Dealer to explain any instructions that you do not fully understand.

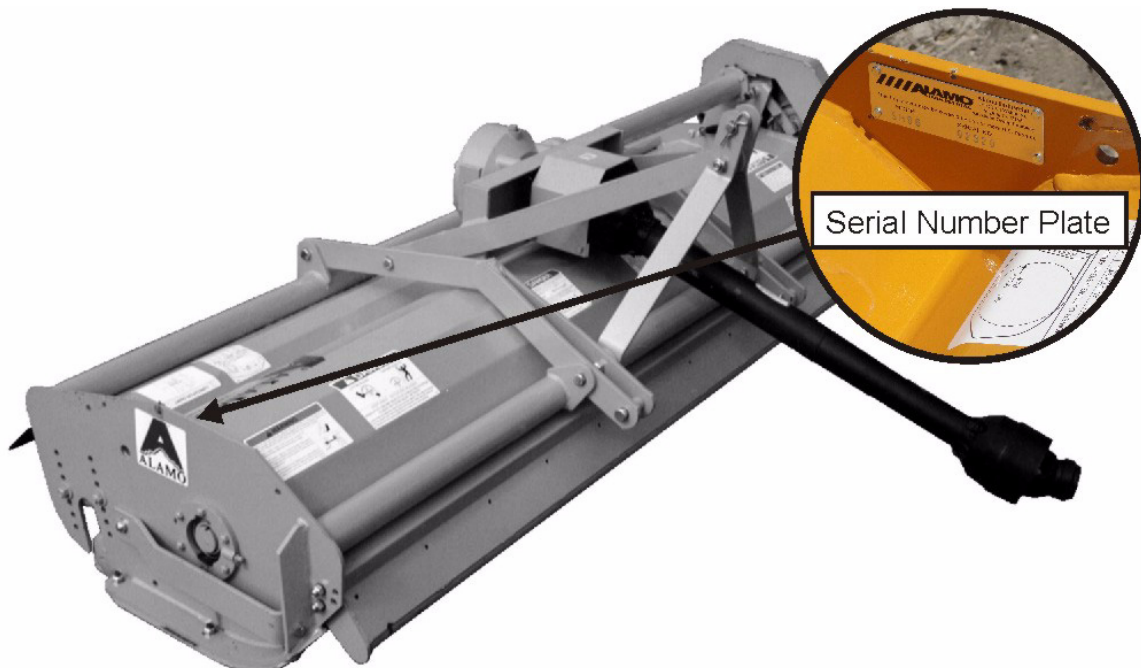
The care you give your *Alamo Industrial* Implement will greatly determine your satisfaction with its performance and its service life. Carefully read and follow the instructions in this manual to provide you with a thorough understanding of your new implement and its intended use and service requirements.

All references made in this manual to right, left, front, rear, top or bottom are as viewed facing the direction of forward travel with the implement properly attached to the tractor.

Replacement Parts information is located in a separate Parts Manual. *Alamo Industrial* mowers use balanced and matched system components for blade carriers, blades, cuttershafts, knives, knife hangers, rollers, drivetrain components, and bearings. These parts are made and tested to *Alamo Industrial* specifications. Non-genuine "will fit" parts do not consistently meet these specifications. The use of "will fit" parts may reduce mower performance, void warranties, and present a safety hazard. Use genuine *Alamo Industrial* mower parts for economy and safety.

For future reference, record your *Alamo Industrial* product model number and serial number.

Dealer		Telephone		Model Number	
Owner		Purchase Date:		Serial Number	



DEALER to CUSTOMER Pre-Delivery/ Operation Instructions

Dealer should inform the Purchaser of this product of Warranty terms, provisions, and procedures that are applicable. Dealer should inform Purchaser to review the contents of the Operator's Manual including safety equipment, safe operation and maintenance, to review the Safety Signs on the implement (and tractor if possible) and of Purchaser's responsibility to train his/her operators's of safe operation procedures.

- **IMPLEMENTS:** I have explained that Deflectors, Chain Guards, or Solid Skirts must be installed and maintained in good repair.
- **DRIVELINES:** I have made certain that all driveline, gearbox, and other shields are in good repair and fastened securely in place to prevent injuries from entanglement or thrown objects.
- **HYDRAULIC MACHINES:** I have explained the necessity of using clean hydraulic oil, changing filters as instructed, stopping leaks, damage caused by operating with over-heated oil, caring for hoses, using hoses of proper rating, maintaining the specified operating pressure and the potential hazard of oils penetrating the skin.
- **FOLDING-TYPE IMPLEMENTS:** I have explained that it is not possible to guard against thrown objects when the head is lifted off ground and that operator is responsible to watch out for persons in the area. I have explained that the lifted mower head or boom can contact overhead obstructions with damage to cables and telephone lines and possible injury. I have explained that the extended head or boom or retracted boom can contact power lines resulting in electrocution, injury or death and that operator is responsible for keeping clear of such hazards.

PRE-DELIVERY SERVICE

CHECK AND ADJUST OR LUBRICATE AS REQUIRED

See Operator's Manual for Details

Inspection Performed - Warranty and Safety Procedures Explained - Installation Complete

LUBRICATION & HYDRAULICS

- ☐ Gearbox (Oil Levels)
- ☐ Tractor Hydraulic Oil Level
- ☐ Hydraulic Hoses (Not Kinked Tighten Connections)

MOWER

- ☐ Spindle And Motor Bolts Properly Torqued
- ☐ Spindle Oil Level
- ☐ Blade Carrier Bolts Properly Torqued/Retaining Pin In Place
- ☐ Mower Cutting Height And Level Adjusted
- ☐ Cutting Shaft Bearings Lubricated
- ☐ All Hardware Properly Torqued
- ☐ Tire and Air Pressure/Lug Nuts (Correct Torque)
- ☐ Wheel Bearings (Check, Grease, and Preload)

ATTACHMENTS & INSTALLATION

- ☐ Deflectors Front And Rear
- ☐ Correct Blade Rotation Direction
- ☐ All Bolts - Pins And Nuts (Proper Torque)

MOWER TO TRACTOR CONNECTIONS

- ☐ Draw Bar Length (Check And Set)
- ☐ A-Frame Pivot & Links
- ☐ Cutting Height (Adjust)
- ☐ Mounting Hardware Properly Torqued

SAFETY ITEMS

- ☐ Protective Shields (Operation And Installation)
- ☐ Driveline Clutch (Torque Limiter) (Adjust And Run In)
- ☐ Safety Decals (Installed)
- ☐ Operator's Manual (Supplied)
- ☐ Tractor PTO Shield (Installed)
- ☐ S.M.V. Emblem (Installed If Needed)
- ☐ ADMA Driveline Safety Manual Supplied
- ☐ AEM Mower Safety Manual (Supplied in Canister)
- ☐ AEM Mower Safety Video has been shown to Purchaser

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SAFETY SECTION

Safety Section 1-1

SAFETY

GENERAL SAFETY INSTRUCTIONS AND PRACTICES

A careful operator is the best operator. Safety is of primary importance to the manufacturer and should be to the owner/operator. Most accidents can be avoided by being aware of your equipment, your surroundings, and observing certain precautions. The first section of this manual includes a list of Safety Messages that, if followed, will help protect the operator and bystanders from injury or death. Read and understand these Safety Messages before assembling, operating or servicing this Implement. This equipment should only be operated by those persons who have read the manual, who are responsible and trained, and who know how to do so responsibly.



The Safety Alert Symbol combined with a Signal Word, as seen below, is used throughout this manual and on decals which are attached to the equipment. The Safety Alert Symbol means: "ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!" The Symbol and Signal Word are intended to warn the owner/operator of impending hazards and the degree of possible injury faced when operating this equipment.

Practice all usual and customary safe working precautions and above all--- remember safety is up to YOU. Only YOU can prevent serious injury or death from unsafe practices.



Indicates an imminently hazardous situation that, if not avoided, WILL result in DEATH OR VERY SERIOUS INJURY.



Indicates an imminently hazardous situation that, if not avoided, COULD result in DEATH OR SERIOUS INJURY.



Indicates an imminently hazardous situation that, if not avoided, MAY result in MINOR INJURY.



Identifies special instructions or procedures that, if not strictly observed, could result in damage to, or destruction of the machine, attachments or the environment.

NOTE: *Identifies points of particular interest for more efficient and convenient operation or repair.*

READ, UNDERSTAND, and FOLLOW the following Safety Messages. Serious injury or death may occur unless care is taken to follow the warnings and instructions stated in this Manual and in the Safety Messages on the implement. Always follow the instruction in this manual and use good common sense to avoid hazards.



NOTE: *If you want a translation of this safety section in one of the following Languages, please contact: Translations at 1502 E. Walnut Street Seguin, TX 78155; Fax: (830) 372-9529; Safety Section Translations are available in Spanish, Portuguese, French, German, Russian. PN GS01*

SAFETY

OPERATOR SAFETY

				
Read and understand Operator's Manual	Always wear Safety Glasses	Wear Hard Hat Safety Shoes	Never use Drugs or Alcohol when operating equipment	Wear Safety Vest when operating on or near roads



TO AVOID SERIOUS INJURY OR DEATH DO THE FOLLOWING:

- **READ, UNDERSTAND and FOLLOW** Operator's Manual instructions, Warnings and Safety Messages.
- **WEAR SAFETY GLASSES**, safety shoes, hard hat, hearing protection and gloves when operating or repairing equipment
- **WEAR** appropriate breathing respirator when operating in dusty conditions to avoid respiratory diseases.
- **DO NOT WEAR** loose clothing or jewelry to avoid rotating parts entanglement injury.
- **DO NOT USE DRUGS or ALCOHOL** before or while operating equipment.
- **DO NOT ALLOW** anyone to operate equipment under the influence of drug or alcohol.
- **CONSULT** medical professional for medication impairment side effects.
- **STAY ALERT**, prolonged operation can cause fatigue, **STOP** and **REST**.

GENERAL OPERATING SAFETY

VISIBILITY CONDITIONS WHEN MOWING:

- **OPERATE IN DAYLIGHT** or with lights that gives at least 100 yards clear visibility.
- **BE ABLE TO SEE** and identify passersby, steep slopes, ditches, drop-offs, overhead obstructions, power lines, debris and foreign objects.

GROUND SPEED WHEN MOWING:

- **NORMAL SPEED** range is between 2 to 5mph.
- **ADJUST MOWING SPEED** for terrain conditions and grass type, density and cut height.
- **REDUCE MOWING SPEED** when near steep slopes, ditches, drop-offs, overhead obstructions, power lines and to avoid debris and foreign objects.

INSECT INFESTATION

- Do Not operate in areas where bees or insects may attack unless you **WEAR PROTECTIVE CLOTHING** or use enclosed tractor cab.

PTO SPEED:

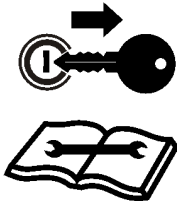
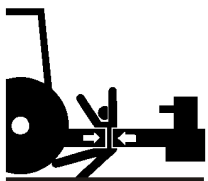
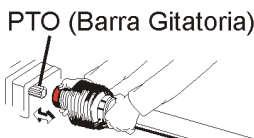
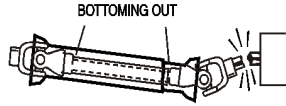
- **DO NOT EXCEED IMPLEMENT RATED PTO SPEED**
- **AVOID** exceeding rated PTO speeds that may result in broken drivelines or blade failures.

SAFETY SIGNS:

- **REPLACE** missing, damaged or unreadable safety signs immediately. PN 0501

SAFETY

CONNECTION OR DISCONNECTING IMPLEMENT SAFETY

			
<p>Stop Tractor Remove Key Read Manual</p>	<p>Crushing injury between tractor and implement</p>	<p>Make sure PTO shaft is securely attached to tractor</p>	<p>Make sure PTO shaft are proper length</p>



TO AVOID SERIOUS INJURY OR DEATH FROM BEING CRUSHED BY TRACTOR OR IMPLEMENT:

WHEN BACKING tractor to implement hitch:

- **DO NOT ALLOW BYSTANDERS** between tractor and implement

BEFORE connecting and disconnecting implement hitch:

- **STOP TRACTOR ENGINE**, place transmission into park, engage parking brake and remove key.

WHEN connecting and disconnecting implement hitch:

- **DO NOT** crawl or walk under raised mower

WHEN CONNECTING IMPLEMENT DRIVELINE:

TO AVOID implement driveline coming loose during operation:

- **LUBRICATE** yoke spring locking collar to ensure it freely slides on PTO shaft
- **SECURELY** seat yoke locking balls in PTO shaft groove.
- **PUSH** and **PULL DRIVELINE** on both the tractor and implement **PTO SHAFTS** to ensure it is **SECURELY ATTACHED**

TO AVOID broken driveline during operations:

- **CHECK** driveline for proper length between PTO shaft and implement gearbox shaft.
- Drivelines too short can pull apart or disengage.
- Drivelines too long can bottom out.
- Bottoming driveline telescoping assembly will stop sliding and become solid.
- Driveline bottoming can push through support bearings and break off PTO shaft.

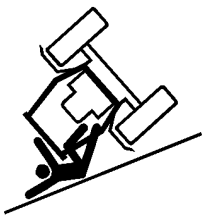
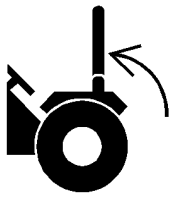

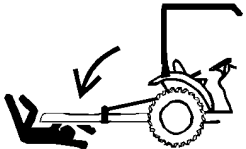
CONTACT DEALER if implement driveline does not match Tractor PTO shaft:

- **DO NOT USE PTO ADAPTER.**
Using a **PTO** adapter can cause:
 - Excessive vibration, thrown objects, blade and implement failures by doubling operating speed.
 - Increased working length exposing unshielded driveline areas and entanglement hazards.

DO NOT connect the Mower to a tractor with the PTO directly connected to the Tractor transmission. PN CDFM-01

SAFETY

CRUSHING HAZARDS

			
Crushing injury from roll over	Lock ROPS in up position	Always wear seatbelt	Crushing injury implement falling

⚠ DANGER

TO AVOID SERIOUS INJURY OR DEATH FROM FALLING OFF TRACTOR, EQUIPMENT RUN OVER, ROLLOVER AND CRUSHING BY FALLING WING OR IMPLEMENT:

- **USE ROPS** and **SEAT BELT** equipped tractors for mowing operations.
- **KEEP ROPS** lock in up position.
- **ALWAYS BUCKLE UP** seat belt when operating tractor and equipment.
- **ONLY OPERATE** tractor and equipment while seated in tractor seat.

WHEN RAISING OR LOWERING IMPLEMENT:

- Raise or lower **ONLY WHILE SEATED** in tractor seat with seat belt buckled.
- Raise or lower **ONLY** when implement tongue is securely attached to tractor drawbar TO AVOID implement tip over.
- **KEEP BYSTANDERS CLEAR** of area TO AVOID crushing.

LIFTED Equipment can fall from mechanical or hydraulic failure or inadvertent Control Lever movement.

⚠ WARNING

TO AVOID EQUIPMENT FALLING while working near or under lifted wings, components and implements raised by 3-Pointed tractor hitch:

- **SECURELY SUPPORT** or block up raised equipment and components.
- **BLOCK UP** and securely support equipment before putting hands, feet or body under raised equipment or lifted components.

WHEN PARKING Implement and Tractor:

- **LOWER** implement, **LOCK** or **BLOCK** lifted parts before leaving equipment.
- **NEVER** leave implement unattended in a raised position.

⚠ WARNING

TO AVOID CHILDREN FALLING OFF OR BEING CRUSHED BY EQUIPMENT:

- **NEVER ALLOW** children to play on or around Tractor or Implement.




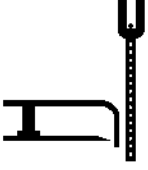
WHEN UNHITCHING IMPLEMENT:

- **LOWER** implement, **LOCK** or **BLOCK** lifted parts before leaving equipment. *PN CHFM-01*

SAFETY

SAFETY

THROWN OBJECT HAZARDS

			
Mower Thrown Objects Hazard	Raised Mower Thrown Objects	Inspect Area remove foreign objects	Do not let blades contact solid objects



ROTARY MOWERS CAN THROW OBJECTS 300 FEET OR MORE UNDER ADVERSE CONDITIONS.

TO AVOID SERIOUS INJURY OR DEATH TO OPERATOR OR BYSTANDERS FROM THROWN OBJECTS:

- KEEP bystanders 300 feet away

STOP MOWING IF PASSERSBY ARE WITHIN 300 FEET UNLESS:

- **ALL THROWN OBJECT SHIELDING** including, Front and Rear Deflectors, Steel Guards, Bands, Side Skirts and Skid Shoes in place and in good condition when mowing.
- Mower sections or wing are adjusted to be close and parallel to ground without exposing blades.
- **MOWING AREA** has been inspected and foreign materials and debris have been removed.
- **PASSERSBY** are inside enclosed vehicle.

INSPECT AREA FOR POTENTIAL THROWN OBJECTS BEFORE MOWING:

- **REMOVE** debris, rocks, wire, cable, metal objects and other foreign material from area. Wire, cable, rope, chains and metal objects can be thrown or swing outside deck with great velocity:
 1. **MARK** objects that cannot removed.
 2. **AVOID** these objects when mowing.

HIGH GRASS and WEED AREA INSPECTION:

- **INSPECT** for and **REMOVE** any hidden large debris.
- **MOW** at Intermediate height
- **INSPECT** and remove remaining debris
- **MOW** at final height.

MOWER THROWN OBJECT SHIELDING:


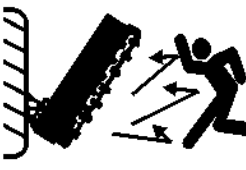

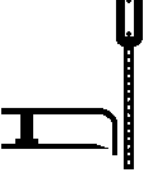
- **KEEP** all thrown object shielding including, Front and Rear Deflectors, Steel Guards, Bands, Side Skirts and Skid Shoes in place and in good condition when mowing.
- **DO NOT OPERATE** with any thrown object shielding missing, damaged or removed.

RIGHT OF WAY (Highway) MOWING

- No shielding is 100% effective in preventing thrown objects. To Reduce Possibility of Injury:
 1. **MAINTAIN MOWER SHIELDING**, side skirts, skid shoes, and blades in good operational condition,
 2. **RAISE CUTTING HEIGHT** to **6 INCHES** minimum,
 3. **INSPECT AREA** thoroughly before mowing to **REMOVE** potential **THROWN OBJECT HAZARDS**,
 4. **NEVER ALLOW BLADES to CONTACT SOLID OBJECTS** like wire, rocks, post, curbs, guardrails, or ground while mowing. *PN TOFM-01*

SAFETY

THROWN OBJECTS HAZARDS (CONTINUED)

			
Mower Thrown Objects Hazard	Raised Mower Thrown Objects	Inspect Area remove foreign objects	Do not let blades contact solid objects

MOWER OPERATION:

- **DO NOT** exceed mower's rated Cutting Capacity or cut non-vegetative material.
- **USE ENCLOSED TRACTOR CABS** when two or more mowers are operating in mowing area.
- **ADJUST** mower sections or wing close and parallel to ground without exposing blades
- **ADJUST** cutting **HEIGHT** to **AVOID BLADE CONTACT** with solid objects like wire, rocks, posts, curbs, guard rails and fixed obstructions.
- **DO NOT** operate mower when mower is raised or in transport position
- **STOP MOWING** immediately if blades strike heavy objects, fixed structures, metal guard rails and concrete structures:
 1. **BLADES CAN FAIL** from impact and objects can be thrown with great velocity.
 2. **INSPECT** and **REPLACE** any damaged blades.
 3. **CHECK** blade carrier balance and **REPLACE** if damaged.
- **DO NOT** mow in standing water **TO AVOID** possible **BLADE FAILURE**.
- **AVOID MOWING** in reverse:
 1. **STOP PTO** and back up mower.
 2. **LOWER** mower, engage **PTO** and mow forward.
- **STOP PTO** and **BLADES** when raising the mower to transport position.
- **DO NOT ENGAGE PTO** with mower in transport position.
- **STOP** mowing when **EXCESSIVE VIBRATION** occurs:
 1. **STOP PTO** and tractor **ENGINE**.
 2. **INSPECT** mower for vibration source
 3. **REPLACE** any damage parts and bent or damaged **BLADES**. *PN TOFM-02*

SAFETY

RUN OVER HAZARDS

		
Operator run over hazard	Rider fall off run over hazard	Rider fall off run over hazard



TO AVOID SERIOUS INJURY OR DEATH FROM FALLING OFF TRACTOR OR EQUIPMENT RUN OVER:


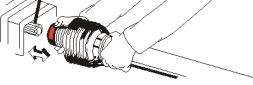
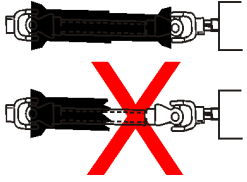
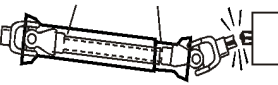
- **USE ROPS** and **SEAT BELT** equipped tractors for mowing operations.
- **KEEP ROPS** locked in **UP** position.
- **ONLY** start tractor while seated in tractor seat.
- **ALWAYS BUCKLE UP** seat belt when operating tractor and equipment.
- **ONLY OPERATE** tractor and equipment while seated in tractor seat.
- **NEVER ALLOW RIDERS** on tractor or implement.

WHEN MOUNTING AND DISMOUNTING TRACTOR:

- **ONLY** mount or dismount when tractor and moving parts are stopped.
- **STOP ENGINE AND PTO**, engage parking brake, lower implement, allow all moving parts to stop and remove key before dismounting from tractor. *PN R001*

SAFETY

PTO ENTANGLEMENT HAZARDS

			
Entanglement hazard Do Not approach or touch a rotating PTO driveshaft	Make sure PTO shaft is securely attached Do Not Use PTO Adapter	DO NOT Operate if PTO shields are damaged or missing	Make sure PTO shafts are proper length



KEEP AWAY FROM ROTATING DRIVELINES AND ELEMENTS TO AVOID SERIOUS INJURY OR DEATH:

STAY AWAY and **KEEP** hands, feet and body **AWAY** from rotating blades, drivelines and parts until all moving elements have stopped.

- **STOP, LOOK and LISTEN** before approaching the mower to make sure all rotating motion has stopped.
- **ROTATING COMPONENTS CONTINUE to ROTATE** after the PTO is shut off.

PTO SHIELDING:

TO AVOID SERIOUS INJURY OR DEATH FROM ENTANGLEMENT WHEN OPERATING IMPLEMENT:

- **KEEP PTO** shields, integral driveline shields and input shields installed
- **DO NOT OPERATE** mower without shields and guards in place or missing
- **REPAIR OR REPLACE** if damage, broken or missing
- **ALWAYS REPLACE GUARDS** that have been removed for service or maintenance.
- Do Not use PTO or PTO guard as a step.

TO AVOID broken driveline during operations:

- **CHECK** driveline for proper length between PTO shaft and implement gearbox shaft. *(Refer to Instructions in Operation Section)*
- Drivelines too short can pull apart or disengage.
- Drivelines too long can bottom out.
Bottoming driveline telescoping assembly will stop sliding and become solid.
- Driveline bottoming can push through support bearings and break off PTO shaft
- **AVOID** sharp turns or lift mower to heights to cause driveline "knocking".
- Lubricate driveshaft-telescoping components weekly.

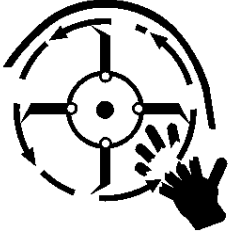
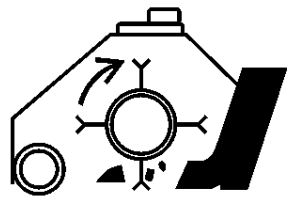
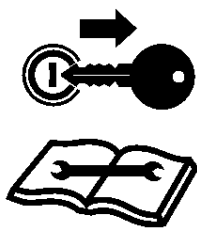
CONTACT DEALER if implement driveline does not match Tractor PTO shaft:

- **DO NOT USE PTO ADAPTER.**

Using a PTO adapter can cause excessive vibration, thrown objects, blade and implement failures by doubling operating speed. Increased working length exposing unshielded driveline areas. **PN PE01**

SAFETY

MOWER BLADE CONTACT HAZARDS




		
Do not put fingers underneath mower	Do not put foot underneath mower	Stop Tractor Remove Key Read Manual

⚠ DANGER

KEEP AWAY FROM ROTATING BLADES TO AVOID SERIOUS INJURY OR DEATH FROM BLADE CONTACT:

- **STAY AWAY** and **KEEP HANDS, FEET** and **BODY AWAY** from rotating blades, drivelines and parts until all moving elements have stopped.
- **DO NOT** put hands or feet under mower decks
- **STOP** rotating **BLADES** disengage PTO and wait for blade to stop rotating before raising mower deck or wings
- **STOP LOOK** and **LISTEN** before approaching the mower to make sure all rotating motion has stopped. **PN MBFM-01**

HIGH PRESSURE OILLEAK HAZARDS

		
High pressure oil penetrating skin	High pressure oil eroding skin	Using cardboard to check for oil leaks

⚠ DANGER

TO AVOID SERIOUS INJURY OR DEATH FROM HIGH PRESSURE HYDRAULIC OIL LEAKS PENERATING SKIN:

- **DO NOT OPERATE** equipment with oil or fuel leaks.
- **KEEP** all hydraulic hoses, lines and connections in **GOOD CONDITION** and **TIGHT** before applying system pressure.
- **RELIEVE HYDRAULIC PRESSURE** before disconnecting lines or working on the system.
- **REMOVE** and replace hose if you suspect it leaks. Have dealer test it for leaks.

HIGH PRESSURE FLUID LEAKS CAN BE INVISIBLE.

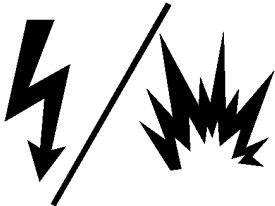

WHEN CHECKING FOR HYDRAULIC LEAKS AND WORKING AROUND HYDRAULIC SYSTEMS:

- **ALWAYS WEAR** safety glasses and impenetrable gloves.
- **USE** paper or cardboard to search for leaks.
- **DO NOT USE** hands or body parts to search for leak.
- **KEEP** hands and body **AWAY** from pin holes and nozzles ejecting hydraulic fluid.
- Hydraulic fluid may cause gangrene if not surgically removed immediately by a doctor familiar with this form of injury.

PN HP01

SAFETY

ELECTRICAL & FIRE HAZARDS

	
Strike and explosion Hazard Blades Contacting Utility or Gas Lines	Do not operate near fires. Keep mower deck clear of debris



TO AVOID SERIOUS INJURY OR DEATH FROM ELECTRICAL CONTACT WHEN WORKING AROUND ELECTRICAL POWER LINES, GAS LINES AND UTILITY LINES:

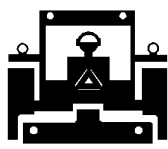


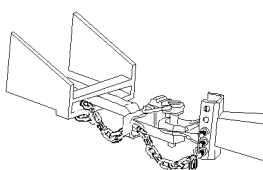

- **INSPECT** mowing area for overhead or underground electrical power lines, obstructions, gas lines, cables and Utility, Municipal, or other type structure.
- **DO NOT** allow mower to contact with any Utility, Municipal, or type of structures and obstructions.
- **CALL 811** and 1-800-258-0808 for identify buried utility lines.

FIRE PREVENTION GUIDELINES while Operating, Servicing, and Repairing Mower and Tractor to reduce equipment and grass fire Risk:

- **EQUIP** Tractor with a **FIRE EXTINGUISHER**
- **DO NOT OPERATE** mower on a tractor equipped with under frame exhaust
- **DO NOT SMOKE** or have open flame near Mower or Tractor
- **DO NOT DRIVE** into burning debris or freshly burnt area
- **AVOID FIRE IGNITION** by not allowing mower blade to contact solid objects like metal or rock.
- **ADJUST SLIP CLUTCHES** to avoid excessive slippage and clutch plate heating.
- **CLEAR** any grass clippings or debris buildup around mower drivelines, slip clutches, and gearboxes.
- **SHUT OFF ENGINE** while refueling. *PN EF02*

SAFETY

TRANSPORTING HAZARDS

				
Use SMV signs and Flashing Lights	Loss of Control Stopping Hazard	Loss of Control Speeding Hazard	Use Safety Tow Chain - Tractor to Implement	Engage Transport Locks

WARNING

TO AVOID SERIOUS INJURY AND DEATH WHEN TOWING OR TRANSPORTING EQUIPMENT:

- **KEEP** transport speed **BELOW 20 mph** to maintain control of equipment.
- **REDUCE SPEED** on inclines, on turns and in poor towing conditions.
- **DO NOT TOW** with trucks or other vehicles
- **USE** only properly sized and equipped tractor for towing equipment.
- **FOLLOW** all local traffic regulations.

TRACTOR REQUIREMENTS FOR TOWING OR TRANSPORTING IMPLEMENTS:

- **ONLY TRANSPORT** with tractor with **ROPS** in the raised position.
- **USE** properly sized and equipped tractor that exceeds implement weight by at least 20%
- **KEEP 20%** of tractor weight on front wheels to maintain safe steering.

BEFORE TRANSPORTING OR TOWING IMPLEMENT:

TRACTOR INSPECTION:

- **CHECK** steering and braking for proper operation and in good condition.
- **CHECK SMV** sign, reflectors and warning lights for proper operation and visibility behind unit.
- **CHECK** that your driving vision is not impaired by tractor, cab, or implement while seated in tractor seat.
- **ADJUST** your operating position, mirrors, and implement transport for clear vision for traveling and traffic conditions.

PREPARE IMPLEMENT FOR TRANSPORTING OR TOWING:

- **DISENGAGE PTO**
- **RAISE MOWER**
- **REMOVE** any cut material collected on mower deck.

TOWED MOWERS - ENGAGE TRANSPORT LOCKS AND SAFETY CHAINS:

- **INSTALL** center axle cylinder transport stops or pins
- **ATTACH** implement **SAFETY CHAIN** to tractor

DETERMINE STOPPING CHARACTERISTICS OF TRACTOR AND IMPLEMENT FOR TRANSPORTING OR TOWING:

BRAKING TESTS:

- **APPLY** brakes at increasing speeds
- Observe **STOPPING** distances increases with increased speeds.
- **DETERMINE** the maximum safe transport speed that does not exceed 20 mph

DETERMINE MAXIMUM TURNING SPEED BEFORE OPERATING ON ROADS OR UNEVEN GROUND:

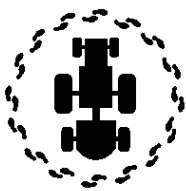
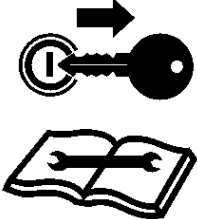
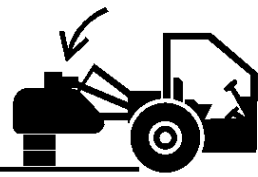


- **TEST** equipment in slowly increasing speed in turns to determine it can be operated at higher speeds.
- **USE REDUCED** turning speeds in sharp turns to avoid equipment turning over.

WHEN TOWING OR TRANSPORTING EQUIPMENT:

- Always **WEAR SEAT BELT** when operating or transporting mower.
- **USE** low speeds to avoid overturn with raised wings.
- **USE** low speeds and gradual steering on curves, hills, rough or uneven surfaces and on wet roads
- **TURN ON** tractor **FLASHING WARNING LIGHTS**.
- **ALLOW** clearance for implement swing while turning. **PN TH02**

SAFETY

HAZARDS WITH MAINTENANCE OF IMPLEMENT

				
Periodically inspect all moving parts, lubricate drivelines, and tighten all fasteners	Stop engine remove key before conducting maintenance	Block up implement before servicing Use large blocks on soft or wet soil	Engage cylinder transport locks	Inspect Blades for damage or cracks

WARNING AVOID SERIOUS INJURY OR DEATH FROM COMPONENT FAILURE BY KEEPING IMPLEMENT IN GOOD OPERATING CONDITION IN PERFORMING PROPER SERVICE, REPAIRS AND MAINTENANCE.

BEFORE PERFORMING SERVICE, REPAIRS AND MAINTENANCE ON THE IMPLEMENT:

- **STOP ENGINE AND PTO**, engage parking brake, lower implement, allow all moving parts to stop and remove key before dismounting from tractor.
- **PLACE** implement on ground or securely block up raised equipment. Use large blocks on soft or wet soil.
- **PUSH and PULL** Remote Hydraulic Cylinder lever to relieve hydraulic pressure.
- **DISCONNECT IMPLEMENT** driveline from tractor **PTO SHAFT**.

WEAR SAFETY GLASSES, PROTECTIVE GLOVES and follow **SAFETY PROCEDURES** when performing service, repairs and maintenance on the implement:

- Always **WEAR** protective **GLOVES** when handling blades, knives, cutting edges or worn component with sharp edges.
- Always **WEAR GLOVES** and **SAFETY GLASSES** when servicing hot components
- **AVOID CONTACT** with hot hydraulic oil tanks, pumps, motors, valves and hose connection surfaces.
- **SECURELY** support or **BLOCK UP** raised implement, framework and lifted components before working underneath equipment.
- **STOP** any implement movements and **SHUT-OFF TRACTOR** engine before doing any work procedures.
- **USE** ladder or raised stands to reach high equipment areas inaccessible from ground.
- **ENSURE** good footing by standing on solid flat surfaces when getting on implement to perform work.
- **FOLLOW** manufacturer's instructions in handling oils, solvents, cleansers, and other chemical agents.
- **DO NOT** change any factory-set hydraulic calibrations to avoid component or equipment failures.
- **DO NOT** modify or alter implement, functions or components.
- **DO NOT WELD** or repair rotating mower components. These may cause vibrations and component failures being thrown from mower.

PERFORM SERVICE, REPAIRS, LUBRICATION AND MAINTENANCE OUTLINED IN IMPLEMENT MAINTENANCE SECTION:

- **INSPECT** for loose fasteners, worn or broken parts, leaky or loose fittings, missing or broken cotter keys and washers on pins, and all moving parts for wear.
- **REPLACE** any worn or broken parts with authorized service parts.
- **LUBRICATE** unit as specified by lubrication schedule
- **NEVER** lubricate, adjust or remove material while it is running or in motion.
- **TORQUE** all bolts and nuts as specified.

BLADE INSPECTION:

- **REPLACE** bent, damage, cracked or broken blades immediately with new blades.
- **AVOID** blade failures and thrown broken blades. **DO NOT** straighten, weld, or weld hard-facing blades.

