



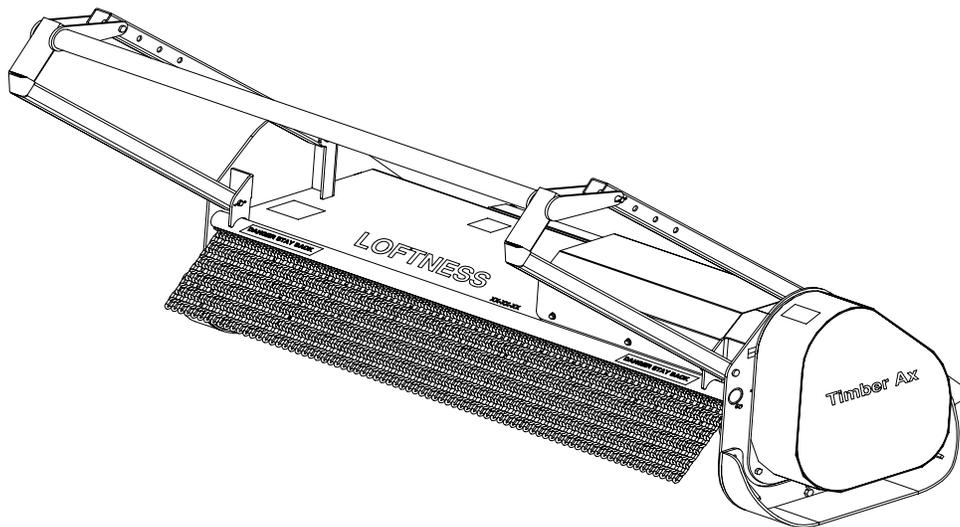
Timber Ax

Skid-steer Mounted Tree Shredder

43AXH 53AXH 63AXH 73AXH 83AXH

Operator's Manual & Parts Book

(2004)



Model Number: _____

Serial Number: 01-100 Thru 01-168

Date of Purchase: _____



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.

Loftness one (1) year warranty policy covers only the Crop Shredders, Snowblowers, Kwik-Piks, and Sod Unrollers.

Loftness six (6) month warranty policy covers Timber Axes, Brush Shredders, Flail Mowers, and BPOs.

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 Shredders – LOFTNESS shredders 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 – 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.



Skid-steer Mounted Tree Shredder

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Dear Customer:

Thank you for your decision to purchase a Timber Ax Skid-steer Mounted Tree Shredder from Loftness Specialized Equipment, Inc. It has been designed to provide years of profitable and dependable service. To insure maximum performance of your shredder, 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 shredder 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 shredder 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.

Owner's Manual (Timber Ax)

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.

These message alert symbols, shown below, 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) Warns of an immediate hazard which, if not avoided, will result in severe personal injury or death.



WARNING - (black lettering on orange background) Refers to a potentially hazardous situation which, if not avoided, could result in severe personal injury or death.



CAUTION - (black lettering on yellow background) Refers to a potential hazard or unsafe practice which may result in minor personal injury.

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"** (page 1-2 Section 1).
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.
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 brush shredder. Become familiar with them before operating this machine.

Owner's Manual (Timber Ax)

Safety Instructions for Operation and Maintenance Continued:



Mandatory Shut-Down Procedure:

- Move throttle to idle position.
- Disengage all power to the brush shredder.
- 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 brush shredder 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 shredder. 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 brush shredder.

- 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 brush shredder, always exercise the **“Mandatory Shut-Down Procedure”** (page 1-2 Section 1). 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 brush shredder. 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 advice to determine if he can safely operate a machine.
- Stay alert for hidden hazards or traffic.
- Before using a brush shredder 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 brush shredder 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. Do not use your hands to check for hydraulic leaks.

Owner's Manual (Timber Ax)

Safety Instructions for Operation and Maintenance Continued:



WARNING:

- Keep all guards, shields and decals in place.
- Always repair or replace any damaged front guard chains.
- 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 brush shredder 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 brush shredder.
- Never operate the brush shredder in a lifted position. Work only on the surface that the loader is standing on.



DANGER:

- Do not operate the mower above the rated RPM.
- **DANGER:** Before leaving the operator's position for **ANY** reason or allowing anyone near the brush shredder, 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.



WARNING:

- Stay alert for hidden hazards or traffic. Do not carry passengers.
- Never operate the shredder without good light or visibility.
- After striking a foreign object, be sure to exercise mandatory shut-down procedure. Thoroughly inspect shredder for any damage before restarting and operating the shredder.
- 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 shredder until the problem has been detected and corrected. Be sure to exercise the **“Mandatory Shut-Down Procedure”**.
- Disengage power to shredder when transporting or not in use.

Owner's Manual (Timber Ax)

Operation Safety Continued:

- When transporting the shredder 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 shredder 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 shredder, or removing material from it, be sure to exercise the **“Mandatory Shut-Down Procedure”** (page 1-2 Section 1).
- 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!
- 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.

