

# LOFTNESS™

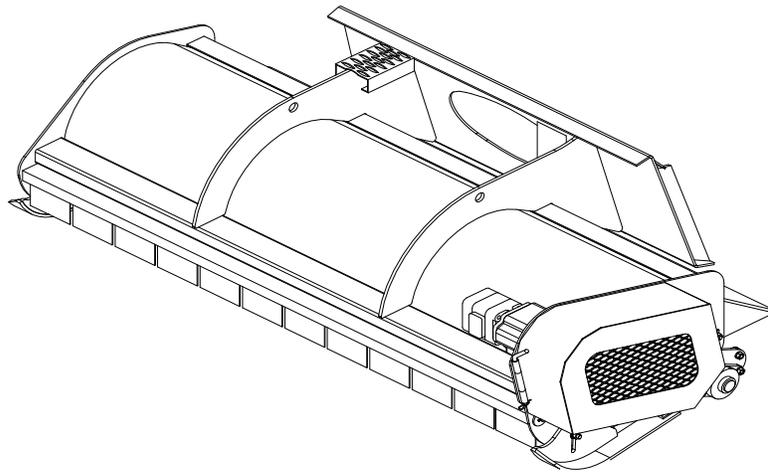
## Hydraulic Flail Mower

48MH 60MH 72MH 90MH

### Operator's Manual & Parts Book

(Originating w/Serial Number 05-100 Thru 05-369)

(Also Includes Years 2002, 2003, 2004)



Model Number: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Date of Purchase: \_\_\_\_\_



**LOFTNESS**

Specialized  
Equipment, Inc.

650 So. Main Street - PO Box 337 - Hector, MN 55342  
Business Phone: 320-848-6266 \* Fax: 320-848-6269 \* Toll Free: 1-800-828-7624

# LOFTNESS SPECIALIZED EQUIPMENT, INC.

## WARRANTY POLICY

**The warranty policy begins upon delivery of the unit to the original customer.**

**All Loftness products have a one (1) year warranty policy.**

**If any Loftness product is used as a rental unit, the warranty period extends for only 30 days from the delivery date to the original customer.**

Loftness Specialized Equipment, hereinafter referred to as LOFTNESS, a manufacturer of quality machinery since 1956, warrants new LOFTNESS machinery and/or attachments at the time of delivery to the original purchaser, to be free from defects in material and workmanship when properly set up and operated in accordance with the recommendations set forth in the LOFTNESS Operator's Manual.

LOFTNESS' liability for any defect with respect to accepted goods shall be limited to repairing the goods at an authorized dealer or other LOFTNESS designated location, or replacing them as LOFTNESS shall elect. The above shall be in accordance with LOFTNESS warranty adjustment policies. This warranty shall not apply to any machine or attachment which shall have been repaired or altered outside the LOFTNESS factory or authorized LOFTNESS dealership or in any way so as in LOFTNESS' judgment, to affect its stability or reliability, nor which has been subject to misuse, negligence or accident, nor to any machine or attachment which shall not have been operated in accordance with LOFTNESS' printed instructions or beyond the company recommended machine rated capacity.

### WARRANTY REQUIREMENTS

**Warranty registration form must be filled out and returned to Loftness Specialized Equipment to validate all future warranty claims.**

### LIMITATIONS OF WARRANTY

All Products – LOFTNESS products are designed to provide years of dependable service when proper use and maintenance is adhered to. The potential for misuse in many applications exists, therefore a limited warranty is provided as follows:

All Shredders, Axes, Cutters & Mowers – Rotor Balance: Critical rotor balance can be affected by conditions beyond LOFTNESS' control, such as the operation of a shredder beyond the Company's rated capacity, improper knife replacement, missing knives, striking foreign objects, lack of lubrication, etc. Any failure resulting from running in as "out-of-balance" condition, such as, but not limited to bearing and or drive-line failure, metal fatigue, cracks, etc. will be considered abuse and will not be covered under warranty. LOFTNESS may elect to have an area representative evaluate the condition of the machine before warranty is considered.

To receive a warranty claim, a return authorization from LOFTNESS must be obtained. The failed part may then be returned in an untampered status. This warranty does not include freight or delivery charges incurred when returning machinery for servicing. Dealer mileage, service calls and pick-up/delivery charges are the customer's responsibility.

### EXCLUSIONS OF WARRANTY

Except as otherwise expressly stated herein, LOFTNESS makes no representation or warranty of any kind, expressed or implied, and makes no warranty of merchantability in respect to its machinery and/or attachments and makes no warranty that its machinery and/or attachments are fit for any particular purpose. LOFTNESS shall not be liable for incidental or consequential damages for any breach of warranty, including but not limited to inconvenience, rental or replacement equipment, loss of profits or other commercial loss. Upon purchase the buyer assumes all liability, all personal injury and property damage resulting from the handling, possession or use of the goods by the buyer.

No agent, employee, or representative of LOFTNESS has any authority to bind LOFTNESS to any affirmation, representation or warranty concerning its machinery and/or attachments except as specifically set forth herein.

# LOFTNESS

SPECIALIZED EQUIPMENT. UNLIMITED INNOVATION.

650 South Main Street  
Hector, MN 55342 USA  
loftness.com 320-848-6266  
US & Canada 800-828-7624



International: 320-848-6266 Fax: 320-848-6269 Parts Fax: 320-848-6055 E-mail: info@loftness.com Web Address: www.loftness.com

## WARRANTY REGISTRATION

Dealer No.: \_\_\_\_\_  
Dealer Name: \_\_\_\_\_ Dealer Phone: \_\_\_\_\_  
Shipping Address: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Invoice No.: \_\_\_\_\_ Part No.: \_\_\_\_\_  
Model No.: \_\_\_\_\_ Serial No.: \_\_\_\_\_

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### FOLLOWING INFORMATION MUST BE FILLED IN COMPLETELY FOR WARRANTY:

Customer:  
Last Name: \_\_\_\_\_ First \_\_\_\_\_ Middle Initial \_\_\_\_\_  
Mailing Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
County: \_\_\_\_\_ Warranty (Delivered) Date  
Phone: \_\_\_\_\_ Month \_\_\_\_\_ Day \_\_\_\_\_ Year \_\_\_\_\_

### DEALER

The machine was properly set up, adjusted and inspected before delivery. The following items were explained to the purchaser.

- \* How to operate machine properly as shown in the owner's manual.
- \* The importance of safety precaution, safety equipment and preventative maintenance.
- \* Loftness Warranty for this machine.

**X**

\_\_\_\_\_  
Dealer's Signature

\_\_\_\_\_  
Date

### PURCHASER

I have received and reviewed the operator's manual for the above machine and understand the proper and safe operation as well as the applicable warranty outlined therein.

A customer's manual is included with each machine.

The unit was delivered to me in satisfactory condition.

**X**

\_\_\_\_\_  
Purchaser's Signature

\_\_\_\_\_  
Date

**Customer Copy**





## WARRANTY REGISTRATION

Dealer No.: \_\_\_\_\_

Dealer Name: \_\_\_\_\_ Dealer Phone: \_\_\_\_\_

Shipping Address: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Invoice No.: \_\_\_\_\_ Part No.: \_\_\_\_\_

Model No.: \_\_\_\_\_ Serial No.: \_\_\_\_\_

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### FOLLOWING INFORMATION MUST BE FILLED IN COMPLETELY FOR WARRANTY:

Customer:  
Last Name: \_\_\_\_\_ First \_\_\_\_\_ Middle Initial \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

County: \_\_\_\_\_ Warranty (Delivered) Date

Phone: \_\_\_\_\_ Month \_\_\_\_\_ Day \_\_\_\_\_ Year \_\_\_\_\_

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Date

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Purchaser's Signature

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Date





Hydraulic Flail Mower

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Business Phone: 320-848-6266 \* Fax: 320-848-6269 \* Toll Free: 1-800-828-7624

Dear Customer:

Thank you for your decision to purchase a Hydraulic Flail Mower from Loftness Specialized Equipment, Inc. It has been designed to provide years of profitable and dependable service. To ensure maximum performance of your mower, it is mandatory that you thoroughly study the owner's manual and follow its recommendations. Proper operation and maintenance are essential to maintain and maximize the life of the machine and to prevent damage or injury.

**It is the owner's responsibility to:**

- \*Operate and maintain this mower in a safe manner and in accordance with all applicable local, state, and federal codes, regulations and/or laws, and in compliance with on-product labeling and these instructions.
- \*Make sure that all personnel have read this owner's manual and thoroughly understand safe and correct operating, installation, and maintenance procedures.
- \*Provide impact-resistant shielding on the power unit to protect the operator from the possible dangers of flying debris.
- \*Make sure the mower is set-up correctly before being placed in service. It should be serviced at regular intervals thereafter, in accordance with procedures outlined in this manual.
- \*Fulfill all warranty obligations so as not to void the warranties. The warranty section at the beginning of this manual outlines the warranty policy of Loftness Specialized Equipment, Inc.

Loftness Specialized Equipment, Inc. reserves the right to make product improvements to the equipment at any time.

We welcome you to the satisfied family of Loftness equipment owners.

Gloria Nelson, President  
Steve Nelson, Vice-President  
Dave Nelson, Vice-President

**Section**

**1**

**Safety**

# **WARNING**

Because of the potential safety hazard to eyes from hydraulic leaks and/or flying debris, **“USE OF PROTECTIVE EYEWEAR IS ABSOLUTELY MANDATORY”** for operator and others in the work area.

Due to the possible danger of flying debris, it is **“ABSOLUTELY MANDATORY that IMPACT-RESISTANT SHIELDING”** be provided on the power unit to protect the operator. The owner is responsible for providing the operator protection devices on the power unit.

Flying debris can gather on the skid-steer and needs to be cleaned off, especially around the radiator and oil cooler screens, engine compartment and exhaust areas. Periodic cleaning will help prevent the possibility of fire.

## Owner's Manual (Hydraulic Flail Mower)

### Safety Instructions

#### Safety First

Accidents can be prevented by recognizing the causes or hazards before an accident occurs, and doing something about them. Read this manual carefully and become familiar with the controls and proper use

of the machine. Know how to stop the unit by disengagement of the controls. Be sure the operator knows how to exercise the mandatory shut-down procedure.

Regardless of the care used in the design and construction of this equipment, there are some areas that cannot be safeguarded without interfering with accessibility and efficient operation.

**TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.**



**THIS SYMBOL MEANS**

**\*ATTENTION**

**\*BECOME ALERT**

**\*YOUR SAFETY IS INVOLVED**

These safety alert symbols shown, are intended to identify and provide information that must be heeded for proper safe operation of the equipment and to prevent damage or deterioration of the equipment. In this manual and on labels used on this flail mower the words "Danger", "Warning", and "Caution" are used to indicate the following:



**DANGER:** (white lettering on red background) Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.



**WARNING:** (black lettering on orange background) Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.



**CAUTION:** (black lettering on yellow background) Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

The following safety information is a general overview of precautions that should be adhered to:

1. Read this manual carefully. Become thoroughly familiar with the controls and proper use of the machine. Insure that all operators know how to stop the unit by disengagement of the controls using the mandatory shut-down procedure.
2. Remember, it is the owner's responsibility for communicating all information on the safe use and proper maintenance of this machine.
3. Never allow children to operate equipment. Allow adults to operate the equipment only after receiving the proper instructions. Keep the area of operation clear of all unauthorized persons.

## Owner's Manual (Hydraulic Flail Mower)

### Safety Instructions Continued

#### Safety First Continued:

4. Remove from area of operation all foreign objects such as sticks, wire, rocks, etc., that might become tangled in the rotor, causing damage to the mower or thrown from the mower striking other objects.
5. Never attempt to make any adjustments while the engine is running or the key is in the "ON" position of the skid-steer loader. Before leaving the operator's position, disengage power to the mower and remove ignition key.
6. Disengage hydraulic valve and place skid-steer controls in neutral or park before starting engine.

### Safety Instructions for Operation and Maintenance

The following safety warnings are used here and on the flail mower. Become familiar with them before operating this machine.