SAFETY SHIELDS, GUARDS AND SAFETY DEVICES INSPECTION:

- **KEEP** all Deflectors, Steel Guards, Gearbox Shields, and PTO integral shields, Bands, Side Skirts and Skid Shoes in place and in good condition.
- **REPLACE** any missing, broken or worn safety shields, guards and safety devices.
- Engine Exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.
- Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer, birth defects or other reproductive harm. **PN HMFM-01**

SAFETY

PARTS INFORMATION

PARTS INFORMATION

Alamo Industrial mowers use balanced and matched system components for blade carriers, blades, cuttershafts, knives, knife hangers, rollers, drivetrain components, and bearings. These parts are made and tested to Alamo Industrial specifications. Non-genuine "will fit" parts do not consistently meet these specifications. The use of "will fit" parts may reduce mower performance, void mower warranties, and present a safety hazard. Use genuine Alamo Industrial mower parts for economy and safety. (SPAM-1)

SEE YOUR ALAMO DEALER

Operator's & Parts Manuals



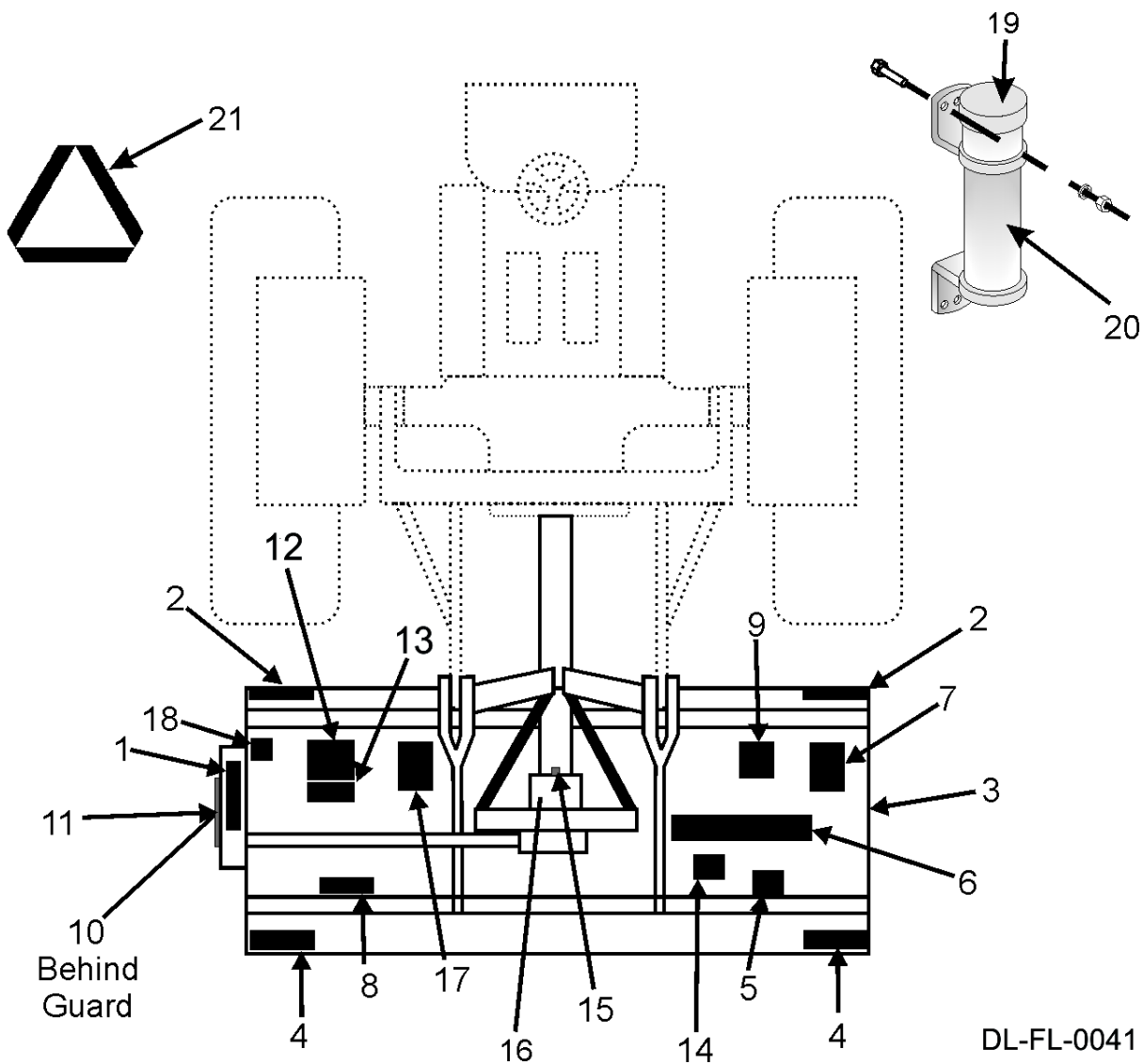
www.algqr.com/apm

SAFETY

SAFETY

Decal Location

NOTE: Alamo Industrial supplies safety decals on this product to promote safe operation. Damage to the decals may occur while in shipping, use, or reconditioning. Alamo Industrial cares about the safety of its customers, operators, and bystanders, and will replace the safety decals on this product in the field, free of charge (Some shipping and handling charges may apply). Contact your Alamo Industrial dealer to order replacement decals.



SAFETY

SAFETY

SAFETY

ITEM	PART NO.	QTY	LEVEL	DESCRIPTION
1.	D641	1	WARNING	Pinch Point Hazard
2.	1458393	2	REFLECTR	Yellow Reflector Decal
3.	02979546	1	LOGO	Alamo Industrial 2"x13-9/16"
4.	1458392	2	REFLECTR	Red Reflector Decal
5.	002023	1	INSTRUCT	Height Adjustment
6.	001651	1	LOGO	Alamo Industrial 4-5/8"x16-5/8"
7.	D816	1	WARNING	Use Alamo Industrial Genuine Parts
8.	D626	1	DANGER	Thrown Object Hazard
9.	000108	1	INSTRUCT	Operating Instructions
10.	D646	1	DANGER	Guard Missing
11.	001650	1	LOGO	Alamo Industrial
12.	D687	1	DANGER	Multi-Hazard Decal
13.	D831	1	DANGER	Multi-Hazard Decal
14.	D708	1	WARNING	Avoid Equipment Fire
15.	D726	1	INSTRUCT	Grease Fitting
16.	D546	1	DANGER	Guard Missing
17.	D547	1	DANGER	Driveline Hazard
18.	D700	1	INSTRUCT	Lube Chart Rear Flail
19.	00776031	1	-----	Canister (Operator's Manual)
20.	803213C	1	-----	Operators Manual
21.	03200347	1	REFLECT	SMV

SAFETY

Decal Description



SAFETY

SAFETY

WARNING

**Non-genuine parts can fail catastrophically.
TO AVOID SERIOUS INJURY OR DEATH:**

- ONLY use genuine ALAMO INDUSTRIAL replacement parts.
- Non-genuine parts can fail creating hazardous conditions for operator and bystanders.



Contact local dealer or ALAMO INDUSTRIAL about repair parts

at: www.algqr.com/apm
1502 E. Walnut, Seguin, TX 78155.
Customer Service: 800-882-5762.
Email: support@alamo-industrial.com

IMPORTANT

**BE AWARE
BE ALERT
BE ALIVE**

BE TRAINED

Before Operating this Mower



To prevent serious injury to yourself and/or bystanders, be trained in Safe Mowing Practices. Alamo Group Companies as well as AEM and FEMA provide training material that is critical for your Safety and the Safety of others when operating this equipment.

Make these Safety Procedures an important part of every workday. Read and understand the Operator's Manual. Do not let untrained individuals operate this equipment. Contact your Dealer, AEM (www.aem.org), FEMA (314-878-2304, www.FarmEquip.org), or Alamo Group (www.Alamo-Group.com) for information on training material or courses that provide training in Safer Operating Practices for Mowers.


www.algqr.com/ave

D816

SAFETY

⚠ DANGER





D687_1

THROWN OBJECTS HAZARD

Mower can throw objects up to 300 feet. TO AVOID SERIOUS INJURY OR DEATH to operator or bystanders:

- STOP mowing if bystanders or traffic come within 300 feet.
- DO NOT OPERATE with thrown object shielding removed.
- KEEP thrown object shielding in place and in good condition during operation. Thrown Objects shielding is subject to wear.
- REPAIR OR REPLACE shielding if damaged, broken or missing. See Operator's Manual for all Shields and Guards.
- INSPECT area for potential mower thrown object hazards before mowing.
- Remove and AVOID objects such as wire, cable, metal objects and all other foreign material.
- DO NOT ALLOW blades to contact solid objects like wire, rocks, posts, curbs or guard rails.
- DO NOT OPERATE in transport position or with wings off ground.

⚠ DANGER






Run Over Hazard - Injury or Death

TO AVOID SERIOUS INJURY OR DEATH:

- ALWAYS BUCKLE UP seat belt.
- ONLY START Tractor while seated in the operator's seat.
- STOP ENGINE and PTO, engage parking brake, lower implement, allow all moving parts to stop and remove key before dismounting from tractor.
- KNOW HOW to stop tractor and equipment quickly for an emergency.
- DO NOT MOUNT or DISMOUNT Tractor in motion.
- NEVER ALLOW riders on tractor or implement.
- NEVER ALLOW children to operate or ride on tractor or implement.
- KEEP BYSTANDERS CLEAR of area before moving tractor or implement.
- KEEP ALERT and AVOID hitting stumps, holes, ruts, and uneven terrain.
- AVOID tree limbs, brush and other overhanging objects that can strike and throw the operator from seat.

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SAFETY

SAFETY

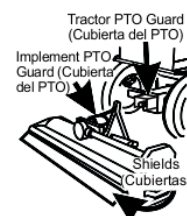
DANGER

ENTANGLEMENT HAZARD

TO AVOID SERIOUS INJURY OR DEATH:

- DO NOT operate without guards in place and in good condition. PTO and gearbox guarding are SUBJECT TO WEAR.
- STAY AWAY and KEEP hands, feet and body AWAY from rotating blades, drivelines and parts that continue to move after power shut-off. WAIT until all moving elements have stopped.
- ALWAYS REPLACE GUARDS that have been removed for service or maintenance.
- STOP, LOOK and LISTEN for rotating motion before approaching implement.
- DO NOT STEP ON drivelines or guards.

D687_2



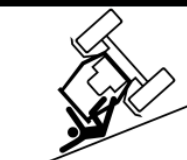
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Crushing Hazard - Injury or Death

TO AVOID SERIOUS INJURY OR DEATH:

D687_3

- USE tractor equipped with Rollover Protective Structure ("ROPS") including roll bar and seat belt. Keep roll bar in raised position.
- STAND CLEAR when removing transport latch, lowering or raising wings.
- CLEAR AREA of bystanders before lowering implement wings.
- IMPLEMENT CAN FALL from hydraulic failure or accidental operation of controls.
- BLOCK UP and securely support equipment before putting hands, feet or body under raised equipment or lifted components.



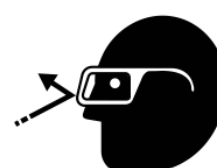
DANGER



D687_5



www.algqr.com/afe



TO AVOID SERIOUS INJURY OR DEATH:

D687

- READ AND UNDERSTAND the provided Operator's Manuals, safety signs and information decals for tractor and implement before operating equipment.
- CONTACT DEALER immediately if you do not have manuals.
- CONTACT DEALER to explain any instructions not fully understood.
- ALWAYS WEAR safety glasses.
- WEAR hard hat, safety shoes and gloves for protection when operating equipment.

SAFETY

SAFETY

 PELIGRO	 DANGER
<p>Si no puede leer inglés: antes de poner en funcionamiento este equipo, solicite que alguien le traduzca los mensajes de seguridad o vaya al sitio web para consultar los mensajes de seguridad y las etiquetas ya traducidos.</p>	<p>Si vous ne savez pas lire le français: avant d'utiliser l'équipement, demandez à une personne de vous traduire les messages de sécurité ou allez sur le site Internet pour voir la traduction des autocollants et des messages de sécurité.</p>
<p>El Manual del Operador Seguridad vídeo</p> <div data-bbox="293 779 483 915">  </div> <div data-bbox="513 764 862 926">  </div> <p>www.algqr.com/afs www.algqr.com/avs</p>	<p>Manuel de l'Opérateur</p> <div data-bbox="919 779 1109 915">  </div> <div data-bbox="1138 764 1308 926">  </div> <p>www.algqr.com/aff</p>

 PERIGO	 GEFAHR
<p>Caso você não leia inglês: antes de operar o equipamento, peça para alguém traduzir as mensagens de segurança ou visite a web e obtenha tais mensagens ou os decalques traduzidos.</p>	<p>Falls Sie Deutsch nicht lesen können: Lassen Sie sich, bevor Sie das Gerät in Betrieb nehmen, die Sicherheitshinweise von einer geeigneten Person in Ihre Sprache übersetzen. Oder suchen Sie auf unserer Website nach Übersetzungen von Schilderaufschriften und Sicherheitshinweisen.</p>
<p>Manual do Operador</p> <div data-bbox="331 1509 521 1646">  </div> <div data-bbox="553 1495 716 1656">  </div> <p>www.algqr.com/afp</p>	<p>Benutzerhandbuch</p> <div data-bbox="810 1509 1000 1646">  </div> <div data-bbox="1053 1495 1216 1656">  </div> <p>D831 www.algqr.com/afg</p>

SAFETY

SAFETY


⚠ WARNING

TO AVOID EQUIPMENT AND GRASS FIRES:

- CLEAR AWAY grass or debris from slip clutches, gearboxes, drivelines and decks.

TO AVOID FIRE IGNITION:

- DO NOT ALLOW BLADES TO CONTACT rocks, metal or solid objects.



D708

⚠ DANGER

D546



**GUARD MISSING
DO NOT OPERATE**

D546 B

SAFETY

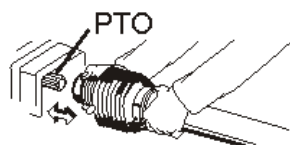
SAFETY

DANGER



TO AVOID SERIOUS INJURY OR DEATH FROM DRIVELINE CONTACT, DRIVELINE SEPARATION OR PTO STUB SHAFT FAILURE:

- STOP, LOOK and LISTEN for rotating motion before approaching implement.
- STAY AWAY and KEEP hands, feet and body AWAY from rotating parts until all moving elements have stopped.
- ALWAYS shut off PTO before dismounting.
- DO NOT operate if PTO shields are damaged or missing.
- PUSH AND PULL on yoke until collar clicks and locks yoke in place.
- CHECK driveline guards for free rotation and sufficient overlap to avoid unshielded areas.
- DO NOT USE PTO ADAPTER



WARNING

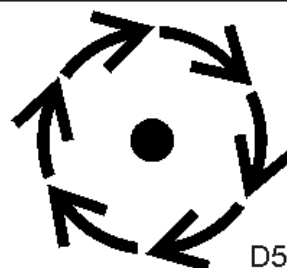
OPERATE THIS MACHINE AT

540 RPM

TRACTOR PTO SPEED ONLY.

Overspeeding PTO may cause component failure resulting in bodily injury.

TRACTOR PTO ROTATION: CLOCKWISE



D547

D547 B

SAFETY

SAFETY

Federal Laws and Regulations

This section is intended to explain in broad terms the concept and effect of federal laws and regulations concerning employer and employee equipment operators. This section is not intended as a legal interpretation of the law and should not be considered as such.

Employer-Employee Operator Regulations

U.S. Public Law 91-596 (The Williams-Steiger Occupational and Health Act of 1970) OSHA

This Act Seeks:

"...to assure so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources..."

DUTIES

Sec. 5 (a) Each employer-

- (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
- (2) shall comply with occupational safety and health standards promulgated under this Act.
- (b) Each employee shall comply with occupational safety and health standards and all rules, regulations and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA Training Requirements

Title 29, Code of Federal Regulations Part 1928.57(a)(6). www.osha.gov

Operator instructions. At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee who operates an agricultural tractor and implements in the safe operating practices and servicing of equipment with which they are or will be involved, and of any other practices dictated by the work environment.

Keep all guards in place when the machine is in operation;

Permit no riders on equipment

Stop engine, disconnect the power source, and wait for all machine movement to stop before servicing, adjusting, cleaning or unclogging the equipment, except where the machine must be running to be properly serviced or maintained, in which case the employer shall instruct employees as to all steps and procedures which are necessary to safely service or maintain the equipment.

Make sure everyone is clear of machinery before starting the engine, engaging power, or operating the machine.

Employer Responsibilities:

To ensure employee safety during Tractor and Implement operation, it is the employer's responsibility to:

1. Train the employee in the proper and safe operation of the Tractor and Implement.
2. Require that the employee read and fully understand the Tractor and Implement Operator's manual.
3. Permit only qualified and properly trained employees to operate the Tractor and Implement.
4. Maintain the Tractor and Implement in a safe operational condition and maintain all shields and guards on the equipment.
5. Ensure the Tractor is equipped with a functional ROPS and seat belt and require that the employee operator securely fasten the safety belt and operate with the ROPS in the raised position at all times.
6. Forbid the employee operator to carry additional riders on the Tractor or Implement.
7. Provide the required tools to maintain the Tractor and Implement in a good safe working condition and provide the necessary support devices to secure the equipment safely while performing repairs and service.
8. Require that the employee operator stop operation if bystanders or passersby come within 300 feet.

Child Labor Under 16 Years of Age

Some regulations specify that no one under the age of 16 may operate power machinery. It is your responsibility to know what these regulations are in your own area or situation. (Refer to U.S. Dept. of Labor, Employment Standard Administration, Wage & Home Division, Child Labor Bulletin #102.)

INTRODUCTION SECTION

Introduction Section 2-1

INTRODUCTION

INTRODUCTION

We are pleased to have you as a Alamo Industrial customer. Your Flail Cutter has been carefully designed with care and built with quality materials by skilled workers to give maximum service with minimum down time. This manual is provided to give you the necessary operating and maintenance instructions for keeping your flail cutter in top operation condition. Careful use and timely service saves extensive repairs and costly downtime losses. Please read this manual thoroughly. Understand what each control is for and how to use it.

Alamo Industrial offers shielding to protect the operator, passerby, livestock, and property from thrown objects such as defectors. No shielding is 100% effective in preventing thrown objects. The possibility of injury and property damage from this hazard can be substantially reduced by selecting proper shielding, maintaining the mower and shielding in good operational condition, inspecting the area for foreign debris before mowing, operating the mower at a minimum cutting height of 2", and keeping unprotected persons at a minimum distance of 300 feet from the mower at all times during operation.

Safety is of primary importance to the owner/operator and to the manufacturer. The first section of this manual includes a list of Safety Messages, that, if followed, will help protect the operator and bystanders from injury or death. Many of the Safety Messages will be repeated throughout the manual. The owner/operator/dealer should know these Safety Messages before assembly and be aware of the hazards of operating this mower during assembly, use, and maintenance. The Safety Alert Symbol combined with a Signal Word, as seen below, is intended to warn the owner/operator of impending hazards and the degree of possible injury faced when operating this machine.



Indicates an imminently hazardous situation that, if not avoided, WILL result in DEATH OR VERY SERIOUS INJURY.



Indicates an imminently hazardous situation that, if not avoided, COULD result in DEATH OR SERIOUS INJURY.



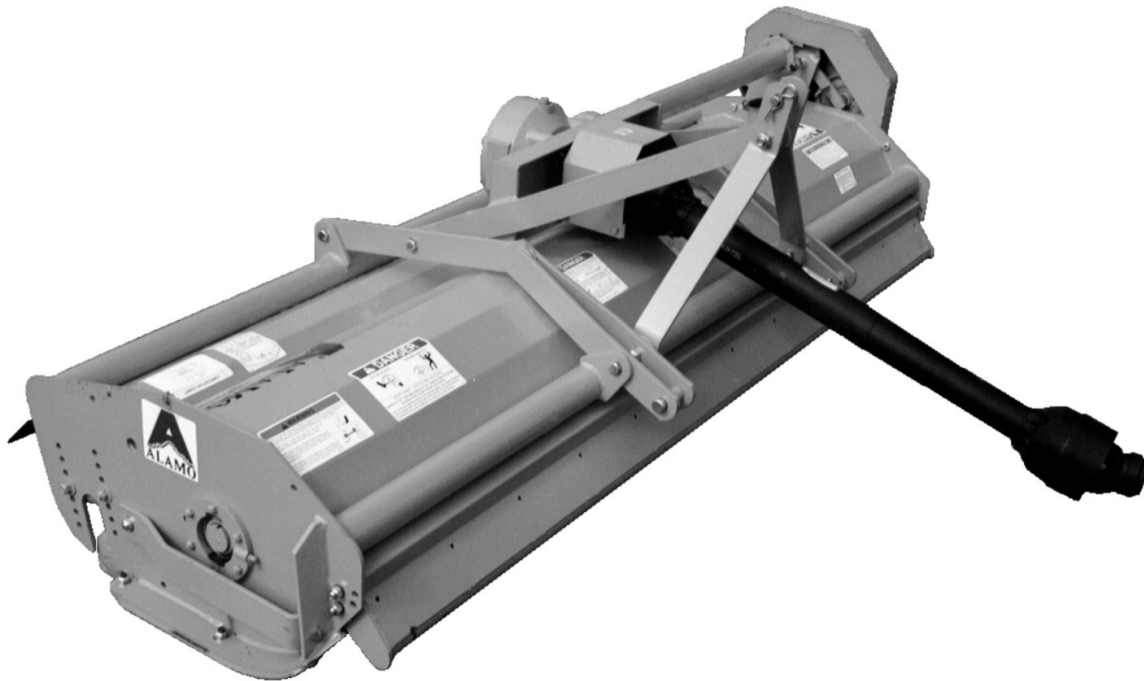
Indicates an imminently hazardous situation that, if not avoided, MAY result in MINOR INJURY.



Identifies special instructions or procedures that, if not strictly observed, could result in damage to, or destruction of the machine, attachments or the environment.

INTRODUCTION

INTRODUCTION



FCP-FL-0002

The Super Heavy Duty Flail is made from the proven, time-tested design of Alamo Industrial, offering you a manicured look with substantial safety. It is the ideal machine not only for roadside use, but also for parks, playgrounds, school grounds, and even golf courses.

Strong top decks make with 10-gauge steel and end plates that are 1/2" thick for the inboard and 5/16" thick steel for the outboard.

- Convenient Mount---3pt. hitch that mounts to 36 HP or greater tractors.
- Sharp appearance---Leaves a manicured cut appearance.
- Knife Options---An array of cutting knife options allows you to tailor the finished appearance to meet your needs.
- Available Cutting Widths -62", 74", 88" and 96"
- Cutting Capacity: 1" Diameter grass and weeds
- Tractor Requirement - 25-50 PTO HP

Literature Page



www.algqr.com/ale

Knife Variety - An array of cutting knife options allows you to tailor the finished appearance to meet your needs.

Cutting Widths: SHD 62", 74", 88" and 96"

Warranty: One year parts and labor. Non-governmental users subject to a modified policy. Only genuine Alamo Industrial OEM parts may be used for warranty replacement.

INTRODUCTION

INTRODUCTION

Attention Owner/Operator

BEFORE OPERATING THIS MACHINE:

1. Carefully read the Operator's Manual, completely understand the Safety Messages and instructions, and know how to operate correctly both the tractor and implement.
2. Fill out the Warranty Card in full. Be sure to answer all questions, including the Serial Number of the implement. Mail within 30 days of delivery date of this implement.

NOTE: Warranties are honored only if completed "Owner Registration and Warranty" forms are received by Alamo Industrial within thirty days of delivery of the implement.

3. Record the Model and Serial Numbers on the Warranty page at the front of the Operator's Manual. Keep this as part of the permanent maintenance file for the implement.

**WARNING**

**Non-genuine parts can fail catastrophically.
TO AVOID SERIOUS INJURY OR DEATH:**

- ONLY use genuine ALAMO INDUSTRIAL replacement parts.
- Non-genuine parts can fail creating hazardous conditions for operator and bystanders.

Contact local dealer or ALAMO INDUSTRIAL about repair parts at:
1502 E. Walnut, Seguin, TX 78155.
Customer Service: 800-882-5762.
Email: support@alamo-industrial.com



www.algqr.com/apm

IMPORTANT

**BE AWARE
BE ALERT
BE ALIVE**

**BE TRAINED
Before Operating this Mower**



To prevent serious injury to yourself and/or bystanders, be trained in Safe Mowing Practices. Alamo Group Companies as well as AEM and FEMA provide training material that is critical for your Safety and the Safety of others when operating this equipment. Make these Safety Procedures an important part of every workday. Read and understand the Operator's Manual. Do not let untrained individuals operate this equipment. Contact your Dealer, AEM (www.aem.org), FEMA (314-878-2304, www.FarmEquip.org), or Alamo Group (www.Alamo-Group.com) for information on training material or courses that provide training in Safer Operating Practices for Mowers.

www.algqr.com/ave

D816

INTRODUCTION

ALAMO-INDUSTRIAL LIMITED WARRANTY

1. LIMITED WARRANTIES

- 1.01. Alamo Industrial warrants for one year from the purchase date to the original non-commercial, governmental, or municipal purchaser ("Purchaser") and warrants for six months to the original commercial or industrial purchaser ("Purchaser") that the goods purchased are free from defects in material or workmanship.
- 1.02. Manufacturer will replace for the Purchaser any part or parts found, upon examination at one of its factories, to be defective under normal use and service due to defects in material or workmanship.
- 1.03. This limited warranty does not apply to any part of the goods which has been subjected to improper or abnormal use, negligence, alteration, modification, or accident, damaged due to lack of maintenance or use of wrong fuel, oil, or lubricants, or which has served its normal life. This limited warranty does not apply to any part of any internal combustion engine, or expendable items such as blades, shields, guards, or pneumatic tires except as specifically found in your Operator's Manual.
- 1.04. Except as provided herein, no employee, agent, Dealer, or other person is authorized to give any warranties of any nature on behalf of Manufacturer.

2. REMEDIES AND PROCEDURES.

- 2.01. This limited warranty is not effective unless the Purchaser returns the Registration and Warranty Form to Manufacturer within 30 days of purchase.
- 2.02. Purchaser claims must be made in writing to the Authorized Dealer ("Dealer") from whom Purchaser purchased the goods or an approved Authorized Dealer ("Dealer") within 30 days after Purchaser learns of the facts on which the claim is based.
- 2.03. Purchaser is responsible for returning the goods in question to the Dealer.
- 2.04. If after examining the goods and/or parts in question, Manufacturer finds them to be defective under normal use and service due to defects in material or workmanship, Manufacturer will:
 - (a) Repair or replace the defective goods or part(s) or
 - (b) Reimburse Purchaser for the cost of the part(s) and reasonable labor charges (as determined by Manufacturer) if Purchaser paid for the repair and/or replacement prior to the final determination of applicability of the warranty by Manufacturer.

The choice of remedy shall belong to Manufacturer.

- 2.05. Purchaser is responsible for any labor charges exceeding a reasonable amount as determined by Manufacturer and for returning the goods to the Dealer, whether or not the claim is approved. Purchaser is responsible for the transportation cost for the goods or part(s) from the Dealer to the designated factory.

3. LIMITATION OF LIABILITY.

- 3.01. MANUFACTURER DISCLAIMS ANY EXPRESS (EXCEPT AS SET FORTH HEREIN) AND IMPLIED WARRANTIES WITH RESPECT TO THE GOODS INCLUDING, BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
- 3.02. MANUFACTURER MAKES NO WARRANTY AS TO THE DESIGN, CAPABILITY, CAPACITY, OR SUITABILITY FOR USE OF THE GOODS.
- 3.03. EXCEPT AS PROVIDED HEREIN, MANUFACTURER SHALL HAVE NO LIABILITY OR RESPONSIBILITY TO PURCHASER OR ANY OTHER PERSON OR ENTITY WITH RESPECT TO ANY LIABILITY, LOSS, OR DAMAGE CAUSED OR ALLEGED TO BE CAUSED DIRECTLY OR INDIRECTLY BY THE GOODS INCLUDING, BUT NOT LIMITED TO, ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES RESULTING FROM THE USE OR OPERATION OF THE GOODS OR ANY BREACH OF THIS WARRANTY. NOTWITHSTANDING THE ABOVE LIMITATIONS AND WARRANTIES, MANUFACTURER'S LIABILITY HEREUNDER FOR DAMAGES INCURRED BY PURCHASER OR OTHERS SHALL NOT EXCEED THE PRICE OF THE GOODS.
- 3.04. NO ACTION ARISING OUT OF ANY CLAIMED BREACH OF THIS WARRANTY OR TRANSACTIONS UNDER THIS WARRANTY MAY BE BROUGHT MORE THAN TWO (2) YEARS AFTER THE CAUSE OF ACTION HAS OCCURRED.

4. MISCELLANEOUS.

- 4.01. Proper Venue for any lawsuits arising from or related to this limited warranty shall be only in Guadalupe County, Texas.
- 4.02. Manufacturer may waive compliance with any of the terms of this limited warranty, but no waiver of any terms shall be deemed to be a waiver of any other term.
- 4.03. If any provision of this limited warranty shall violate any applicable law and is held to be unenforceable, then the invalidity of such provision shall not invalidate any other provisions herein.
- 4.04. Applicable law may provide rights and benefits to purchaser in addition to those provided herein.

KEEP FOR YOUR RECORDS

ATTENTION: Purchaser should fill in the blanks below for his reference when buying repair parts and/or for proper machine identification when applying for warranty.

Alamo Industrial Implement Model _____ Serial Number _____

Date Purchased _____ Dealer _____

ATTENTION:

READ YOUR OPERATOR'S MANUAL

ALAMO INDUSTRIAL

An Alamo Group Company
Post Office Drawer 549
Seguin, Texas 78156
830-379-1480



ASSEMBLY SECTION

Assembly Section 3-1

ASSEMBLY

GENERAL

To help you assemble your new SHD FLAIL to your tractor, we provide you with drawings, instructions, and information, if necessary, you may get more information or clarification from our Technical Services Department over the phone.

The mower comes shipped from factory completely setup. The only assembly required is to remove driveline from its shipping position and attach to the gear box.

SHIPPING CONFIGURATION



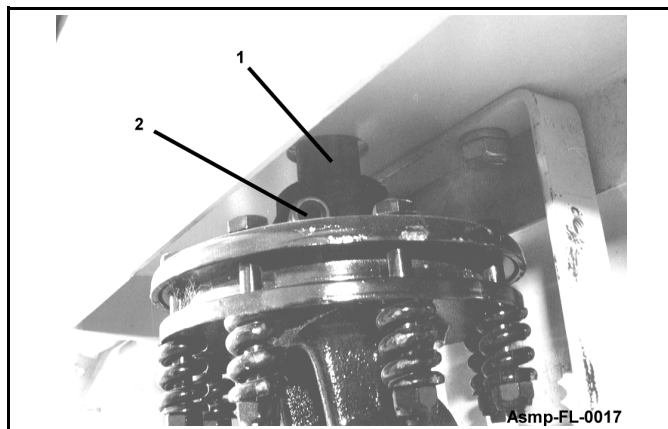
ASMP-FL-0036

DRIVELINE ATTACHMENT

Before starting assembly, make certain that all paint, dirt, and grease are removed from gearbox shaft (1). To ease assembly apply a light coat of grease to splines and assemble. Do not assemble a drive line without a shield.

Attach the slip clutch end of the driveline to the gearbox input shaft securely. Make certain that the slip clutch is fully onto the input shaft splines. Tighten the locknuts (2) alternately until they have reached the proper torque. See **Image ASMP-FL-0017**.

Refer to Torque Chart in the Maintenance Section.



IMPORTANT: Scan this QR Code with your smart phone to link to the ADMA Driveline Safety Manual for more information on the safe use of a driveline during normal operation and maintenance. Or type in your internet browser the following web address: www.algqr.com/dme Ops-0009-MISC



OPERATION SECTION

Operation Section 4-1

OPERATION

OPERATION

ALAMO INDUSTRIAL SHD62, SHD74, SHD88 & SHD96 SUPER-HEAVY-DUTY FLAIL MOWER OPERATION INSTRUCTIONS

Alamo Industrial SHD flail mowers are manufactured with quality material by skilled workers. These mowers are designed for cutting grass and small weeds up to 1". The mower is equipped with protective deflectors to prevent objects being thrown from the mower by the blades, however, no shielding is 100% effective. All shields, guards, and deflectors equipped on the mower must be maintained in good operational condition.

It is the operator's responsibility to be knowledgeable of all potential operating hazards and to take every reasonable precaution to ensure oneself, others, animals, and property are not injured or damaged by the mower, tractor, or a thrown object. Do not operate the mower if passersby, pets, livestock, or property are within 300 feet of the unit unless:

- **ALL THROWN OBJECT SHIELDING** including, Front and Rear Deflectors, Side Skirts and Skid Shoes in place and in good condition when mowing.
- Mower section adjusted to be close and parallel to ground without exposing blades.
- **MOWING AREA** has been inspected and foreign materials and debris have been removed.
- **PASSERSBY** are inside enclosed vehicle.

This section of the Operator's Manual is designed to familiarize, instruct, and educate safe and proper mower use to the operator. Pictures contained in this section are intended to be used as a visual aid to assist in explaining the operation of a SHD flail mower and are not specific to any model. Some pictures may show shields removed for picture clarity. NEVER operate implement without all shields in place and in good operational condition. The operator must be familiar with the mower and tractor and all associated safety practices before operating the mower and tractor. Proper operation of the mower, as detailed in this manual, will help ensure years of safe and satisfactory use of the mower.

IMPORTANT: To avoid mower damage, retorque all bolts after the first 10 hours of operation. Refer to the Torque Chart at the end of the Maintenance Section to ensure bolts are properly tightened.