Owner's Manual (Timber Ax)

Operating and Set-up Instructions

Operating:

The Loftness hydraulic brush shredder is an effective, reliable machine used for maintaining grass, weeds and brush up to 1-1/2" in diameter continuous duty and up to 6" in diameter intermittent duty. For best results, operate the machine as low to the ground as possible without the blades striking ground or other obstructions. Lifting or tilting the shredder increases the risk of flying debris. 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, weeds and brush. The shredder deposits cut material over the entire width-of-cut, which eliminates bunching or windrowing behind the machine.

The shredder rotor is equipped with two rows of stationary cutting knives, plus an adjustable cutter bar that restricts the feed rate of the material being shredded. This is located behind the deflector in the cutting chamber and preset at 1/8" clearance for the slowest feed rate to lower power requirements. The more powerful systems can use a wider opening to increase the feed rate (see page 4-5 Section 4).

The Loftness Hydraulic Brush Shredder can be attached to any skid-steer with an auxiliary hydraulic system of 21 - 54 GPM, which has a standard universal skid steer hitch.

Operating Speed:

Various mowing conditions, and desired finished-cut appearance, will determine proper ground speed. Heavy brush will require a forward stop and go movement to allow the shredder to properly mow the brush.

WARNING:

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

WARNING:

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 prevent the possibility of fire.

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 brush shredder 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 brush shredder 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.

Owner's Manual (Timber Ax)

Operating and Set-up Instructions Continued:

Equipment Set-up Continued:

- 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

Owner's Manual (Timber Ax)

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 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.

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

- A) Belt idler bracket - located under belt cover.
- B) Drive pulley shaft bearing - located under belt cover, behind drive pulley.

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.

Knife Replacement:

When the knives become dull or broken, they must be replaced. If a knife is replaced, the knife on the opposite side of rotor must be replaced to maintain the balance.

- 1) Refer to page 4-8 in Section 4 for an illustrated parts listing.

- 2) Remove the 5/8" UNF bolt, lock nut and knife.
- 3) Install new knives (bolt must be inserted through the knife mount from the rotor side to allow the nut to be on the outside).
- 4) Apply a thread-locking compound to the nut and tighten to torque values listed in chart.

Belt Removal:

- 1) Refer to page 4-7 in Section 4 for an illustrated parts listing.
- 2) Remove belt cover 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 to reinstall the belt.

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.

Owner's Manual (Timber Ax)

General Service Continued

Pulley Removal Continued:

- 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 set screws and thread into the two opposing holes.
- 8) Position assembly on shaft and alternately torque set screws to 35 ft. lbs.
- 9) To increase gripping force, hammer face of bushing using drift or sleeve. (Do not hit bushing directly with hammer).
- 10) 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.

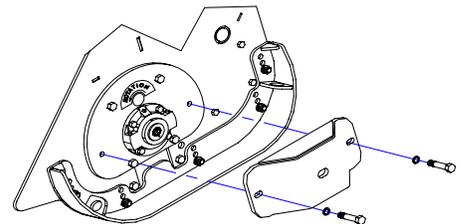
 **CAUTION:**

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 100 lbs./ft - i.e., a 73 inch mower rotor weighs approximately 608 lbs.

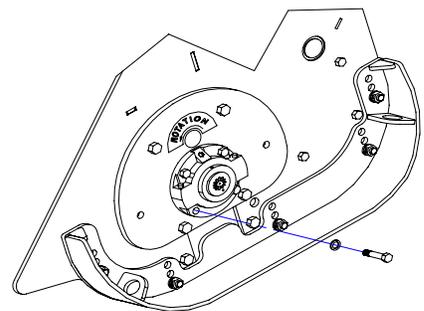
Rotor Removal (Mower in Upside Down Position):

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 4-8 in Section 4 for an illustrated parts listing.
- 2) Attach a lifting device to both ends of rotor, and apply a light tension.
- 3) Remove the bearing guard by removing the (2) 5/8" bolts and lock washers on the right side of the shredder.



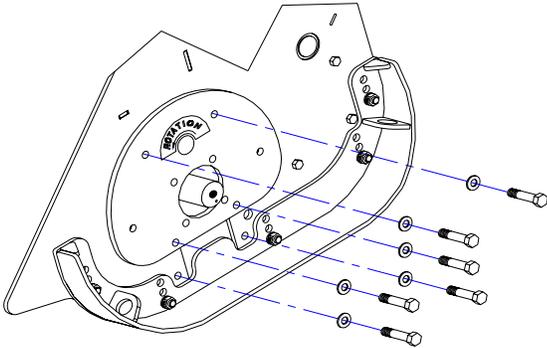
- 4) Loosen the set screws on the bearings.
- 5) Remove the (4) 1/2" bolts and lock washers holding the bearing to the side plate and anti-wrap plate (located on the inside of the side plate) on the left hand side of the mower. Remove the bearing.



Owner's Manual (Timber Ax)

Rotor Removal (Mower in Upside Down Position) Continued:

- 6) Remove the remaining (6) 5/8" bolts and lock washers that hold the anti-wrap to the inside of the side plate.



- 7) Repeat step 4, 5, and 6 on left hand side.
- 8) Lift rotor out of machine.
- 9) Slide anti-wrap plates off rotor shaft. Remove spacers from right and left hand ends of rotor shaft.