#### **Mandatory Shut-Down Procedure:**

- Move throttle to idle position.
- Disengage all power to the mower.
- Shut off engine and remove the key.
- Wait until the rotor has stopped completely before inspecting the unit.

#### **CAUTION:**

- Failure to follow safety, operating, and maintenance instructions could result in death or serious injury to the operator or bystanders, poor operation, or costly breakdown.

- Become familiar with and know how to use all safety devices and controls on the mower before attempting to operate the unit. Know how to stop the unit before starting it.
- Repeated impact of the knives with hard objects can cause excessive wear and damage to the skid-steer or mower. Be sure to maintain recommended ground clearance as specified in this manual.
- Should excessive vibration occur, disengage the hydraulic valve immediately and shut off skid-steer. Do not continue to operate the machine until the problem has been determined and corrected.
- Do not start, operate, or work on this machine until you have carefully read and thoroughly understand the contents of this manual, the operator's manual for your loader, and the EMI skid-loader safety manual provided with the flail mower.
- Keep children, spectators and other workers off and away from the machine while it is operating or engine is running. Do not carry passengers.
- Before inspecting, cleaning, lubricating, adjusting or servicing any part of the flail mower, always exercise the "Mandatory Shut-Down Procedure". After service has been performed, be sure to restore all guards, shields and covers to their original position.
- Read and observe all warnings decals on the machine before attempting to operate the flail mower. Do not attempt to operate this machine unless all factory devices and decals are in place. Keep safety decals clean of dirt and grime. Keep all guards, shields and decals in place.
- The operator must not use drugs or alcoholic drinks which would impair his alertness or coordination while working. An operator who is taking prescription drugs must get medical

## Owner's Manual (Hydraulic Flail Mower)

### Safety Instructions for Operation and Maintenance Continued:

advice to determine if he can safely operate a machine.

- Stay alert for hidden hazards or traffic.
- Before using a flail mower on a new job site, check the rules and regulations at the location. The rules may include an employer's work safety requirements.
- Never operate the flail mower without good light and visibility.
- Make sure all controls, (levers, pedals and switches), are in **NEUTRAL** position before starting the loader engine.
- To prevent serious personal injury from escaping high pressure fluid, never attempt to inspect, service or disassemble any part of the hydraulic system until all pressure has been relieved from the system.

#### **WARNING:**

- Keep all guards, shields and decals in place.
- Always repair or replace any front flipper shields that are damaged or missing.
- Keep hands, feet and clothing away from moving components.
- Do not wear loose or baggy clothing around rotating machinery. Machine must be clear of people, tools, and other objects before engaging hydraulic valve.
- Before working under any hydraulically controlled implement, be certain it is securely blocked!

- Because of the potential safety hazard to eyes from hydraulic leaks and/or flying debris, **USE OF PROTECTIVE EYEWEAR IS ABSOLUTELY MANDATORY** for operator and others in the work area.
- Always use an approved roll bar and seatbelt for safe operation. Overturning a loader without a roll bar and seatbelt can result in injury or death.
- Use the handholds and step plates when getting on and off the loader to prevent falls. Keep steps and platform cleared of mud and debris.
- Operate the flail mower only from the operator's seat.
- Keep your feet on the pedals, (floor plates) seat belt fastened snugly and seat bar lowered, (if equipped), when operating the flail mower.
- Never operate the flail-mower in a lifted position. Work only on the surface that the loader is standing on.
- Do not operate the mower above the rated RPM.

#### **DANGER:**

- **DANGER:** Before leaving the operator's position for **ANY** reason or allowing anyone near the flail mower, always exercise the following **Mandatory Shut-down Procedure** (page 1-2, section 1).

### Operation Safety

Because this machine will be operated in a potentially hazardous environment, it is **ABSOLUTELY MANDATORY** that you read and follow these safety precautions.

## Owner's Manual (Hydraulic Flail Mower)

### Operation Safety Continued:

#### **WARNING:**

- Stay alert for hidden hazards or traffic. Do not carry passengers.
  - Never operate the mower without good light or visibility.
  - Engage the hydraulic valve slowly at idle speed to prevent unnecessary stress to driveline.
  - After striking a foreign object, be sure to exercise mandatory shut-down procedure. Thoroughly inspect mower for any damage before restarting and operating the mower.
  - Repeated impact of knives with ground or hard objects can cause excessive wear and damage to the skid-steer or mower. Be sure to maintain recommended ground clearance as specified in this manual.
  - Should excessive vibration occur, disengage hydraulic valve immediately. Do not continue operation of mower until the problem has been detected and corrected. Be sure to exercise the mandatory shut-down procedure.
  - Disengage power to mower when transporting or not in use.
  - When transporting the mower on the road at day or night, provide adequate warning to the operators of other vehicles.
  - Never park on a steep incline.
  - Do not leave equipment in raised position.
  - Due to the possible danger of flying debris, impact-resistant shielding must be provided for the operator. The owner is responsible for providing the operator protection devices on the power unit.
- **DO NOT** allow **ANY** people or animals within 1000 feet of the work area while operating this machine.
  - **THOROUGHLY** clear the work area of **ALL** foreign objects such as bottles, rocks, wire, etc. before starting shredder.
  - **ALWAYS** operate shredder level with the ground (front to rear).
  - **NEVER** operate shredder over 2 feet above the ground.
  - When high pressure fluid escapes, it can be almost invisible, yet have enough pressure to penetrate the skin and enter the blood stream. Never attempt to use hands to search for suspected oil leak. If injured by escaping fluid, consult a doctor at once! Serious reaction or infection can occur if proper medical treatment is not obtained immediately.

#### **WARNING:**

- Never operate the mower without guards, shields, plates or other safety precaution devices in place. Shields are for your protection, please keep all shields in place.
- Always cut in an up and down direction on slopes. To avoid loss of control and to prevent overturn, never cut across the slope.
- Reduce speed when turning.
- Do not operate on extremely steep slopes.
- Before servicing or adjusting the mower, or removing material from it, be sure to exercise the mandatory shut-down procedure.

## Owner's Manual (Hydraulic Flail Mower)

### Operation Safety Continued:

- Be sure the rotor has stopped completely before checking knives.
- Be especially careful not to touch attachment parts which might be hot from operation. Allow such parts to cool before attempting to maintain, adjust, or service.



### **DANGER:**

- Never get off skid-steer while it is in motion!
- Rotating driveline! Personal injury or death can result from entanglement!
- Keep hands and feet out! Do not step on or climb over the unit while machine is in operation, or engine is running. Do not carry passengers.



Section

2

Operating

# **WARNING**

Because of the potential safety hazard to eyes from hydraulic leaks and/or flying debris, **“USE OF PROTECTIVE EYEWEAR IS ABSOLUTELY MANDATORY”** for operator and others in the work area.

Due to the possible danger of flying debris, it is **“ABSOLUTELY MANDATORY that IMPACT-RESISTANT SHIELDING”** be provided on the power unit to protect the operator. The owner is responsible for providing the operator protection devices on the power unit.

Flying debris can gather on the skid-steer and needs to be cleaned off, especially around the radiator and oil cooler screens, engine compartment and exhaust areas. Periodic cleaning will help prevent the possibility of fire.

## Operating and Set-up Instructions

### Operating:

The Loftness Hydraulic Flail Mower is an effective, reliable machine used for maintaining grass and controlling weeds. For best results, operate the machine as low to the ground as possible without the blades striking ground or other obstructions. Because of the high speed of the blades, the life of the blade will be reduced if it is operated in rocky terrain or in areas where many obstacles are present. Areas to be mowed should be free of debris such as rocks, bottles, large branches etc. The blades cut and pulverize the grass and weeds, making the mower suitable for mulching of lawns and golf courses. The mower deposits cut material over the entire width-of-cut, which eliminates bunching or windrowing behind the machine.

The adjustable steel roller is positioned near the point of cut, which allows self-adjusting for surface irregularities in time to prevent scalping. It runs the full width-of-cut and is used to determine the height-of-cut. (See page 3-1 in Section 3).

The mower rotor is equipped with four rows of pivoting cutting knives. If an obstruction is encountered, the knives will fold or pivot to absorb shock, thereby reducing impact damage to mower. The rotor and knives turn in reverse rotation (opposite of skid steer wheels forward operating direction).

The Loftness Hydraulic Flail Mower can be attached to any skid-steer with an auxiliary hydraulic system of 13-40 GPM, which has a standard universal skid steer hitch.

### Operating Speed:

Various mowing conditions, and desired finished-cut appearance, will determine proper ground speed.

 **WARNING:** Do not operate the mower above the rated RPM. Check with your Loftness dealer to be sure your mower is set-up with the correct hydraulic motor to match the hydraulic flow (Gallons per Minute) of your loader.

### Equipment Set-up:

#### Attachment to Loader Using Standard Universal Mounting Plate:

- Pull the attachment-locking levers all the way up.
- Tilt the loader-mounting plate ahead. Drive forward with the loader and hook the top edge of the mounting plate under the flange on the flail mower mount. Be careful not to damage the locking levers on the loader-mounting plate.
- Tilt the loader-mounting plate back until you feel the weight of the flail-mower transfer to the loader tires, but do not lift the attachment off the ground. Stop the engine.



**WARNING:** Before you leave the operator's seat: Lower the lift arms, put the attachment on the ground. Stop engine and remove ignition key. Engage the parking brake.

- Push locking-levers down into the locked, over-center position.



**WARNING:** Locking-wedge pins must extend through the holes in attachment-mounting plate. Levers must be fully down in the locked over-center position. Failure to secure wedge pins can allow attachment to come off, causing serious injury or death.

- Connect hydraulic quick-couplers from flail mower to auxiliary hydraulic outlets on loader.

### Belt Tension:

The rotor drive belts should have 1/2" maximum deflection at the midpoint between the pulleys.



**Section**

**3**

**Maintenance**

# **WARNING**

Because of the potential safety hazard to eyes from hydraulic leaks and/or flying debris, **“USE OF PROTECTIVE EYEWEAR IS ABSOLUTELY MANDATORY”** for operator and others in the work area.

Due to the possible danger of flying debris, it is **“ABSOLUTELY MANDATORY that IMPACT-RESISTANT SHIELDING”** be provided on the power unit to protect the operator. The owner is responsible for providing the operator protection devices on the power unit.

Flying debris can gather on the skid-steer and needs to be cleaned off, especially around the radiator and oil cooler screens, engine compartment and exhaust areas. Periodic cleaning will help prevent the possibility of fire.

## Owner's Manual (Hydraulic Flail Mower)

### Maintenance

#### Lubrication:

The operation and component lifetimes of this machine are very dependent on regular and proper lubrication. The frequency of lubrication recommended is based on normal conditions. Severe or unusual conditions may determine actual service requirements.

Replace any broken or missing grease fittings. Be sure to clean fittings before greasing.

**NOTE:** Rotor, roller, and line shaft bearings cannot be damaged by over-greasing. Grease bearings until a small amount of grease is purged from the bearing.

The following items require lubrication every (8) hours of running time:

- A) Rotor bearings - located on each end of machine and on the driveline side, located under belt cover.
- B) Roller bearings - located on each end of roller.
- C) Universal joint - located on left side of the drive motor, under driveline shield.

The following items require lubrication every (25) hours of running time:

- A) Belt idler bracket - located under belt cover.

#### General Service

When reassembling components, always use new lock nuts and a thread-locking compound to insure against vibration loosening. Use an anti-seize compound on all bearing/shaft contacts.

#### Procedure for Adjusting Height of Cut:

This procedure should be performed on a level surface with mower mounted on tractor.

The Loftness Flail Mower uses slotted adjustments on the rear roller to allow an infinite cutting height adjustment from 0 to 4-1/2". To adjust the height of cut:

- 1) Set bucket tilt cylinders to carry flail mower level from front to rear.
- 2) Manually position knife rotor until the bottom row of knives is at the lowest operating position.
- 3) Set blocks under skid shoes at the desired cutting height.
- 4) Loosen the nuts of the 5/8" carriage bolt and the 5/8" pivot bolt, on both sides of the mower.
- 5) Allow steel roller to contact ground.
- 6) Retighten the (4) 5/8" nuts to 170 ft. lbs.
- 7) Remove blocks from under skid shoes.
- 8) Adjust the skid shoes 1"- 2" from ground to prevent scalping by means of the 1/2" carriage bolts and the 1/2" pivot bolts.
- 9) Refer to page 4-5 in Section 4 for an illustrated parts listing.