READ AND UNDERSTAND THE ENTIRE OPERATING INSTRUCTIONS AND SAFETY SECTION OF THIS MANUAL AND THE TRACTOR MANUAL BEFORE ATTEMPTING TO USE THE TRACTOR AND IMPLEMENT. If you do not understand any of the instructions, contact your nearest authorized dealer for a full explanation. Pay close attention to all safety signs and safety messages contained in this manual and those affixed to the implement and tractor. *OPS-U- 0001*

READ, UNDERSTAND, and FOLLOW the following Safety Messages. Serious injury or death may occur unless care is taken to follow the warnings and instructions stated in the Safety Messages. Always use good common sense to avoid hazards. (SG-2)

**SAFETY
INSTRUCTIONS**



Si no lee ingles, pida ayuda a alguien que si lo lea para que le traduzca las medidas de seguridad. (SG-3)

**¡ LEA EL
INSTRUCTIVO!**



OPERATION

1. Standard Equipment and Specifications

	<u>SHD 62</u>	<u>SHD74</u>
Horsepower Required (Min.)	20HP	35HP
Tractor PTO	540 RPM	540 RPM
Cutting Capacity	1"	1"
Cutting Height	1/2 - 6"	1/2 - 6"
Cutting Width	62"	74"
Overall Width	70"	82"
Overall Length	40"	40"
Weight (Approximate)	815 lbs	930 lbs
Hitch	CAT I	CAT I-II
Blades	Fine or Coarse Cut	Fine or Coarse Cut
Number of Knives	Fine Cut 76 pair Coarse Cut 36 pair	Fine Cut 92 pair Coarse Cut 36 pair
Blade Rotation	Forward	Forward
Cuttershaft Diameter	4-1/2	4-1/2
Gearbox Rating	60HP	60HP
Knife Tip Speed (FPM)	8900	8900
Driveline Size	CAT 4	CAT 4
Driveline Protection	Slip Clutch	Slip Clutch
Drive Belt	"C" Size	"C" Size
Deck Thickness	10 Ga.	10 Ga.
Rear Roller Diameter	6"	6"
Skid Shoe	STD	STD
	<u>SHD 88</u>	<u>SHD 96</u>
Horsepower Required (Min.)	40HP	50HP
Tractor PTO	540 RPM	540 RPM
Cutting Capacity	1"	1"
Cutting Height	1/2 - 6"	1/2 - 6"
Cutting Width	88"	96"
Overall Width	96"	103"
Overall Length	40"	40"
Weight (Approximate)	1035 lbs	1170 lbs
Hitch	CAT I-II	CAT I-II
Blades	Fine or Coarse Cut	Fine or Coarse Cut
Number of Knives	Fine Cut 108 pair Coarse Cut 44 pair	Fine Cut 118 pair Coarse Cut 48 pair
Blade Rotation	Forward	Forward
Cuttershaft Diameter	4-1/2	4-1/2
Gearbox Rating	60HP	60HP
Knife Tip Speed (FPM)	8900	8900
Driveline Size	CAT 4	CAT 4
Driveline Protection	Slip Clutch	Slip Clutch
Drive Belt	"C" Size	"C" Size
Deck Thickness	10 Ga.	10 Ga.
Rear Roller Diameter	6"	6"
Skid Shoe	STD	STD

OPERATION



The Mower is designed for certain mowing applications and is rated to cut up to a specific size vegetation (see Mower Standard Equipment and Specifications). DO NOT use this mower to cut vegetation above the Mower's rated capacity or to cut any type of non-vegetative material. Only operate this Mower on a properly sized and equipped Tractor. Operating this Mower in an application for which it is not designed and/or operating the Mower with the wrong size Tractor can cause Mower component damage and equipment failure resulting in possible serious injury or death. (SGM-14)

OPERATION

2. OPERATOR REQUIREMENTS

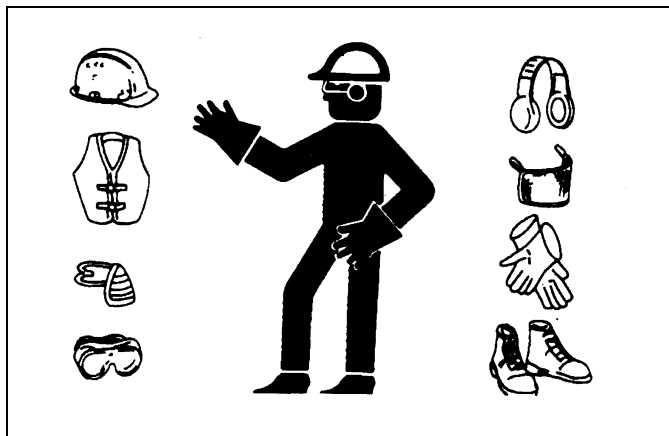
Safe operation of the unit is the responsibility of a qualified operator. A qualified operator has read and understands the implement and tractor Operator's Manuals and is experienced in implement and tractor operation and all associated safety practices. In addition to the safety messages contained in this manual, safety signs are affixed to the implement and tractor. If any part of the operation and safe use of this equipment is not completely understood, consult an authorized dealer for a complete explanation.

If the operator cannot read the manuals for themselves or does not completely understand the operation of the equipment, it is the responsibility of the supervisor to read and explain the manuals, safety practices, and operating instructions to the operator.

Safe operation of equipment requires that the operator wear approved Personal Protective Equipment (PPE) for the job conditions when attaching, operating, servicing, and repairing the equipment. PPE is designed to provide operator protection and includes the following safety wear:

PERSONAL PROTECTIVE EQUIPMENT (PPE)

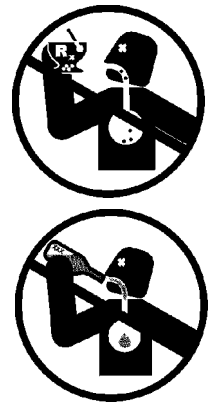
- Always Wear Safety Glasses
- Hard Hat
- Steel Toe Safety Footwear
- Gloves
- Hearing Protection
- Close Fitting Clothing
- Respirator or Filter Mask (depends on operating conditions) OPS-U- 0002



OPERATION



DO NOT use drugs or alcohol immediately before or while operating the Tractor and Implement. Drugs and alcohol will affect an operator's alertness and coordination and therefore affect the operator's ability to operate the equipment safely. Before operating the Tractor or Implement, an operator on prescription or over-the-counter medication must consult a medical professional regarding any side effects of the medication that would hinder their ability to operate the Equipment safely. NEVER knowingly allow anyone to operate this equipment when their alertness or coordination is impaired. Serious injury or death to the operator or others could result if the operator is under the influence of drugs or alcohol. (SG-27)



OPERATION

3. TRACTOR REQUIREMENTS

The tractor used to operate the mower must have the power, capacity and required equipment to safely operate the mower at a ground speed between 2 and 5 MPH. Operating the mower with a tractor that does not meet the following requirements may cause tractor or mower damage and could be a potential danger to the operator and passersby.

Tractor Requirements and Capabilities

- Certified approved Roll-Over Protective Structure (ROPS) or ROPS cab and seat belt.
- Tractor Safety Devices Slow Moving Vehicle (SMV) emblem, lighting, PTO master shield
- Tractor Horsepower-Minimum SHD62-20 HP, SHD74-35 HP, SHD88-40 HP, SHD96-50HP
- 3-Point Hitch-Lifting Capacity SHD60-815 lbs., SHD72-930 lbs., SHD88-1035 lbs., SHD96-1170 lbs.
Category SHD60 - CAT I and SHD74, SHD88, SHD96, CAT I or CAT II
- Front End Weights As needed to maintain 20% weight on tractor front axle
- Power Take Off 540 RPM-6 spline

3.1 ROPS and Seat Belt

The tractor must be equipped with a Roll-Over-Protective-Structure (ROPS) (tractor cab or roll-bar) and seat belt to protect the operator from falling off the tractor, especially during a roll over where the driver could be crushed and killed. Only operate the tractor with the ROPS in the raised position and seat belt fastened. Tractor models not equipped with a ROPS and seat belt should have these life saving features installed by an authorized dealer. OPS-U- 0003



Operate this Equipment only with a Tractor equipped with an approved roll-over-protective system (ROPS). Always wear seat belts. Serious injury or even death could result from falling off the tractor--particularly during a turnover when the operator could be pinned under the ROPS. (SG-7)



OPERATION

3.2 Tractor Safety Devices

If transporting or operating the tractor and implement near a public roadway, the tractor must be equipped with proper warning lighting and a Slow Moving Vehicle (SMV) emblem which are clearly visible from the rear of the unit. Lights and a SMV emblem must be equipped directly on implements if the visibility of the tractor warning signals are obscured.

Maintain all manufacturer equipped safety shields and guards. Always replace shields and guards that were removed for access to connect, service, or repair the tractor or implement. Never operate the tractor PTO with the PTO master shield missing or in the raised position. *OPS-U- 0004*

3.3 Tractor Horsepower

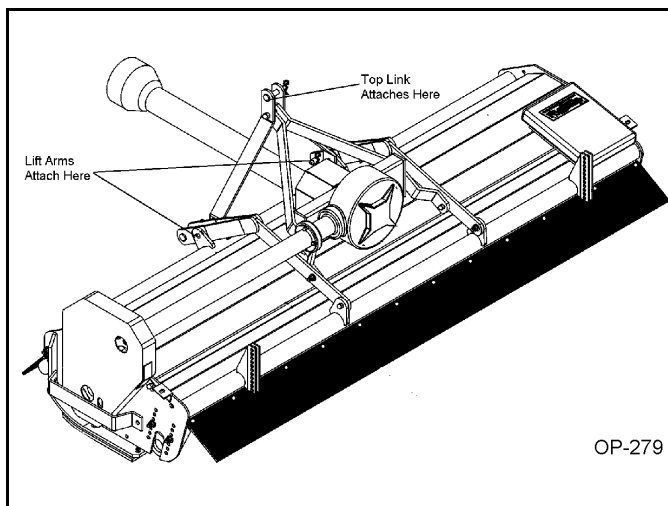
The horsepower required to operate the mower depends on many factors including the vegetation to be cut, terrain condition, operator experience, and condition of the mower and tractor. For most mowing condition, the SHD62 mower requires a tractor with at least 20HP, SHD74-35HP, SHD-88-40HP and SHD96-50HP. Operating the mower with a tractor that does not have adequate power may damage the tractor engine.

3.4 3-Point Hitch

The tractor 3-point hitch must be rated to lift at least 815 lbs. if attaching a SHD62, 930 lbs. if attaching a SHD74, 1035 lbs. if attaching SHD88, and 1170 lbs. if attaching a SHD96 flail.

SHD mowers can attach to tractor's with either a CAT I or II hitch. Refer to the tractor operator's manual for the category of the tractor used. If the hitch does not conform to ASABE CAT I or II dimensions, the mower may not fit or raise properly. Consult an authorized dealer for possible modification procedures to mount nonconforming hitches.

Use the correct hitch pins for the hitch category being used. For a CAT I hitch, 7/8" lower and 3/4" upper diameter hitch pins are used and CAT II hitches require 1-1/8" lower and 1" upper diameter hitch pins.

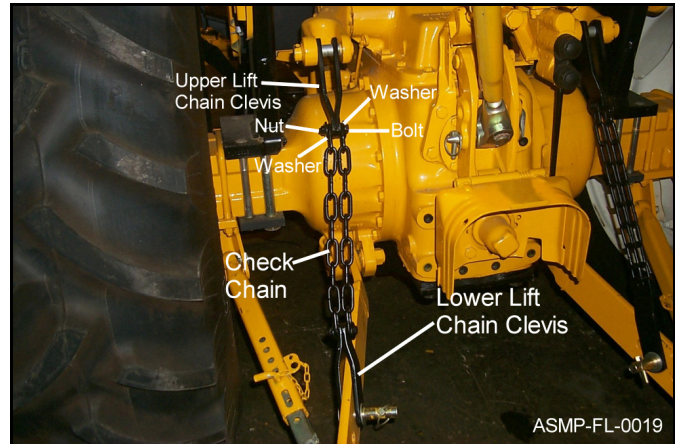


OP-279

OPERATION

Before attaching mower to tractor, it will be necessary that each tractor lower hitch arms have freedom of movement that the mower is completely independent of tractor movement. This will allow the mower to pivot sideways as well as move vertically.

Some tractors provide this “float” by means of an optional slot in the lower end of each lift link, others by lift check chains which can be made telescopic by changing the position of the pins in the links. Failure to provide “float” may result in failure of the cutterhousing and bearings in the roller, thus voiding the mower warranty. Should your tractor not have a built “float” option, a flexible check chain assembly (optional equipment) will be required. See **Figure ASMP-FL-0019**.



3.5 Front End Weight

Maintain a minimum of 20% total tractor weight on the tractor front end at all times. Front end weight is critical to maintain steering ability and to prevent the front end from rearing up. Consult your authorized tractor dealer for front weights and carriers.

3.6 Power Take Off (PTO)

Only operate the mower on a tractor equipped to operate at 540 rpm PTO speed. Tractors operating at 540 rpm will have a 1-3/8” diameter 6-spline PTO shaft stub. Refer to the tractor operator’s manual for operating the PTO at the proper speed.

If operating an older model tractor where the tractor’s transmission and PTO utilize one master clutch, an over-running clutch must be used between the PTO output shaft and the driveline of the mower. Consult an authorized tractor dealer to purchase and install an over-running clutch if needed.



DO NOT use a PTO adapter to attach a non-matching Implement driveline to a Tractor PTO. Use of an adapter can double the operating speed of the Implement resulting in excessive vibration, thrown objects, and blade and implement failure. Adapter use will also change the working length of the driveline exposing unshielded driveline areas. Serious bodily injury and/or equipment failure can result from using a PTO adapter. Consult an authorized dealer for assistance if the Implement driveline does not match the Tractor PTO.

(S3PT-14)



Never operate the Tractor and Mower if the Implement input driveline is directly connected to the Tractor transmission. Tractor braking distances can be substantially increased by the momentum of the rotating Mower blades driving the Tractor transmission even though the Tractor clutch has been disengaged. Install an over running clutch between the Tractor PTO and the Mower driveline to prevent this potentially dangerous situation. (S3PT-16)

OPERATION

OPERATION

4. GETTING ON AND OFF THE TRACTOR

Before getting onto the tractor, the operator must read and completely understand the implement and tractor operator manuals. If any part of either manual is not completely understood, consult an authorized dealer for a complete explanation. *OPS-U- 0007*

WARNING

Do not mount or dismount the Tractor while the tractor is moving. Mount the Tractor only when the Tractor and all moving parts are completely stopped. (SG-12)



4.1 Boarding the Tractor

Use both hands and equipped handrails and steps for support when boarding the tractor. Never use control levers for support when mounting the tractor. Seat yourself in the operator's seat and secure the seat belt around you.

Never allow passengers to ride on the tractor or attached equipment. Riders can easily fall off and be seriously injured or killed from falling off and being ran over. It is the operator's responsibility to forbid all extra riders at all times. *OPS-U- 0008*

DANGER

Never allow children to operate, ride on, or come close to the Tractor or Implement. Usually, 16-17 year-old children who are mature and responsible can operate the implement with adult supervision, if they have read and understand the Operator's Manuals, been trained in proper operation of the tractor and Implement, and are physically large enough to reach and operate the controls easily. (SG-11)



DANGER

Never allow children or other persons to ride on the Tractor or Implement. Falling off can result in serious injury or death. (SG-10)



WARNING

Do not mount or dismount the Tractor while the tractor is moving. Mount the Tractor only when the Tractor and all moving parts are completely stopped. (SG-12)



OPERATION

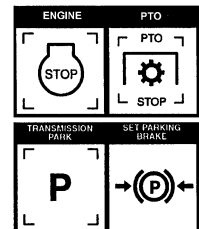
4.2 Dismounting the Tractor

Before dismounting, park the tractor and implement on a reasonably level surface, apply the parking brake, idle the engine down, disengage the PTO, and lower the implement to the ground. Shut down the tractor engine according to the operator's manual, remove the key, and wait for all motion to completely stop. Never leave the seat until the tractor, its engine and all moving parts have come to a complete stop.

Use hand rails and steps when exiting the tractor. Be careful of your step and use extra caution when mud, ice, snow or other matter has accumulated on the steps or hand rails. Use all handrails and steps for support and never rush or jump off the tractor. OPS-U- 0009



BEFORE leaving the tractor seat lower the implement, set the parking brake and/or set the tractor transmission in parking gear, disengage the PTO, stop the engine, remove the key, and wait for all moving parts to stop. Place the tractor shift lever into a low range or parking gear to prevent the tractor from rolling. Never dismount a Tractor that is moving or while the engine is running. Operate the Tractor controls from the tractor seat only. (SG-9)



OPERATION

5. STARTING THE TRACTOR

The operator must have a complete understanding of the placement, function, and operational use of all tractor controls before starting the tractor. Review the tractor operator's manual and consult an authorized dealer for tractor operation instructions if needed.

Essential Tractor Controls:

- Locate the light control switch.
- Locate the engine shut off control.
- Locate the brake pedals and the clutch.
- Locate the PTO control.
- Locate the 3-point hitch control lever.
- Locate the hydraulic remote control levers.

Before starting the tractor ensure the following:

- Conduct all pre-start operation inspection and service according to the tractor operator's manual.
- Make sure all guards, shields, and other safety devices are securely in place.
- The parking brake is on.
- The PTO control lever is disengaged.
- The 3-point hitch control lever is in the lowered position.
- The hydraulic remote control levers are in the neutral position.
- The tractor transmission levers are in park or neutral.

Refer to the tractor owner's manual for tractor starting procedures. Only start the tractor while seated and belted in the tractor operator's seat. Never bypass the ignition switch by short circuiting the starter solenoid.

After the tractor engine is running, avoid accidental contact with the tractor transmission to prevent sudden and unexpected tractor movement. OPS-U-0028



Never run the Tractor engine in a closed building or without adequate ventilation. The exhaust fumes can be hazardous to your health. (SG-23)

OPERATION



Start tractor only when properly seated in the Tractor seat. Starting a tractor in gear can result in injury or death. Read the Tractor operators manual for proper starting instructions. (SG-13)



OPERATION

6. CONNECTING THE MOWER TO THE TRACTOR

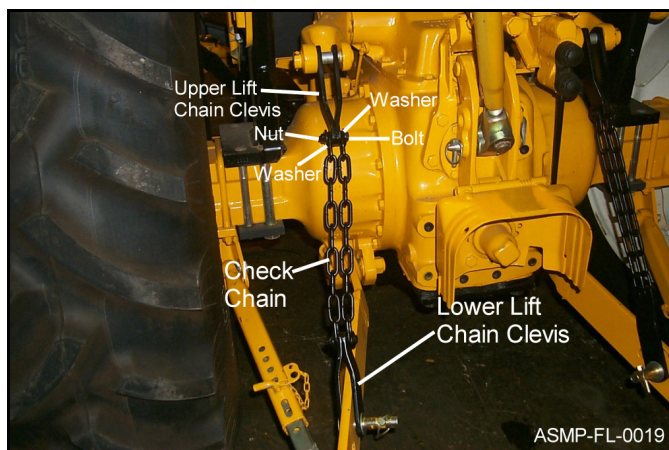
Use extreme caution when connecting the mower to the tractor. The mower should be securely resting at ground level or setting on blocks. Keep hands and feet from under the mower deck and clear of pinch points between the tractor hitch arms and mower pins. OPS-R-0001



Always shut the Tractor completely down, place the transmission in park, and set the parking brake before you or anyone else attempts to connect or disconnect the Implement and Tractor hitches. (S3PT-15)

6.1 Connecting the Mower A-Frame to the Tractor

1. Make sure the tractor is equipped with the correct PTO shaft. Change shafts if needed.
2. Shorten or remove the tractor drawbar to avoid interference when raising and lowering the mower.
3. Board the tractor and start the engine. Position the tractor to the mower with the 3-point lift arms positioned between the respective set of mower A-frame lift lugs. Note: Set the 3-point lift control to "Position Control" so that the lift arms maintain a constant height when attaching the mower. See the tractor Operator's Manual for correct settings when attaching 3-point equipment.



IMPORTANT: Scan this QR Code with your smart phone to link to the PAMI Safe Implement Hitching Manual for more information on correctly connecting agricultural tractors to implements. Or type in your internet browser the following web address: www.algqr.com/hme Ops-0008-MISC



OPERATION

OPERATION

4. Turn off the tractor engine and dismount.
5. One lift arm at a time, align arm end hole between the set of A-frame lift lugs. Insert hitch pin through the lug and arm holes and insert retaining pin into hitch pin.
6. Walk around to opposite side and repeat procedure for remaining lift arm and hitch pin.
7. Extend or retract 3-point top link to align its end hole with the holes of the mower's top link. Insert the top link hitch pin and insert retaining pin into hitch pin.
8. Adjust any lower link check chains, guide blocks, or sway blocks to prevent the mower from swaying side to side and possible contact with tractor rear tires.



7. SETTING THE MOWER

After the mower is attached to the tractor's 3-point hitch, but before the universal slip joint is installed, and with the mower on the ground, adjust the top link of the hitch to make the mower gearbox input shaft parallel to the tractor PTO shaft. This relationship provides optimum operation of the universal joints in the driveline. A driveline that is not parallel to the PTO will result in vibration due to the characteristic of a universal joint that results in the output end speeding up and slowing down twice each revolution of the universal jointed shaft. Adjust the top link whenever the cutting height is changed.

Properly setting the cutting height is essential for efficient and safe operation. A properly set mower will make a more uniform cut, distribute clippings more evenly, require minimal tractor work, and follow the contour of uneven terrain.

NOTE: Avoid very low cutting heights, striking the ground with the blades gives the most damaging shock loads and will cause damage to the mower and drive. Blades contacting the ground may cause objects to be thrown out from under the mower deck. Always avoid operating the mower at a height which causes the blades to contact the ground. OPS-F-0071



Never work under the Implement, the framework, or any lifted component unless the Implement is securely supported or blocked up to prevent sudden or inadvertent falling which could cause serious injury or even death. (SG-14)



OPERATION

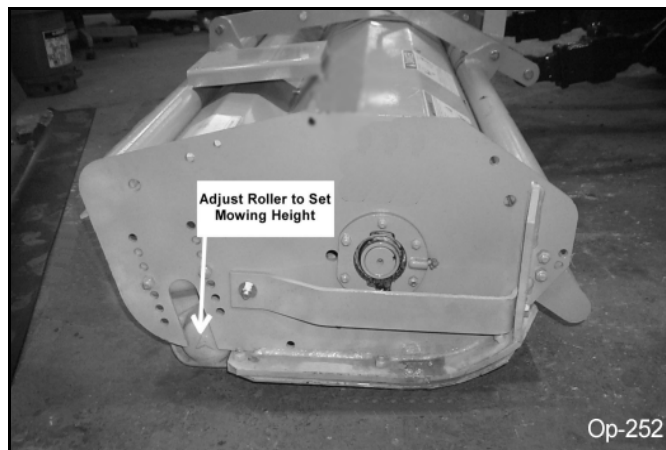
OPERATION

7.1 Roller Height Adjustment

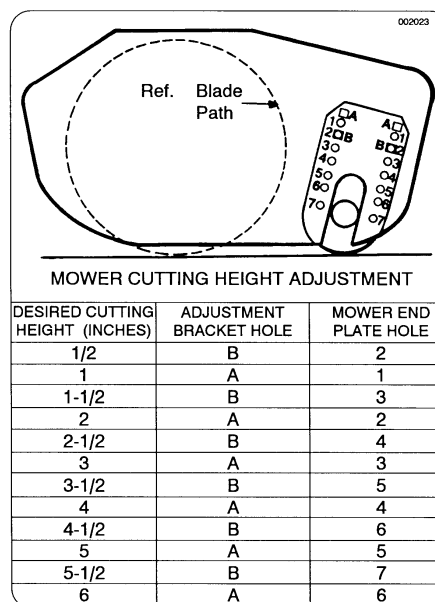
The mower's cutting height is set by positioning the roller assembly for each mower section. Each section must be set at the same height to ensure an even cut across the entire width of the mower.

Place the tractor and mower on a level surface and completely lower the mower to the ground.

1. Shut down the tractor, place the transmission in park, and set the parking brake before dismounting.
2. One section at a time, place lifting device (scissors jack or hydraulic jack) under center of cutter housing.
3. Remove hex nuts, washers and carriage bolts from bracket at each end of roller. Make certain that roller bracket is free to move once the fasteners are removed. A stuck roller could drop unexpectedly and cause injury.
4. Use lifting device to reposition cutter housing to desired cutting height. Align bracket holes with cutter housing, then reinstall hardware.
5. Lower cutter housing to the ground and remove lifting device.
6. Set cutting height according to procedures above for remaining two cutter sections. Make sure that all three rollers are set at the same height to ensure a even cut across the entire width of the mower.



Op-252



Op- 253

OPERATION

8. DRIVELINE ATTACHMENT

The driveline yoke and tractor PTO shaft must be dirt free and greased for attachment.

To connect the mower driveline to the tractor PTO output shaft, pull the driveline yoke collar back and align the grooves and splines of the yoke with those of the PTO shaft. Push the driveline yoke onto the PTO shaft, release the locking collar, and position the yoke until the locking collar balls are seated onto the PTO shaft. Push and pull the driveline back and forth several times to ensure a secure attachment.

After the driveline is securely attached, place the tractor PTO master shield back in the operating position. OPS-R-0003



WARNING

When attaching the Implement input driveline to the Tractor PTO, it is important that the connecting yoke spring activated locking collar slides freely and the locking balls are seated securely in the groove on the Tractor PTO shaft. Push and pull the driveline back and forth several times to ensure it is securely attached. A driveline not attached correctly to the Tractor PTO shaft could come loose and result in personal injury and damage to the Implement. (S3PT-17)

8.1 Driveline Length Check

WARNING

Before operating the Implement, check to make sure the Implement input driveline will not bottom out or become disengaged. Bottoming out occurs when the inner shaft penetrates the outer housing until the assembly becomes solid-it can shorten no more. Bottoming out can cause serious damage to the Tractor PTO by pushing the PTO into the Tractor and through the support bearings or downward onto the PTO shaft, breaking it off. A broken driveline can cause personal injury. (S3PT-18)

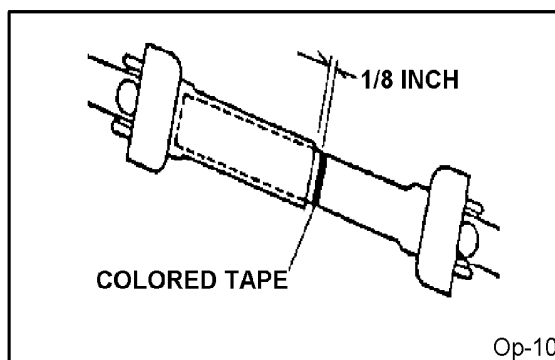
When fitting the mower to the tractor, the telescoping driveline must be inspected to ensure that at its most compressed position, the profiles do not "bottom out", and when at its farthest extended position, there is sufficient engagement between the profiles to operate safely. At its shortest length, there must be at least a 1" clearance between each profile end and opposite profile universal joint. At its farthest operating extension, a minimum profile engagement of 12" must be maintained.

OPERATION

OPERATION

“Bottoming Out” Check Procedure

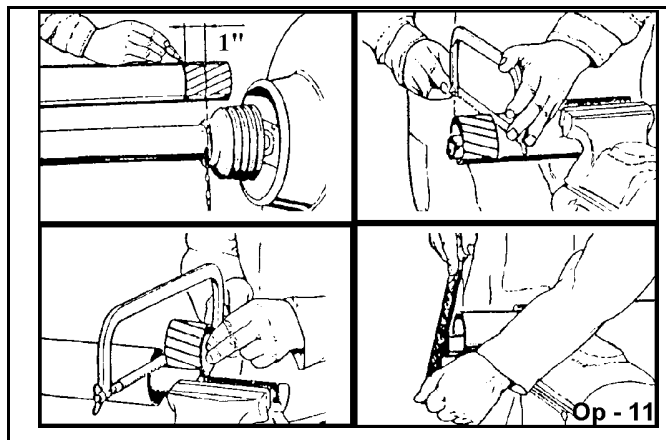
- Disconnect driveline from the tractor and slide the profiles together until fully compressed.
- Place a mark on the inner shield 1/8” from the end of the outer shield and reattach the driveline to the PTO Shaft.
- With the **PTO NOT TURNING**, slowly drive the tractor with mower attached through the sharpest turn possible and watch shaft movement. With the **PTO NOT TURNING**, slowly drive the tractor with the mower attached through the most severe terrain conditions expected and watch shaft movement.
- If the distance between the mark and the outer shield becomes less than 2” at any point there is a potential problem bottoming out the driveline and the driveline should be shortened.
OPS-F-0001



Driveline in maximum compressed position

Shorten the driveline profiles as follows:

- Remove the driveline from the tractor.
- Position the mower to the point with the shortest distance between the tractor PTO shaft and cutter gearbox. Shut down the tractor and securely block the mower in this position.
- Pull driveline apart and reattach yoke to PTO shaft.
- Hold driveline sections parallel to one another and measure back 1” from yoke of each shaft and place mark on opposite section. Cut this length off with a saw.
- Round off all sharp edges and debur.
- Thoroughly grease then reinstall the driveline.
- Recheck for proper operation.



Engagement Check Procedure

- With the driveline attached, position the mower to the point where the telescoping driveline is at its maximum extension. Completely shut down the tractor and secure in position.
- Mark the inner driveline shield 1/8” from the end of the outer shield.
- Disconnect the driveline from the tractor and separate the two driveline halves.
- Measure the distance from the mark to the end of the inner profile. This length is the amount the driveline profiles were engaged.
- If the engaged length is less than 12” the shaft is considered too short and should be replaced with a longer shaft. Consult an authorized dealer to purchase the required driveline length.

NOTE: If the driveline cannot be shortened and still maintain the required profile engagement, the operator must be made aware of terrain conditions and avoid situations which pose a potential problem to avoid damaging the driveline.
OPS-F-0002

OPERATION

IMPORTANT: Scan this QR Code with your smart phone to link to the ADMA Driveline Safety Manual for more information on the safe use of a driveline during normal operation and maintenance. Or type in your internet browser the following web address: www.algqr.com/dme Ops-0009-MISC



9. PRE-OPERATION INSPECTION AND SERVICE

Before each use, a pre-operation inspection and service of the implement and tractor must be performed. This includes routine maintenance and scheduled lubrication, inspecting that all safety devices are equipped and functional, and performing needed repairs. DO NOT operate the unit if the pre-operation inspection reveals any condition affecting safe operation. Perform repairs and replacement of damaged and missing parts as soon as noticed. By performing a thorough pre-operation inspection and service, valuable down time and repair cost can be avoided. OPS-U-0029



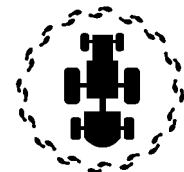
Always disconnect the main PTO Driveline from the Tractor before performing service on the Implement. Never work on the Implement with the tractor PTO driveline connected and running. Rotating Parts, Blades or Drivelines could turn without warning and cause immediate entanglement, injury or death. (S3PT-11)



DO NOT allow any person under a folded wing unless wing is securely locked up or supported. **DO NOT** approach the Implement unless the Tractor is turned off and all motion has ceased. Never work under the frame work, or any lifted component unless the implement is securely supported or blocked up. A sudden or inadvertent fall by any of these components could cause serious injury or even death. (STI-03)



Periodically inspect all moving parts for wear and replace when necessary with authorized service parts. Look for loose fasteners, worn or broken parts, and leaky or loose fittings. Make sure all pins have cotter pins and washers. Serious injury may occur from not maintaining this machine in good working order. (SG-21)



OPERATION

OPERATION

9.1 Tractor Pre-Operation Inspection/Service

Refer to the tractor operator's manual to ensure a complete pre-operation inspection and scheduled service is performed according to the manufacturers recommendations. The following are some of the items that require daily service and inspection:

- Tire condition/air pressure
- Wheel lug bolts
- Steering linkage
- PTO shield
- SMV sign is clean and visible
- Tractor's lights are clean and functional
- Tractor Seat belt is in good condition
- Tractor ROPS is in good condition
- ROPS is in the raised position
- No tractor oil leaks
- Radiator free of debris
- Engine oil level and condition
- Engine coolant level and condition
- Power brake fluid level
- Power steering fluid level
- Fuel condition and level
- Sufficient lubrication at all lube points
- Air filter condition OPS-U-0030

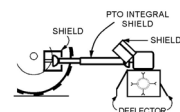


9.2 Mower Pre-Operation Inspection/Service

Before each mower use, a complete inspection and service is required to ensure the mower is in a good and safe working condition. Damaged and/or broken parts should be repaired and/or replaced immediately. To ensure the mower is ready for operation, conduct the following. OPS-R-0007



All Safety Shields, Guards and Safety devices including (but not limited to) - the Deflectors, Steel Guards, Gearbox Shields, PTO integral shields, and Retractable Door Shields should be used and maintained in good working condition. All safety devices should be inspected carefully at least daily for missing or broken components. Missing, broken, or worn items must be replaced at once to reduce the possibility of injury or death from thrown objects, entanglement, or blade contact. (SFL-5)



Replace bent or broken blades with new blades. NEVER ATTEMPT TO STRAIGHTEN, WELD, OR WELD HARDFACING ON BLADES SINCE THIS WILL LIKELY CRACK OR OTHERWISE DAMAGE THE BLADE WITH SUBSEQUENT FAILURE AND POSSIBLY CAUSE SERIOUS INJURY FROM THROWN BLADES. (SGM-10)

OPERATION

OPERATION

The operator's manual and safety signs affixed on the unit contain important instructions on the safe and proper use of the equipment. Maintain these important safety features on the implement in good condition to ensure the information is available to the operator at all times.