#### Knife Reversal or Replacement:

When the knives become dull, they should be reversed to extend the usable life. When both sides of the knives become dull, the set must be replaced. Always replace knives as a set (2), either when broken or dull. If a set of knives is replaced, the set on the opposite side of rotor must be replaced to maintain the balance. (The knife mounts are staggered and no set is directly across from another. If the 3rd set of knives is replaced on one side, replace 3rd set on opposite side, etc.).

- 1) Refer to page 4-4 in Section 4 for an illustrated parts listing.
- 2) Remove the 9/16" standard nut, (2) flat washers, the 9/16" bolt, and the set (2) of knives.
- 3) Install new knives or reversed set. (The bolt must be inserted through the knife mount from the left side in order for the nut to be tightened by rotation).
- 4) Make certain the bolt is forced to the outside of the knife mount loop.

## Owner's Manual (Hydraulic Flail Mower)

### Maintenance

#### General Service Continued:

- 5) Apply a thread-locking compound to the nut and torque to 75 ft. lbs.

#### Belt Removal:

- 1) Refer to page 4-7 in Section 4 for an illustrated parts listing.
- 2) Remove belt guard shield from left end of the mower to expose the belt and its components.
- 3) Unlock the 5/8" nuts on the threaded rod of the belt tightener tube and thread them in to relieve the spring tension on the belt.
- 4) Remove the 1/2" nut and lock washer from the 1/2" bolt. Remove the bolt and pulley and the two spacers.
- 5) Remove the belt.
- 6) Reverse the above steps for installation.

#### Pulley Removal:

- 1) Refer to page 4-7 in Section 4 for an illustrated parts listing.
- 2) Remove the (2) screws from the taper lock bushing of the rotor pulley.
- 3) Insert (1) screw into the threaded hole.
- 4) Tighten screw until bushing grip is released. (If excessively tight, lightly hammer face of pulley using drift pin or sleeve). **NOTE:** Never hit pulley directly with hammer.
- 5) Replace the pulley by cleaning the shaft, bore of bushing, outside of bushing and hub bore of all oil, paint and dirt. File away any burrs.
- 6) Insert bushing into hub. Match the hole pattern, not threaded holes (each complete hole will be threaded on one side only).
- 7) Apply a thread-locking compound to setscrews and thread into the two opposing holes.
- 8) Position assembly on shaft and alternately torque setscrews to 35 ft. lbs.
- 9) To increase gripping force, hammer face of bushing using drift or sleeve. (Do not hit bushing directly with hammer).

- 19) Re-torque screws after hammering.
- 11) Recheck screw torque after initial run-in, and periodically thereafter, repeat steps 4, 5 & 6 if loose.
- 12) Check alignment of the pulleys. Repeat pulley removal and assembly procedures if necessary.



**CAUTION:** Excessive screw torque may cause damage to the bushing or sheave.

#### Rotor Removal (Mower in Operating Position):

The belt and pulley should be removed with the mower in operating position, but the procedures for rotor removal and installation are greatly simplified if the machine is turned upside down.



**CAUTION:** If procedure is initiated with mower in operating position, proper lifting devices must be used to lift and move rotor. A mower rotor weighs approximately 35 lbs./ft - i.e., a 90 inch mower rotor weighs approximately 250 lbs.

#### Rotor Removal (Mower in Upside Down Position):

This service section is written as if the mower is upside down. If procedure is done with machine in operating position, movable jacks will be needed to support and move the rotor.

- 1) Refer to page 4-4 in Section 4 for an illustrated parts listing.
- 2) Attach a lifting device to both ends of rotor, and apply a light tension.
- 3) Loosen the set screws on the bearings.
- 4) Remove the (4) 1/2" nuts and lock washers from the 1/2" bolts holding the bearing to the anti-wrap plate on the left hand side of the mower. Remove the bearing. Remove the nuts and lock washers on the (2) 1/2" bolts thru the anti-wrap plate and the mower end plate.

## Owner's Manual (Hydraulic Flail Mower)

### Maintenance

#### Rotor Removal (Mower in Upside Down Position) Continued:

- 5) Remove the nuts and lock washers on the (2) 1/2" bolts and remove the bearing guard on the right side of the mower.
- 6) Remove the flat head screw, the star washer, and the bearing retaining washer from the rotor shaft on the right hand side of the mower.
- 7) Repeat step 3 on right hand side.
- 8) Lift rotor out of machine.
- 9) Slide anti-wrap plates off shafts. Remove spacer shaft of rotor.
- 10) Reverse the above noted procedure for installation.

#### Storage:

#### End of the Season

- Clean entire mower thoroughly.
- Clean the belt and pulleys, relax the belt tension.
- Lubricate all parts of the machine. (See lubrication section)

- Paint all parts that are worn or rusted.
- Store mower in a clean dry place.

#### Beginning of the Season

- Review your operator's manual.
- Lubricate all parts of the machine (See lubrication section).
- Tighten all bolts, nuts and set screws.
- Reapply tension to belt so there is 1/2" deflection at midpoint between the pulleys.

## Owner's Manual (Hydraulic Flail Mower)

### Maintenance Continued

#### Trouble shooting:



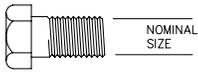
**WARNING:** When high pressure fluid escapes, it can be almost invisible, yet have enough pressure to penetrate the skin and enter the blood stream. Never attempt to use hands to search for suspected oil leak. If injured by escaping fluid, consult a doctor at once! Serious reaction or infection can occur if proper medical treatment is not obtained immediately.

<b>SYMPTOM</b>	<b>POSSIBLE CAUSE</b>	<b>SOLUTION</b>
<b>Excessive Vibration</b>	* Broken or missing knife.	* Replace knife
	* Mud and/or debris wrapped around the rotor or	* Clean the machine
	* Bearing malfunction	* Check and replace faulty rotor and drive line bearings.
	* Damage to rotor, includes bent end shafts of missing balance weights, or actual rotor deformity from striking rocks, etc.	* Return to factory for repair
	* Tractor top link not adjusted properly.	* Re-adjust top link so input shaft of gearbox is parallel with PTO shaft on tractor.
<b>Uneven Cut</b>	* Knives dull or worn excessively.	* Reverse or replace knives.
	* Engine RPM too slow.	* Operate at full throttle
	* Ground speed too fast.	* Reduce ground speed and increase rotor speed.
	* Roller not properly adjusted.	* Re-adjust roller.
<b>Rotor Does Not Turn</b>	* Bearings malfunction	* Check and replace.
	* Belt damaged or slipping.	* Adjust tension or replace.
	* Gearbox malfunction	* If the gearbox is determined to be faulty while the machine is still under warranty, <b>DO NOT</b> open the gearbox.

Torque Charts

Minimum Hardware Tightening Torques

In Foot Pounds (Newton-Meters) for Normal Assembly Applications



Inches Hardware and Lock Nuts

SAE Gr. 2 Nominal Size	SAE Grade 5		SAE Grade 8		Lock Nuts			
	Unplated or Plated Silver	Plated W/ZnCr Gold	Unplated or Plated Silver	Plated W/ZnCr Gold	Unplated or Plated Silver	Plated W/ZnCr Gold	Grade W/Gr.5 Bolt	Grade W/Gr.8 Bolt
1/4	55* (6.2)	72* (8.1)	86* (9.7)	112* (13)	121* (14)	157* (18)	61* (6..9)	86* (9.8)
5/16	115* (13)	149* (17)	178* (20)	229* (26)	250* (28)	324* (37)	125* (14)	176* (20)
3/8	17 (23)	22 (30)	26 (35)	34 (46)	37 (50)	48 (65)	19 (26)	26 (35)
7/16	27 (37)	35 (47)	42 (57)	54 (73)	59 (80)	77 (104)	30 (41)	42 (57)
1/2	42 (57)	54 (73)	64 (87)	83 (113)	91 (123)	117 (159)	45 (61)	64 (88)
9/16	60 (81)	77 (104)	92 (125)	120 (163)	130 (176)	169 (229)	65 (88)	92 (125)
5/8	83 (112)	107 (145)	128 (174)	165 (224)	180 (244)	233 (316)	90 (122)	127 (172)
3/4	146 (198)	189 (256)	226 (306)	293 (397)	319 (432)	413 (560)	160 (217)	226 (306)
7/8	142 (193)	183 (248)	365 (495)	473 (641)	515 (698)	667 (904)	258 (350)	364 (494)
1	213 (289)	275 (373)	547 (742)	708 (960)	773 (1048)	1000 (1356)	386 (523)	545 (739)

GRADE 2  
CLASS A



GRADE 5  
CLASS B



GRADE 8  
CLASS C



BOLT MARKING'S

GRADE 2  
CLASS A



GRADE 5  
CLASS B



GRADE 8  
CLASS C



NEW CLOCK MARKING'S NUTS  
INCHES AND METRIC

GRADE 2  
CLASS A



GRADE 5  
CLASS B



GRADE 8  
CLASS C



LINE MARKING'S NUTS



CENTER LOCK MARKING



LOCK NUT MARKING



LOCK NUT NOTCH MARKING



LOCK NUT LETTER MARKING

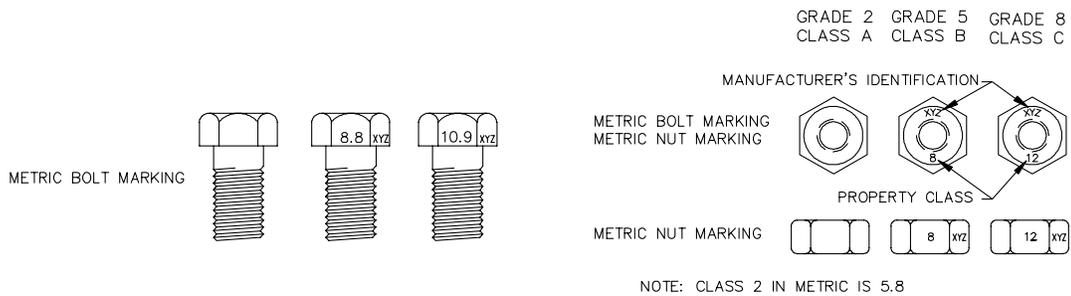
Torque Charts

Minimum Hardware Tightening Torque

Inch Pounds for Normal Assembly Applications

Metric Hardware and Lock Nuts

Nominal Size	Class 5.8		Class 8.8		Class 10.9		Lock Nuts Class 8 W/CL.8.8 Bolt
	Unplated or Plated Silver	Plated W/ZnCr Gold	Unplated or Plated Silver	Plated W/ZnCr Gold	Unplated or Plated Silver	Plated W/ZnCr Gold	
M4	15* (107)	19* (2.2)	23* (2.6)	30* (3.4)	33* (3.7)	42* (4.8)	16* (1.8)
M6	51* (5.8)	67* (7.6)	79* (8.9)	102* (12)	115* (13)	150* (17)	56* (6.3)
M8	124* (14)	159* (18)	195* (22)	248* (28)	274* (31)	354* (40)	133* (15)
M10	21 (28)	27 (36)	32 (43)	41 (56)	45 (61)	58 (79)	22 (30)
M12	36 (49)	46 (63)	55 (75)	72 (97)	79 (107)	102 (138)	39 (53)
M16	89 (121)	117 (158)	137 (186)	177 (240)	196 (266)	254 (344)	97 (131)
M20	175 (237)	226 (307)	277 (375)	358 (485)	383 (519)	495 (671)	195 (265)
M24	303 (411)	392 (531)	478 (648)	619 (839)	662 (897)	855 (1160)	338 (458)



**Section**

**4**

**Service Parts**



### Service Parts

#### Ordering Service Parts:

To assist our customer service department in providing you with the correct replacement parts promptly and accurately, follow the ordering instructions as listed below.

1. Order replacement parts by providing the following information:
  - A) Mower serial number – Refer to serial number plate, which also includes the model number, located on left hand side of the center support. Or if the plate is missing, check the top flange of the mounting plate (serial number is stamped into the flange).
  - B) Part description - Illustration drawings are provided to assist in identifying the parts by description and part numbers. Use this information to insure that correct service parts are ordered and sent to you.
  - C) Quantities - Order the exact number of parts required, do not order by “sets”.
  - D) Shipping instructions - Give company/customer name, shipping point or will call and mailing addresses notification if different than shipping point. State whether freight, express, parcel or other handling is desired. Confirm telephone orders in writing.
2. Inspection of parts when received is important. Damages or shortages should be brought to the attention of the carrier at the time the parts are accepted. Shipper's responsibilities cease upon delivery of shipment, in good order, to the customer.

#### Return Policy:

Return of parts for either warranty or incorrect parts received, must have a “Return of Materials Authorization” (RMA) number. Call Loftness Specialized Equipment, Inc. service department for this return number. To receive this number, you will need your “Sales Order, Invoice and Part Numbers” with quantities of parts to be returned. Credit information and shipping instructions will be given to you when you have received your “RMA” number. Be sure to place this number on the outside of the shipping package and on any documents placed inside.

#### Illustrated Parts Listings:

Illustrated parts drawings are included in this section, starting with page 4-3, that will assist you in identifying your flail mower and the parts available for service. These pages include part numbers, descriptions and quantities required for the 48”, 60”, 72” and 90” flail mowers. Include this information on your purchase orders to insure correct receiving of replacement parts.

**Owner's Manual (Hydraulic Flail Mower)**

**Service Parts Continued**

**Decals:**

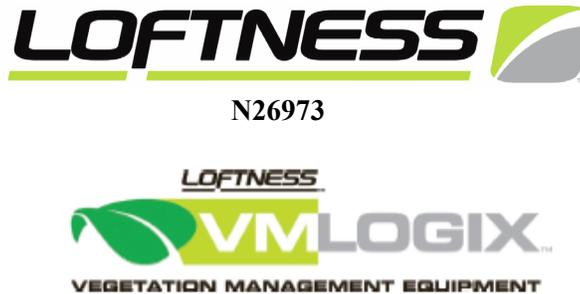
Refer to illustration drawing on page 4-3 for placement of below listed decals:

- 4135: Danger-Rotating Knives - (2) required
- 4137: Grease – (3) required
- 4138: FEMA - (1) required
- 4141: Red Reflectors - (2) required
- 4189: Warning – Rotating Parts – (1) required
- 4256: Caution-Do Not Start - (1) required
- 4334: Danger Stay Back - (1) required

- N13517: Proudly Made in the USA – (1) required
- N13721: Model & Serial Number Tag – (1) required
- N13863: Danger Flying Debris – (1) required
- N13872: Rotation Direction – (1) required
- N26973: Loftness Horizontal Medium – (1) required
- N28576: VM Logix Large- (1) required
- N33105: VM Logix QR Code – (1) required



4256



N26973



N33105



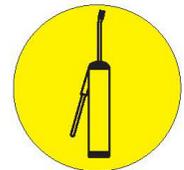
4135



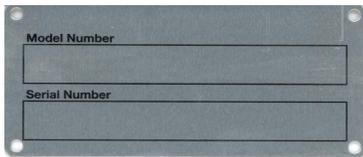
4334



4138



4137



N13721



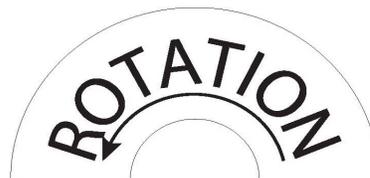
4189



4141



N13863

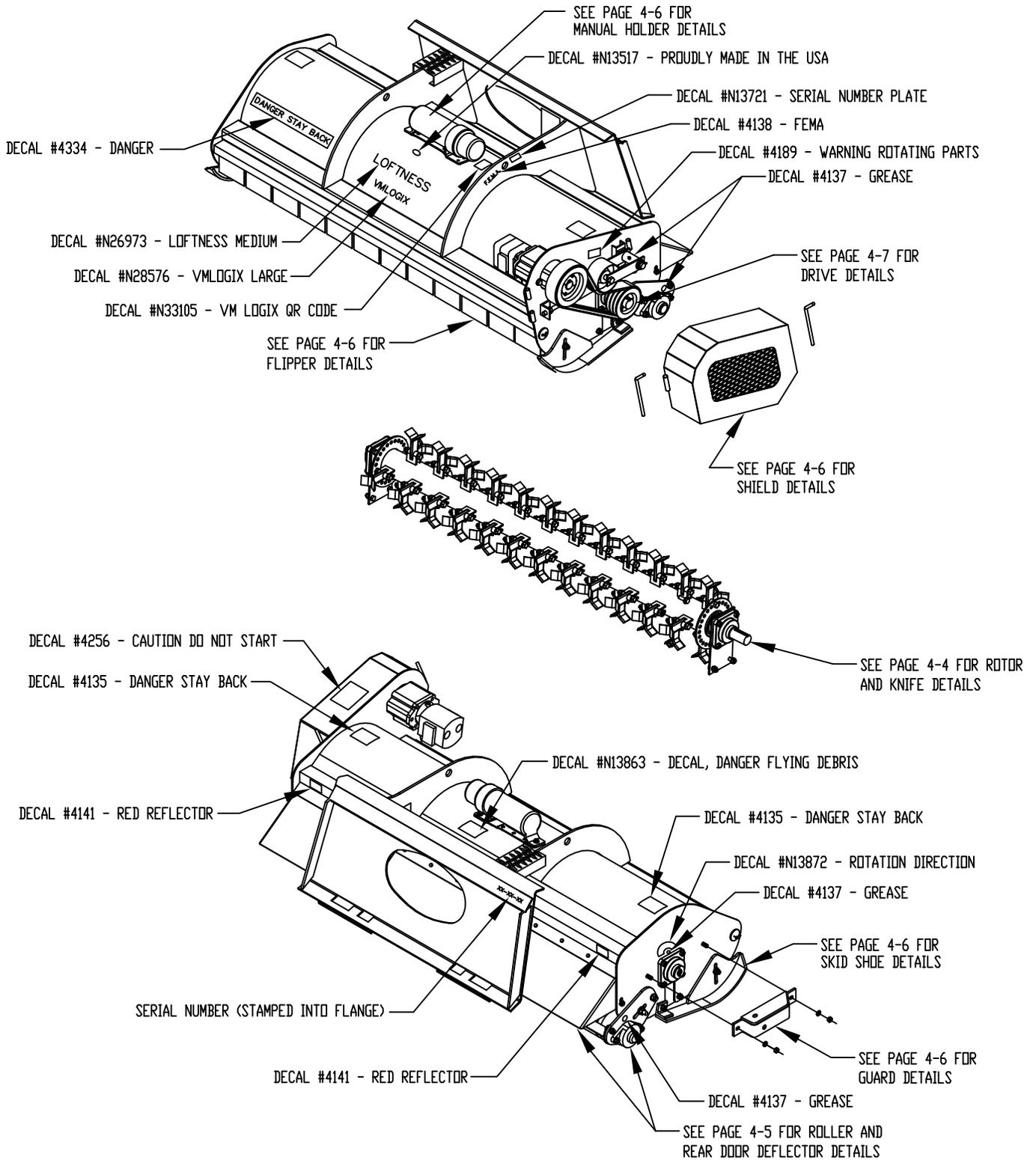


N13872



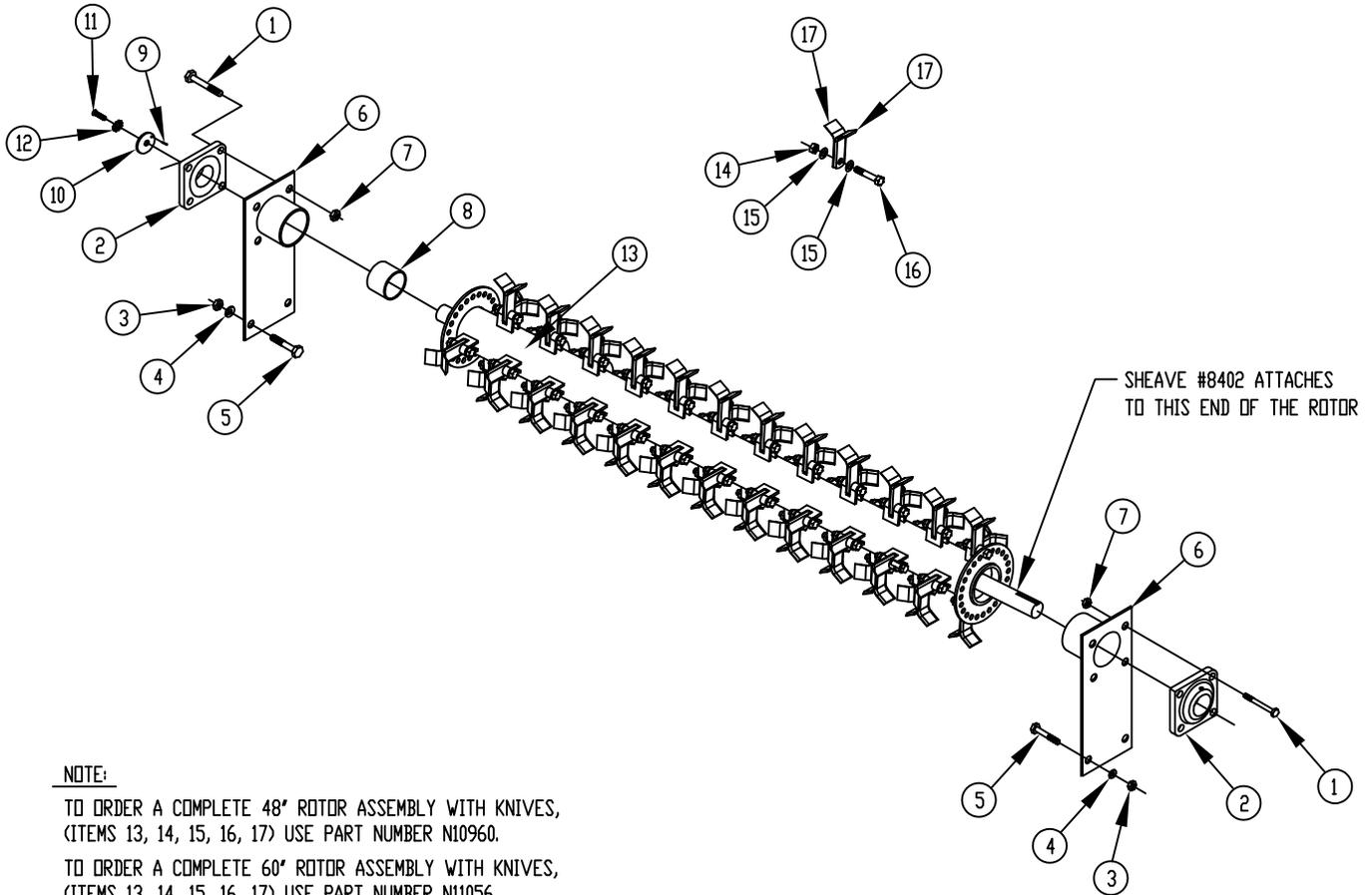
N13517

# HYDRAULIC FLAIL MOWER



THIS ILLUSTRATION PAGE IS A GENERAL OVERVIEW OF THE HYDRAULIC FLAIL MOWER. SHOWN IS THE DECAL PLACEMENT AND REFERENCES TO THE DIFFERENT PAGES WHICH SHOW THE PARTS BREAK DOWN OF VARIOUS ASSEMBLIES. THE GENERAL SERVICE PORTION OF THE MANUAL IN SECTION 3, EXPLAINS THE ASSEMBLY OR DISASSEMBLY OF THE MOWER PARTS AND ALSO WILL REFER TO THESE PAGES AS PICTORIAL GUIDES IN SERVICING YOUR FLAIL MOWER.