- Ensure the manual canister is secured to the equipment with the operator's manual inside.
- Ensure all safety signs are in place and legible. Replace missing, damaged, and illegible decals. *OPS-U- 0011*



- Check that the main driveline is securely attached to the tractor and the locking collar is seated in the groove of the PTO Shaft.
- Inspect that the 3-point hitch pins are the proper size, correctly installed and secured to the tractor lift arms with retaining pins inserted.
- Ensure that a properly rated safety tow chain is equipped securing the mower to the tractor. *OPS-F-0015*



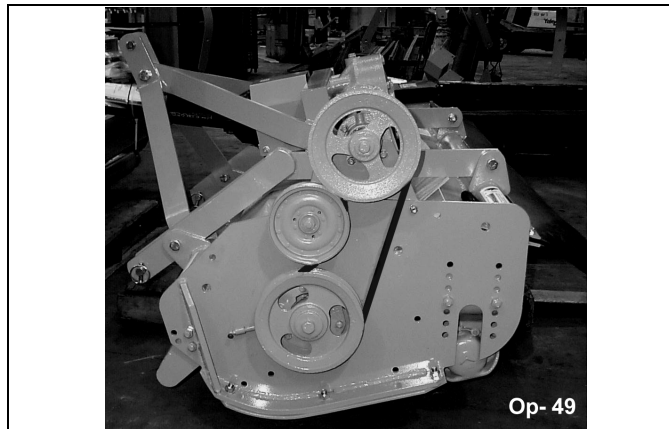
- Ensure rubber deflectors are in position and not damaged. Replace worn, broken, and missing sections immediately.
- Ensure the rollers are in good condition and rotate freely.
- Ensure the driveline integral shield is in good condition and rotate freely.
- Inspect that all bolts and screws are in position and are properly torqued. *OPS-F- 0004*



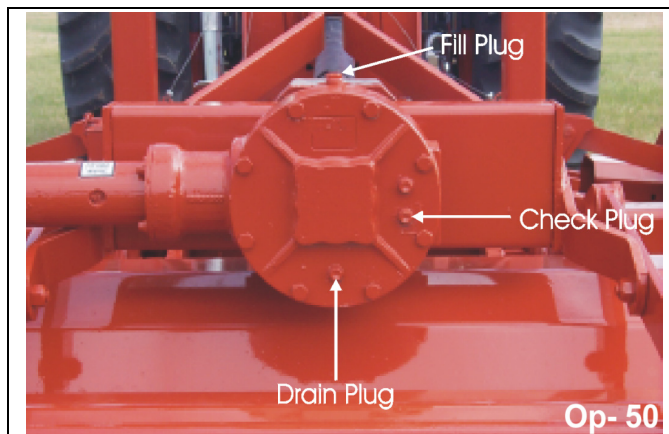
OPERATION

OPERATION

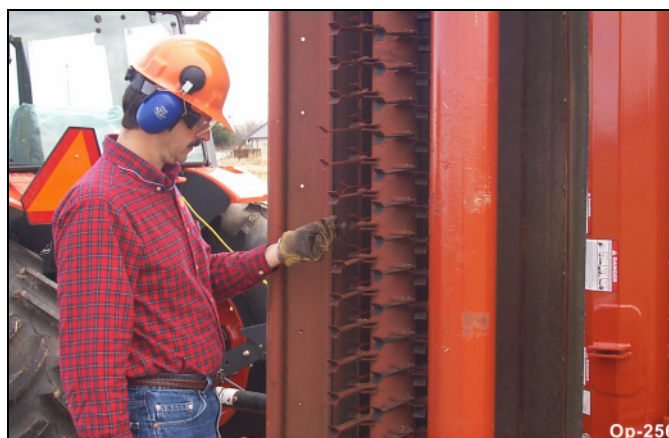
- Inspect the condition of the drive belts.
- Ensure the slip clutch (rear mower section only) is properly adjusted and the friction plates are not frozen together. Reference the Maintenance Section for proper slip clutch maintenance.
- Ensure the slop clutch shield and drive belts shields are in place and in good repair.
- Ensure the tractor PTO master shield is in place, lowered and in good condition. *OPS-F- 0016*



- Inspect oil level in gearbox and replenish if needed. A low oil level is a warning sign that the gearbox may be cracked or its seal is damaged and needs to be replaced.
- Perform scheduled lubrication as specified in the maintenance section. *OPS-F-0017*



- Inspect cutter knives and knife pins for looseness and excessive wear. Make sure the mower is securely blocked up before crawling beneath. Replace damaged, worn, and missing knives as complete sets to maintain cuttershaft balance.
- Remove any grass or other debris which may be wrapped around the cuttershafts.
- Inspect the condition of deck skid shoes and hardware. *OPS-F- 0007*



OPERATION

Flail Mower PRE-OPERATION Inspection



Mower ID# _____

Make: _____

Date: _____

Shift: _____

IMPORTANT: Scan this QR Code for an electronic copy of this inspection sheet.

Inspection Sheet



www.algqr.com/fmi



Before conducting the inspection, make sure the tractor engine is off, all rotation has stopped and the tractor is in park with the parking brake engaged. Make sure the mower is resting on the ground or securely blocked up and all hydraulic pressure has been relieved.

Item	Condition at Start of Shift	Specific Comments if not O.K.
FLAIL MOWER		
The Operator's Manual is in the canister on the mower		
All safety decals are in place and legible		
The hitch connection bolts & pins are tight		
There are no cracks in hitch		
Their mower deck is clear of cut grass and debris		
The thrown object guard/deflectors are in place		
Their guards/deflectors are in good condition		
The driveline/gearbox shields are in good condition		
The driveline clutch is in good condition, not frozen		
The driveline tubes & u-joints have been lubricated		
The driveline yoke is securely attached to the PTO		
The gearbox oil level is full		
Blades are not broken, chipped, cracked or bent		
Blade shackles are in good condition with no cracks		
The blade pins are properly retained		
The skid shoes are in good condition & tight		
The rear roller is in good condition and turns freely		

Operator's Signature: _____

DO NOT OPERATE an UNSAFE TRACTOR or MOWER

OPERATION

OPERATION

Tractor PRE-OPERATION Inspection



Mower ID# _____ Make _____

Date: _____ Shift _____



Before conducting the inspection, make sure the tractor engine is off, all rotation has stopped and the tractor is in park with the parking brake engaged. Make sure the mower is resting on the ground or securely blocked up and all hydraulic pressure has been relieved.

OPERATION

Item	Condition at Start of Shift	Specific Comments if not O.K.
The flashing lights function properly		
The SMV Sign is clean and visible		
The tires are in good condition with proper pressure		
The wheel lug bolts are tight		
The tractor brakes are in good condition		
The steering linkage is in good condition		
There are no visible oil leaks		
The hydraulic controls function properly		
The ROPS or ROPS Cab is in good condition		
The seatbelt is in place and in good condition		
The 3-point hitch is in good condition		
The drawbar pins are securely in place		
The PTO master shield is in place		
The engine oil level is full		
The brake fluid level is full		
The power steering fluid level is full		
The fuel level is adequate		
The engine coolant fluid level is full		
The radiator is free of debris		
The air filter is in good condition		

Operator's Signature: _____

DO NOT OPERATE an UNSAFE TRACTOR or MOWER

This Inspection Form may be freely duplicated for extra copies.

DRIVING THE TRACTOR AND IMPLEMENT

OPERATION

Safe tractor transport requires the operator possess a thorough knowledge of the model being operated and precautions to take while driving with an attached implement. Ensure the tractor has the capacity to handle the weight of the implement and the tractor operating controls are set for safe transport. To ensure safety while driving the tractor with an attached implement, review the following. *OPS-U- 0012*



This Implement may be wider than the Tractor. Be careful when operating or transporting this equipment to prevent the Implement from running into or striking sign posts, guard rails, concrete abutments or other solid objects. Such an impact could cause the Implement and Tractor to pivot violently resulting in loss of steering control, serious injury, or even death. Never allow the Implement to contact obstacles. (S3PT-12)



Transport only at speeds where you can maintain control of the equipment. Serious accidents and injuries can result from operating this equipment at high speeds. Understand the Tractor and Implement and how it handles before transporting on streets and highways. Make sure the Tractor steering and brakes are in good condition and operate properly.



Before transporting the Tractor and Implement, determine the proper transport speeds for you and the equipment. Make sure you abide by the following rules:

Test the tractor at a slow speed and increase the speed slowly. Apply the Brakes smoothly to determine the stopping characteristics of the Tractor and Implement. As you increase the speed of the Tractor the stopping distance increases. Determine the maximum transport speed not to exceed 20 mph (30 kph) for transporting this equipment.

Test the equipment at a slow speed in turns. Increase the speed through the turn only after you determine that the equipment can be operated at a higher speed. Use extreme care and reduce your speed when turning sharply to prevent the tractor and implement from turning over. Determine the maximum turning speed for you and this equipment before operating on roads or uneven ground.

Only transport the Tractor and Implement at the speeds which allow you to properly control the equipment.

Be aware of the operating conditions. Do not operate the Tractor with weak or faulty brakes or worn tires. When operating down a hill or on wet or rain slick roads, the braking distance increases: use extreme care and reduce your speed. When operating in traffic always use the Tractor's flashing warning lights and reduce your speed. Be aware of traffic around you and watch out for the other guy. (SG-19)



OPERATION

OPERATION

9.3 Starting the Tractor

The procedure to start the tractor is model specific. Refer to the tractor operator's manual for starting procedures for your particular tractor. Consult an authorized dealer if the starting procedure is unclear. Ensure the 3-point control lever is in the lowered position and the PTO is disengaged before starting the tractor. OPS-U-0033



9.4 Brake and Differential Lock Setting

Make sure the tractor brakes are in good operating condition. Tractor brakes can be set to operate independently allowing single rear wheel braking action or locked together to provide simultaneous rear wheel braking. FOR MOST DRIVING AND OPERATING CONDITIONS, THE BRAKE PEDALS SHOULD BE LOCKED TOGETHER TO PROVIDE THE MOST EFFECTIVE BRAKING ACTION.

Always disengage the tractor differential lock when turning. When engaged the differential lock will prevent or limit the tractor from turning. During normal cutting conditions, locking the differential provides no benefit and should not be used. OPS-U-0013



⚠ WARNING

Be aware of the operating conditions. Do not operate the Tractor with weak or faulty brakes. When operating down a hill or on wet or rain slick roads, the braking distance increases; use extreme care and reduce your speed in these conditions. When operating in traffic, always use the Tractor's flashing warning lights and reduce your speed. Be aware of traffic around you and watch out for the other guy.

Always disengage the tractor differential lock when turning. When engaged the differential lock will prevent or limit the tractor from turning. During normal cutting conditions, locking the differential provides no benefit and should not be used.

OPERATION

OPERATION

9.5 Raising the Mower

Using the tractor 3-point hitch control lever, raise the mower off the ground about 6", or just high enough to clear any ground obstacles. When raising the mower, make sure all connection points are securely attached and at least 1" clearance is maintained between the driveline and the deck. If necessary, place an upper lift strip on the 3-point hitch control lever to limit the height the mower can be raised to avoid driveline damage.



9.6 Driving the Tractor and Mower

Start off driving at a slow speed and gradually increase your speed while maintaining control of the tractor and mower. Moving slowly at first will also prevent the tractor from rearing up and loss of steering control. The tractor should never be operated at speeds that cannot be safely handled or which will prevent the operator from stopping quickly during an emergency. If the power steering or engine ceases operating, stop the tractor immediately as the tractor will be difficult to control.

Drive the tractor with the 3-Point lift arms in the raised position and lock the control lever in the transport detent position to prevent damage to the mower driveline and tongue when turning.

Perform turns with the tractor and mower at slow speeds to determine how the tractor with an attached mower handles a turn. Determine the safe speed to maintain proper control of the tractor when making turns. When turning with a towed implement, the overall working length of the unit is increased. Allow additional clearance for the mower when turning.



To avoid overturns, drive the tractor with care and at safe speeds, especially when operating over rough ground, crossing ditches or slopes, and turning corners. Tractor wheel tread spacing should be increased when working on inclines or rough ground to reduce the possibility of tipping.

Use extreme caution when operating on steep slopes. Keep the tractor in a low gear when going downhill. DO NOT coast or free-wheel downhill.

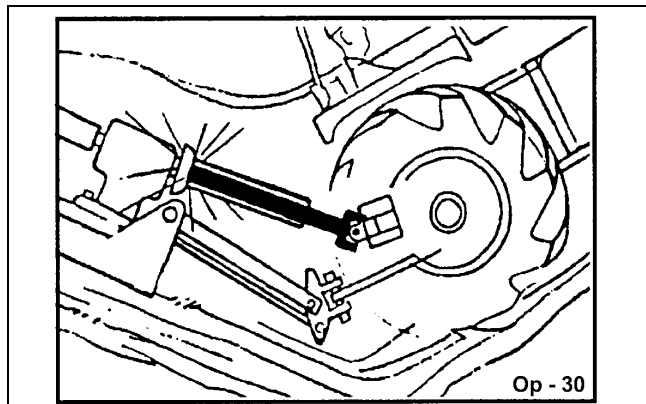
OPS-F- 0018



OPERATION

9.7 Crossing Ditches and Steep Inclines

When crossing ditches with steep banks or going up sharp inclines, it is possible that the main driveline inner profile will penetrate into the outer housing to its maximum depth until the assembly becomes solid (driveline is at its extreme shortest length). This type of abusive operation can cause serious damage to the tractor and mower drive by pushing the PTO into the tractor and through the support bearings or downward onto the PTO shaft, breaking it off.

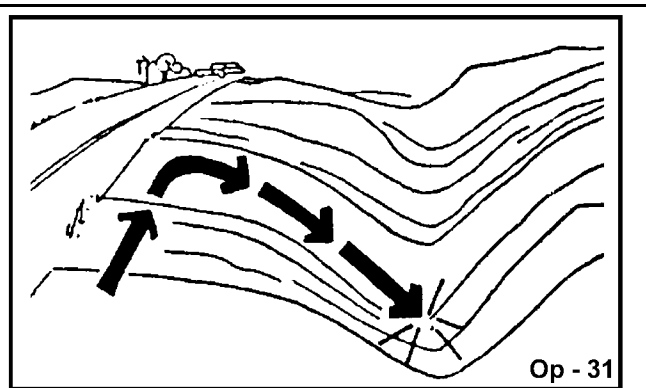


WARNING

Damage resulting from over-collapse of the driveline's inner profile and its outer housing may allow the driveline to come loose from the Tractor which could cause bodily injury to the operator or bystanders and/or extensive damage to the Tractor or Implement. OPS-R-0020

When confronted with an incline or ditch, do not approach from an angle which is perpendicular or straight on as damaged to over collapse of the driveline may occur.

When crossing such terrain, the implement should be fully lowered for a lower center of gravity and added stability. OPS-R-0021



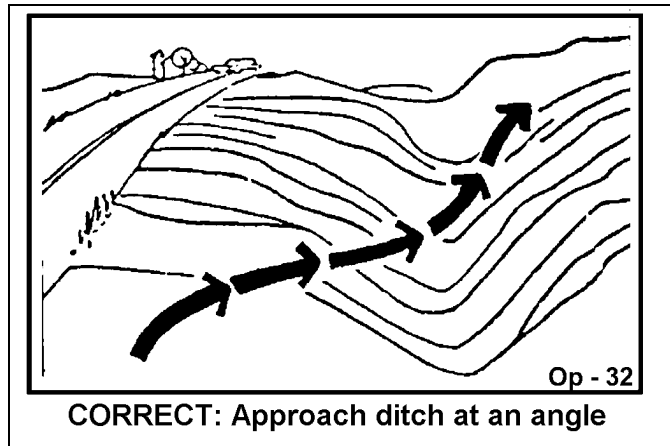
INCORRECT: DO NOT approach ditch straight on

OPERATION

Inclines and ditches should be approached along a line which is at an angle as shown. This type of path will reduce the possibility of over-collapse of the driveline and resulting damage. If the gradient is so steep that such an approach increases the possibility of a tractor roll-over, select an alternate crossing path.

When operating the tractor and mower across slopes and inclines, through ditches, and other uneven terrain conditions, it is important to maintain sufficient deck to ground clearance. Blade contact with the ground may cause soil, rocks and other debris to be thrown out from under the mower resulting in possible injury and/or property damage. Ground contact also produces a severe shock load on the mower drive and to the mower blades resulting in possible damage and premature wear.

OPS-R-0022



OPERATION

10. OPERATING THE TRACTOR AND IMPLEMENT

THE OPERATOR MUST COMPLETELY UNDERSTAND HOW TO OPERATE THE TRACTOR AND IMPLEMENT AND ALL CONTROLS BEFORE ATTEMPTING TO OPERATE. The operator must read and understand the Safety and Operation Sections of the implement and tractor operator's manuals. These manuals must be read and explained to any operator who cannot read. Never allow someone to operate the implement and tractor without complete operating instructions.

Before starting any operation, the operator must become familiar with the area to be worked in and any obstacles and hazards contained within to ensure safety to the operator, bystanders, and equipment. Special attention should be paid to foreign debris, rough terrain, steep slopes, and passersby and animals in the area.

OPS-U-0015



Extreme care should be taken when operating near loose objects such as gravel, rocks, wire, and other debris. Inspect the area before mowing. Foreign objects should be removed from the site to prevent machine damage and/or bodily injury or even death. Any objects that cannot be removed must be clearly marked and carefully avoided by the operator. Stop mowing immediately if blades strike a foreign object. Repair all damage and make certain rotor or blade carrier is balanced before resuming mowing. (SGM-05)



OPERATION

⚠ WARNING

Many varied objects, such as wire, cable, rope, or chains, can become entangled in the operating parts of the mower head. These items could then swing outside the housing at greater velocities than the blades. Such a situation is extremely hazardous and could result in serious injury or even death. Inspect the cutting area for such objects before mowing. Remove any like object from the site. Never allow the cutting blades to contact such items.

(SGM-06)

10.1 Foreign Debris Hazards

Before mowing, inspect the area to make sure there are no foreign objects that the mower blades could hit or become entangled with. Remove all foreign objects and debris. If objects are too big to remove, mark them clearly and be sure to prevent the mower blades from contacting them.

If you hit a solid object or foreign debris, stop the mower and tractor at once. Immediately idle the engine speed and disengage the PTO. Wait for all mower rotating motion to stop, then raise the mower and move the tractor and implement off the object. Inspect the area and remove, or mark the location of the debris. Inspect the condition of the mower and make any needed repairs immediately. Make sure the blades are not damaged and the carrier is balanced before resuming operation.



Always wear your seat belt securely fastened and only operate the tractor and mower with the ROPS in the raised position. If the tractor or mower hits a tree stump, rock, or bump, a sudden movement could throw you off of the seat and under the tractor and/or mower. The seat belt is your best protection from falling off the tractor and the ROPS provides protection from being crushed during a tractor roll-over. *OPS-F-0010*



10.2 Bystanders/Passersby Precautions

If a bystander comes within 300 feet of the tractor while the mower is being operated, stop the tractor at once, idle the engine and disengage the PTO. Do not engage the PTO again until all bystanders are well past the 300 foot distance. *OPS-R-0024*

OPERATION



Flail Mowers are capable under adverse conditions of throwing objects for great distances (300 feet or more) and causing serious injury or death. Follow safety messages carefully.



STOP MOWING IF PASSERSBY ARE WITHIN 300 FEET UNLESS:

- Front and Rear Deflectors, Chain Guards, or Bands are installed and in good, workable condition;
- Mower sections or Wings are running close to and parallel to the ground without exposed Blades;
- All areas have been thoroughly inspected and all foreign material such as rocks, cans, glass, and general debris has been removed.

NOTE: Where there are grass and weeds high enough to hide debris that could be struck by the blades, the area should be: inspected and large debris removed, mowed at an intermediate height, inspected closely with any remaining debris being removed, and mowed again at desired final height. (This will also reduce power required to mow, reduce wear and tear on the Mower drivetrain, spread cut material better, eliminate streaking, and make the final cut more uniform.) (SFL-6)

10.3 Engaging the Power Take Off (PTO)

Before engaging the PTO, make certain that the area is clear of bystanders and passersby. The implement must be completely lowered and the deck positioned at a safe operating height. NEVER engage the PTO with the implement in the raised position.

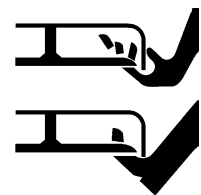
Set the tractor engine speed at approximately 1,000 RPM before engaging the PTO. Shift the PTO control to the on position, and slowly increase the engine speed until the PTO is operating at the rated speed. If you hear unusual noises or see or feel abnormal vibrations, disengage the PTO immediately. Inspect the implement to determine the cause of the noise or vibration and repair the abnormality. OPS-U- 0027



Do not let the Blades turn when the Mower Deck is raised for any reason, including clearance or for turning. Raising the Mower deck exposes the Cutting Blades which creates a potentially serious hazard and could cause serious injury or even death from objects thrown from the Blades. (SRM-07)



Do not put hands or feet under mower decks. Blade Contact can result in serious injury or even death. Stay away until all motion has stopped and the decks are securely blocked up. (SGM-09)



OPERATION

10.4 PTO RPM and Ground Speed

Ground speed for mowing will depend upon the height, type, and density of vegetation to be cut. Recommended speed for efficient mower performance is between 2 and 5 mph(3-8 kph). Operate the mower at its full rated PTO speed to maintain blade speed for a clean cut. Refer to the tractor operator's manual or the tractor instrument panel for the engine speed and gear to provide the required PTO and desired ground speed. Make sure that the mower is operating at its full rated speed before entering the vegetation to be cut. If it becomes necessary to temporarily regulate engine speed, increase or decrease the throttle gradually.

Ground speed is achieved by transmission gear selection and not by the engine operating speed. The operator may be required to experiment with several gear range combinations to determine the best gear and range which provides the most ideal performance from the mower and most efficient tractor operation. As the severity of cutting conditions increase, the ground speed should be decreased by selecting a lower gear to maintain the proper operating PTO speed. OPS-R-0025



Do not exceed the rated PTO speed for the Implement. Excessive PTO speeds can cause Implement driveline or blade failures resulting in serious injury or death. (SG-26)



Mow at the speed that you can safely operate and control the tractor and mower. The correct mowing speed depends on terrain condition and grass type, density, and height of cut. Normal ground speed range is from 2 to 5 mph(3-8 kph). Use slow mowing speeds when operating on or near steep slopes, ditches, drop-offs, overhead obstructions, power lines, or when debris and foreign objects are to be avoided. (SGM-07)

10.5 Operating the Mower

Only operate the mower from the tractor operator's seat with the seatbelt securely fastened. The tractor must be equipped with a ROPS in the raised position or a ROPS cab.

The mower is designed to cut vegetation up to 1-1/2" (38mm) in diameter. Sharp blades will produce a cleaner cut and require less power. Travel at a speed that allows the mower sufficient time to cut through the vegetation and maintain the PTO operating speed to prevent overloading the mower and tractor. Choose a driving pattern that provides the maximum pass length and minimizes turning.

Under certain conditions, tractor tires may roll some grasses down preventing them from being cut at the same height as the surrounding area. When this occurs, reduce the tractor ground speed while maintaining the operating speed of the mower. A slower ground speed will permit grasses to at least partially rebound and be cut. Taking a partial cut and/or reversing the direction of travel may also help produce a cleaner cut.

Avoid mowing in the reverse direction when possible. In situations where the mower must be backed to access areas to be cut, make sure there are no persons or other foreign debris behind the mower before mowing in reverse. When mowing in reverse, operate the tractor and mower at a reduced ground speed to ensure tractor and mower control is maintained. OPS-R-0026

OPERATION



Do not mow with two machines in the same area except with Cab tractors with the windows closed. (SGM-11)



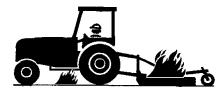
Mow only in conditions where you have clear visibility in daylight or with adequate artificial lighting. Never mow in darkness or foggy conditions where you cannot clearly see at least 300 feet (90 m) in front and to the sides of the tractor and mower. Make sure that you can clearly see and identify passersby, steep slopes, ditches, drop-offs, overhead obstructions, power lines, debris and foreign objects. If you are unable to clearly see these type of items discontinue mowing. (SGM-1)



Avoid mowing in reverse direction when possible. Check to make sure there are no persons behind the mower and use extreme care when maneuvering in reverse. Mow only at a slow ground speed where you can safely operate and control the tractor and mower. Never mow an area that you have not inspected and removed debris or foreign material. (SGM-08)



Follow these guidelines to reduce the risk of equipment and grass fires while operating, servicing, and repairing the Mower and Tractor:



- Equip the Tractor with a fire extinguisher in an accessible location.
- Do Not operate the Mower on a Tractor with an underframe exhaust.
- Do Not smoke or have an open flame near the Mower and Tractor.
- Do Not drive into burning debris or freshly burnt areas.
- Ensure slip clutches are properly adjusted to prevent excessive slippage and plate heating.
- Never allow clippings or debris to collect near drivelines, slip clutches, and gearboxes. Periodically shut down the Tractor and Mower and clean clippings and collected debris from the mower deck. (SGM-12)

OPERATION

OPERATION

10.6 Shutting Down the Implement

To shut down the implement, first bring the tractor to a complete stop. Then slow down the implement by reducing the engine speed before disengaging the PTO. Push the stop button to disengage the wings and wait for all motion to stop before proceeding to drive or shut down the tractor.



Park the tractor on a level surface, place the transmission in park or neutral and apply the parking brake, lower the attached implement to the ground, shut down the engine, remove the key, and wait for all motion to come to a complete stop before exiting the tractor. OPS-F- 0011



OPERATION

OPERATION

11. DISCONNECTING THE MOWER FROM THE TRACTOR

Before disconnecting the mower, the PTO must be disengaged and all motion at a complete stop. Move the mower to a level storage location and lower to the ground. If the mower is not resting securely on the ground, block the mower up securely before attempting to disconnect it from the tractor. Use extreme care to keep feet and hands from under the mower and clear of any pinch points.

To disconnect the implement, first extend the tractor 3-point hitch top link to remove tension on the top link hitch pin. When the pin is loose and easy to rotate, remove the pin from the mower. Next remove both lower hitch pins.



Use extreme care to keep feet and hands from under the mower and clear of any pinch points.

OPS-F-0012_A

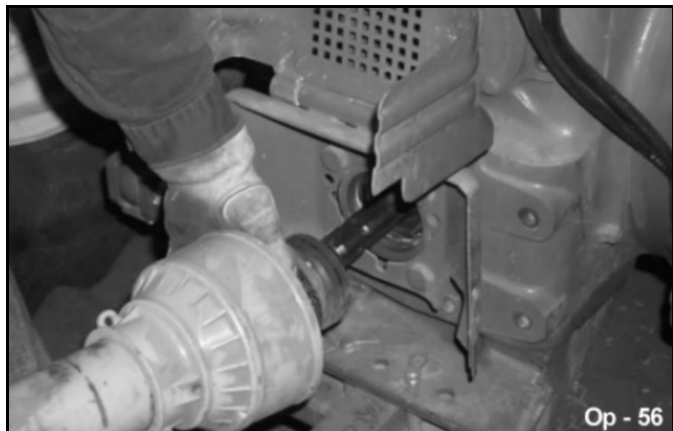


Always shut the Tractor completely down, place the transmission in park, and set the parking brake before you or anyone else attempts to connect or disconnect the Implement and Tractor hitches. (S3PT-15)



Never stand or allow another person to stand between a running Tractor and the Mower when disconnecting the Implement from the Tractor 3-point hitch. Always shut the Tractor off completely and set the parking brake before attempting to disconnect the Mower pins from the Tractor hitch.

After disconnecting the 3 lift points, remove the mower driveline from the tractor PTO shaft. Lay the driveline down carefully to avoid damaging the driveline or its shield. Do not let the driveline fall into mud or dirt, which can contaminate the bearing and shorten the life of the driveline. OPS-F-0013



OPERATION



Never work under the Implement, the framework, or any lifted component unless the Implement is securely supported or blocked up to prevent sudden or inadvertent falling which could cause serious injury or even death. (SG-14)



12. MOWER STORAGE

It is recommended that the mower be stored with the center section and both wings fully lowered to ground level. If the mower is stored with the wings in the raised position, select a level area and install wing transport braces to prevent the wings from falling BEFORE disconnecting the mower hitch from the tractor.

Properly preparing and storing the mower at the end of the season is critical to maintaining its appearance and to help ensure years of dependable service. The following are suggested storage procedures:

- Thoroughly clean all debris off the mower to prevent damage from rotting grass and standing water.
- Lubricate all mower grease points and fill gearbox oil levels as detailed in the maintenance section.
- Tighten all bolts and pins to the recommended torque.
- Check the mower for worn and damaged parts. Perform repairs and make replacements immediately so that the mower will be ready for use at the start of the next season.
- Store the mower in a clean, dry place with the mower housing resting securely on blocks or at ground level.
- Keep the driveline yoke from sitting in water, dirt and other contaminants.
- Use spray touch-up enamel where necessary to prevent rust and maintain the appearance of the mower.



It is critical that driveline clutches slip when an obstacle or heavy load is encountered to avoid mower and/or tractor damage. If the mower sits outside for an extended period of time or is exposed to rain and/or humid air, the clutch lining plates must be inspected to ensure they are not frozen together from rust or corrosion. If the mower has been exposed to such conditions, at the start of each mowing season, and any time it is suspected that the slip clutch plates may be frozen together, readjust the slip clutch as detailed in Seasonal Clutch Maintenance of the maintenance section in this manual. OPS-F-0014



Never allow children to play on or around Tractor or Implement. Children can slip or fall off the Equipment and be injured or killed. Inadvertent contact with controls can cause the Implement to shift or fall crushing themselves or others. (SG-25)

OPERATION

13. TRANSPORTING THE TRACTOR AND IMPLEMENT

Inherent hazards of operating the tractor and implement and the possibility of accidents are not left behind when you finish working in an area. Therefore, the operator must employ good judgement and safe operation practices when transporting the tractor and implement between locations. By using good judgement and following safe transport procedures, the possibility of accidents while moving between locations can be substantially minimized. *OPS-U- 0017*



Never allow children or other persons to ride on the Tractor or Implement.
Falling off can result in serious injury or death. (SG-10)



Before transporting the tractor and mower, idle the tractor engine, disengage the PTO and wait for all mower moving parts to come to a complete stop. Raise the mower sections and ensure transport locks engage. *OPS-F- 0021*

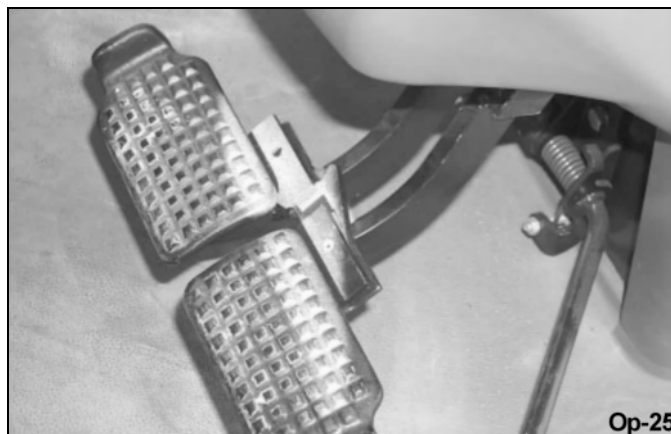


OPERATION

OPERATION

Before transporting the tractor on a public roadway or boarding a trailer for transport, the tractor brake pedals should be locked together. Locking the pedals ensures that both wheels brake simultaneously while stopping, especially when making an emergency stop.

Use extreme caution and avoid hard applications of the tractor brakes when towing heavy loads at road speeds. Never tow the implement at speeds greater than 20 MPH (32 kph). OPS-U- 0018



If the tractor's hydraulic pump is not independent of the tractor PTO, or if the tractor PTO has to be run to have hydraulic power, disconnect the mower driveline from the tractor PTO output shaft. Secure the driveline to the mower deck to prevent driveline damage or loss during transport.

13.1 Transporting on Public Roadways

Extreme caution should be used when transporting the tractor and implement on public roadways. The tractor must be equipped with all required safety warning features including a SMV emblem and flashing warning lights to alert drivers of the tractor's presence. Remember that roadways are primarily designed for automotive drivers and most drivers will not be looking out for you, therefore, you must look out for them. Check your side view mirrors frequently and remember that vehicles will approach quickly because of the tractor's slower speed. Be extremely cautious when the piece of equipment that you are towing is wider than the tractor tire width and/or extends beyond your lane of the road.

Make sure that a proper size safety tow chain is secured between the tractor and implement before entering a public road. OPS-U- 0019

NOTE: Ensure that the mower sections are fully raised and that the transport locks are engaged for each section.

WARNING

Only tow the Implement behind a properly sized and equipped Tractor which exceeds the weight of the Implement by at least 20%. DO NOT tow the Implement behind a truck or other type of vehicle. Never tow the Implement and another Implement connected in tandem. Never tow the Implement at speeds over 20 MPH. (STI-06)



ANGER

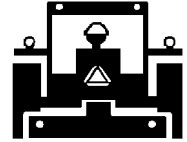
Never allow children or other persons to ride on the Tractor or Implement. Falling off can result in serious injury or death. (SG-10)



OPERATION



Make certain that the “Slow Moving Vehicle” (SMV) sign is installed in such a way as to be clearly visible and legible. When transporting the Equipment use the Tractor flashing warning lights and follow all local traffic regulations. (SG-6)



The SMV (Slow-Moving Vehicle) emblem is universal symbol used to alert drivers of the presence of equipment traveling on roadways at a slow speed. SMV signs are a triangular bright orange with reflective red trim for both easy day and night visibility. Make sure the SMV sign is clean and visible from the rear of the unit before transporting the tractor and implement on a public roadway. Replace the SMV emblem if faded, damaged, or no longer reflective. OPS-U- 0020



Op-43

Make sure that all tractor flashing warning lights, headlights, and brake/tail lights are functioning properly before proceeding onto public roads. While newer model tractors have plenty of lighting to provide warning signals and operating lighting, most older models are only equipped with operating lights. Consult an authorized tractor dealer for lighting kits and modifications available to upgrade the lighting on older tractor models. OPS-U- 0021



Op-595

When operating on public roads, have consideration for other road users. Pull to the side of the road occasionally to allow all following traffic to pass. Do not exceed the legal speed limit set in your country for agricultural tractors. Always stay alert when transporting the tractor and implement on public roads. Use caution and reduce speed if other vehicles or pedestrians are in the area. OPS-U- 0022_A



Op-600

OPERATION

OPERATION

13.2 Hauling the Tractor and Implement

Before transporting a loaded tractor and implement, measure the height and width dimensions and gross weight of the complete loaded unit. Ensure that the load will be in compliance with the legal limits set for the areas that will be traveled through. *OPS-U- 0024*



Use adequately sized and rated trailers and equipment to transport the tractor and implement. Consult an authorized dealer to determine the proper equipment required. Using adequately sized chains, heavy duty straps, cables and/or binders, securely tie down both the front and rear of the tractor utilizing the proper tie down locations as specified by the tractor manufacturer. *OPS-U- 0025*



Arrange the chains so that when tightened, the chains are pulling downward and against themselves. Carefully tighten the securing chains or other fasteners using boomers or binders to apply maximum tension. Use extreme care when attaching and removing the securing devices as the extreme tension involved when released has the potential to inflict serious injury.

While hauling the tractor and implement, make occasional stops to check that the tractor and implement have not moved or shifted and that the securing chains have maintained tension. If during transport a hard braking, sharp turning, or swerving action was performed, stop at the next safe location to inspect the security of the load. *OPS-U- 0026*



OPERATION

14. TROUBLESHOOTING GUIDE

Problem	Possible Cause	Remedy
Excessive Vibrations	Check gearbox bolts. Check for missing knives on cutter shaft. Check to see if knives are free swinging. Blade broken or bent. Cuttershaft bent. Drivelines not phased correctly. Implement & Tractor yokes must be in line. Cuttershaft bearing worn	Tighten if loose. Replace missing knives. Free knives so they swing. Replace blades. Replace cuttershaft. Replace driveline. Replace bearings
Gearbox Overheating	Low on lubricant. Improper type lubricant. Excessive trash build-up around gearbox. Bearing or gears set up improperly.	Fill to level plug. Replace with proper lubricant. Remove trash. Consult your Dealer.
Gearbox Noisy	Rough Gears. Worn Bearing.	Run in or change gears. Replace bearing.
Noise	Damaged Belt Shield (Rubbing on pulleys or belt). Worn Bearing or Gear.	Straighten or replace Shields. Replace Bearing or Gear.
Gearbox Leaking	Damaged oil seal Bent shaft. Shaft rough in oil seal area. Oil seal installed wrong. Oil seal not sealing in the housing. Oil level too high. Sand hole in casting. Gasket damaged. Bolts loose.	Replace seal. Replace oil seal and shaft. Replace or repair shaft. Replace seal. Replace seal or use a sealant on OD of Seal. Drain oil to proper level. Replace castings or gearbox. Replace gasket. Tighten bolts.

OPERATION

Clutch Slips Excessively	Clutch linings badly worn or plates warped. Too much power for clutch. Oil on facings. Friction facings glazed.	Repair clutch per maintenance section of manuals. Reduce ground speed and material intake. Replace facings. Clean with emery cloth.
Knives Wear Too Fast	Cutting in sandy conditions. Cutting in rocky conditions. Soft "will fit" knives.	Increase cutting height. Increase cutting height. Use genuine Alamo Industrial knives.
Discharging Bunches or Clogging	Belt installed improperly. Blades dull. Grass too wet. Grass too long. Travel speed too fast. PTO RPM too low.	Check belt for correct set-up. Check blades for sharpness. Wait for grass to dry. Mow at 3-1/2" and recut lower. Use a lower tractor gear. Mow at engine RPM to match 540 PTO RPM.
Blades Scalping High Places	Mowing too low. Rough, uneven ground. Turning Tractor too fast.	Raise height of cut. Use a slower speed. Lower rollers. Slow down when turning.
Uneven Cut	Travel speed too fast. Mower deck not level. Blades dull or unbalanced. Deck underside plugged. Grass too high.	Use a slower speed. Level the mowing deck. Sharpen or balance blades. Clean underside of deck. Mow at 3-1/2" and recut lower.
Grass Clippings Windrow or clump	Grass too wet. Grass too high. Housing plugged.	Wait for grass to dry. Mow at 3-1/2" and recut lower. Clean underside of deck.
Grass Not being Cut Evenly	Belt worn or slipping. Spring broke & belt off idler. Housing plugged. Debris around pulleys. Grass too high.	Replace or adjust belt. Replace spring or adjust belt. Clean underside of housing. Remove deck belt shield and clean out debris. Mow at 3-1/2" and recut lower.

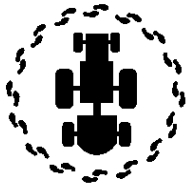
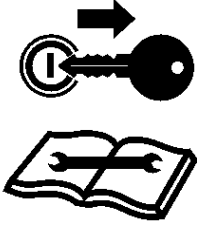
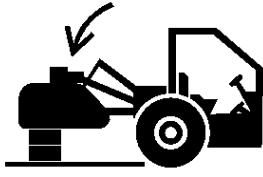


MAINTENANCE SECTION

Maintenance Section 5-1

MAINTENANCE

MAINTENANCE

HAZARDS WITH MAINTENANCE OF IMPLEMENT

				
Periodically inspect all moving parts, lubricate drivelines, and tighten all fasteners	Stop engine remove key before conducting maintenance	Block up implement before servicing Use large blocks on soft or wet soil	Engage cylinder transport locks	Inspect Blades for damage or cracks

WARNING

AVOID SERIOUS INJURY OR DEATH FROM COMPONENT FAILURE BY KEEPING IMPLEMENT IN GOOD OPERATING CONDITION IN PERFORMING PROPER SERVICE, REPAIRS AND MAINTENANCE.

BEFORE PERFORMING SERVICE, REPAIRS AND MAINTENANCE ON THE IMPLEMENT:

- **STOP ENGINE AND PTO**, engage parking brake, lower implement, allow all moving parts to stop and remove key before dismounting from tractor.
- **PLACE** implement on ground or securely block up raised equipment. Use large blocks on soft or wet soil.
- **PUSH** and **PULL** Remote Hydraulic Cylinder lever to relieve hydraulic pressure.
- **DISCONNECT IMPLEMENT** driveline from tractor **PTO SHAFT**.

WEAR SAFETY GLASSES, PROTECTIVE GLOVES and follow **SAFETY PROCEDURES** when performing service, repairs and maintenance on the implement:

- Always **WEAR** protective **GLOVES** when handling blades, knives, cutting edges or worn component with sharp edges.
- Always **WEAR GLOVES** and **SAFETY GLASSES** when servicing hot components
- **AVOID CONTACT** with hot hydraulic oil tanks, pumps, motors, valves and hose connection surfaces.
- **SECURELY** support or **BLOCK UP** raised implement, framework and lifted components before working underneath equipment.
- **STOP** any implement movements and **SHUT-OFF TRACTOR** engine before doing any work procedures.
- **USE** ladder or raised stands to reach high equipment areas inaccessible from ground.
- **ENSURE** good footing by standing on solid flat surfaces when getting on implement to perform work.
- **FOLLOW** manufacturer's instructions in handling oils, solvents, cleansers, and other chemical agents.
- **DO NOT** change any factory-set hydraulic calibrations to avoid component or equipment failures.
- **DO NOT** modify or alter implement, functions or components.
- **DO NOT WELD** or repair rotating mower components. These may cause vibrations and component failures being thrown from mower.

PERFORM SERVICE, REPAIRS, LUBRICATION AND MAINTENANCE OUTLINED IN IMPLEMENT MAINTENANCE SECTION:

- **INSPECT** for loose fasteners, worn or broken parts, leaky or loose fittings, missing or broken cotter keys and washers on pins, and all moving parts for wear.
- **REPLACE** any worn or broken parts with authorized service parts.
- **LUBRICATE** unit as specified by lubrication schedule
- **NEVER** lubricate, adjust or remove material while it is running or in motion.
- **TORQUE** all bolts and nuts as specified.

BLADE INSPECTION:

- **REPLACE** bent, damage, cracked or broken blades immediately with new blades.
- **AVOID** blade failures and thrown broken blades. **DO NOT** straighten, weld, or weld hard-facing blades.

SAFETY SHIELDS, GUARDS AND SAFETY DEVICES INSPECTION:

- **KEEP** all Deflectors, Steel Guards, Gearbox Shields, and PTO integral shields, Bands, Side Skirts and Skid Shoes in place and in good condition.
- **REPLACE** any missing, broken or worn safety shields, guards and safety devices.
- Engine Exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.
- Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer, birth defects or other reproductive harm. **PN HMFM-01**

MAINTENANCE

PARTS INFORMATION

Alamo Industrial mowers use balanced and matched system components for blade carriers, blades, cuttershafts, knives, knife hangers, rollers, drivetrain components, and bearings. These parts are made and tested to Alamo Industrial specifications. Non-genuine "will fit" parts do not consistently meet these specifications. The use of "will fit" parts may reduce mower performance, void mower warranties, and present a safety hazard. Use genuine Alamo Industrial mower parts for economy and safety. (SPAM-1)

SEE YOUR ALAMO DEALER

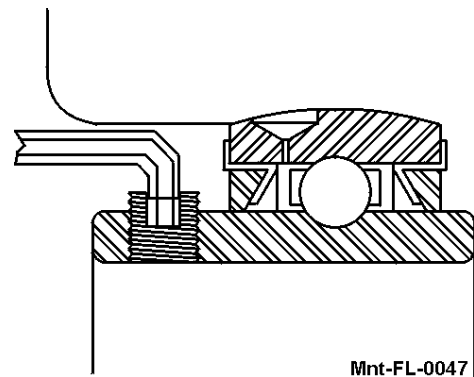
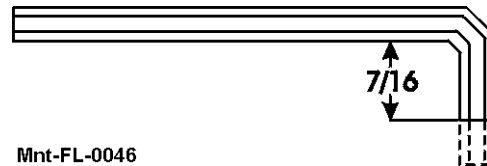
Maintenance Instructions

Before operating the mower, make sure it is properly lubricated and thoroughly inspected. Only a minimum of time and effort is required to regularly lubricate and maintain this machine to provide long life and trouble free operation.

Check all bolt tightness BEFORE initial operation of the mower. Re-torque all hardware after the first 4 hours of operation. A torque chart is provided at the end of the **Maintenance Section**.

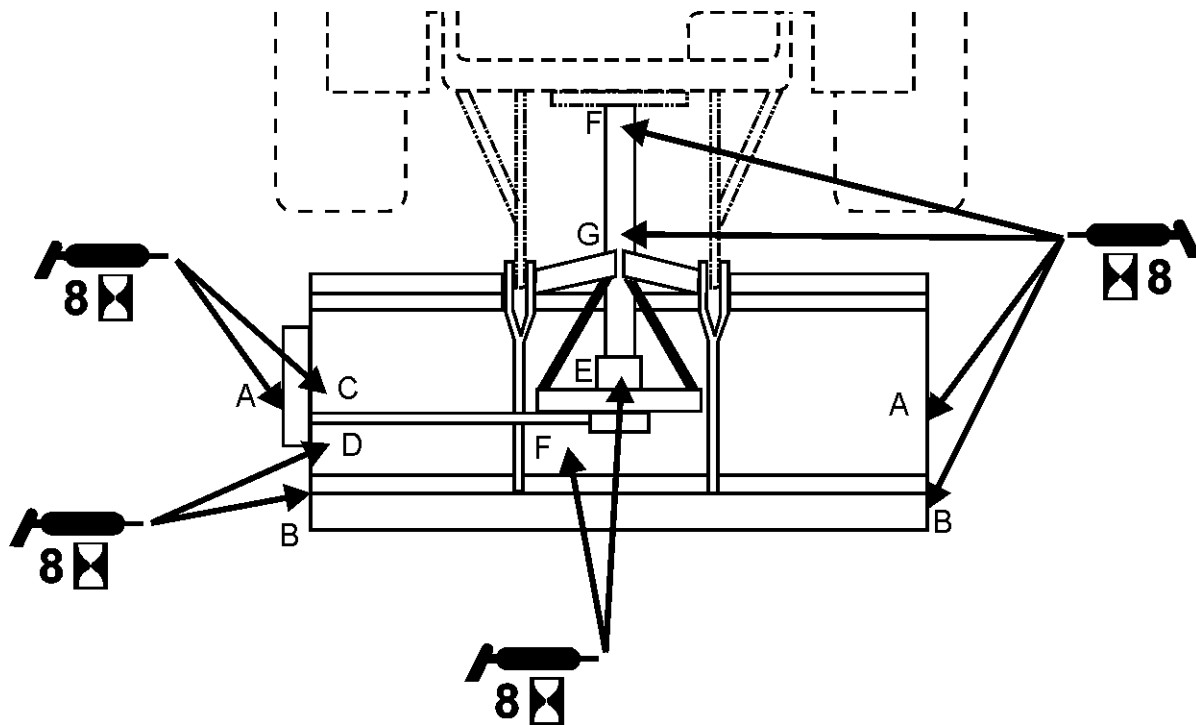
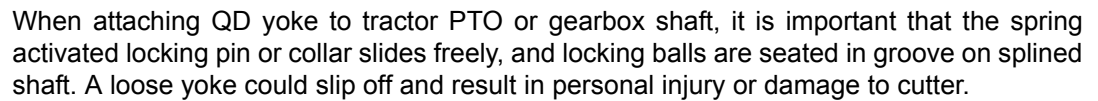
NOTE: Before initial start-up, check outer cuttershaft bearing setscrews. Standard 3/16 allen wrench must be modified as shown.

This modified tool allows access between housing and bearing inner race to tighten setscrews. Check setscrews after first days of operation. If loose, tighten and recheck again the next day or until setscrews are found to remain tight.



MAINTENANCE

Use Multi-Purpose Gear Oil P/N 00786250 for all locations shown according to instructions. Be sure to clean the fitting thoroughly before using grease gun. Daily lubrication of the wing driveline slip joint is necessary. Failure to maintain proper lubrication will result in damage to U-joints, gearbox and/or drive shaft.



- A Cuttershaft Bearings
- B Roller Bearing
- C Rear Mower Idler Arm
- D Banjo Bearing
- E Banjo Coupling
- F Driveline Yoke
- G Driveline Telescoping Joint

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MAINTENANCE

MAINTENANCE

LOCATION

- A. Cuttershaft Bearings
- B. Roller Bearings
- C. Mower Idler Arm
- D. Banjo Bearing
- E. Banjo Coupling
- F. Cross & Bearings
- G. Telescoping Tubes
- H. Shield Bearings

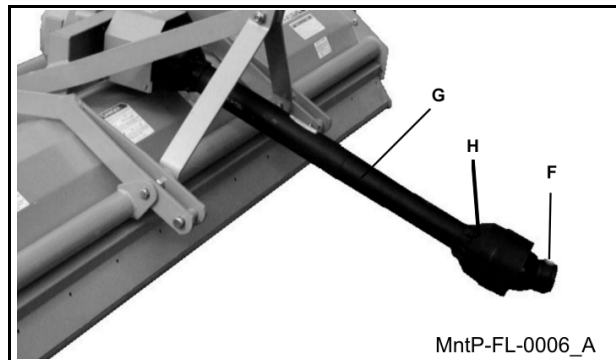
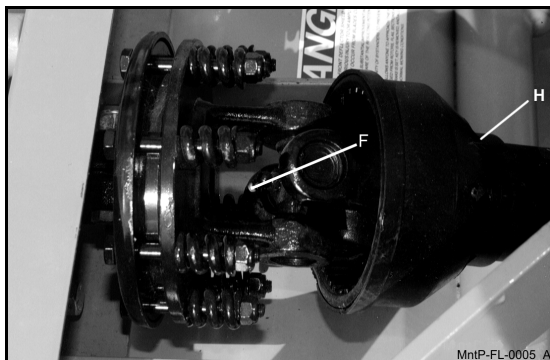
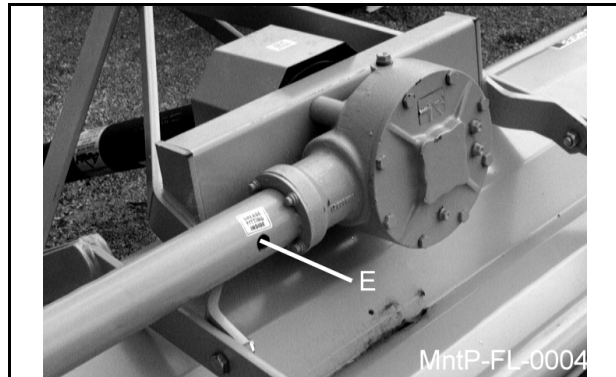
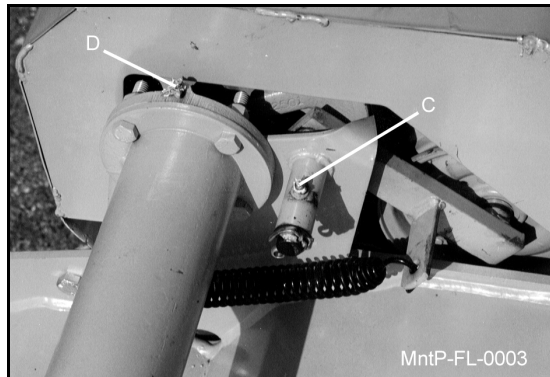
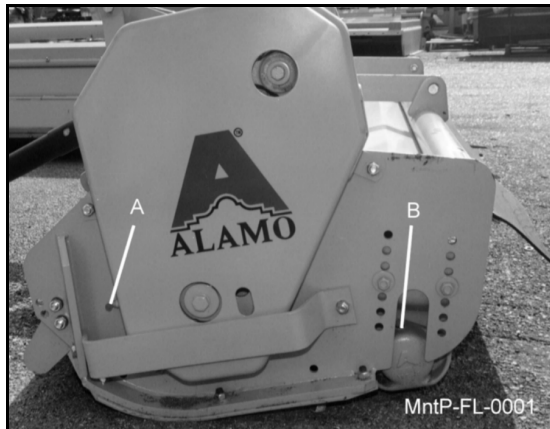
LUBE INTERVAL

- 8 Hours
- 8 Hours
- 8 Hours
- 8 Hours
- 8 Hours
- 8 Hours
- 8 Hours
- 50 Hours

LEVER ACTION PUMPS

- 4-6
- 8-10*
- 1-2
- 2-3
- 2-3
- 2-3
- 6-8
- 1-2

**Note: Lubricate roller bearings until lubricant can be seen coming out between roller and bearing housing.*



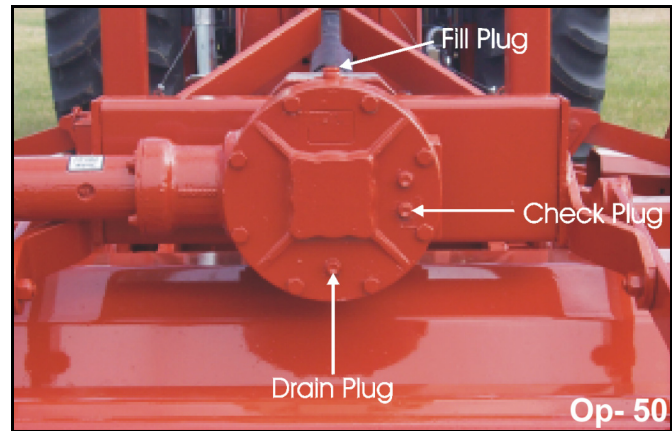
MAINTENANCE

MAINTENANCE

Banjo Gearbox

The gearbox should not require additional lubricant unless the box is cracked or a seal is leaking. It is recommended that the check plug be removed after every 8 to 10 hours of operation and oil added until it shows proper level.

Use Multi-Purpose gear oil, P/N 00786250.



Driveline

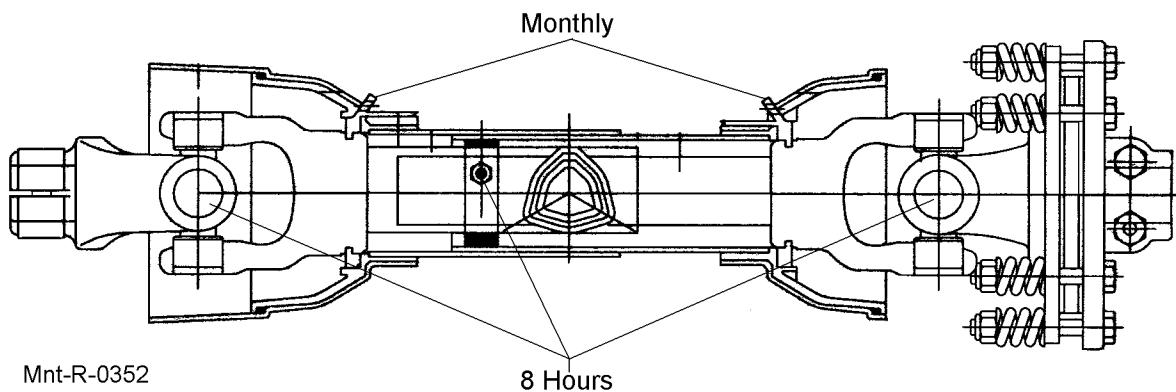
The Driveline should be inspected each morning before the mower is started.

Cross & bearings are located at each end of driveline.

Telescoping tube sitting is accessible by rotating driveline shield tubes until hole in shield exposes grease fitting.

Lubricate all fittings with a good quality Lithium Soap compatible E.P. grease meeting the NLGI #2 specifications and containing no more than 1%.

Check the cross & bearing kits for wear by rotating tractor yoke back and forth while implement yoke is attached to mower. If there is noticeable movement in driveline, replace the cross & bearing kit before it causes damage to driveline.



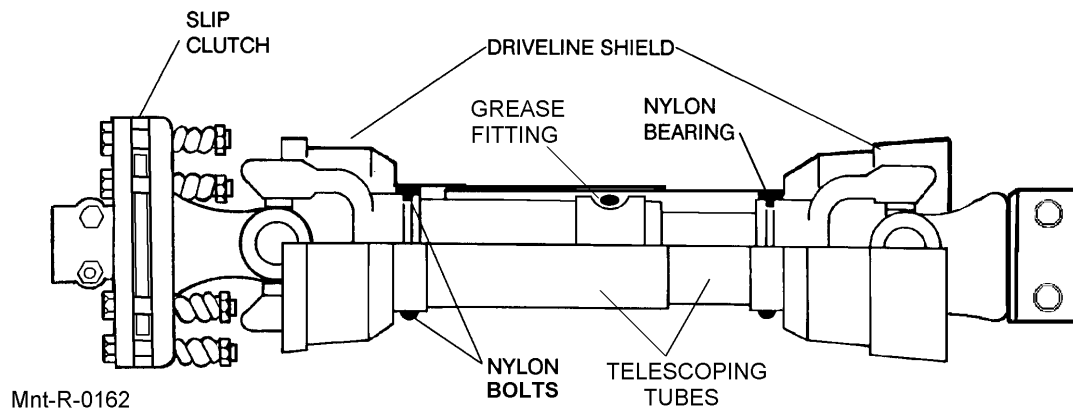
MAINTENANCE

Driveline Shield

The Driveline Integral Shields should not become dented or otherwise damaged. The Integral Shield Assembly has a Nylon Bearing at each end and should turn freely. This nylon bearing should require lubrication every 8 hours. To remove the Integral Shields for replacement or repair, turn the three Nylon Nuts 1/4 turn in the Shield Slots of the Cone and Tube and remove them. Slip the Shield Cone Assembly off inner section of the Driveline. Install the new or repaired Shield on the Driveline. Place the split Nylon Bearing over the Driveline Housing of Shaft against the Yoke and in the Bearing groove. Install shield over the Housing so the Nylon Bearing fits into the Shield Bearing Retainer. Align a slot in the Shield Cone with one of the slots in the Shield. Put one of the Nylon Nuts back in through the aligned slots and turn until it is perpendicular to the slots. Add the other two Nylon Nuts.



Make certain that the Driveline Integral Shields are free to telescope and rotate around the Driveline without binding.



IMPORTANT: Scan this QR Code with your smart phone to link to the ADMA Driveline Safety Manual for more information on the safe use of a driveline during normal operation and maintenance. Or type in your internet browser the following web address: www.algqr.com/dme Ops-0009-MISC



MAINTENANCE

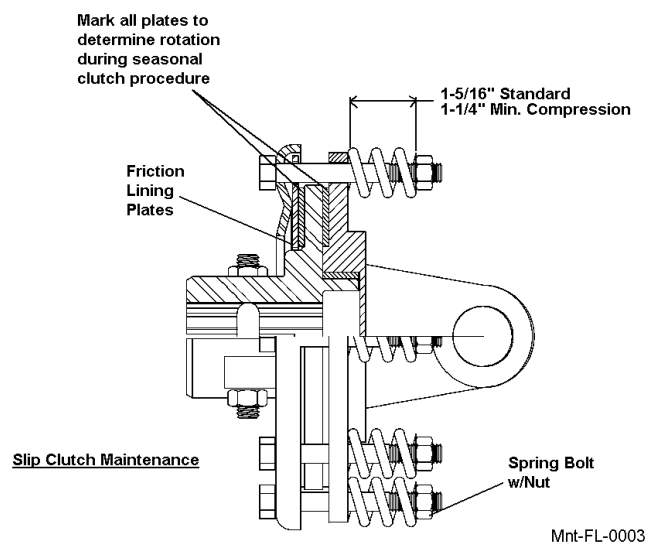
MAINTENANCE

Slip Clutch

A slip clutch is incorporated in the PTO driveline. It is designed to slip, absorb the shock load, and protect the driveline.

After the first hour of operation, the slip clutch should be checked for overheating. After this first check, the slip clutch should be checked weekly or anytime there is overheating. To adjust the slip clutch, tighten the spring bolts $1/8$ (maximum) turn at a time. Bolts should NEVER be adjusted to the point where the springs are compressed solid. Minimum spring compression length is $1-1/4$ ".

The slip clutch should be checked periodically and adjusted to compensate for wear. The lining plates are $1/8$ " thick when new. Replace after $1/32$ " wear. If the mower has been idle for an extended period of time, or in wet weather, before operating check to be sure the friction lining plates are not frozen or rusted together. Should this freezing occur refer to the procedure described in the "Seasonal Clutch Maintenance" section on the next page.



Seasonal Clutch Maintenance

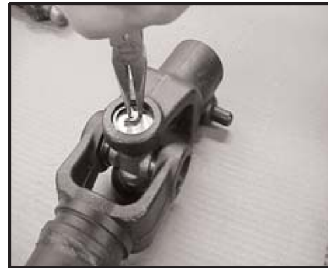
It is important that the clutch lining plates slip when an obstacle or load heavier than the clutch setting is encountered. Therefore, if the machine sits outside longer than 30 days and is exposed to rain and/or humid air it is important to make sure that the clutch lining plates are not rusted/corroded together. Before using the mower use the following procedure to make sure the clutch will slip and give the overload protection required.

1. Loosen nuts (Image Mnt-FL-0003) on springs until the springs can freely rotate, yet remain secure on bolts.
2. Attach mower to tractor and start the tractor. Set the engine speed at 1200 RPM.
3. Mark outer plates as shown in Image Mnt-FL-0003.
4. Engage the PTO (approximately one second) and then quickly disengage it. The friction lining plates should break loose (check the mark).
5. Turn tractor off and tighten the nuts on the springs to their original position of $1-5/16$ " compressed spring length.

MAINTENANCE

To Disassemble Universal Joint

1. Remove all snap rings.
2. Position joint in loose vice, strike top arm of unsupported yoke to drive the top cup up. Repeat on opposite side.
3. If you cannot grip the loosened cap per Step 4, use a pointed tool to tip a needle them repeat Step 2.
4. Grip loosened cup in vise, strike yoke arm to drive yoke off cup. Repeat on opposite cup.
5. Support cross in loose vise and strike yoke arm. Repeat Step 4 to remove remaining two cups.



EXTERNAL



INTERNAL



Mnt-R-0365



Mnt-R-0366



Mnt-R-0367



Mnt-R-0368

MAINTENANCE

MAINTENANCE

To Reassemble Universal Joint

1. Smear grease into bearings and check for dirt.
CAUTION! Make sure all needle bearings are seated properly.



2. Insert cup and cross. Drive in with spacer.



3. Insert snap ring



4. Insert second cup and hold cross into cup.
Drive cup flush with arm.



MAINTENANCE

MAINTENANCE

5. Drive cup down with spacer and insert snap ring



6. To loosen cross, strike yoke arm and check cross for free rotation



7. Position second yoke on cross. Repeat Steps 2 to 6.



8. Grease Kit after assembly is completed.

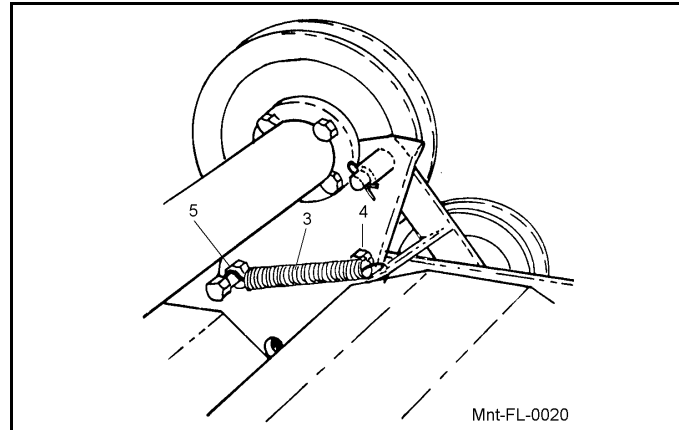
MAINTENANCE

MAINTENANCE

Replacing Cutter Unit Drive Belt

Image Mnt-FL-0020

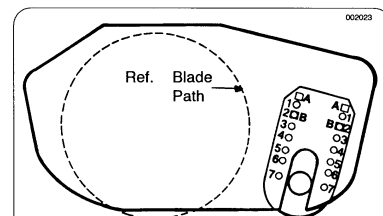
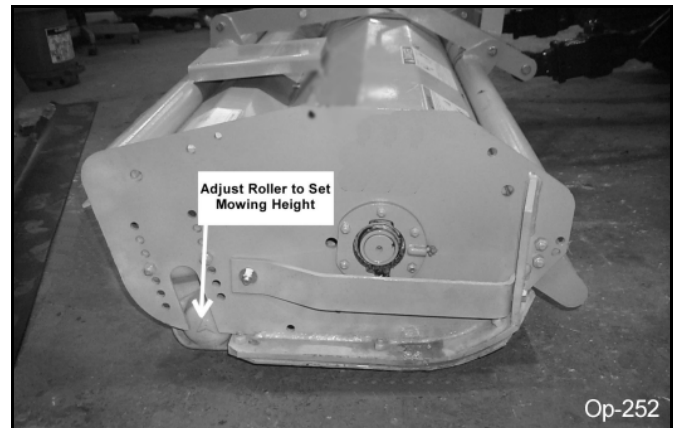
1. Place unit on ground or support securely.
2. Remove belt guard.
3. Remove idler arm spring.
4. Remove extension shaft housing mounting bracket front bolt and loosen rear bolt.
5. Loosen extension shaft housing mounting bracket rear bolt.
6. Pivot extension shaft housing mounting bracket assembly. Remove old belt and install new one.
7. Reinstall front mounting bolt then secure extension shaft housing mounting bracket to unit.
8. Reinstall idler arm spring and belt guard.



Setting Cutting Height

The mower's cutting height is set by positioning the roller assembly to desired cut height.

1. Place the tractor and mower on a level surface and completely lower the mower to the ground.
2. Shut down the tractor, place the transmission in park, and set the parking brake before dismounting.
3. Place lifting device (scissor jack or hydraulic jack) under center of cutter housing.
4. Remove hex nuts, washers and carriage bolts from bracket at each end of roller. Make certain that roller bracket is free to move once the fasteners are removed. A stuck roller could drop unexpectedly and cause injury.
5. Use lifting device to reposition cutter housing to desired height. Align bracket holes with cutter housing, then reinstall hardware.
6. Lower cutter housing to the ground and remove lifting device.



MOWER CUTTING HEIGHT ADJUSTMENT

DESIRED CUTTING HEIGHT (INCHES)	ADJUSTMENT BRACKET HOLE	MOWER END PLATE HOLE
1/2	B	2
1	A	1
1-1/2	B	3
2	A	2
2-1/2	B	4
3	A	3
3-1/2	B	5
4	A	4
4-1/2	B	6
5	A	5
5-1/2	B	7
6	A	6

Op- 253

MAINTENANCE

Changing Rotation of Cuttershaft

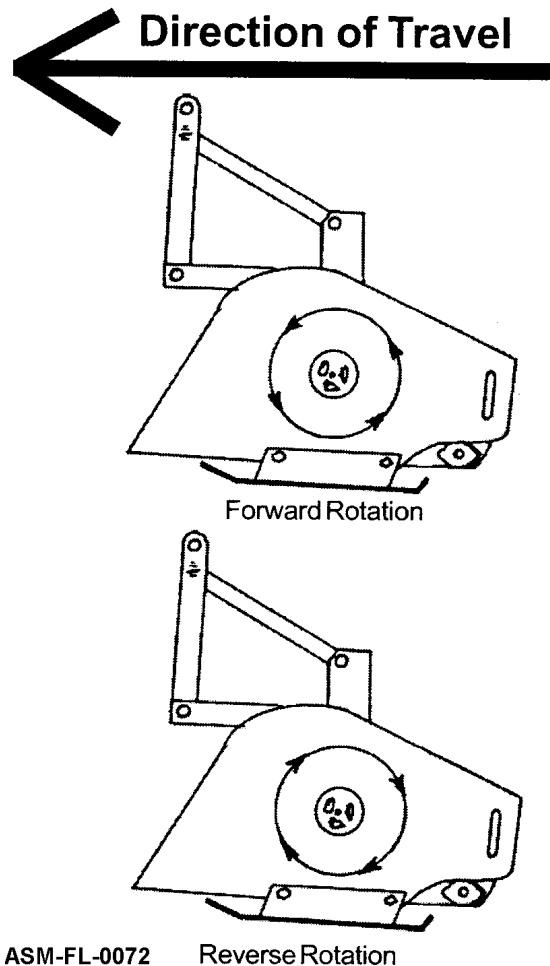
Standard shaft rotation is forward rotation as shown in the **Figure ASM-FL-0072**. To reverse cuttershaft rotation, the wing drive gearbox must be flipped over 180 degrees and the center mower drive components moved to the opposite side. When changing rotation of cuttershafts (course cut only) knife pins on wing mower sections must be reinstalled in opposite direction.

Center Cuttershaft Rotation Reversal

1. To reverse direction of cuttershaft rotation, three left hand parts must be ordered: belt guard, outboard bearing plate and an idler pulley arm. A front trash deflector is also required. Refer to the parts section of this manual for part numbers and ordering information.
2. With the mower housing securely blocked up, remove cuttershaft and turn 180 degrees.
3. Remove gearbox cuttershaft drive pulley and outboard bearing plate. Attach new mounting plate to opposite side of mower housing.
4. Remove four gearbox bolts and rotate gearbox 180 degrees to new position.
5. Install Cuttershaft pulley, gearbox output pulley, idler arm pulley assembly, and belt on housing right side.
6. Attach new belt guard.