# HYDRAULIC FLAIL MOWER ROTOR

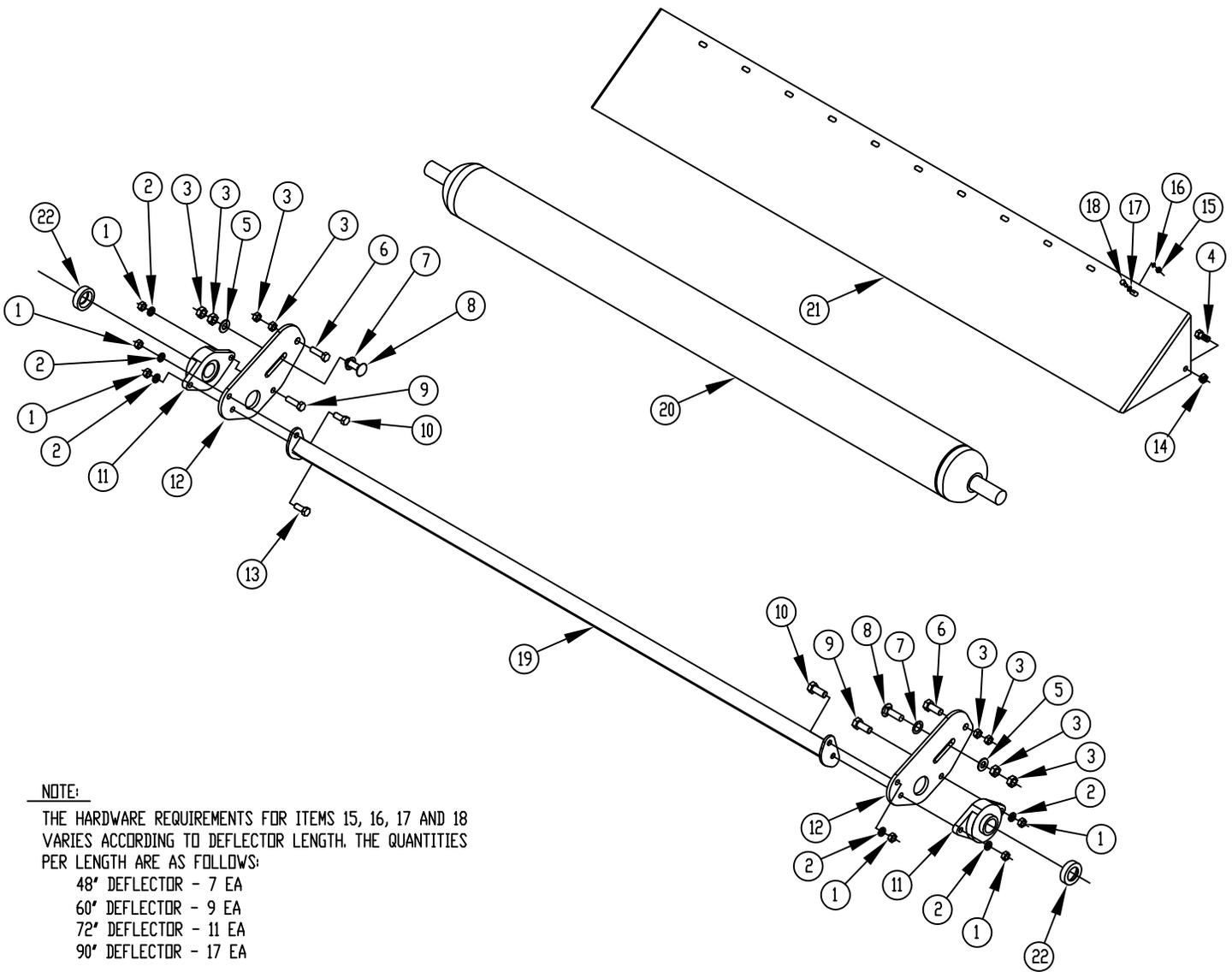


**NOTE:**

TO ORDER A COMPLETE 48" ROTOR ASSEMBLY WITH KNIVES, (ITEMS 13, 14, 15, 16, 17) USE PART NUMBER N10960.  
 TO ORDER A COMPLETE 60" ROTOR ASSEMBLY WITH KNIVES, (ITEMS 13, 14, 15, 16, 17) USE PART NUMBER N11056.  
 TO ORDER A COMPLETE 72" ROTOR ASSEMBLY WITH KNIVES, (ITEMS 13, 14, 15, 16, 17) USE PART NUMBER N10963.  
 TO ORDER A COMPLETE 90" ROTOR ASSEMBLY WITH KNIVES, (ITEMS 13, 14, 15, 16, 17) USE PART NUMBER N11845.

17	120	8600	KNIFE, 60° HEAVY DUTY (90°)	13	1	7521	ROTOR, 90° FLAIL W/D KNIVES
	96	8600	KNIFE, 60° HEAVY DUTY (72°)		1	7520	ROTOR, 72° FLAIL W/D KNIVES
	80	8600	KNIFE, 60° HEAVY DUTY (60°)		1	N11058	ROTOR, 60° FLAIL W/D KNIVES
	64	8600	KNIFE, 60° HEAVY DUTY (48°)		1	N10961	ROTOR, 48° FLAIL W/D KNIVES
16	60	4324	BOLT, 9/16"-12 UNC X 3" LG HEX HD GR 8 (90°)	12	1	4076	WASHER, 1/2" EXTERNAL TOOTH LOCK
	48	4324	BOLT, 9/16"-12 UNC X 3" LG HEX HD GR 8 (72°)	11	1	4468	SCREW, 1/2"-20 UNF X 1-1/4" LG FLAT HD CAP
	40	4324	BOLT, 9/16"-12 UNC X 3" LG HEX HD GR 8 (60°)	10	1	4434	WASHER, FLAIL BEARING RETAINING
	32	4324	BOLT, 9/16"-12 UNC X 3" LG HEX HD GR 8 (48°)	9	1	4085	PIN, ROLL (3/16" X 3/4" LG)
15	120	4337	WASHER, 9/16" SAE FLAT WASHER (90°)	8	1	7531	SPACER, ROTOR (FLAIL)
	96	4337	WASHER, 9/16" SAE FLAT WASHER (72°)	7	8	4436	NUT, 1/2"-20 UNF LOCK GR 8
	80	4337	WASHER, 9/16" SAE FLAT WASHER (60°)	6	2	7505	PLATE, ANTI-WRAP (FLAIL BEARING)
	64	4337	WASHER, 9/16" SAE FLAT WASHER (48°)	5	4	4012	BOLT, 1/2" UNC X 1-1/4" LG HEX HD GR 5
14	60	4323	NUT, 9/16"-12 UNC STD HEX HD GR 8 (90°)	4	4	4155	WASHER, 1/2" LOCK
	48	4323	NUT, 9/16"-12 UNC STD HEX HD GR 8 (72°)	3	4	4250	NUT, 1/2" UNC STD
	40	4323	NUT, 9/16"-12 UNC STD HEX HD GR 8 (60°)	2	2	8087	BEARING, 1-3/4" DODGE 4-BOLT FLANGE
	32	4323	NUT, 9/16"-12 UNC STD HEX HD GR 8 (48°)	1	8	4245	BOLT, 1/2"-20 UNF X 1-3/4" LG HEX HD GR 8
ITEM	QTY	PART NO	DESCRIPTION	ITEM	QTY	PART NO	DESCRIPTION

# HYDRAULIC FLAIL MOWER ROLLER



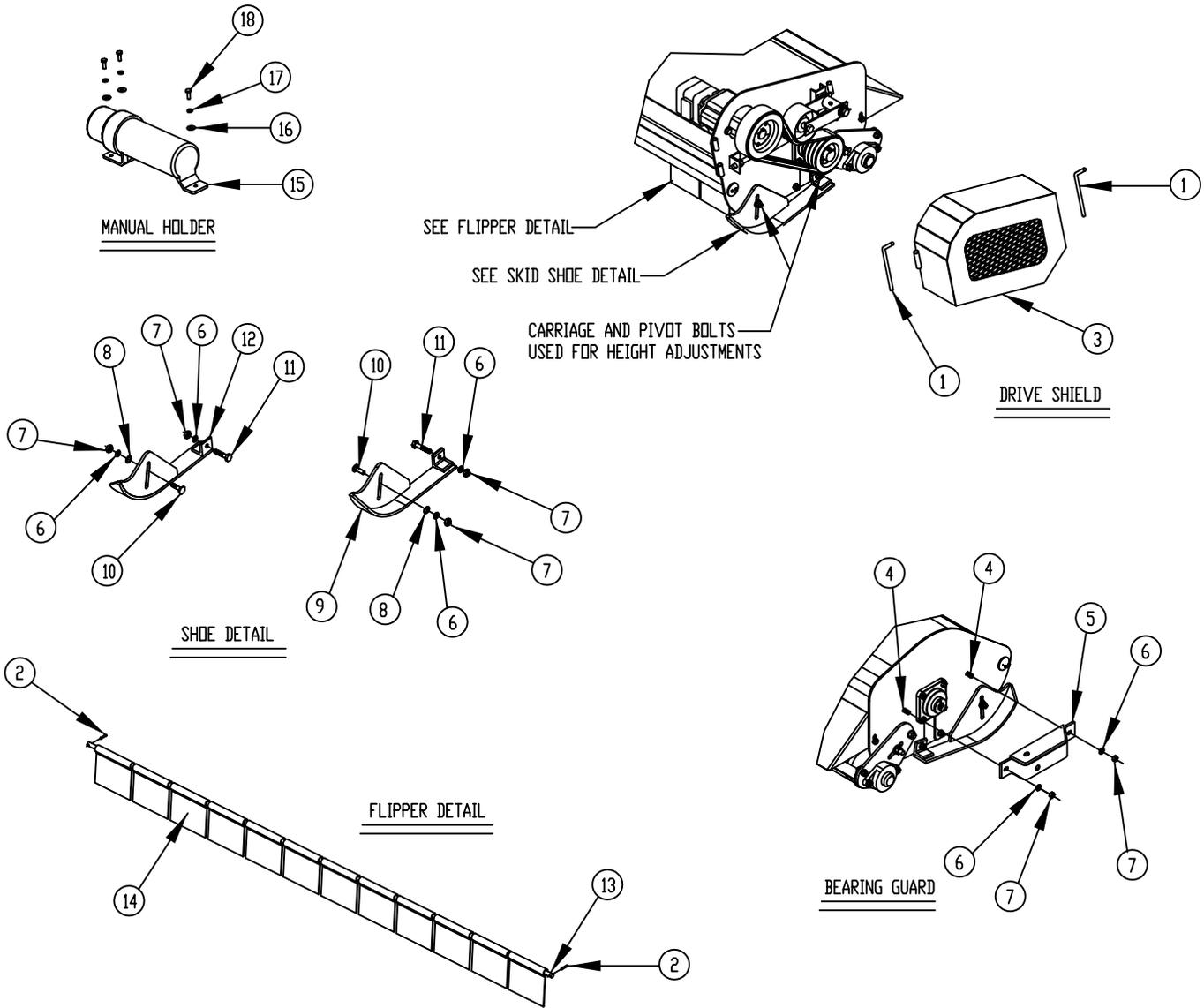
**NOTE:**

THE HARDWARE REQUIREMENTS FOR ITEMS 15, 16, 17 AND 18 VARIES ACCORDING TO DEFLECTOR LENGTH. THE QUANTITIES PER LENGTH ARE AS FOLLOWS:

- 48° DEFLECTOR - 7 EA
- 60° DEFLECTOR - 9 EA
- 72° DEFLECTOR - 11 EA
- 90° DEFLECTOR - 17 EA

22	4	4354	SCREW, 3/8" X 3/8" SET (INCLUDED W/N12137)	16	VAR	4231	WASHER, 1/4" LOCK
	2	N12137	PROTECTOR, 1-1/2" BEARING	15	VAR	4230	NUT, 1/4" UNC STD
21	1	N10448	DEFLECTOR, 90° REAR DOOR	14	2	4054	NUT, 1/2" UNC LOCK
	1	N10447	DEFLECTOR, 72° REAR DOOR	13	2	4014	BOLT, 1/2" UNC X 1-3/4" HEX HD GR 5
	1	N11057	DEFLECTOR, 60° REAR DOOR	12	2	7513	PLATE, ROLLER MOUNT
	1	N10976	DEFLECTOR, 48° REAR DOOR	11	2	N25060	BEARING, 1-1/2" DODGE 2BLT FLG
20	1	7515	ROLLER, 90° REAR	10	2	4012	BOLT, 1/2" UNC X 1-1/4" LG HEX HD GR 5
	1	7514	ROLLER, 72° REAR	9	2	4013	BOLT, 1/2" UNC X 1-1/2" LG HEX HD GR 5
	1	N10981	ROLLER, 60° REAR	8	2	4339	BOLT, 5/8" UNC X 2" LG CARRIAGE GR 5
	1	N10977	ROLLER, 48° REAR	7	2	4347	WASHER, 1-5/16" OD X 7/8" ID X 1/16" THK
19	1	7517	SCRAPER, 90° REAR ROLLER	6	2	4020	BOLT, 5/8" UNC X 1-1/2" LG HEX HD GR 5
	1	7516	SCRAPER, 72° REAR ROLLER	5	2	4069	WASHER, 5/8" FLAT
	1	N10983	SCRAPER, 60° REAR ROLLER	4	2	4011	BOLT, 1/2" UNC X 1" LG HEX HD GR 5
	1	N10982	SCRAPER, 48° REAR ROLLER	3	8	4438	NUT, STANDARD 5/8" GRD 8
18	VAR	4340	BOLT, 1/4" UNC X 3/4" LG HEX HD GR5	2	6	4155	WASHER, 1/2" LOCK
17	VAR	3183	WASHER, 1/4" FLAT	1	6	4250	NUT, 1/2" UNC STD
ITEM	QTY	PART NO	DESCRIPTION	ITEM	QTY	PART NO	DESCRIPTION

# HYDRAULIC FLAIL MOWER MISC PARTS

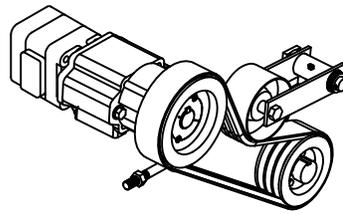


**NOTE:**

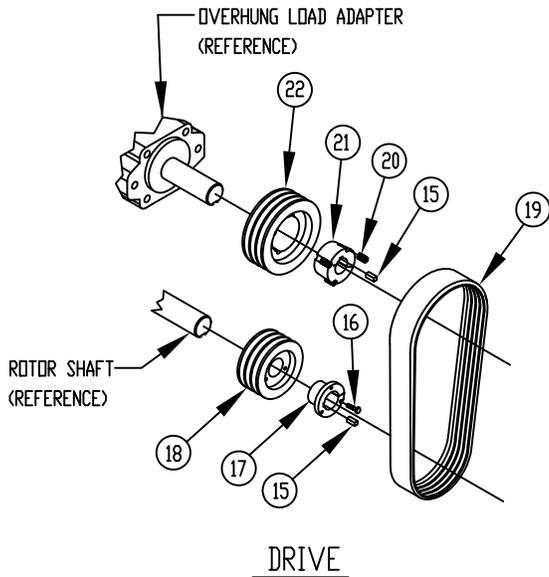
WHEN THE QUANTITIES (QTY) COLUMN IN THE PARTS LISTING SHOWS VAR (VARIES) REFER TO THE ILLUSTRATION FOR EXACT NUMBER OF ITEMS REQUIRED.

18	3	4340	BOLT, 1/4" X 3/4" GR 5	12	1	7512	SHOE, RIGHT SKID
17	3	4231	WASHER, LOCK 1/4"	11	2	4013	BOLT, 1/2" UNC X 1-1/2" LG HEX HD GR 5
16	3	4460	WASHER, FLAT 1/4"	10	2	4039	BOLT, 1/2" UNC X 1-1/2" LG CARRIAGE
15	1	N19600	HOLDER, LG. OPERATORS MANUAL	9	1	7511	SHOE, LEFT SKID
14	15	N10958	FLIPPER, 90° FRONT	8	2	4068	WASHER, 1/2" FLAT
	12	N10958	FLIPPER, 72° FRONT	7	VAR	4250	NUT, 1/2" UNC STD
	10	N10958	FLIPPER, 60° FRONT	6	VAR	4155	WASHER, 1/2" LOCK
	8	N10958	FLIPPER, 48° FRONT	5	1	N16161	GUARD, RIGHT BEARING
13	1	7508	ROD, 90° FLIPPER	4	2	4012	BOLT, 1/2" UNC X 1-1/4" LG HEX HD GR 5
	1	7507	ROD, 72° FLIPPER	3	1	7530	SHIELD, BELT
	1	N10991	ROD, 60° FLIPPER	2	2	4375	PIN, 3/16" X 1" LG ROLL
	1	N10990	ROD, 48° FLIPPER	1	2	7529	PIN, BELT SHIELD
ITEM	QTY	PART NO	DESCRIPTION	ITEM	QTY	PART NO	DESCRIPTION

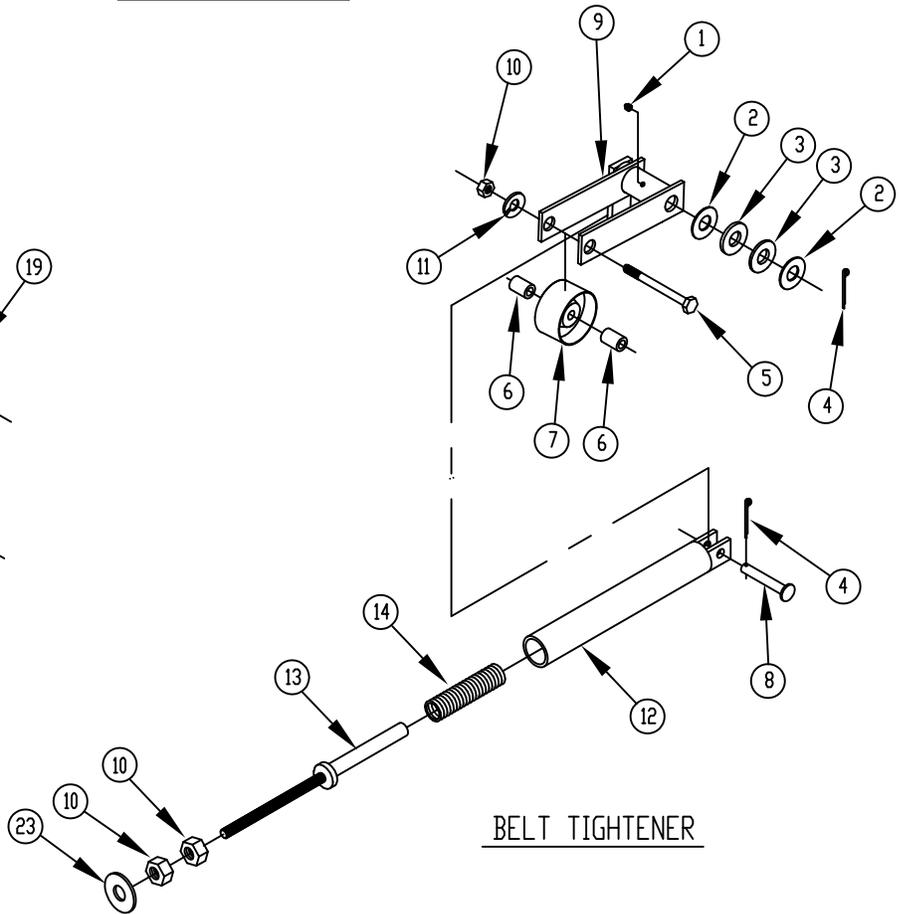
# HYDRAULIC FLAIL MOWER DRIVE



REFERENCE VIEW



DRIVE



BELT TIGHTENER

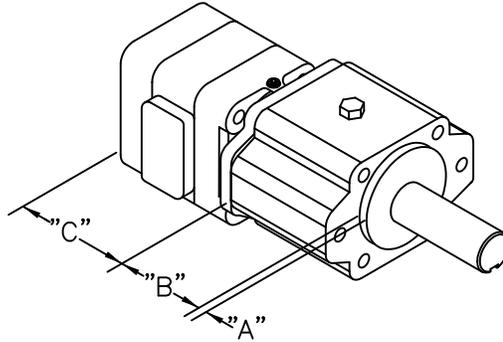
**NOTE:**

1) REFER TO PAGES 4-10 THRU 4-15 FOR HYDRAULIC DRIVE COMPONENTS.

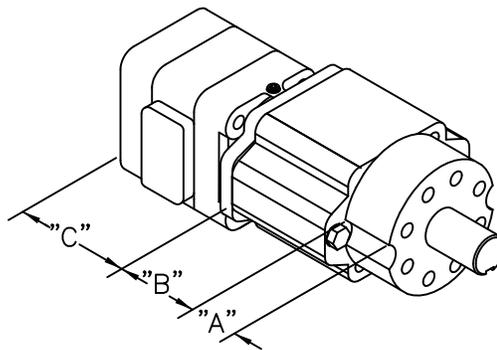
23	1	4069	WASHER, FLAT 5/8"	12	1	9163	TUBE, BELT TIGHTENER
22	1	N11421	SHEAVE, 6.8 PD TAPER LOCK 3-BAND	11	1	4070	WASHER, 5/8" LOCK
21	1	8126	BUSHING, 1-1/2" TAPER LOCK KEYED (INCLUDES 20)	10	2	4438	NUT, STANDARD 5/8" GRD 8
20	3	8128-10	SCREW, 1/2" X 1" SET TAPER LOCK (INCLUDED W/21)	9	1	7527	BRACKET, BELT TIGHTENER
19	1	8403	BELT, 3B X 51' GOODYEAR	8	1	4345	PIN, PLATED 3/4" DIA X 1-1/4" LG
18	1	8402	SHEAVE, QD 523B 3-BAND	7	1	8409	PULLEY, IDLER 5" DD X 2-1/2"
17	1	8414	BUSHING, 1-3/4" QD SD KEYED (INCLUDES 15 & 16)	6	2	7528	SPACER, 5/8" ID X 15/16" LG
16	3	4001	BOLT, 1/4" UNC X 1-3/4" HEX HD GR 5 (INCLUDED W/17)	5	1	4252	BOLT, 5/8-11 UNC X 4-1/2" LG HEX HD GR 5
15	2	7121-02	KEY, 3/8" X 1-3/4" (INCLUDED W/17 & 25)	4	2	4325	PIN, COTTER 3/16" X 1-1/2"
14	1	8067	SPRING, BELT TIGHTENER	3	2	4158	WASHER, 1" ID THICK SPACER
13	1	7525	ROD, BELT TIGHTENER	2	2	4157	WASHER, 1" ID THIN SPACER
ITEM	QTY	PART NO	DESCRIPTION	ITEM	QTY	PART NO	DESCRIPTION
				1	1	4105	ZERK, SCREW-IN GREASE

*SERVICE NOTES*

# HYDRAULIC FLAIL MOTOR & ADAPTER IDENTIFICATION CHART



3500 PSI MOTOR & LOAD ADAPTER  
FIGURE "B"

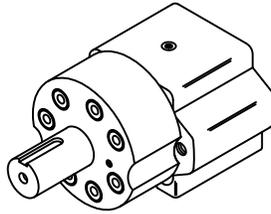


3500 PSI MOTOR & LOAD ADAPTER  
FIGURE "A"

DETAIL	LOAD ADAPTER PILOT LENGTH - DIM "A"	LOAD ADAPTER LENGTH - DIM "B"	OVERALL MOTOR LENGTH - DIM "C"	SYSTEM NO.	DESCRIPTION
FIGURE "A"	2-1/8"	4-1/2"	UP TO 10"	1	3500 PSI 10 - 48 GPM (W/D CASE DRAIN)
FIGURE "B"	1/2"	4-1/2"	UP TO 10"	2	3500 PSI 25 - 48 GPM (W/CASE DRAIN)
FIGURE "B"	1/2"	5-1/2"	UP TO 10"	3	3500 PSI 49 - 60 GPM (W/CASE DRAIN)

# 3500 PSI HYDRAULIC FLAIL DRIVE W/O CASE DRAIN & MOTOR SEAL

## SYSTEM NO. 1 10 - 48 GPM UNITS



THIS OVERHUNG LOAD ADAPTER (#N10533) IS EQUIPPED WITH A SPECIAL "HIGH PRESSURE MECHANICAL SEAL", ELIMINATING THE NEED FOR A CASE DRAIN. SEND THE COMPLETE ADAPTER BACK TO THE FACTORY FOR ALL REPAIRS.