Wing Cuttershaft Rotation Reversal

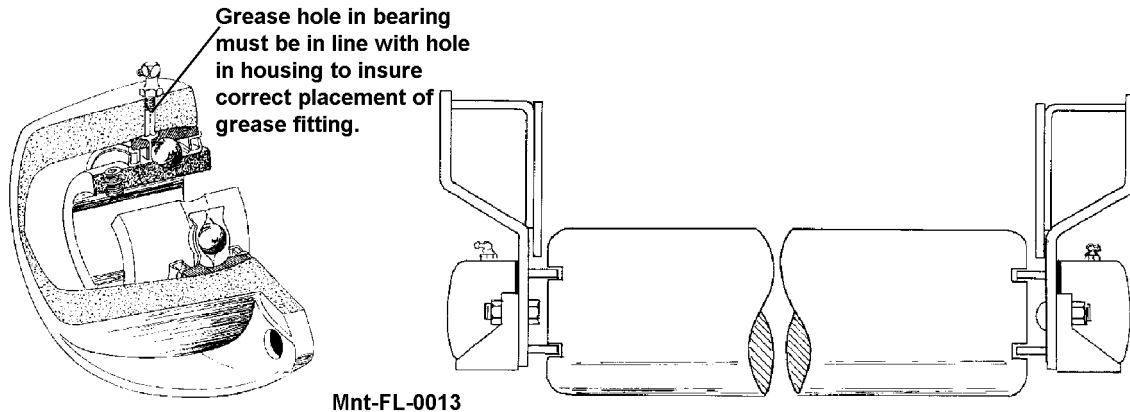
1. Remove skid plate, front cover plate and front shield.
2. Loosen powerband belt tensioner and remove powerband belt from gearbox sheave.
3. Remove four gearbox bolts and remove gearbox.
4. Change positions of gearbox vented plug and drain plug.
5. Rotate gearbox 180 degrees and re-mount.
6. Replace powerband belt and re-tension.
7. Reattach skid plate, front cover plate and front shield.



MAINTENANCE

Roller Bearing Replacement

Image Mnt-FL-0013



1. Remove roller and both bearing and bracket assemblies from mower. Lift the mower only high enough to remove the roller assembly.
2. Slide bearing and bracket assemblies off each end of roller.
If replacing with new bearing and bracket assemblies, proceed to step 9.
3. Remove roller bearing and housing assembly attaching hardware. Remove assembly from bracket. Inspect seal between assembly and bracket for brittleness, cracks, wear and tear. Replace if necessary.
If replacing with new roller bearing and housing assemblies, proceed to step 8.
4. Remove grease fitting from the top of bearing housing.
5. Remove bearing from housing by rotating bearing 90° sideways and line up with notches in bearing housing then pull out.
6. Install new bearing into housing. Bearing must be installed with grease hole in bearing aligned with grease fitting hole in housing.
7. Reinstall grease fitting to housing. Grease fitting must have locking pin installed which inserts into grease hole in bearing when installed. If grease fitting does not have a pin, order a new grease fitting. Grease fitting must be tight and seated in grease hole in bearing to prevent bearing from rotating in housing.
8. Attach roller bearing and housing assembly to bracket with seal between housing and bracket.
9. Slide bearing and bracket assemblies on each end of roller.
10. Check bearing for proper installation in housing by gently rocking bearing and bracket assembly in end of roller. Play should be slight to none at all.
11. Install roller and bearing and bracket assemblies on mower.
12. Lubricate roller bearing until lubricant can be seen coming out between roller and bearing housing.



Securely support the mower while removing and installing roller assembly.

MAINTENANCE

Cuttershaft Bearing Replacement

OUTBOARD (DRIVE) BEARING

1. Lift cutter unit to maximum horizontal height; then, securely support ends of cutterhousing.
2. Remove enough knives to place a floor jack under center of cuttershaft.
3. Securely support cuttershaft.

NOTE: The cuttershaft must remain supported while changing bearings.

4. Remove outboard fender-outboard bearings or wing drivelines-wing inboard bearings. Loosen setscrews securing bearing inner race to cuttershaft. Use special 3/16 hex allen wrench which has been shortened to reach into bearings.
5. Remove fasteners securing bearing and housing assembly to cutterhousing; then remove bearing and housing assembly.

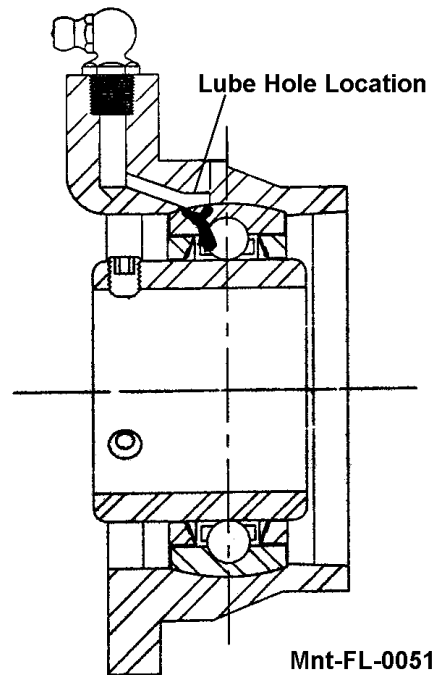
NOTE: There are two tapped holes in the housing which can be used to pull bearing and housing assembly out by using special tool No. 701627.

6. Using a jack to align parts, install bearing and housing assembly to cutter unit and make certain that bearing setscrew is located in keyway on cuttershaft. Grease bearing and install cap over fitting.

NOTE: Make sure grease is getting into bearing.

7. Replace outboard fender or wing driveline. Make sure to time wing drivelines properly before reconnecting.

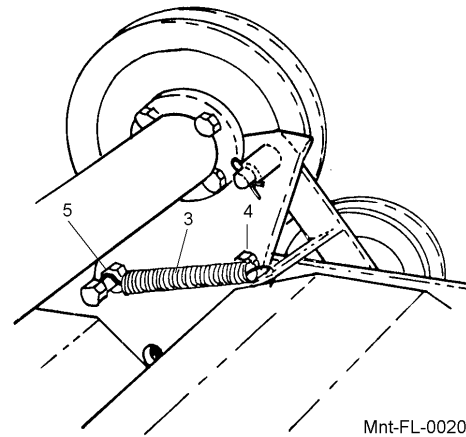
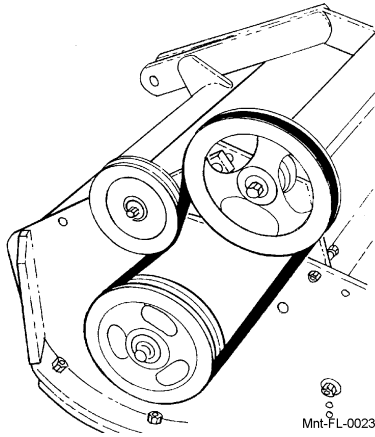
NOTE: Grease Lube Hole in bearing outer race must align with lube hole in housing. Inboard or Drive Side Bearing cannot be used as Outboard Bearing.



MAINTENANCE

MAINTENANCE

Cuttershaft Bearing Replacement (continued)



Inboard (Drive) Bearing-Figures Mnt-FL-0023 and Mnt-FL_0020

1. Remove belt guard.
2. Remove spring from idler arm.
3. Remove extension shaft housing mounting bracket fasteners at the cutterhousing. Pivot mounting bracket assembly and remove drive belt.
4. Remove fasteners that secure pulley to cuttershaft. Remove pulley and key.
5. Remove fasteners securing inboard bearing and housing assembly to cutterhousing; then, remove bearing and housing assembly.
NOTE: *There are two tapped holes in the housing which can be used to pull bearing and housing assembly out by using special tool No. 701627.*
6. Using a jack to align parts, install inboard bearing and housing assembly to cutter unit. Grease bearing and install cap over fitting.
7. Reinstall key and pulley. Secure with cuttershaft fasteners.
8. Remove jack and check shaft rotation. Reinstall knives which were removed.
9. Reinstall drive belts then secure motor mounting bracket to cutterhousing.
10. Reinstall idler arm spring.
11. Reinstall belt guard
12. Remove supports, lower unit to ground and test unit. Reinstall outboard fender, if not already installed.

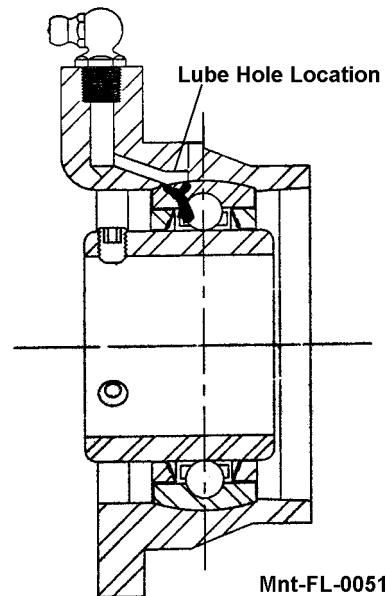
MAINTENANCE

Cuttershaft Replacement

NOTE: It is recommended that cuttershaft bearing and housing assemblies be replaced when replacing cuttershaft.

1. Place unit on the ground or securely support at a convenient height.
2. Remove cuttershaft bearing and housing assemblies as in Cuttershaft Bearing Replacement. After removing both assemblies, the cuttershaft can be removed and a new one installed. It may be necessary to remove two sets of knives nearest the drive end of cuttershaft.
3. Install new bearing and housing assemblies.

NOTE: Lube hole in bearing outer race must align with hole in housing. Outboard bearing cannot be used on inboard side. Set screws are not required for Inboard Bearing.



Changing to Forward or Reverse Rotation

To change direction of cuttershaft rotation, three left hand parts are required. A belt guard, an outboard bearing plate and an idler pulley arm (Consult parts list for these part numbers). Remove the cuttershaft and turn 180°. Remove the gearbox cuttershaft drive pulley and outboard bearing plate, (using the proper bearing plate) mount the plate to opposite side of mower housing. Remove the four bolts that mount the gearbox and rotate gearbox 180° to new position. Install cuttershaft pulley, gearbox output pulley, idler arm pulley assembly and belt. REPLACE EXISTING BELT GUARD WITH PROPER GUARD.

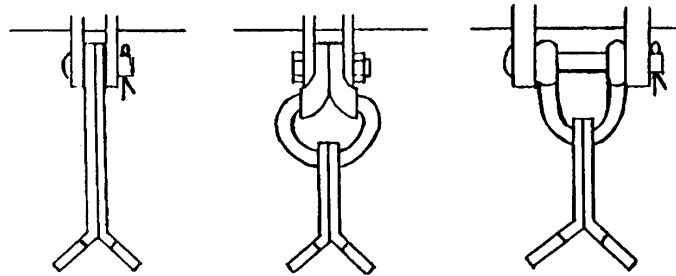
MAINTENANCE

Cutter Knives

Cutter knives are attached to the cutter shaft with hardened pin and cotter pins. These pins are supplied with the knife kit. To remove existing knives, remove and discard these pins and install new knives using new pins. Knife pins must be installed in certain direction to locate cotter pins where knives will not reach them when flexing backward. After installing cotter pins, bend extended prong at 45 degree angle.

FOR FORWARD ROTATION: Knife pins must be installed with their heads facing away from the cuttershaft pulley.

FOR REVERSE ROTATION: Knife pins must be installed with their heads facing toward the cuttershaft pulley.



ASM-FL-0047

IMPORTANT

ALAMO GENUINE FLAIL PARTS

ALAMO INDUSTRIAL Flail Mowers use dynamically balanced and matched system components for Cutter Shafts, Knives, Knife Hangers, Rollers, Drivetrain components, Bearings, Belts, and Pulleys. ALAMO INDUSTRIAL parts are made and tested to meet close-tolerance specifications of balance, quality, and consistency that assure long, trouble-free service.

The use of inferior "will fit" parts will void warranty for your ALAMO INDUSTRIAL implement and may cause premature or catastrophic failure which can result in serious injury or death. If you have any questions concerning the repair parts you are using, contact ALAMO INDUSTRIAL 1502 E. Walnut Seguin, TX 78155 (830) 372-3551.

ALAMO
INDUSTRIAL

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MAINTENANCE

Flail Blades Inspection



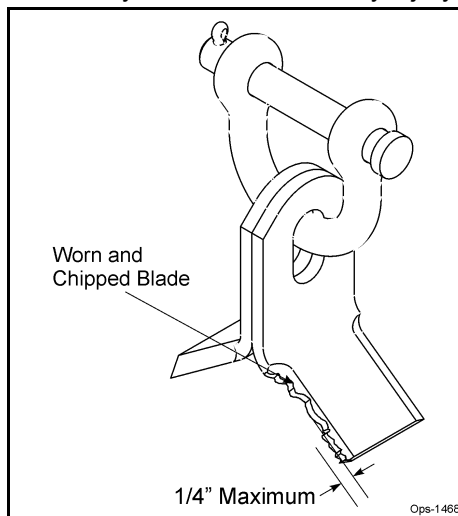
DANGER

Inspect the Blades daily for abnormal wear. REPLACE ALL BLADES on the carrier IMMEDIATELY if any blades have:

- Become bent or deformed from its original shape, or
- Wear inside the blade bolt hole, or
- Any cracks are visible, or
- Deep gouges in the blade's surface are present, or
- Gouges or chipped areas in the cutting edge are larger than 1/4"(8mm), or
- The material on the leading edge has been worn away by more than 1/4"(8mm)

DO NOT straighten, sharpen, weld or hard-face blades

Failure to replace worn or damaged blades may lead to catastrophic failure of the blades and ejection of the broken part with tremendous force which may cause serious bodily injury or death.



Always replace blades in sets

- Blades that are damaged may indicate severe service or abuse. If one blade is worn or damaged other blades on the same shaft will have been subjected to the same severe service or abuse.
- The Flail rotor turns at speeds exceeding 2000 RPM and is dynamically balanced at the factory. Differences in blade weight between used blades with loss of material from gouges or wear as compared to new blades can cause severe vibration and damage to the Flail rotor. Always replace blades as complete sets.

Important

Use only genuine Alamo Industrial replacement blades and fasteners. Other blades and fasteners may not meet the Alamo Industrial requirements and could fail during operation resulting in part being thrown out from under the mower.



CAUTION

Never attempt to sharpen blades. OPS-U-0044

MAINTENANCE

Blade Pins and D-Ring Inspection

Blade Pins and D-Rings daily for wear or damage as follows:

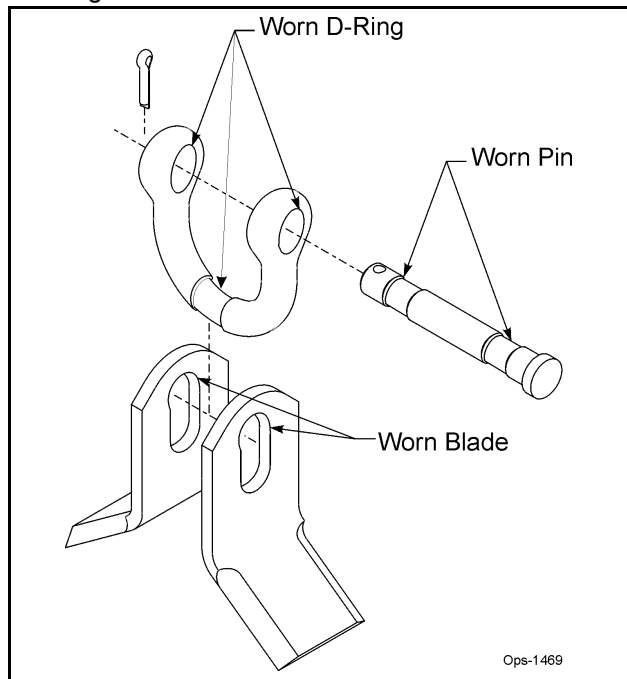


Inspect the Blade pins and D-Rings daily for abnormal wear. Make sure the cotter pins are in place and properly spread. REPLACE BLADE Pins and D-Rings IMMEDIATELY if they have:

- Visible cracks or
- If a Pin or D-Ring has visible worn areas, or
- If a Pin or D-Ring has gouges or chipped areas

Failure to replace abnormally worn pins or D-Rings may lead to catastrophic failure and ejection of the broken part which may cause serious bodily injury or death.

Always replace the pins and D-Rings whenever excessive wear is noticed.



Important

If the cotter pins are broken by contact with other flail blades, remove the pin and reverse the direction the pin is inserted through the D-Ring so that the cotter pin is on the opposite side of the D-Ring. This will prevent the next set of blades from swinging back and hitting the cotter pin. OPS-U-0045

MAINTENANCE

General Information on Flail Mower Vibration

FLAIL MOWERS - INFORMATION BULLETIN NO. 5

Excessive Vibration

Vibration is a **MONSTER** and if allowed to continue unchecked, can cause the complete break-up of a machine in a very short time.

A properly operated Flail Mower will produce very little vibration. If vibration does occur, the mower should be stopped and the trouble corrected, **as warranty does not cover failures resulting from continued operation after something happens to cause the mower to vibrate excessively.**

Vibration is caused by a rotating part which is out of balance. This could be the cutter shaft or, on those models having a universal slip joint assembly drive shaft, from the drive shaft.

If the two extreme ends of the drive shaft, (the splined yokes which fit on the tractor power take off shaft and on the mower gear box driven shaft), are not parallel, vibration will be evident. This is because of the mechanics of a universal drive wherein the rotational speed through a universal joint is not uniform. If the ends of a universal drive shaft are parallel, the uneven rotation effect is cancelled out and the machine being driven will be driven at a uniform rate of speed. However, if the ends are not parallel, the uneven rotation effect may be multiplied, resulting in a speeding up and slowing down of the entire mower system (gear box, extension shaft, pulleys, belt, and cutter shaft) each revolution. This effect can be readily noticed if the mower, while running, is raised to an extreme height on the tractor lift.

For smoothest operation, the tilt of the mower should be adjusted (on a 3-point hitch, by adjusting the length of the top link between the tractor and the mower) so that the ends of the drive shaft are parallel when the mower is down in operating position. Raising the mower while running, to extreme heights on the lift should be avoided.

To check where the vibration is originating, first be sure the ends of the universal drive shaft are parallel. Then, if vibration is still present, remove the drive belt and run the mower. If vibration is still present, it most likely is coming from and caused by a bent drive shaft. If so, the shaft should be replaced or straightened. If the vibration is gone - the drive portion of the mower is running smoothly - then the vibration is probably coming from the cutter shaft (it could be a pulley out of balance or a faulty belt with a varying cross section, but this is not likely).

The cutter shaft will run out of balance if:

1. **Wire, rope, string, rags, etc., around the cutter shaft** are holding the knives in a folded back position. Remove such foreign objects and be sure all knives are free to swing to the extended position.
2. **Knives are missing or broken.** Replace missing or broken knives.
3. **Knife hanger lugs are broken off shaft.** This condition usually results from continued operation in contact with large hard objects where the knife hanger lugs themselves are hitting the hard objects. Lugs should be replaced using arc welding equipment so as not to direct too much heat in one area of the shaft.
4. **Cutter shaft ball bearings are worn** enough to have radial "play" in them. Replace ball bearing and other worn parts to eliminate "play".
5. **Shaft is bent.** The shafts are straight within a couple of thousandths of an inch when they are made. It is possible that they will become bent in use, such as if the shaft is hooked on a stump while the tractor is moving forward at good speed.
6. **Shafts are operated at improper speed.** Rotating shafts have what is known as a natural period of vibration. The same is true of the cutter shafts on the Flail Mowers.

The actual speed at which the harmonic will occur will vary with each mower and each installation. To avoid this harmonic vibration when operating the mower, it may be necessary to adjust the engine speed of the tractor up or down.

Some units have a harmonic which occurs below the nominal operating speed. On these units, it will be noticed that there is always a little vibration at a particular RPM as the mower is being sped up to operating speed. This occurs as the shaft passes through its normal harmonic vibration point. As long as the mower is opened at the proper speed, then harmonic vibration will not be an issue.

MAINTENANCE

Proper Torque For Fasteners

The chart lists the correct tightening torque for fasteners. When bolts are to be tightened or replaced, refer to this chart to determine the grade of bolts and the proper torque except when specific torque values are assigned in manual text.

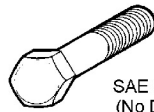
RECOMMENDED TORQUE IN FOOT POUNDS UNLESS OTHERWISE STATED IN THE MANUAL *

NOTE: These values apply to fasteners as received from supplier, dry or when lubricated with normal engine oil. They do not apply if special graphited or molydisulphide greases or other extreme pressure lubricants are used. This applies to both UNF fine and UNC coarse threads.

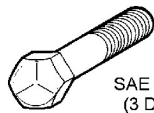
MAINTENANCE

TORQUE SPECIFICATIONS

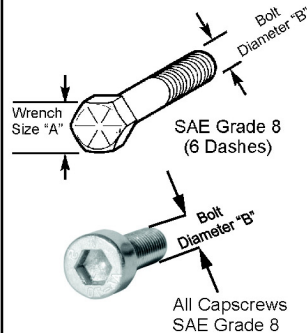
AMERICAN Bolt Head Markings



SAE Grade 2
(No Dashes)



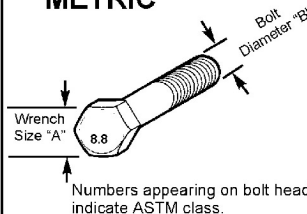
SAE Grade 5
(3 Dashes)



Proper torque for American fasteners.
Recommended Torque in Foot Pounds (Newton Meters).*

WRENCH SIZE (IN.) "A"	BOLT DIAMETER (IN.) "B" AND THREAD SIZE	SAE GRADE 2	SAE GRADE 5	SAE GRADE 8
7/16	1/4 - 20 UNC	6 (7)	8 (11)	12 (16)
7/16	1/4 - 28 UNF	6 (8)	10 (13)	14 (18)
1/2	5/16 - 18 UNC	11 (15)	17 (23)	25 (33)
1/2	5/16 - 24 UNF	13 (17)	19 (26)	27 (37)
9/16	3/8 - 16 UNC	20 (27)	31 (42)	44 (60)
9/16	3/8 - 24 UNF	23 (31)	35 (47)	49 (66)
5/8	7/16 - 14 UNC	32 (43)	49 (66)	70 (95)
5/8	7/16 - 20 UNF	36 (49)	55 (75)	78 (106)
3/4	1/2 - 13 UNC	49 (66)	76 (103)	106 (144)
3/4	1/2 - 20 UNF	55 (75)	85 (115)	120 (163)
7/8	9/16 - 12 UNC	70 (95)	109 (148)	153 (207)
7/8	9/16 - 18 UNF	79 (107)	122 (165)	172 (233)
15/16	5/8 - 11 UNC	97 (131)	150 (203)	212 (287)
15/16	5/8 - 18 UNF	110 (149)	170 (230)	240 (325)
1-1/8	3/4 - 10 UNC	144 (195)	266 (360)	376 (509)
1-1/8	3/4 - 16 UNF	192 (260)	297 (402)	420 (569)
1-5/16	7/8 - 9 UNC	166 (225)	430 (583)	606 (821)
1-5/16	7/8 - 14 UNF	184 (249)	474 (642)	668 (905)
1-1/2	1 - 8 UNC	250 (339)	644 (873)	909 (1232)
1-1/2	1 - 12 UNF	274 (371)	705 (955)	995 (1348)
1-1/2	1 - 14 UNF	280 (379)	721 (977)	1019 (1381)
1-11/16	1-1/8 - 7 UNC	354 (480)	795 (1077)	1288 (1745)
1-11/16	1-1/8 - 12 UNF	397 (538)	890 (1206)	1444 (1957)
1-7/8	1-1/4 - 7 UNC	500 (678)	1120 (1518)	1817 (2462)
1-7/8	1-1/4 - 12 UNF	553 (749)	1241 (1682)	2013 (2728)
2-1/16	1-3/8 - 6 UNC	655 (887)	1470 (1992)	2382 (3228)
2-1/16	1-3/8 - 12 UNF	746 (1011)	1672 (2266)	2712 (3675)
2-1/4	1-1/2 - 6 UNC	870 (1179)	1950 (2642)	3161 (4283)
2-1/4	1-1/2 - 12 UNF	979 (1327)	2194 (2973)	3557 (4820)

METRIC




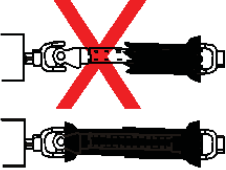
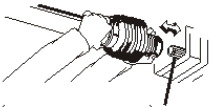

*Use 75% of the specified torque value for plated fasteners. Use 85% of the specified torque values for lubricated fasteners.

Proper torque for Metric fasteners.
Recommended torque in Foot Pounds (Newton Meters).*

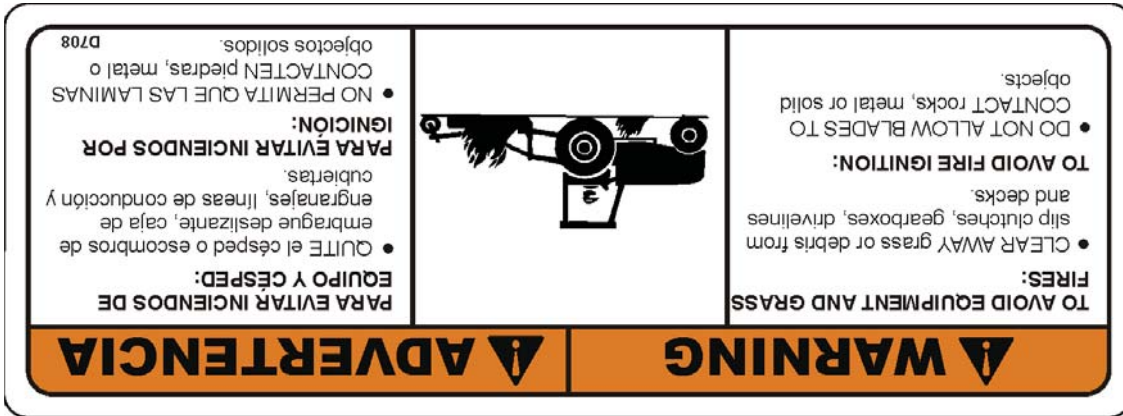
WRENCH SIZE (mm) "A"	BOLT DIA. (mm) "B"	ASTM 4.6	ASTM 8.8	ASTM 9.8	ASTM 10.9
8	5	1.8 (2.4)		5.1 (6.9)	6.5 (8.8)
10	6	3 (4)		8.7 (12)	11.1 (15)
13	8	7.3 (10)		21.1 (29)	27 (37)
16	10	14.5 (20)		42 (57)	53 (72)
18	12	25 (34)	74 (100)	73 (99)	93 (126)
21	14	40 (54)	118 (160)	116 (157)	148 (201)
24	16	62 (84)	167 (226)	181 (245)	230 (312)
30	20	122 (165)	325 (440)		449 (608)
33	22		443 (600)		611 (828)
36	24	211 (286)	563 (763)		778 (1054)
41	27		821 (1112)		1138 (1542)
46	30	418 (566)	1119 (1516)		1547 (2096)

Mnt-B-0005

SEGURIDAD

⚠ PELIGRO		⚠ DANGER	
<p>PARA EVITAR LESION SERIA O MUERTE POR CONTACTO A LA LINEA DE CONDUCCION, SEPARACION DE LINEA DE CONDUCCION O EL FRACASO DEL EJE DE PTO:</p> <ul style="list-style-type: none">• PARE, MIRE y ESCUCHE por el movimiento de rotación antes de acercarse al implemento.• MANTENGASE ALEJADO y MANTENGAN MANOS, PIES Y CUERPO LEJOS de partes girando, hasta que todos los elementos de movimiento se han parado.• SIEMPRE apague la Toma De Fuerza (Barra Gitaloria) antes de desmontar.• NO opere si las cubiertas de Toma De Fuerza (Barra Gitaloria) están dañadas.• EMPUJE Y JALE el yugo hasta que el collar de fijación hace clic y el yugo se traba en lugar.• REVISE las guardias de línea de conducción por giración libre y suficiente trasape para evitar areas sin cobertura.• NO UTILICE UN ADAPTADOR PARA LA TOMA DE FUERZA (Barra Gitaloria).		<p>TO AVOID SERIOUS INJURY OR DEATH FROM DRIVELINE CONTACT, DRIVELINE SEPARATION OR PTO STUB SHAFT FAILURE:</p> <ul style="list-style-type: none">• STOP, LOOK and LISTEN for rotating motion before approaching implement.• STAY AWAY and KEEP hands, feet and body AWAY from rotating parts until all moving elements have stopped.• ALWAYS shut off PTO before dismounting.• DO NOT operate if PTO shields are damaged or missing.• PUSH AND PULL on yoke until collar clicks and locks yoke in place.• CHECK driveline guards for free rotation and sufficient overlap to avoid unshielded areas.• DO NOT USE PTO ADAPTER	
			
			
<p>⚠ ADVERTENCIA</p>		<p>⚠ WARNING</p>	
<p>OPERE ESTA MÁQUINA A 540 RPM</p> <p>SOLAMENTE OPERE ESTA MÁQUINA A LA VELOCIDAD DE PTO (TOMA DE FUERZA O BARRA GITATORIA) DEL TRACTOR DE 540 RPM. El sobre exceso de velocidad de PTO puede causar el fracaso de componente que resultara en lesión. ROTACION DE PTO DEL TRACTOR: EN SENTIDO HORARIO D547 SP</p>		<p>OPERATE THIS MACHINE AT 540 RPM</p> <p>OVERSPEEDING PTO may cause component failure resulting in bodily injury. TRACTOR PTO ROTATION: CLOCKWISE</p>	

SEGURIDAD



SEGURIDAD

! PELIGRO		! PELIGRO	
<p>Si no puede leer inglés: antes de poner en funcionamiento este equipo, solicite que alguien le traduzca los mensajes de seguridad o vaya al sitio web para consultar los mensajes de seguridad y las etiquetas ya traducidos.</p>		<p>El Manual del Operador Seguridad video</p>	
<p>www.algqr.com/ats</p>		<p>www.algqr.com/avs</p>	
			
<p>Manuel de l'Opérateur</p>		<p>Manuel de l'Opérateur</p>	
<p>www.algqr.com/aff</p>		<p>www.algqr.com/aff</p>	
! DANGER		! DANGER	
<p>Si vous ne savez pas lire le français: avant d'utiliser l'équipement, demandez à une personne de vous traduire les messages de sécurité ou allez sur le site Internet pour voir la traduction des autocollants et des messages de sécurité.</p>		<p>Manuel de l'Opérateur</p>	
			
<p>Manuel de l'Opérateur</p>		<p>Manuel de l'Opérateur</p>	
<p>www.algqr.com/aff</p>		<p>www.algqr.com/aff</p>	
! GEFAHR		! GEFAHR	
<p>Falls Sie Deutsch nicht lesen können: Lassen Sie sich, bevor Sie das Gerät in Betrieb nehmen, die Sicherheitshinweise von einer geeigneten Person in Ihre Sprache übersetzen. Oder suchen Sie auf unserer Website nach Übersetzungen von Schilderaufschriften und Sicherheitshinweisen.</p>		<p>Manual do Operador</p>	
			
<p>Manual do Operador</p>		<p>Manual do Operador</p>	
<p>www.algqr.com/atp</p>		<p>www.algqr.com/atp</p>	
! PERIGO		! PERIGO	
<p>Caso você não leia inglês: antes de operar o equipamento, peça para alguém traduzir as mensagens de segurança ou visite a web e obtenha tais mensagens ou os decalques traduzidos.</p>		<p>Manual do Operador</p>	
			
<p>Manual do Operador</p>		<p>Manual do Operador</p>	
<p>www.algqr.com/atp</p>		<p>www.algqr.com/atp</p>	
! PERIGO		! PERIGO	
<p>Falls Sie Deutsch nicht lesen können: Lassen Sie sich, bevor Sie das Gerät in Betrieb nehmen, die Sicherheitshinweise von einer geeigneten Person in Ihre Sprache übersetzen. Oder suchen Sie auf unserer Website nach Übersetzungen von Schilderaufschriften und Sicherheitshinweisen.</p>		<p>Manual do Operador</p>	
			
<p>Manual do Operador</p>		<p>Manual do Operador</p>	
<p>www.algqr.com/atp</p>		<p>www.algqr.com/atp</p>	
! PERIGO		! PERIGO	



PELIGRO

PARA EVITAR LESION SERIA O MUERTE:

- LEA Y ENTIENDA el Manual de Operador proporcionado, signos de seguridad y calcomanías informativas para el tractor y implemento antes de operar el equipo.
- CONTACTE AL DISTRIBUIDOR inmediatamente si no tiene los manuales.
- CONTACTE AL DISTRIBUIDOR para que le explique cualquier instrucciones que no entienda completamente.
- SIEMPRE USE lentes de seguridad.
- USE un casco, zapatos de seguridad y guantes para su protección cuando esta operando el equipo.

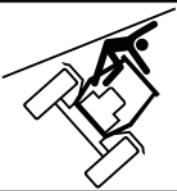

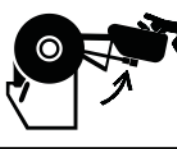


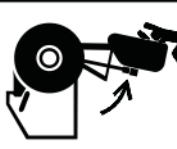


DANGER


TO AVOID SERIOUS INJURY OR DEATH:


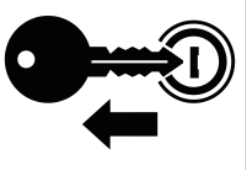


- READ AND UNDERSTAND the provided Operator's Manuals, safety signs and information decals for tractor and implement before operating equipment.
- CONTACT DEALER immediately if you do not have manuals.
- CONTACT DEALER to explain any instructions not fully understood.
- ALWAYS WEAR safety glasses.
- WEAR hard hat, safety shoes and gloves for protection when operating equipment.

SEGURIDAD

					
PELIGRO			DANGER		
Riesgo de Aplastamiento - Lesion o Muerte			Crushing Hazard - Injury or Death		
PARA EVITAR LESION SERIA O MUERTE:			TO AVOID SERIOUS INJURY OR DEATH:		
<ul style="list-style-type: none">• USE un tractor equipado con Estructura Protectora Contra Vuelcos ("ROPS") incluyendo barra antivuelco y cinturón de seguridad. Mantenga la barra antivuelco en la posición elevada.• PERMANEZCA ALEJADO al quitar el seguro de transporte, y al bajar o subir las alas.• DESPEJE EL ÁREA de personas presentes antes de bajar las alas del implemento.• EL IMPLEMENTO SE PUEDE CAER por el mal funcionamiento hidráulico o operación accidental de los controles.• BLOQUEE y soporte con seguridad el equipo antes de poner manos, pies o cuerpo debajo del equipo o componentes levantados.			<ul style="list-style-type: none">• USE tractor equipped with Rollover Protective Structure ("ROPS") including roll bar and seat belt. Keep roll bar in raised position.• STAND CLEAR when removing transport latch, lowering or raising wings.• CLEAR AREA of bystanders before lowering implement wings.• IMPLEMENT CAN FALL from hydraulic failure or accidental operation of controls.• BLOCK UP and securely support equipment before putting hands, feet or body under raised equipment or lifted components.		