### *N10533 OVERHUNG LOAD ADAPTER*

NOTE:

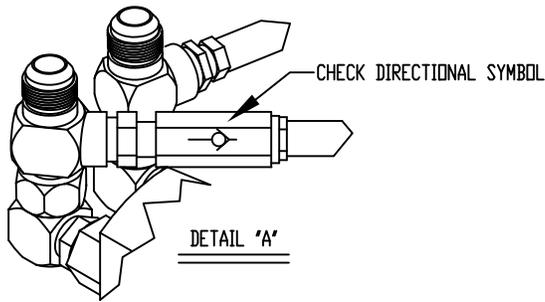
- 1) TO ORDER SERVICE PARTS, REFER TO PAGE 4-11 TO SELECT THE ITEM NUMBERS REQUIRED, THEN USE THE PART NUMBERS, QUANTITY, AND DESCRIPTION FROM THIS PAGE FOR ORDERING.
- 2) REDUCER, ITEM #14 PART NUMBER N11694, WILL ONLY BE USED WITH HYDRAULIC MOTORS N10913, N10914 AND N10915.
- 3) TO ORDER A COMPLETE HOSE KIT (ITEMS 7, 8, 9, 10, 11, 12), USE PART NUMBER N11366.
- 4) THESE MOTORS DO NOT USE A SHAFT SEAL, REPLACE THE COMPLETE MOTOR WHEN WORN.

15	2	4513	BOLT, 1/2" UNC X 1-1/4" LG HEX HD GR 8
* 14	2	N11694	REDUCER, 1-5/16-12 O-RING TO 1-1/16-12 O-RING
13	2	N15944	HOSE, 3/4" X 102"-12F JIC-12MDR
12	1	N11369	HOSE, 1/2" X 20" HYD 3/4" F JIC TO 1/2" M O-RING
11	1	N11949	VALVE, IN LINE CHECK 3/4" F O-RING
10	1	N11947	ADAPTER, 3/4" M O-RING TO 3/4" F SWIVEL
9	1	N11948	ADAPTER, 1-1/16" F JIC TO 3/4" M JIC
8	2	N19306	TEE, 12MJIC-12FJIC-12MJIC SWIVEL
7	2	N11945	ELBOW, 90° 1-1/16" M O-RING TO 1-1/16" M JIC
6	4	4466	BOLT, 1/2" UNC X 1-1/2" LG HEX HD GR 8
ITEM	QTY	PART NO	DESCRIPTION

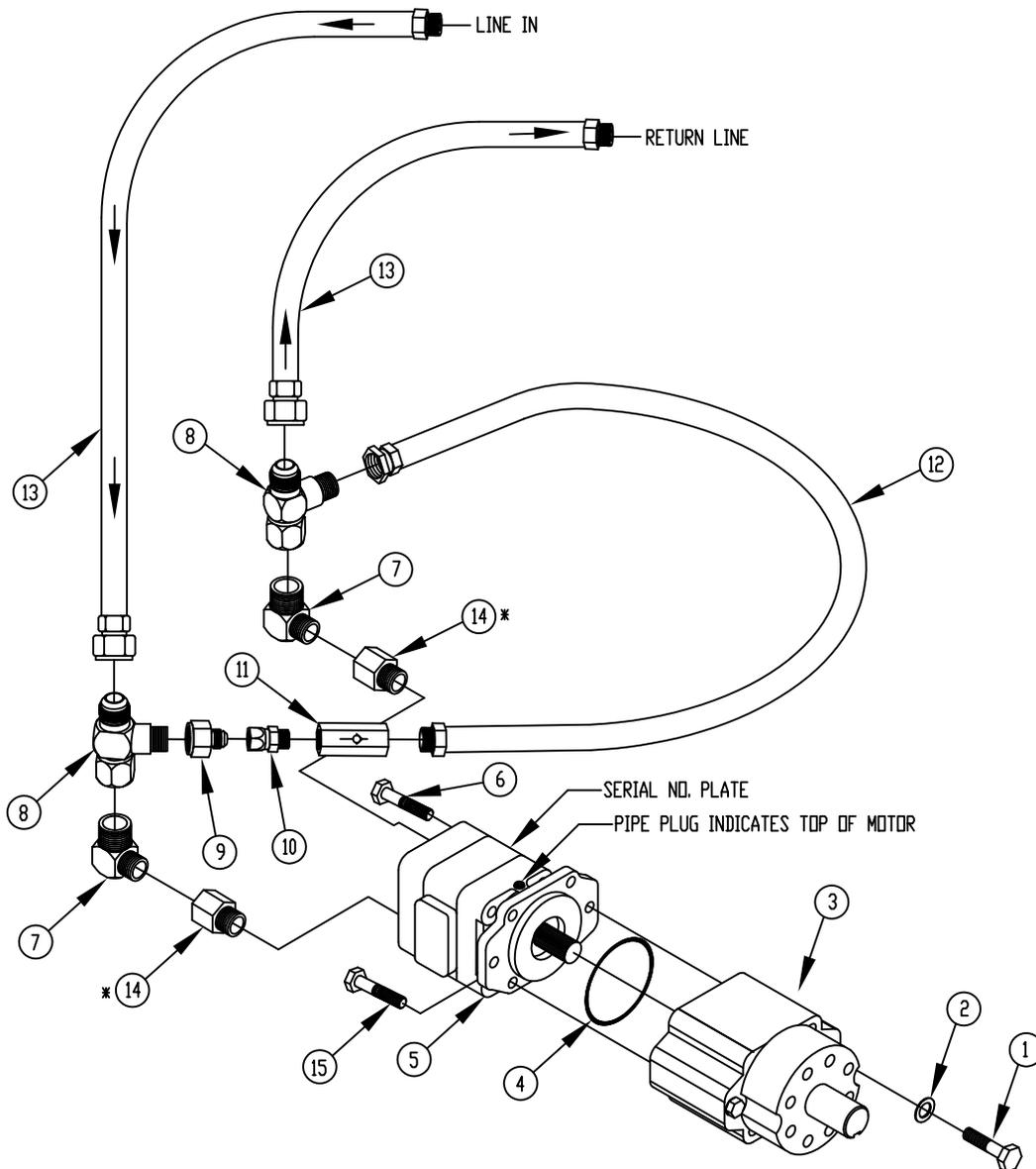
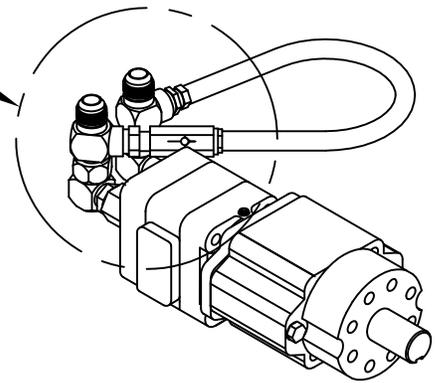
5	1	N10915	MOTOR, COMMERCIAL (#9 43-48 GPM) W/O SEAL
	1	N10914	MOTOR, COMMERCIAL (#8 38-42 GPM) W/O SEAL
	1	N10913	MOTOR, COMMERCIAL (#7 33-37 GPM) W/O SEAL
	1	N10912	MOTOR, COMMERCIAL (#6 29-32 GPM) W/O SEAL
	1	N10911	MOTOR, COMMERCIAL (#5 25-28 GPM) W/O SEAL
	1	N10910	MOTOR, COMMERCIAL (#4 21-24 GPM) W/O SEAL
	1	N10909	MOTOR, COMMERCIAL (#3 17-20 GPM) W/O SEAL
	1	N10908	MOTOR, COMMERCIAL (#2 13-16 GPM) W/O SEAL
	1	N10907	MOTOR, COMMERCIAL (#1 10-12 GPM) W/O SEAL
4	1	N11859	SEAL, O-RING (243)
3	1	N10533	ADAPTER, OVERHUNG LOAD (INCLUDES #N11859 SEAL)
2	2	4068	WASHER, 1/2" SAE FLAT GRADE 8
1	2	4013	BOLT, 1/2" UNC X 1-1/2" GRADE 5
ITEM	QTY	PART NO	DESCRIPTION

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SYSTEM NO. 1 10-48 GPM UNITS

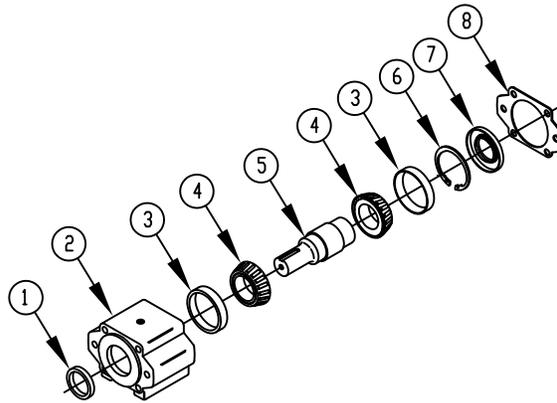


DETAIL "A"



# 3500 PSI HYDRAULIC FLAIL DRIVE W/CASE DRAIN & MOTOR SEAL

## SYSTEM NO. 2 25 - 48 GPM UNITS



**NOTE:**

N/A FOR A PART NUMBER MEANS THAT IT IS NOT A SERVICE ITEM.

ITEM	QTY	PART NO	DESCRIPTION	ITEM	QTY	PART NO	DESCRIPTION
8	1	N14158	GASKET	4	2	N14153	CONE, BEARING
7	1	N14157	SEAL, REAR (55MM X 90MM X 10MM)	3	2	N14152	CUP, BEARING
6	1	N14156	RING, RETAINING	2	1	N/A	HOUSING
5	1	N14154	SHAFT	1	1	N14151	SEAL, FRONT (1.50" I.D. X 2.13" O.D. X .312" THK)

### N16416 OVERHUNG LOAD ADAPTER (600 SERIES) PARTS LIST

**NOTE:**

1) TO ORDER SERVICE PARTS, REFER TO PAGE 4-13 TO SELECT THE ITEM NUMBERS REQUIRED, THEN USE THE PART NUMBERS, QUANTITY, AND DESCRIPTION FROM THIS PAGE FOR ORDERING.

2) TO ORDER A COMPLETE 3500 PSI HOSE KIT W/CASE DRAIN HOSE, (ITEM #13 & 15), USE PART NUMBER #N16535.

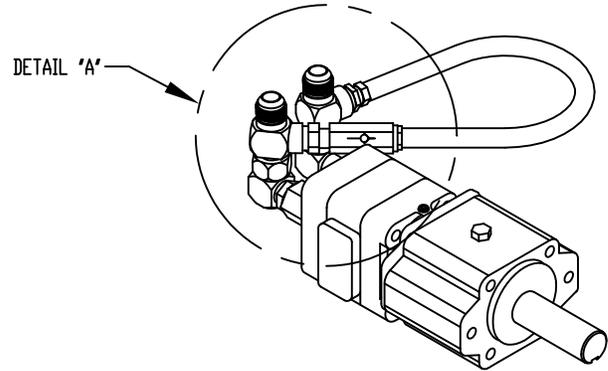
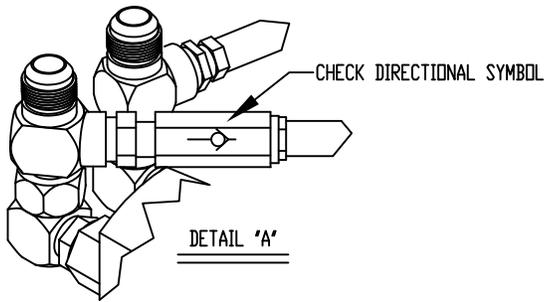
\* 3) THE MOTORS (ITEM #5) WERE SUPPLIED WITH EITHER PIPE OR O-RING STYLE OF THREADS. SELECT THE CORRECT ADAPTER (ITEM #17) WHEN REPLACING PART.