							
PELIGRO		RIESGO DE ENREDAMIENTO		DANGER		ENTANGLEMENT HAZARD	
<p>PARA EVITAR LESION SERIA O MUERTE:</p> <ul style="list-style-type: none">• NO opere sin la cubierta protectora en su lugar y en buen estado. Toma De Fuerza (Barra Gritatoria) y guardias de caja de engranaje son SUJETO AL ESGASTE.• MANTENGASE ALEJADO y MANTENGA manos, pies y cuerpo LEJOS de las cuchillas girando, líneas de conducción, y partes que siguen moviendose después de que el poder es apagado. ESPERE hasta que todos los elementos móviles se han parado.• SIEMPRE REEMPLACE CUBIERTAS que han sido quitadas para servicio o mantenimiento.• DETENGASE, OBSERVE y ESCUCHE por el movimiento de rotación antes de acercarse al implemento.• NO PISE EN las líneas de conducción o cubiertas.		<p>TO AVOID SERIOUS INJURY OR DEATH:</p> <ul style="list-style-type: none">• DO NOT operate without guards in place and in good condition. PTO and gearbox guarding are SUBJECT TO WEAR.• STAY AWAY and KEEP hands, feet and body AWAY from rotating blades, drivelines and parts that continue to move after power shut-off. WAIT until all moving elements have stopped.• ALWAYS REPLACE GUARDS that have been removed for service or maintenance.• STOP, LOOK and LISTEN for rotating motion before approaching implement.• DO NOT STEP ON drivelines or guards.					

**PELIGRO**



Riesgo de Atropello Lesión o Muerte

PARA EVITAR LESION SERIA O MUERTE:

- SIEMPRE ABROCHE el cinturón de seguridad.
- SOLO ENCIENDA el tractor mientras que esta sentado en el asiento del operador.
- PARE EL MOTOR y Toma De Fuerza (Barro Gítoria), aplique el freno de mano, baje el implemento, y deje que todas las partes movi paren completamente, y quite la llave antes de desmontar el tractor.
- ENTIENDA COMO parar el tractor y equipo rapidamente en caso de una emergencia.
- NO MONTE o DESMONTE el tractor en movimiento.
- NUNCA PERMITA pasajeros en el tractor o implemento.
- NUNCA PERMITA que niños operen o se monten en el tractor o implemento.
- MANTENGA LAS PERSONAS PRESENTES LEJOS de la area antes de mover el tractor o implemento.
- MANTENGASE ALERTO y EVITE golpes en troncos, agujeros, pozos o terreno en desnivel.
- EVITE las ramas de árbol, maleza y algun otros objetos que sobresalen que puedan golpear y tumbar el operador del asiento.

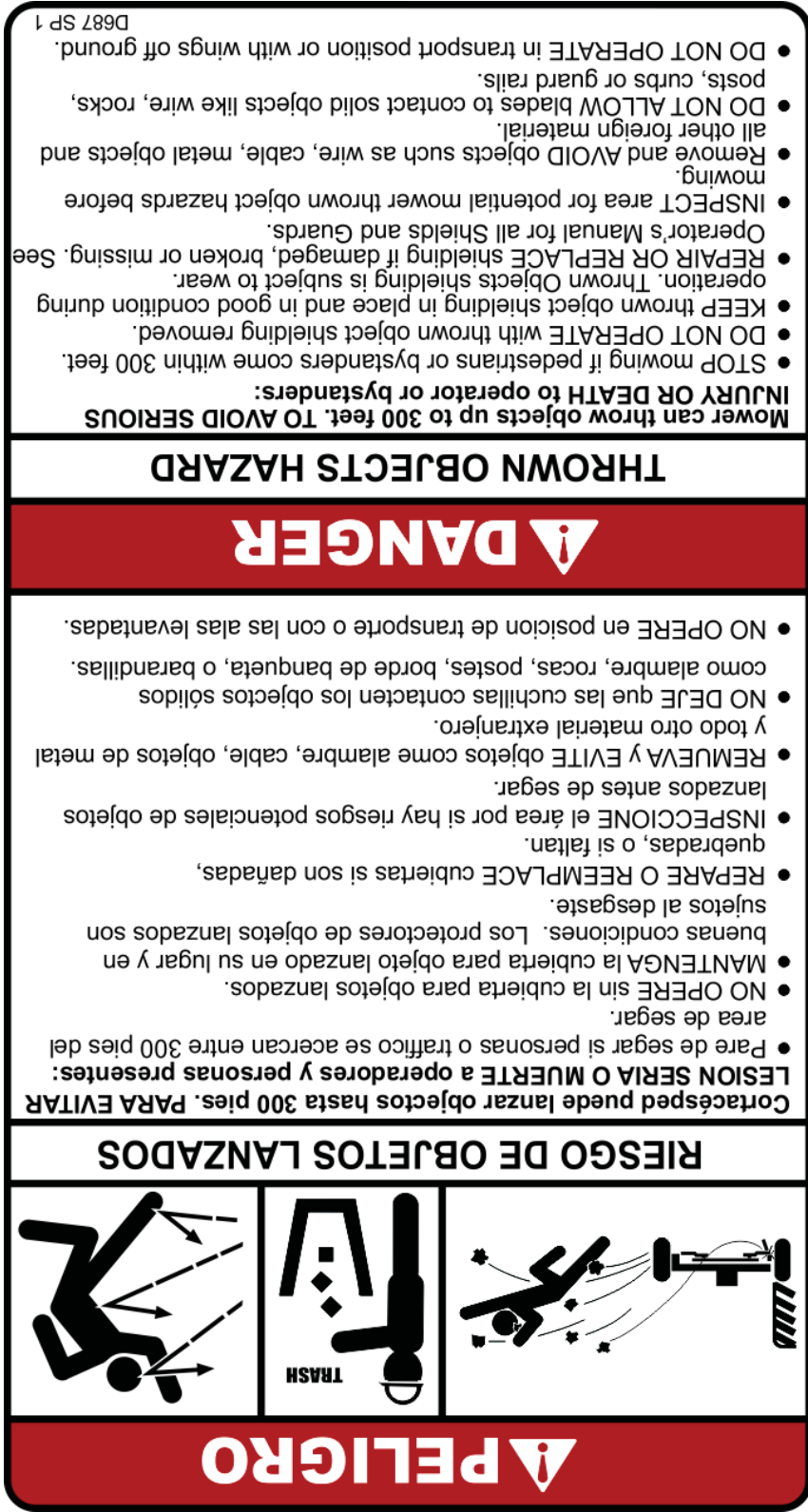
! DANGER

Run Over Hazard - Injury or Death


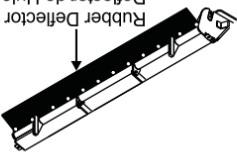
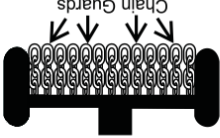
TO AVOID SERIOUS INJURY OR DEATH:

- ALWAYS BUCKLE UP seat belt.
- ONLY START Tractor while seated in the operator's seat.
- STOP ENGINE and PTO, engage parking brake, lower implement, allow all moving parts to stop and remove key before dismounting from tractor.
- KNOW HOW to stop tractor and equipment quickly for an emergency.
- DO NOT MOUNT or DISMOUNT Tractor in motion.
- NEVER ALLOW riders on tractor or implement.
- NEVER ALLOW children to operate or ride on tractor or implement.
- KEEP BYSTANDERS CLEAR of area before moving tractor or implement.
- KEEP ALERT and AVOID hitting stumps, holes, ruts, and uneven terrain.
- AVOID tree limbs, brush and other overhanging objects that can strike and throw the operator from seat.

D687 SP 2



SEGURIDAD

⚠ DANGER		THROWN OBJECT HAZARD
		
TO AVOID SERIOUS INJURY OR DEATH: DO NOT OPERATE if Thrown Object Shielding is damaged or missing. • Maintain Rubber Deflectors in good condition. • Inspect Rubber Deflectors frequently.		
		
		
RIESGO DE OBJETOS LANZADOS	PARA EVITAR LESION SERIA O MUERTE: NO OPERE si la Cubierta de Objetos Lanzados esta dañada o falta.	
⚠ PELIGRO		
• Mantenga Los Deflectores de Hule en buenas condiciones. • Inspeccione Los Deflectores de Hule con frecuencia.		

D626 SP

⚠ DANGER	⚠ PELIGRO
GUARD MISSING DO NOT OPERATE	FALTA EL CUBIERTA NO OPERE
	
⚠ DANGER	⚠ PELIGRO

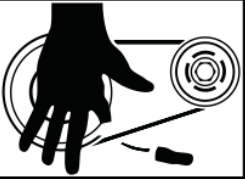
D646

⚠️ ADVERTENCIA

RIESGO DE PUNTOS DE PELIZCO

PARA EVITAR LESION SERIA: NO OPERE con la cubierta de correa ausente.

D641 SP



⚠️ WARNING

PINCH POINT HAZARD

TO AVOID SERIOUS INJURY: DO NOT OPERATE with Belt Shield removed.

⚠️ ADVERTENCIA

Partes que no son auténticas pueden fallar catastróficamente.

PARA EVITAR LESION SERIA O MUERTE:

- Use SOLAMENTE las partes de reemplazo auténticas de ALAMO INDUSTRIAL
- Partes que no son auténticas pueden fallar y causar condiciones peligrosas para el operador y personas presentes. Contacte a su distribuidor local o ALAMO INDUSTRIAL sobre partes de reparo a: 1502 E. Walnut, Seguin, TX 78155. www.aligqr.com/aps Servicio al Cliente: 800-882-5762. Correo Electronico: support@alamo-industrial.com



⚠️ WARNING

Non-genuine parts can fail catastrophically. **TO AVOID SERIOUS INJURY OR DEATH:**


- ONLY use genuine ALAMO INDUSTRIAL replacement parts.
- Non-genuine parts can fail creating hazardous conditions for operator and bystanders.

Contact local dealer or ALAMO www.aligqr.com/apm INDUSTRIAL about repair parts at: 1502 E. Walnut, Seguin, TX 78155. Customer Service: 800-882-5762. Email: support@alamo-industrial.com



IMPORTANTE


SEA ENTRENADO **ESTE CONSCIENTE** **ESTE ALERTO** **Antes de Funcionar** **Cortacésped** **ESTE VIVO**



Para prevenir lesiones graves a usted y/o personas presentes, sea entrenado en la Practica de Segar Seguro. Compañías de Alamo Group, Alamo Industrial, Bush Hog, M&W, Rhino, Schulte y Tiger así como AEM y FEMA proporcionan material para su entrenamiento que es esencial para su seguridad y la seguridad de otros al operar este equipo. Haga estos procedimientos de seguridad una parte importante de su día de trabajo. Lea y entienda el Manual de Operadores. No permita que personas sin entrenamiento funcionen este equipo. Contacte a su distribuidor, AEM (www.aem.org), FEMA (314-878-2304, www.FarmEquipment.org), o Alamo Group (www.Alamo-Group.com) para la información sobre el material de entrenamiento o cursos que ofrecen el entrenamiento de Practicas de Operación para Cortadoras. www.aligqr.com/avs

IMPORTANT

BE TRAINED **BE ALERT** **BE ALIVE** **Before Operating this Mower**



To prevent serious injury to yourself and/or bystanders, be trained in Safe Mowing Practices. Alamo Group Companies, Alamo Industrial, Bush Hog, M&W, Rhino, Schulte, Tiger and Terrain King as well as AEM and FEMA provide training material that is critical for your Safety and the Safety of others when operating this equipment. Make these Safety Procedures an important part of every workday. Read and understand the Operator's Manual. Do not let untrained individuals operate this equipment. Contact your Dealer, AEM (www.aem.org), FEMA (314-878-2304, www.FarmEquipment.org), or Alamo Group (www.Alamo-Group.com) for information on training material or courses that provide training in Safer Operating Practices for Mowers. www.aligqr.com/ave

SEGURIDAD

INFORMACIÓN DE PARTES

INFORMACIÓN DE PARTES

Cortacéspedes de ALAMO INDUSTRIAL usan balanceado y componentes del sistema de igualdad para los portadores de la lámina, las láminas, los cortador-ejes, los cuchillos, las suspensiones del cuchillo, los rodillos, los componentes del engranajes de conducción y los cojinetes. Estas piezas se hacen y se prueban a las especificaciones de ALAMO INDUSTRIAL. Partes de No-genuino "caber" piezas no resuelven constantemente estas especificaciones. El uso de "caber" piezas puede reducir el funcionamiento del cortacéspedes, garantías vacías del cortacéspedes y presentar un peligro de seguridad. ! Utilice las piezas genuinas de cortacéspedes del ALAMO INDUSTRIAL para la economía y la seguridad! (SPAM-1 SP)

VEA A SU VENDEDOR ALAMO INDUSTRIAL

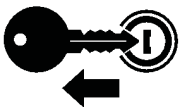
Manuales de Partes y Operador



www.alqqr.com/aps

NOTA: Si necesita un manual completamente en español por favor de ponerse en contacto a: *Translations, direccion 1502 E. Walnut Street Seguin, TX 78155; Fax: (830) 372-9529*

RIESGOS CON EL MANTENIMIENTO DEL IMPLEMENTO

	Inspeccione periódicamente todas las partes móviles, lubrique las líneas de conducción y ajuste todas las sujeciones.
	Apague el motor. Quite la llave antes de realizar tareas de
	Bloquee el implemento antes de repararlo. Utilice bloques grandes sobre suelo blando o húmedo
	Coloque las trabas de transporte cilíndricas
	Inspeccione las cuchillas para detectar daños o fisuras

MANTENGA LOS IMPLEMENTOS EN BUENAS CONDICIONES DE FUNCIONAMIENTO, A TRAVÉS DE UN SERVICIO, REPARACIÓN O MANTENIMIENTO APROPIADO.



ANTES DE REALIZAR TAREAS DE SERVICIO, REPARACIÓN Y MANTENIMIENTO DEL IMPLEMENTO:

- **APAGUE EL MOTOR Y EL PTO**, coloque el freno de mano, descienda el implemento, espere a que se detengan todas las partes móviles y quite la llave antes de bajarse del tractor.
- **COLOQUE** el implemento sobre el suelo o trabe de manera segura los equipos elevados. Utilice bloques grandes sobre suelo blando o húmedo.
- **EMPÚJE Y JALE** la palanca del Cilindro Hidráulico Remoto para liberar la presión hidráulica.
- **DESCONECTE** la línea de conducción del **IMPLEMENTO** del **EJE DE PTO** del tractor.
- **USE GAFAS DE SEGURIDAD Y GUANTES PROTECTORES** y siga todos los **PROCEDIMIENTOS DE SEGURIDAD** al realizar tareas de servicio, reparación y mantenimiento sobre el implemento:
- Siempre **USE GUANTES** protectores al manipular las hojas, cuchillas, bordes filosos o un componente desgastado con bordes filosos.
- Siempre **USE GUANTES Y GAFAS DE SEGURIDAD** al reparar componentes en caliente
- **EVITE EL CONTACTO** con tanques de aceite hidráulico, bombas, motores, válvulas y superficies de conexión de mangueras calientes.
- **SUJETE FIRMEMENTE** o **TRABE EN POSICIÓN ELEVADA** todos los implementos, bastidores y componentes elevados antes de trabajar sobre los equipos que se encuentran debajo.
- **DETENGA** el movimiento de todos los implementos y **APAGUE EL MOTOR DEL TRACTOR** antes de realizar ninguna tarea.
- **USE** una escalera o gradas elevadas para alcanzar áreas altas del equipo a las que no se pueda acceder desde la tierra.
- **ASEGÚRESE** de estar bien apoyado sobre superficies sólidas planas al subirse al implemento para realizar tareas.
- **SIGA** las instrucciones del fabricante sobre cómo manipular los lubricantes, solventes, limpiadores y otros agentes químicos.
- **NO** cambie ninguna calibración hidráulica de fábrica para evitar fallas de los componentes o equipos.
- **NO** modifique o altere el implemento, las funciones o componentes.
- **NO SUELDE** o repare los componentes de la cortadora. Esto puede causar vibraciones y fallas de los componentes que se desprendan de la cortadora.

REALICE LAS TAREAS DE SERVICIO, REPARACIÓN, LUBRICACIÓN Y MANTENIMIENTO QUE SE DESCRIBEN EN LA SECCIÓN DE MANTENIMIENTO DEL IMPLEMENTO:

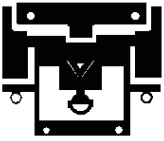


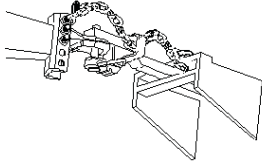

- **INSPECCIONE** el implemento para detectar sujeciones sueltas, partes gastadas o rotas, ajustes sueltos o con filtraciones, que los pasadores tengan chavetas y arandelas, y las partes móviles para detectar el desgaste.
- **REEMPLACE** todas las partes gastadas o rotas con repuestos autorizados.
- **LUBRIQUE** la unidad tal como se especifica en el cronograma de lubricación.
- **NUNCA** lubrique, ajuste o quite material mientras el equipo está en funcionamiento o movimiento.
- **AJUSTE** todas las tuercas y pernos tal como se especifica.

INSPECCIÓN DE CUCHILLAS:

- **REEMPLACE** las cuchillas dobladas, dañadas, agrietadas o rotas inmediatamente por cuchillas nuevas.
- **EVITE** fallas de las cuchillas y que vuelen trozos de cuchillas. NO enderece, suelde o suelde con superficies rígidas.
- **INSPECCIÓN DE PROTECTORES DE SEGURIDAD, GUARDAS Y DISPOSITIVOS DE SEGURIDAD:**
- **MANTENGA** en su lugar y en buen estado todos los defletores, protectores de acero, cubiertas de caja de engranajes, cubiertas integrales de PTO, bandas, faldones laterales y zapatas antideslizantes.
- **REEMPLACE** cualquier protector, cubierta o dispositivo de seguridad falante, roto o gastado.
- El escape del motor, al igual que algunos de sus componentes, y determinados elementos del vehículo contienen o emiten agentes químicos que el estado de California ha determinado que causan cáncer, defectos de nacimiento y otros daños reproductivos.
- Las terminales de baterías y los accesorios relacionados contienen plomo y componentes de plomo, que el estado de California ha determinado son químicos que causan cáncer, defectos de nacimiento u otros daños reproductivos. **PN HMMFM-01 SP**

SEGURIDAD

RIESGOS EN TRANSPORTE

	Use señales de SMV (vehículo de movimiento lento) y balizas
	Peligro de detención por pérdida de control
	Peligro de velocidad excesiva por pérdida de control
	Use la cadena de remolque de seguridad – Tractor a implemento
	Coloque las trabas de transporte

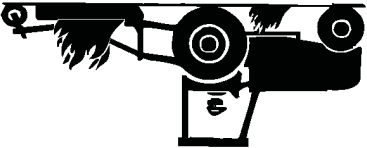
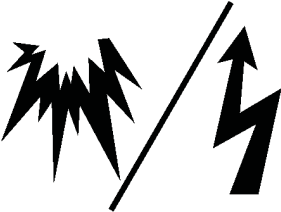
ADVERTENCIA
PARA EVITAR LESIONES GRAVES O LA MUERTE AL REMOLCAR O TRANSPORTAR EQUIPOS:

- **MANTENGA** la velocidad de transporte **POR DEBAJO DE 20** millas por hora para mantener el control del equipo.
- **REDUZCA LA VELOCIDAD** en terreno inclinado, en las curvas y en condiciones de remolque desfavorables.
- **NO REMOLQUE** camiones u otros vehículos
- **USE** un tractor de tamaño adecuado y equipado en función del equipo de remolque.
- **SIGA** todas las reglamentaciones de tránsito locales.
- **REQUISITOS DEL TRACTOR PARA REMOLCAR O TRANSPORTAR IMPLEMENTOS:**
 - **SÓLO TRANSPORTE** en el tractor con el mecanismo **ROPS** (antivuelco) en posición elevada.
 - **USE** un tractor de tamaño adecuado y equipado, que supere el peso del implemento en al menos un 20%
 - **MANTENGA EL 20%** del peso del tractor en las ruedas frontales para mantener la dirección en forma segura.
- **ANTES DE TRANSPORTAR O REMOLCAR EL IMPLEMENTO:**

- **VERIFIQUE** la dirección y los frenos para asegurarse el correcto funcionamiento y las condiciones adecuadas.
- **VERIFIQUE LLEVAR EL AVISO DE SMV**, los reflectores y las luces de advertencia para la adecuada operación y visibilidad de la unidad.
- **VERIFIQUE** que no haya impedimentos a la visión mientras conduce, en el tractor, la cabina o el implemento, sentado en el asiento del tractor.
- **AJUSTE** su posición de conducción, los espejos y el transporte del implemento para tener una visión clara para condiciones de conducción y tránsito.
- **PREPARE EL IMPLEMENTO PARA EL TRANSPORTE O EL REMOLQUE:**
 - **DESAPLIQUE EL PTO**
 - **ELEVE LA CORTADORA**
 - **QUITTE** todo material cortado que se acumule en la plataforma de la cortadora.
- **CORTADORA AL REMOLQUE-INSTALE TRABAS DE TRANSPORTE Y CADENA DE SEGURIDAD:**
 - **INSTALE** los paradores o pernos de transporte en el cilindro de eje central.
 - **AJUSTE LA CADENA DE SEGURIDAD** del implemento al tractor.
- **DETERMINAR LAS CARACTERÍSTICAS DE DETENCIÓN DEL TRACTOR Y EL IMPLEMENTO PARA EL TRANSPORTE O REMOLQUE:**
- **PRUEBAS DE FRENADO:**
 - **FRENE** a velocidades en aumento.
 - **Observe** las distancias de **DETENCIÓN** con el aumento de velocidad.
 - **DETERMINE** la velocidad de transporte máxima segura que no supere las 20 millas por hora
- **DETERMINE LA VELOCIDAD DE GIRO MÁXIMA ANTES DE OPERAR EN CARRETERAS O TERRENO IRREGULAR:**

- **PONGA A PRUEBA** el equipo aumentando lentamente la velocidad en las curvas para determinar si se puede operar a mayor velocidad.
- **USE MENORES** velocidades de giro en las curvas pronunciadas para evitar el vuelco.
- **AL REMOLCAR O TRANSPORTAR EL EQUIPO:**
 - Siempre **USE EL CINTURÓN DE SEGURIDAD** al operar o transportar la cortadora.
 - **USE** bajas velocidades para evitar el vuelco con el implemento elevado.
 - **USE** bajas velocidades y dirección gradual en las curvas, colinas, o en superficies irregulares o poco uniformes, y en carreteras mojadas.
- **ENCIENDA LAS BALIZAS DE ADVERTENCIA** del tractor.
- **TENGA EN CUENTA** el espacio necesario para el vaivén del implemento en las curvas. *PN TH02 SP*

RIESGOS ELÉCTRICOS Y DE FUEGO

	
No opere cerca de fuego. Mantenga limpia la plataforma de la cortadora	Riesgo de choque y explosión Contacto de paletas con líneas de servicios o gas

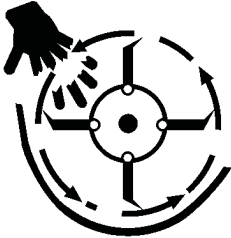
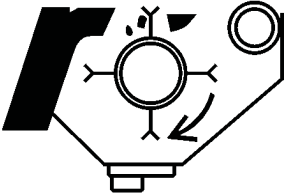
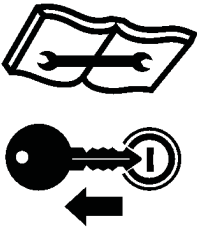
PELIGRO PARA EVITAR LESIONES GRAVES O LA MUERTE POR CONTACTO ELÉCTRICO AL TRABAJAR CERCA DE CABLES ELÉCTRICOS, LÍNEAS DE GAS Y DE SERVICIOS:

- **INSPECCIONE** el área de corte para que no interfiera con cables de alimentación eléctricos subterráneos, obstrucciones, líneas de gas, cables y servicios, estructuras municipales o de otro tipo.
 - **MANTENGA** todas las alas elevadas a 3 metros (10 pies) o una mayor distancia de todos los cables de alimentación y obstrucciones elevadas.
 - **NO** ponga en contacto la cortadora con ninguna estructura u obstrucción de servicios o municipales.
 - **LLAME** AL 811 y al 1-800-258-0808 para identificar cables de servicios subterráneos.
- PAUTAS DE PREVENCIÓN DE INCENDIOS durante la operación, reparación y servicio de la cortadora y el tractor, a fin de reducir el riesgo de incendio del equipo y de la vegetación:**

- El tractor debe estar **EQUIPADO CON MATAFUEGOS**
- **NO OPERE** la cortadora sobre un tractor equipado con escape debajo del bastidor
- **NO FUME** ni acerque fuego directo a la cortadora o el tractor
- **NO CONDUZCA** sobre residuos encendidos o en áreas recientemente quemadas
- **EVITE LA FORMACIÓN DE CHISPAS** al no permitir que la hoja de la cortadora entre en contacto con objetos sólidos como metal o roca.
- **AJUSTE LOS EMBRAGUES DESLIZANTES** para evitar el deslizamiento excesivo y el calentamiento de la placa del embrague.
- **LIMPIE** todo resto de hierba o residuo acumulado alrededor de las líneas de conducción de la cortadora, los embragues deslizantes y cajas de cambios.
- **APAGUE EL MOTOR** al cargar combustible. *PN EF02 SP*

SEGURIDAD


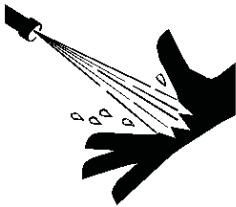
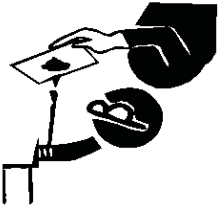
RIESGO DEL CONTACTO A LAS CUCHILLAS DE CORTADORA

		
No ponga los dedos debajo de la cortadora	No ponga el pie debajo de la cortadora	Detenga el tractor. Quite la llave. Lea el Manual

PELIGRO MANTÉNGASE LEJOS DE LAS CUCHILLAS GIRATORIAS PARA EVITAR LESIONES GRAVES O LA MUERTE POR CONTACTO CON LA CUCHILLA:

- MANTÉNGASE LEJOS y NO ACERQUE LAS MANOS, LOS PIES y EL CUERPO a las cuchillas giratorias, líneas de conducción y partes hasta que todos los elementos móviles se hayan detenido.
- NO ponga las manos o los pies debajo de las plataformas de la cortadora
- DETENGA las CUCHILLAS giratorias antes de elevar la plataforma de la cortadora o las alas
- DETENGA la cortadora, EXAMÍNELA y PRESTE ATENCIÓN A LOS SONIDOS antes de acercarse a la cortadora para asegurarse de que se haya detenido todo el movimiento giratorio. *PN MBFM-01 SP*

RIESGO DE FILTRACION DE ACEITE HIDRÁULICO DE ALTA PRESIÓN


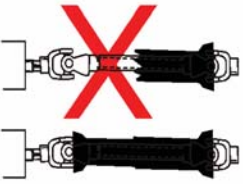
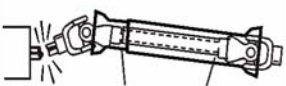
		
Penetración de aceite de alta presión en la piel	Erosión de la piel por el aceite de alta presión	Usar cartón para detectar filtraciones de aceite

PELIGRO PARA EVITAR LESIONES GRAVES O LA MUERTE POR PENETRACIÓN DE FILTRACIONES DE ACEITE HIDRÁULICO DE ALTA PRESIÓN:

- NO OPERE el equipo con filtraciones de aceite o combustible.
- MANTENGA todas las mangueras hidráulicas, líneas y conexiones en BUEN ESTADO y AJUSTADAS antes de aplicar presión al sistema.
- LIBERE LA PRESIÓN HIDRÁULICA antes de desconectar las líneas o trabajar en el sistema.
- QUITÉ y reemplace la manguera si sospecha que tiene filtraciones. Solicite al distribuidor que verifique si hay filtraciones.
- LAS FILTRACIONES DE LÍQUIDO DE ALTA PRESIÓN PUEDEN NO SER VISIBLES.
- AL VERIFICAR FILTRACIONES HIDRÁULICAS y TRABAJAR CERCA DE LOS SISTEMAS HIDRÁULICOS:

- SIEMPRE USE gafas de seguridad y guantes impermeables.
- USE papel o cartón para verificar si hay filtraciones.
- NO USE las manos o partes del cuerpo para detectar filtraciones.
- MANTENGA las manos y el cuerpo LEJOS de los orificios de clavijas y boquillas de eyección de fluido hidráulico.
- El fluido hidráulico puede causar gangrena si no es extraído quirúrgicamente de inmediato por un médico especializado en este tipo de lesiones. *PN HP01 SP*

RIESGO DE ENREDO POR EL PTO

	Peligro de enredo No se acerque o toque ningún eje de transmisión de PTO giratorio
	Asegúrese de que el eje de PTO esté firmemente sujetado. No use un adaptador de PTO
	No opere la máquina si las cubiertas de PTO están dañadas o faltantes
	Asegúrese de que los ejes de PTO sean del largo adecuado

▲ PELIGRO MANTÉNGASE ALEJADO DE LAS LÍNEAS DE CONDUCCIÓN Y OTROS ELEMENTOS GIRATORIOS PARA EVITAR LESIONES GRAVES O LA MUERTE:

MANTÉNGASE LEJOS Y NO ACERQUE las manos, los pies y el cuerpo a las cuchillas giratorias, líneas de conducción y partes hasta que todos los elementos móviles se hayan detenido.

- **DETENGA** la cortadora, **EXAMÍNELA Y PRESTE ATENCIÓN A LOS SONIDOS** antes de acercarse a la cortadora para asegurarse de que se haya detenido todo el movimiento giratorio.
- **LOS ELEMENTOS GIRATORIOS SIGUEN ROTANDO** una vez apagada la PTO.

PROTECCIÓN DE LA PTO:

PARA EVITAR LESIONES GRAVES O LA MUERTE POR ENREDO AL OPERAR EL IMPLEMENTO:

- **MANTENGA** instalados los protectores, las cubiertas integrales de las líneas de conducción y las cubiertas de entrada
- **NO OPERE** la cortadora si los protectores o cubiertas no están bien colocados o faltan.
- **REEMPLACE O REPARÉLOS** si faltan, están dañados o rotos
- **SIEMPRE REEMPLACE LOS PROTECTORES** que se han quitado para tareas de reparación o mantenimiento.

PARA EVITAR que la línea de conducción se rompa durante las operaciones:

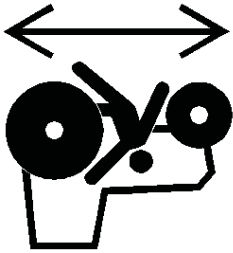
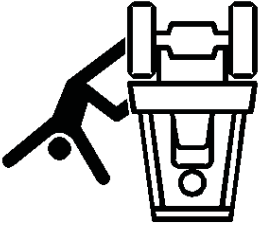

- **VERIFIQUE** que la línea de conducción tenga el largo adecuado entre el eje de **PTO** y el eje de la caja de cambios del implemento.
- Las líneas de conducción demasiado cortas se pueden soltar o romper.
- Las líneas de conducción demasiado largas pueden tocar el suelo.
- Un ensamblaje telescópico de la línea de conducción que toque el suelo no se deslizará y se solidificará.
- Si la línea de conducción toca el suelo, puede atravesar los cojinetes de soporte y romper el eje de **PTO**.
- **EVITE** hacer curvas pronunciadas o elevar la cortadora a alturas que puedan hacer caer la línea de conducción.
- Lubrique los componentes telescópicos del eje de transmisión en forma semanal.

COMUNÍQUESE CON EL DISTRIBUIDOR si la línea de conducción del implemento no coincide con el eje de **PTO** del tractor:

• **NO UTILICE UN ADAPTADOR DE PTO.**

El uso de un adaptador de **PTO** puede causar vibración excesiva, caída de objetos, fallas de las cuchillas y el implemento como consecuencia de la duplicación de la velocidad operativa. El aumento de la longitud de trabajo puede exponer áreas desprotegidas de la línea de conducción. *PN PE01 SP*

RIESGO DE ATROPELLO

		
Riesgo de atropello del operador	Riesgo de atropello por caída del operador	Riesgo de atropello por caída del operador

⚠ PELIGRO PARA EVITAR LESIONES GRAVES O LA MUERTE POR CAÍDA DEL TRACTOR O ATROPELLO DEL EQUIPO:

- USE tractores equipados con SISTEMA ANTIVUELCO (ROPS) y CINTURONES DE SEGURIDAD para las operaciones de corte.
 - MANTENGA EL SISTEMA ROPS trabado en posición vertical.
 - SÓLO ENCIENDA el tractor sentado en el asiento del tractor.
 - SIEMPRE ABROCHESE el cinturón de seguridad al operar el tractor y los equipos.
 - SÓLO OPERE el tractor y el equipo sentado en el asiento del tractor.
 - NUNCA LLEVE A OTRAS PERSONAS en el tractor o implemento.
- AL SUBIR Y BAJAR DEL TRACTOR:**
- SÓLO suba o baje del tractor cuando éste y sus partes móviles estén detenidos.
 - APAGUE EL MOTOR Y LA TDF, coloque el freno de mano, descienda del implemento, espere a que se detengan todas las partes móviles y quite la llave antes de bajarse del tractor. *PNR001 SP*

RIESGO DE OBJETOS LANZADOS Continuada

			
Peligro de objetos lanzados por la cortadora	Objetos lanzados desde cortadora elevada	Inspeccione el área. Quite los objetos extraños	No permita que las cuchillas entren en contacto con objetos sólidos

OPERACIÓN DE LA CORTADORA:

- **NO** exceda la capacidad de corte nominal de la cortadora, ni corte elementos que no sean vegetación.
- **USE CABINAS DE TRACTOR CERRADAS** cuando haya dos o más cortadoras operando en un mismo sector..
- **AJUSTE** las secciones de la cortadora o la ala cercana y paralela al suelo sin exponer las cuchillas
- **AJUSTE LA ALTURA** de corte para **EVITAR EL CONTACTO DE LAS CUCHILLAS** con objetos sólidos, como alambres, piedras, postes, cordones, guardarrailes y obstrucciones fijas.
- **NO** opere la cortadora con la(s) ala(s) elevada(s) o en posición de transporte.
- **DETENGA LA CORTADORA** de inmediato si las cuchillas entran en contacto con objetos pesados, estructuras fijas, guardarrailes de metal y estructuras de cemento:
- 1. **LAS CUCHILLAS PUEDEN FALLAR** con el impacto y los objetos pueden ser arrojados a gran velocidad.
- 2. **INSPECCIONE y REEMPLACE** las cuchillas dañadas.
- 3. **VERIFIQUE** el equilibrio del porta cuchillas y **REEMPLÁCELO** si está dañado.
- **NO** opere la cortadora en agua **PARA EVITAR** una posible **FALLA DE LAS CUCHILLAS**.
- **EVITE OPERAR LA CORTADORA** en reversa:
- 1. **DETENGA EL PTO** y retroceda la cortadora.
- 2. **DESCIENDA** la cortadora, encienda el **PTO** y corte hacia adelante.
- **DETENGA EL PTO** y las **CUCHILLAS** al elevar la cortadora a posición de transporte.
- **NO** encienda **EL PTO** con la cortadora en posición de transporte.
- **DETENGA** la cortadora cuando se produzca **VIBRACIÓN EXCESIVA**:
- 1. **DETENGA EL PTO Y EL MOTOR** del tractor.
- 2. **INSPECCIONE** la cortadora para detectar la fuente de la vibración
- 3. **REEMPLACE** toda parte dañada o las **CUCHILLAS** dobladas o dañadas. *PN TOFM-02 SP*

RIESGO DE OBJETOS LANZADOS

			
Peligro de objetos lanzados por la cortadora	Objetos lanzados desde cortadora elevada	Inspeccione el área. Quite los objetos extraños	No permita que las cuchillas entren en contacto con objetos sólidos

PELIGRO LAS CORTADORAS GIRATORIAS PUEDEN ARROJAR OBJETOS A 90 METROS (300 PIES) O MÁS EN CONDICIONES ADVERSAS.

PARA EVITAR LESIONES GRAVES O LA MUERTE AL OPERADOR O TRANSEÚNTES COMO CONSECUENCIA DE OBJETOS ARROJADOS:

- **MANTENGA** a los transeúntes a 100 metros de distancia (300 pies)
- **NO OPERE LA CORTADORA SI HAY PERSONAS A MENOS DE 100 METROS(300 PIES), SALVO QUE:**
 - Todos los **PROTECTORES CONTRA OBJETOS ARROJADOS** estén colocados y en buen funcionamiento al operar la cortadora, entre los que se incluyen los deflectores frontales y traseros, las bandas, los faldones laterales y las zapatas antideslizantes.
 - Las partes de la cortadora o la aia estén ajustadas cerca y paralelas al suelo, sin exponer las cuchillas.
 - Se ha inspeccionado el **ÁREA DE CORTE** y se han quitado todos los materiales extraños y residuos.
 - **LOS TRANSEÚNTES** estén en el interior de un vehículo cerrado.
- **ANTES DE OPERAR LA CORTADORA, INSPECCIONE EL ÁREA PARA DETECTAR LA POSIBILIDAD DE OBJETOS QUE PUEDAN SER LANZADOS:**
 - **QUITE** residuos, piedras, cables, alambres, objetos metálicos y cualquier otro objetos extraños del área.
 - Los alambres, cables, sogas, cadenas y objetos metálicos pueden ser arrojados o salir desprendidos de la plataforma a gran velocidad:
 - 1. **MARQUE** los objetos que no se puedan quitar.
 - 2. **EVITE** estos objetos cuando use la cortadora.

INSPECCIÓN DEL ÁREA PARA DETECTAR HIERBA ALTA Y MALEZAS:

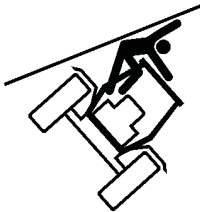
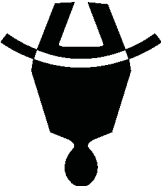

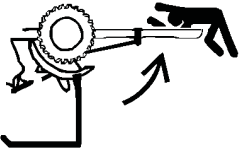
- **INSPECCIONE Y quite** cualquier residuo oculto de gran tamaño.
- **PASE LA CORTADORA** a una altura intermedia
- **INSPECCIONE** y quite el residuo restante
- **PASE LA CORTADORA** a la altura final
- **PROTECCIÓN CONTRA OBJETOS ARROJADOS DE LA CORTADORA:**
 - **MANTENGA** todos los protectores contra objetos arrojados en su lugar y en buen funcionamiento al operar la cortadora, entre los que se incluyen los deflectores frontales y traseros, los protectores de acero, las bandas, los faldones laterales y las zapatas anti-deslizantes.
 - **NO OPERE LA CORTADORA** si falta algún protector contra objetos arrojados, o si éstos están dañados.

DERECHO DE PASO (autopista) CON LA CORTADORA

- Ninguna protección ofrece una eficacia del 100% en la prevención de objetos arrojados. Para reducir la posibilidad de que se produzcan lesiones:
 - 1. **MANTENGA LOS PROTECTORES DE LA CORTADORA**, los faldones laterales, la zapatas antideslizantes y las cuchillas en buen estado de funcionamiento,
 - 2. **ELEVE LA ALTURA DE CORTE a 15 CM (6 PULGADAS)** como mínimo,
 - 3. **INSPECCIONE EL ÁREA** con cuidado antes de pasar la cortadora para **ELIMINAR** el posible riesgo de **OBJETOS ARROJADOS,**
 - 4. **NUNCA PERMITA QUE LAS CUCHILLAS EN MOVIMIENTO ENTREN EN CONTACTO CON OBJETOS SÓLIDOS** como alambres, piedras, postes, cordones, guardarraíles o el suelo. *PN T0FM-01 SP*

SEGURIDAD

RIESGO DE APLASTAMIENTO

			
Lesión aplastante por vuelco	Trabe el sistema ROPS (antivuelco) en la posición vertical	Siempre utilice cinturón de seguridad	Lesión aplastante por caída de implemento

PELIGRO PARA EVITAR UNA LESIÓN GRAVE O LA MUERTE POR CAÍDA DEL TRACTOR, O EL APLASTAMIENTO, VUELCO Y APLASTAMIENTO DE UN EQUIPO POR LA CAÍDA DE UNA ALA O UN IMPLEMENTO:

- USE tractores equipados con SISTEMA ANTIVUELCO (ROPS) y CINTURONES DE SEGURIDAD para las operaciones de corte.
- MANTENGA EL SISTEMA ROPS trabado en posición vertical.
- SIEMPRE ABROCHESE el cinturón de seguridad al operar el tractor y los equipos.
- SÓLO OPERE el tractor y el equipo sentado en el asiento del tractor.
- AL ELEVAR O DESCENDER EL IMPLEMENTO:

- Eleve o descienda SÓLO CUANDO ESTÉ SENTADO en el asiento del tractor, con el cinturón de seguridad ajustado.
- Eleve o descienda SÓLO cuando la lengüeta del implemento esté firmemente ajustada a la barra de tracción del tractor.
- MANTENGA A LOS TRANSEÚNTES FUERA del área de operación PARA EVITAR accidentes por aplastamiento.
- Los equipos ELEVADOS se pueden caer por fallas mecánicas o hidráulicas o por un movimiento inesperado de la palanca de control.

ADVERTENCIA

PARA EVITAR LA CAÍDA DEL EQUIPO al trabajar cerca o debajo de los componentes o implementos elevados por un enganche de tractor de 3 puntos:

- SUJETE CON FIRMEZA o bloquee en posición vertical todos los equipos, alas y componentes elevados.
- BLOQUEE EN POSICIÓN VERTICAL y sujete con firmeza el equipo antes de poner las manos, los pies o el cuerpo debajo de los equipos o componentes elevados.
- AL ESTACIONAR el implemento y el tractor:
- DESCienda el implemento, TRABE o BLOQUEE las partes elevadas antes de alejarse del equipo.
- NUNCA deje un implemento sin atención en posición elevada.

ADVERTENCIA

PARA EVITAR LA CAÍDA O EL APLASTAMIENTO DE NIÑOS POR EL EQUIPO:

- NUNCA DEJE que los niños jueguen sobre el tractor o los implementos, ni en sus alrededores.
- WHEN UNHITCHING IMPLEMENT:
- AL DESENGANCHAR EL IMPLEMENTO:
- DESCienda el implemento, TRABE o BLOQUEE las partes elevadas antes de alejarse del equipo. PN CHFM-02 SP

SEGURIDAD

SEGURIDAD DE CONECTAR O DESCONECTAR IMPLEMENTO

▲ PELIGRO PARA EVITAR LESIONES GRAVES O LA MUERTE POR APLASTAMIENTO POR EL TRACTOR O IMPLEMENTO:

- **AL DAR MARCHA ATRÁS** el tractor hacia el enganche del implemento:
- **NO PERMITA QUE HAYA PERSONAS** entre el tractor y el implemento
- **ANTES de conectar y desconectar el enganche del implemento:**
 - **APAGUE EL MOTOR DEL TRACTOR**, coloque la palanca en "estacionar", ponga el freno de mano y saque la llave.
 - **Al conectar y desconectar el enganche del implemento:**
 - **NO** se agache o camine debajo de la cortadora elevada.
- **AL CONECTAR LA LÍNEA DE CONDUCCIÓN DEL IMPLEMENTO:**
 - **PARA EVITAR que la línea de conducción del implemento se suelte durante la operación:**
 - **LUBRIQUE** el anillo de cierre del resorte del yugo para asegurarse de que se deslice libremente sobre el eje de **PTO**
 - **ASEGURE** las bolas de cierre del yugo en la muesca del eje de **PTO**.
 - **PRESIONE Y JALE DE LA LÍNEA DE CONDUCCIÓN del EJE DE TOMA DE FUERZA(PTO)** del tractor y del implemento para asegurarse de que estén **FIRMEMENTE SUJETADOS**
 - **PARA EVITAR que la línea de conducción se rompa durante las operaciones:**
 - **VERIFIQUE** que la línea de conducción tenga el largo adecuado entre el eje de **PTO** y el eje de la caja de cambios del implemento.
 - Las líneas de conducción demasiado cortas se pueden soltar o romper.
 - Las líneas de conducción demasiado largas pueden tocar el suelo.
 - Un ensamble telescópico de la línea de conducción que toque el suelo no se deslizará y se solidificará.
 - Si la línea de conducción toca el suelo, puede atravesar los cojinetes de soporte y romper el eje de **PTO**.
- **COMUNIQUESE CON EL DISTRIBUIDOR si la línea de conducción del implemento no coincide con el eje de TDF del tractor:**
 - **NO UTILICE UN ADAPTADOR DE PTO.**
 - El uso de un adaptador de **PTO** puede ocasionar:
 - Vibración excesiva, caída de objetos, fallas de la hoja y el implemento como consecuencia de la duplicación de la velocidad operativa.
 - Mayor extensión de trabajo, lo que deja expuestas áreas desprotegidas de la línea de conducción e implica el riesgo de enredo con otros objetos.
- **NO conecte la cortadora a un tractor con la TDF directamente conectada a la transmisión del tractor. PN CD02 SP**

SEGURIDAD

SEGURIDAD DEL OPERADOR

	Lea con atención el Manual del Operador
	Siempre use gafas de seguridad
	Use casco y protector
	Nunca consuma drogas o alcohol mientras opera el equipo
	Utilice chaleco de seguridad al operar en o cercas de carreteras

PARA EVITAR LESIONES GRAVES O LA MUERTE, SIGA LAS SIGUIENTES INSTRUCCIONES:



- **LEA, COMPRENDA y SIGA** las instrucciones del Manual del Operador, al igual que las Advertencias y Mensajes de Seguridad.
- **USE GAFAS DE SEGURIDAD**, calzado protector, casco, protección auditiva y guantes al operar o reparar el equipo
- **USE** un aparato de respiración apropiado al operar en condiciones polvorientas a fin de evitar contraer enfermedades respiratorias.
- **NO USE** prendas sueltas o joyas que se puedan enredar con las partes giratorias y causar una lesión.
- **NO CONSUMA DROGAS o ALCOHOL** antes o durante la operación del equipo.
- **NO PERMITA** que nadie opere el equipo bajo los efectos negativos de las drogas o el alcohol.
- **CONSULTE** a un médico para conocer los efectos desfavorables de la medicación sobre los sentidos.
- **MANTÉNGASE ALERTA**, la operación prolongada puede causar fatiga. **HAGA UNA PAUSA y DESCANSE.**

SEGURIDAD DE OPERACIÓN GENERAL

CONDICIONES DE VISIBILIDAD AL USAR LA CORTADORA:

- **OPERE LA CORTADORA CON LUZ SOLAR** o con luz que aporte una visibilidad nítida de más de 90 metros (100 yardas).
- **DEBE PODER VISUALIZAR** e identificar transeúntes, terrenos empinados, pozos, desniveles, obstrucciones elevadas, cables de alimentación, residuos y objetos extraños.

VELOCIDAD RESPECTO AL SUELO AL USAR LA CORTADORA:

- El rango de **VELOCIDAD NORMAL** es de entre 2 y 5 millas por hora.
- **AJUSTE LA VELOCIDAD DE CORTE** según las condiciones del terreno y el tipo de césped, la densidad y la altura del corte.
- **REDUZCA LA VELOCIDAD DE CORTE** al acercarse a inclinaciones empinadas, pozos, desniveles, obstrucciones elevadas, cables de alimentación y para evitar residuos y objetos extraños.

INFESTACIÓN CON INSECTOS

- No opere en áreas susceptibles al ataque de abejas o insectos, salvo que **USE PRENDAS PROTECTORAS** o una cabina de tractor cerrada.

VELOCIDAD DE PTO:

- **NO EXCEDA LA VELOCIDAD DE PTO NOMINAL DEL IMPLEMENTO**

- **EVITE** superar las velocidades nominales de PTO, porque puede causar roturas en la línea de conducción o fallas de las cuchillas.

SEÑALES DE SEGURIDAD:

- **REEMPLACE** cualquier señal de seguridad faltante, dañada o ilegible. *PN OS01 SP*

INSTRUCCIONES DE SEGURIDAD Y PRÁCTICAS GENERALES

El mejor operador es un operador cuidadoso. La seguridad es de importancia fundamental para el fabricante, y también debería serlo para el propietario u operador. La mayoría de los accidentes se pueden evitar prestando suma atención al equipo, al ambiente circundante, y tomando algunas precauciones. La primera sección de este manual incluye una lista de Mensajes de Seguridad que deben observarse para contribuir a la protección del operador y otras personas frente a lesiones o la muerte. Lea con atención estos Mensajes de Seguridad antes de ensamblar, operar o reparar este implemento. Este equipo sólo debe ser operado por personas que hayan leído el manual, responsables y calificadas, que sepan cómo hacerlo de manera responsable.



El Símbolo de Alerta de Seguridad se utiliza en combinación con una Señal Verbal, tal como la que se muestra a continuación, en todo este manual y en los autoadhesivos adheridos a los equipos. El Símbolo de Alerta de Seguridad significa:

“¡ATENCIÓN! ¡MANTÉNGASE ALERTA! SU SEGURIDAD ESTÁ EN JUEGO!” El Símbolo y la Señal Verbal tienen el objetivo de advertir al propietario/operador sobre un riesgo inminente y el grado de lesión que se puede producir al operar este equipo.

Adopte todas las medidas habituales para trabajar en forma segura y, sobre todo, recuerde que la seguridad depende de USTED. Sólo USTED puede impedir una lesión grave o la muerte a causa de prácticas no seguras.

▲ PELIGRO Indica una situación peligrosa inminente que, de no ser evitada, OCASIONARÁ la MUERTE O UNA LESIÓN MUY GRAVE.

▲ ADVERTENCIA Indica una situación peligrosa inminente que, de no ser evitada, PODRÍA OCASIONAR la MUERTE O UNA LESIÓN MUY GRAVE.

▲ PRECAUCIÓN Indica una situación peligrosa inminente que, de no ser evitada, PODRÍA OCASIONAR UNA LESIÓN MENOR.

Importante Identifica instrucciones o procedimientos específicos que, de no observarse estrictamente, podrían ocasionar daños o la destrucción de la maquinaria, los accesorios o el entorno.

NOTA: Identifica aspectos de particular interés para lograr una operación o reparación más eficiente y conveniente.

LEA CON ATENCIÓN Y RESPETE los siguientes Mensajes de Seguridad. Si no se siguen cuidadosamente las advertencias e instrucciones indicadas en este Manual y en los Mensajes de Seguridad del implemento, se pueden producir lesiones graves o la muerte. Siempre siga las instrucciones de este manual y use el sentido común para evitar situaciones peligrosas.



NOTA: Si desea obtener una traducción de esta sección de seguridad en alguno de los siguientes idiomas, comuníquese con: *Translations, a la dirección 1502 E. Walnut Street Seguin, TX 78155; Fax: (830) 372-9529; La Sección de Seguridad está disponible en español, portugués, francés, alemán, ruso. PN6501 SP*

SECCIÓN DE SEGURIDAD

Sección de Seguridad 1-1

Instrucciones de operaciones antes de la entrega del DISTRIBUIDOR al CLIENTE

El distribuidor deberá informar al comprador de este producto las condiciones, disposiciones y procedimientos de garantía aplicables; informar la responsabilidad del comprador de capacitar a sus operadores para la operación segura; revisar el contenido del Manual del Operador, incluido el equipo de seguridad, la operación segura y el mantenimiento; y revisar las Señales de Seguridad que se encuentran en el implemento (y en el tractor, de ser posible).

- **IMPLEMENTOS:** He explicado que los deflectores, protectores de cadena o faldones sólidos se deben mantener en buenas condiciones de reparación y se deben instalar, excepto en zonas donde personas, vehículos, ganado u otros bienes no corran peligro por objetos arrojados, y en los casos en que dichos equipos de seguridad impedirían un desempeño razonable de la cortadora en su tarea asignada.
- **LÍNEAS DE CONDUCCIÓN:** Me he asegurado de que todos los protectores de líneas de conducción, de caja de engranajes y otros están en buenas condiciones de reparación y firmemente sujetos para prevenir lesiones por enredo u objetos arrojados.
- **MÁQUINAS HIDRÁULICAS:** He explicado la necesidad de usar aceite hidráulico limpio, cambiar los filtros según las instrucciones, detener filtraciones, prevenir daños por operar con aceite demasiado caliente, cuidar las mangueras, usar mangueras del tipo correcto, mantener la presión operativa especificada y prevenir el posible riesgo de que el aceite penetre en la piel.

- **IMPLEMENTOS PLEGABLES:** He explicado que no es posible proteger contra objetos arrojados cuando el cabezal está elevado del suelo y que el operador es responsable de verificar que no existan personas en las inmediaciones. He explicado que el brazo o cabezal de cortadora elevado puede entrar en contacto con obstrucciones elevadas y dañar cables y líneas telefónicas, y posiblemente causar lesiones. He explicado que el brazo o cabezal extendido, o el brazo retraído, puede entrar en contacto con cables de alimentación y causar lesiones o la muerte por electrocución, y que el operador es responsable de evitar dichos riesgos.

**SERVICIO ANTES DE LA ENTREGA
VERIFIQUE Y AJUSTE O LUBRIQUE SEGÚN SEA NECESARIO**

Consulte los detalles en el Manual del Operador
Inspección realizada – Garantía y procedimientos de seguridad explicados – Instalación realizada

LUBRICACIÓN E HIDRÁULICA	
<input type="checkbox"/>	Caja de engranajes (niveles de aceite)
<input type="checkbox"/>	Nivel de aceite hidráulico del tractor
<input type="checkbox"/>	Mangueras hidráulicas (no retorcidas y ajustadas)
CORTADORA	
<input type="checkbox"/>	Pernos de husillo y motor bien ajustados
<input type="checkbox"/>	Pernos de porta cuchillas bien ajustados/pasadores de
<input type="checkbox"/>	retención colocados
<input type="checkbox"/>	Nivel y altura de corte de la cortadora ajustados
<input type="checkbox"/>	Cojinetes del eje de corte lubricados
<input type="checkbox"/>	Todas las piezas metálicas bien ajustadas
<input type="checkbox"/>	Presión de aire y neumáticos/tuercas de rueda (bien
<input type="checkbox"/>	ajustadas)
<input type="checkbox"/>	Cojinetes de rueda (verificar, engrasar y hacer carga
<input type="checkbox"/>	previa)
ACCESORIOS E INSTALACIÓN	
<input type="checkbox"/>	Deflectores frontales y traseros
<input type="checkbox"/>	Sentido de giro de las hojas correcto
<input type="checkbox"/>	Todos los pernos, pasadores y tuercas (ajuste
<input type="checkbox"/>	correcto)
CONEXIONES DE CORTADORA A TRACTOR	
<input type="checkbox"/>	Longitud de barra de enganche (verificar y fijar)
<input type="checkbox"/>	Pivote y conexiones de bastidor en A
<input type="checkbox"/>	Altura de corte (ajustar)
<input type="checkbox"/>	Piezas metálicas de montaje bien ajustadas
ELEMENTOS DE SEGURIDAD	
<input type="checkbox"/>	Protectores (operación e instalación)
<input type="checkbox"/>	Embrague de línea de conducción (limitador de ajuste)
<input type="checkbox"/>	(ajustar y poner en marcha)
<input type="checkbox"/>	Autoadhesivos de seguridad (colocados)
<input type="checkbox"/>	Manual del Operador (entregado)
<input type="checkbox"/>	Protector de TDF del tractor (instalado)
<input type="checkbox"/>	Emblema S.M.V. (instalado de ser necesario)
<input type="checkbox"/>	Gato con lengüeta (instalación y operación)
<input type="checkbox"/>	Cadena de remoique de seguridad (instalada)
<input type="checkbox"/>	Manual de Seguridad de Línea de Conducción ADMA
<input type="checkbox"/>	(entregado)
<input type="checkbox"/>	Manual de Seguridad de Cortadora AEM (entregado en
<input type="checkbox"/>	porta manual)
<input type="checkbox"/>	Se mostró el Video de Seguridad de Cortadora AEM al
<input type="checkbox"/>	comprador

Alamo Industrial Division está dispuesto a suministrar un (1) Video de Prácticas de Seguridad para Cortadoras AEM

Por favor enviar: ☐ Video de Seguridad para el Operador de Cortadoras AEM/FEMA – formato VHS

☐ Video de Seguridad para el Operador de Cortadoras AEM/FEMA – formato DVD

☐ Manual del Operador de la Cortadora

☐ Manual de Seguridad del Operador de la Cortadora AEM

Nombre del solicitante: _____ Teléfono: _____

Dirección del solicitante: _____

Ciudad: _____

Estado: _____

Código postal: _____

Modelo de cortadora: _____ Número de serie: _____

Fecha de compra: _____ Vendedor del distribuidor: _____

Nombre del distribuidor: _____ Dirección del distribuidor: _____

Enviar por correo a:

AEM Video Services

1502 E. Walnut Street

Seguin, TX 78155

☐ enviar por fax a:

(830) 372-9529

☐ enviar por correo electrónico a:

AEMVideo@alamo-group.com



Vídeo de Seguridad

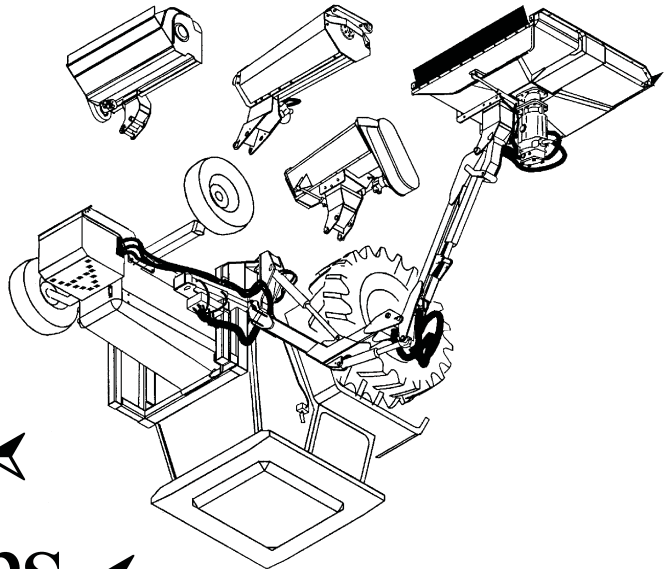
➤ Sea Vivo

➤ Sea Alerto

➤ Sea Seguro

➤ Sea Entrenado
antes de funcionar
el cortacésped

Entrenamiento de Seguridad Hace la Diferencia



ALAMO INDUSTRIAL

Al Image SP

A fin de reducir la tasa de accidentes y mejorar la operación segura de las cortadoras, Alamo Group Ag Division se ha asociado con otros fabricantes de la industria para desarrollar el video y la guía de Prácticas de Seguridad para Cortadoras Industriales y Agrícolas AEM/FEMA.

El video explica a los operadores de tractores y cortadoras las prácticas seguras que deben adoptar cuando utilizan cortadoras industriales y agrícolas. Es importante que todos los operadores de cortadoras aprendan cómo operar sus equipos de corte y puedan reconocer los posibles peligros que pueden surgir al operar una cortadora. Este video, en conjunto con el manual del operador de la cortadora y los mensajes de advertencia que se encuentran en la cortadora, serán muy útiles para complementar este aprendizaje tan importante.

Es posible que su distribuidor autorizado de *Alamo Industrial* le haya mostrado este video y le haya entregado una copia en DVD cuando adquirió su cortadora. Si usted o algún operador de cortadora no vio el video: mire el video, lea este Manual del Operador, y complete la Guía del Video antes de operar su cortadora nueva. Si no comprende alguna de las instrucciones del video o del manual del operador, o si tiene alguna pregunta acerca de la operación segura, comuníquese con su supervisor, con el distribuidor o con Alamo Group Ag.

Si desea recibir una copia del video en VHS, envíe un mensaje de correo electrónico a AEMVide@alamo-group.com o un fax al (830) 372-9529, o envíe por correo una copia rellena del formulario que se encuentra al dorso de esta página a AEM VHS Video 1502 E Walnut Street, Seguin, TX 78155, y solicite la versión en VHS. Indique su nombre, dirección postal, modelo de cortadora y número de serie.

Cada uno de los operadores debe recibir capacitación para cada equipo (tractor y cortadora), comprender el uso previsto, y comprender los posibles peligros antes de operar el equipo.

La información y material mecionado en la información anterior junto con el Manual de Operador puede asistir en cumplir con los requisitos de OSHA para el entrenamiento anual del Operador.

REQUISITOS DE ENTRENAMIENTO DEL OSHA

Los siguientes requisitos de entrenamiento se an toma del Título 29, código de la pieza de regulaciones federales 1928.57 (a) (6), www.osha.gov

Instrucciones del operador. A la hora de la asignación inicial y por lo menos anualmente después de eso, el empleador mandará a cada empleado quien opera un tractor agrícola o implemento en las prácticas de operación segura y el mantenimiento de el equipo con el cual el empleado este, o estará implicado y de cualquier otras prácticas dictados por el ambiente laboral.

Al propietario/operador/distribuidor

Este Manual del Operador es una parte esencial de la operación segura de esta máquina y se debe mantener con la unidad siempre. El implemento incluye un porta manual donde se puede guardar el manual de manera adecuada. Si el manual se extravía o se daña, puede solicitar otra copia sin cargo a un distribuidor autorizado de *Alamo Industrial* o descargarlo del sitio web de *Alamo Industrial* (www.alamo-industrial.com).

ANTES DE COMENZAR LEA, COMPRENDA Y SIGA la información incluida en este manual, el Manual de Seguridad de la Cortadora AEM y el manual del operador del tractor para conocer cómo operar la máquina y realizar tareas de servicio correctamente. De lo contrario, podría sufrir lesiones u ocasionar lesiones a terceros. Todos los implementos con partes móviles son potencialmente peligrosos. Cada esfuerzo ha sido hecho para asegurar que la máquina esté segura, pero los operadores deben evitar entrar en prácticas peligrosas y seguir las instrucciones escritas que son proporcionadas. El fabricante ha diseñado este implemento para ser usado con todos sus equipos de seguridad correctamente sujetados para minimizar la probabilidad de accidentes.

LA SEGURIDAD PRIMERO. Lea con atención la totalidad de la sección de seguridad de este manual antes de operar el equipo. No permita que nadie opere el equipo sin haber leído y comprendido la totalidad de este manual. Comuníquese con el distribuidor si necesita explicación sobre alguna instrucción que no haya comprendido del todo.

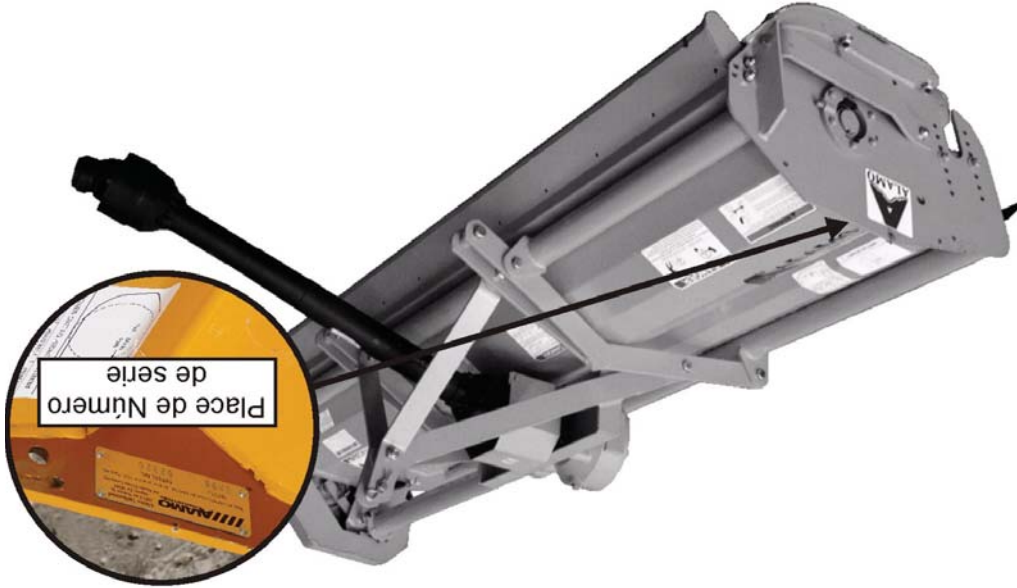
Los cuidados que brinde a su implemento *Alamo Industrial* determinarán en gran medida su satisfacción con el desempeño y la vida útil del equipo. Lea con atención y siga las instrucciones de este manual para comprender cabalmente su nuevo implemento, su uso previsto, y sus requisitos de servicio.

Todas las referencias que se hacen en este manual a derecha, izquierda, frontal, trasero, arriba y abajo corresponden a la perspectiva en el sentido del desplazamiento hacia delante con el implemento correctamente sujetado al tractor.

La información sobre repuestos se encuentra por separado en el Manual de Partes. Las cortadoras *Alamo Industrial* utilizan componentes del sistema equilibrados y coincidentes para porta cuchillas, cuchillas, ejes de corte, hojas, ganchos para hojas, rodillos, componentes de los engranajes, y cojinetes. Estas partes se fabrican y se prueban según las especificaciones de *Alamo Industrial*. Las partes compatibles no genuinas no siempre cumplen con estas especificaciones. El uso de partes no genuinas puede perjudicar el desempeño de la cortadora, anular la garantía y presentar un riesgo para la seguridad. Use partes genuinas *Alamo Industrial* para ahorrar dinero y maximizar la seguridad.

Para referencia futura, registre el número de modelo y el número de serie de *Alamo Industrial* que ha adquirido.

Dueño		Fecha de compra:		Número de serie	
Distribuidor		Teléfono		Número de Modelo	



**SHD62, SHD74
SHD88, SHD96**

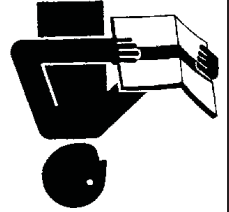
Segadora Desgranadora



Publicado en 05/13

MANUAL DE OPERADOR

Parte nº. 803211C

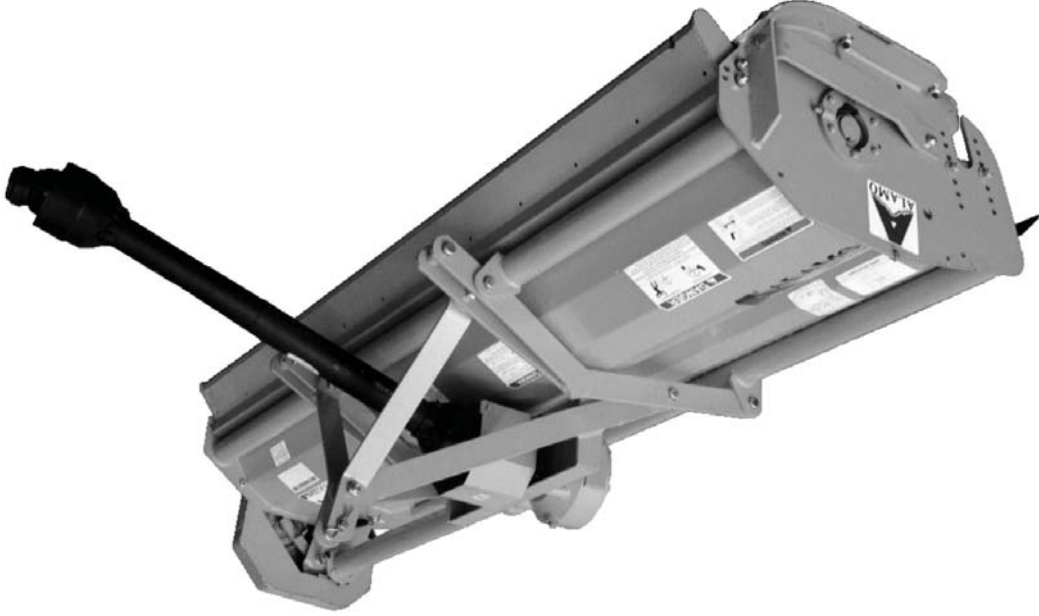


Este Manual del Operador es una parte esencial de la operación segura de esta máquina y se debe mantener con la unidad siempre. LEA, ENTIENDA, y SIGA las Instrucciones de Seguridad y Operación contenidas en este manual antes de operar el equipo. C01-Cover SP_A

Importantes instrucciones de operación y las instrucciones de seguridad se encuentran en el video Cortacésped Sobre Seguridad que se puede acceder instantáneamente en el internet en: www.algqr.com/avs



Video de Seguridad



FCP-FL-0002

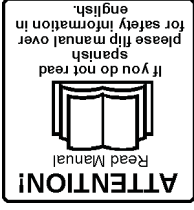
ALAMO INDUSTRIAL®

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Email: parts@alamo-industrial.com



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\$0.00