\*\* 4) REDUCER, ITEM #14 PART NUMBER N11694, WILL ONLY BE USED WITH HYDRAULIC MOTORS N16457, N16458 AND N16459.

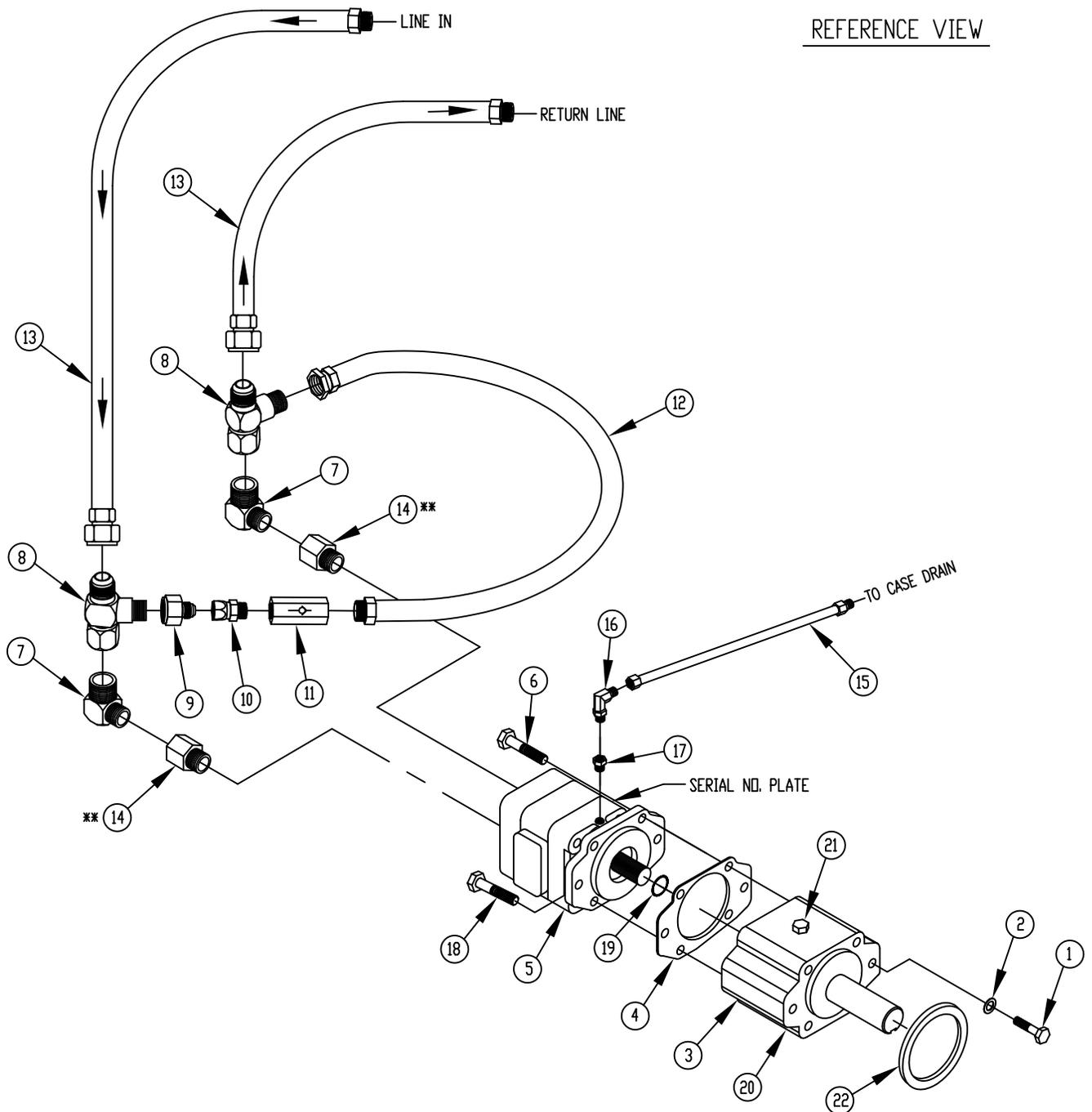
22	1	N16574	ADAPTER, OVERHUNG LOAD 1/4	10	1	N11947	ADAPTER, 3/4" M O-RING TO 3/4" F SWIVEL
21	1	N14118	PLUG, SAE#6 O-RING	9	1	N11948	ADAPTER, 1-1/16" F JIC TO 3/4" M JIC
20	1	N16578	PLUG, SAE#4 O-RING (NOT SHOWN)	8	2	N19306	TEE, 12MJIC-12FJIC-12MJIC SWIVEL
19	1	N14161	SEAL, MOTOR SHAFT (#7, 8, 9 MOTORS)	7	2	N11945	ELBOW, 90° 1-1/16 O-RING TO 1-1/16 M JIC
	1	N14160	SEAL, MOTOR SHAFT (#5 & 6 MOTORS)	6	4	4466	BOLT, 1/2" X 1-1/2" LG. GRADE 8 (TOP BOLTS)
18	2	4513	BOLT, 1/2" X 1-1/4" LG, GRADE 8 (BOTTOM BOLTS)	5	1	N16459	MOTOR, COMMERCIAL W/SEAL (#9 43-48 GPM)
*17	1	N31512	ADAPTER, 4MOR - 6FDR #8 MOTOR		1	N16458	MOTOR, COMMERCIAL W/SEAL (#8 38-42 GPM)
	1	N17002	ADAPTER, 4MP - 6FDR		1	N16457	MOTOR, COMMERCIAL W/SEAL (#7 33-37 GPM)
	1	N16075	ADAPTER, 4MOR - 6FDR		1	N16456	MOTOR, COMMERCIAL W/SEAL (#6 29-32 GPM)
16	1	N17003	ELBOW, 90° #6 MOR X #8 MJ		1	N16455	MOTOR, COMMERCIAL W/SEAL (#5 25-28 GPM)
15	1	N16248	HOSE, 1/2" X 126' 4000 PSI W/SHIELD (#8 FJX X #8 MORB)	4	1	N14158	GASKET (INCLUDED W/N16416)
**14	2	N11694	REDUCER, 1-5/16-12 O-RING TO 1-1/16-12 O-RING	3	1	N16416	ADAPTER, 600 OVERHUNG LOAD (INCLUDES GASKET #4)
13	2	N15944	HOSE, 3/4" X 102'-12FJIC-12MOR	2	2	4068	WASHER, 1/2" SAE FLAT GRADE 8
12	1	N11369	HOSE, 1/2" X 20' HYD 3/4" F JIC TO 1/2" M-DRING	1	2	4013	BOLT, 1/2" X 1-1/2" LG. GRADE 5
11	1	N11949	VALVE, IN LINE CHECK 3/4" M JIC	ITEM	QTY	PART NO	DESCRIPTION

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SYSTEM NO. 2 25-48 GPM UNITS

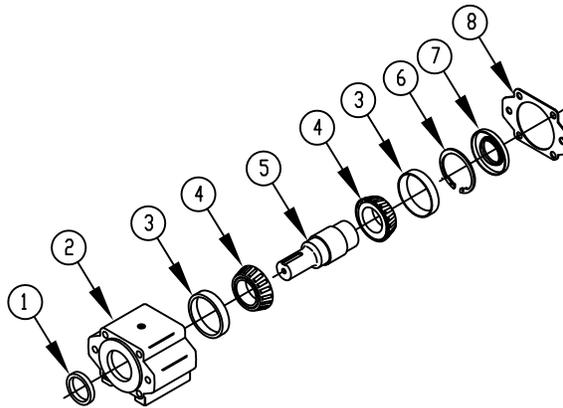


REFERENCE VIEW



# 3500 PSI HYDRAULIC FLAIL DRIVE W/CASE DRAIN & MOTOR SEAL

## SYSTEM NO. 3 48 - 60 GPM UNITS



**NOTE:**

N/A FOR A PART NUMBER MEANS THAT IT IS NOT A SERVICE ITEM.

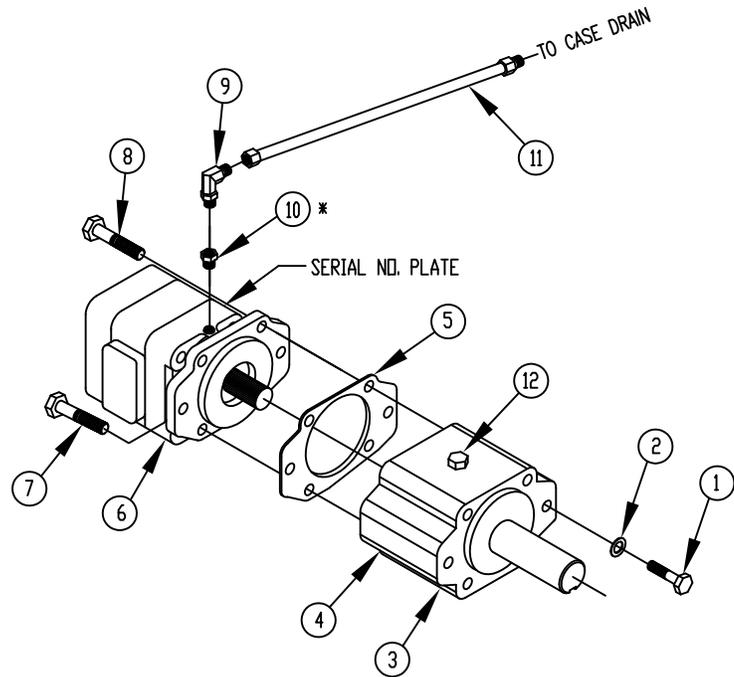
8	1	N14158	GASKET	4	2	N14153	CONE, BEARING
7	1	N14157	SEAL, REAR (55MM X 90MM X 10MM)	3	2	N14152	CUP, BEARING
6	1	N14156	RING, RETAINING	2	1	N/A	HOUSING
5	1	N14155	SHAFT	1	1	N14151	SEAL, FRONT (1.50" I.D. X 2.13" O.D. X .312" THK)
ITEM	QTY	PART NO	DESCRIPTION	ITEM	QTY	PART NO	DESCRIPTION

### N11678 OVERHUNG LOAD ADAPTER (800 SERIES) PARTS LIST

**NOTE:**

\*1) THE MOTORS (ITEM #6) WERE SUPPLIED WITH EITHER PIPE OR O-RING STYLE OF THREADS. SELECT THE CORRECT ADAPTER (ITEM #10) WHEN REPLACING PART.

2) THESE MOTORS REQUIRE LARGER HOSES AND FITTINGS, AND IS AVAILABLE BY SPECIAL ORDER ONLY.



12	1	N14118	PLUG, SAE#6 O-RING	6	1	N13928	MOTOR, COMMERCIAL W/SEAL (#11 55-60 GPM)
11	1	N16248	HOSE, 1/2" X 126' 4000 PSI W/SHIELD (#8 FJX X #8 MORB)	6	1	N10916	MOTOR, COMMERCIAL W/SEAL (#10 49-54 GPM)
*10	1	N17002	ADAPTER, #4 MP TO #6 FOR	5	1	N14118	GASKET (INCLUDED W/N11678)
	1	N16075	ADAPTER, #4 MOR TO #6 FOR	4	1	N11678	ADAPTER, 800 OVERHUNG LOAD (INCLUDES GASKET #5)
9	1	N17003	ELBOW, 90° #6 MOR X #8 MJ	3	1	N16578	PLUG, SAE#4 O-RING (NOT SHOWN)
8	4	4466	BOLT, 1/2" X 1-1/2" LG. GRADE 8 (TOP BOLTS)	2	2	4068	WASHER, 1/2" SAE FLAT GRADE 8
7	2	4513	BOLT, 1/2" X -1/4" LG, GRADE 8 (BOTTOM BOLTS)	1	2	4013	BOLT, 1/2" X 1-1/2" LG. GRADE 5
ITEM	QTY	PART NO	DESCRIPTION	ITEM	QTY	PART NO	DESCRIPTION



***LOFTNESS***

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