- 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, page 3-1 Section 3)
- Make a list of all worn or damaged parts and replace them.
- Paint all parts that are worn or rusted.
- Store mower in a clean, dry area.
- Review your operator's manual

Beginning of the Season:

- Review your operator's manual.
- Lubricate all parts of the machine (see lubrication, page 3-1 Section 3).
- Tighten all bolts, nuts, and set screws.
- Reapply tension to the belt so there is 1/2" deflection at mid point between the pulleys.

Trouble shooting:



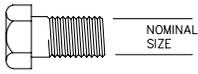
WARNING: When high pressure fluid escapes, it can be almost invisible, yet have enough pressure to penetrate the skin and enter the blood stream. Never attempt to use hands to search for suspected oil leak. If injured by escaping fluid, consult a doctor at once! Serious reaction or infection can occur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

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Excessive Vibration	*Broken or missing knife.	*Replace knife
	*Mud and/or debris wrapped around the rotor	*Clean the machine
	* Bearing malfunction	*Check and replace faulty rotor and drive line bearings.
	*Damage to rotor, includes bent end of shafts missing balance weights, or actual rotor deformity from striking rocks, etc.	*Return to factory for repair
Uneven Cut	*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.	*Readjust roller.
Rotor Does Not Turn	*Bearings malfunction	*Check and replace.
	*Belt damaged or slipping.	*Adjust tension or replace.

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 or	SAE Grade 5		SAE Grade 8		Lock Nuts			
	Unplated 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

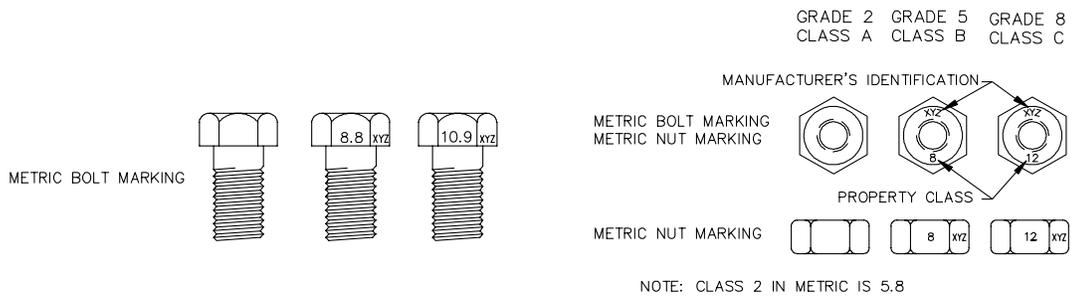
Torque Charts

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
	Unplated or Plated Silver	Plated W/ZnCr Gold	Unplated or Plated Silver	Plated W/ZnCr Gold	Unplated or Plated Silver	Plated W/ZnCr Gold	Class 8 W/CL.8.8 Bolt
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 (750)	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 9648)	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) Shredder serial number – Refer to serial number plate, which also includes the model number, located on left hand side of the unit near the overhung load adapter. Or if the plate is missing, check the top area of the main body near the front of the cylinder/ratchet mount (serial number is stamped into the main body).
- 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 document placed inside.

Rotors damaged, during the warranty period, must be returned complete with the knives still attached for warranty considerations.

Illustrated Parts Listings:

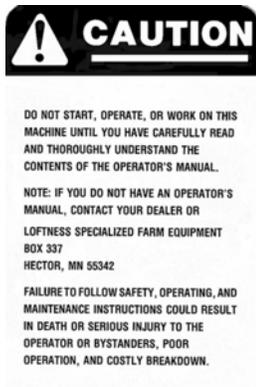
Illustrated parts drawings are included in this section, starting with page 4-3, that will assist you in identifying your brush shredder and the parts available for service. These pages include part numbers, descriptions and quantities required for the 43”, 53”, 63”, 73” and 83” brush shredders. Include this information on our purchase orders to insure correct receiving of replacement parts.

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: F.E.M.A. - (1) required.
- 4189: Warning-Rotating Parts - (1) required.
- 4334: Danger Stay Back - (1) required.
- N12684: Small 3D Loftness – (1) required.
- N13517: Made in the USA (not shown) – (1) required.
- N13721: Model & Serial Number Tag – (1) required.
- N13863: Danger – Flying Debris - (1) required.
- N13864: Timber Ax – (2) required
- N13872: Rotation – (1) required



4189



N12684



4137



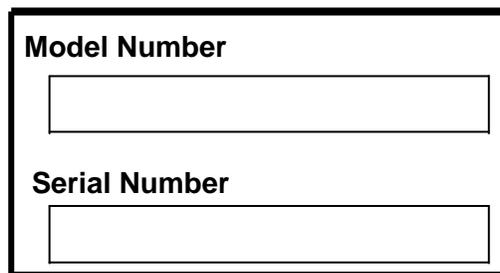
4334



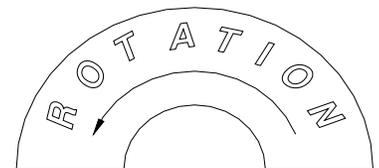
4138



4135



N13721



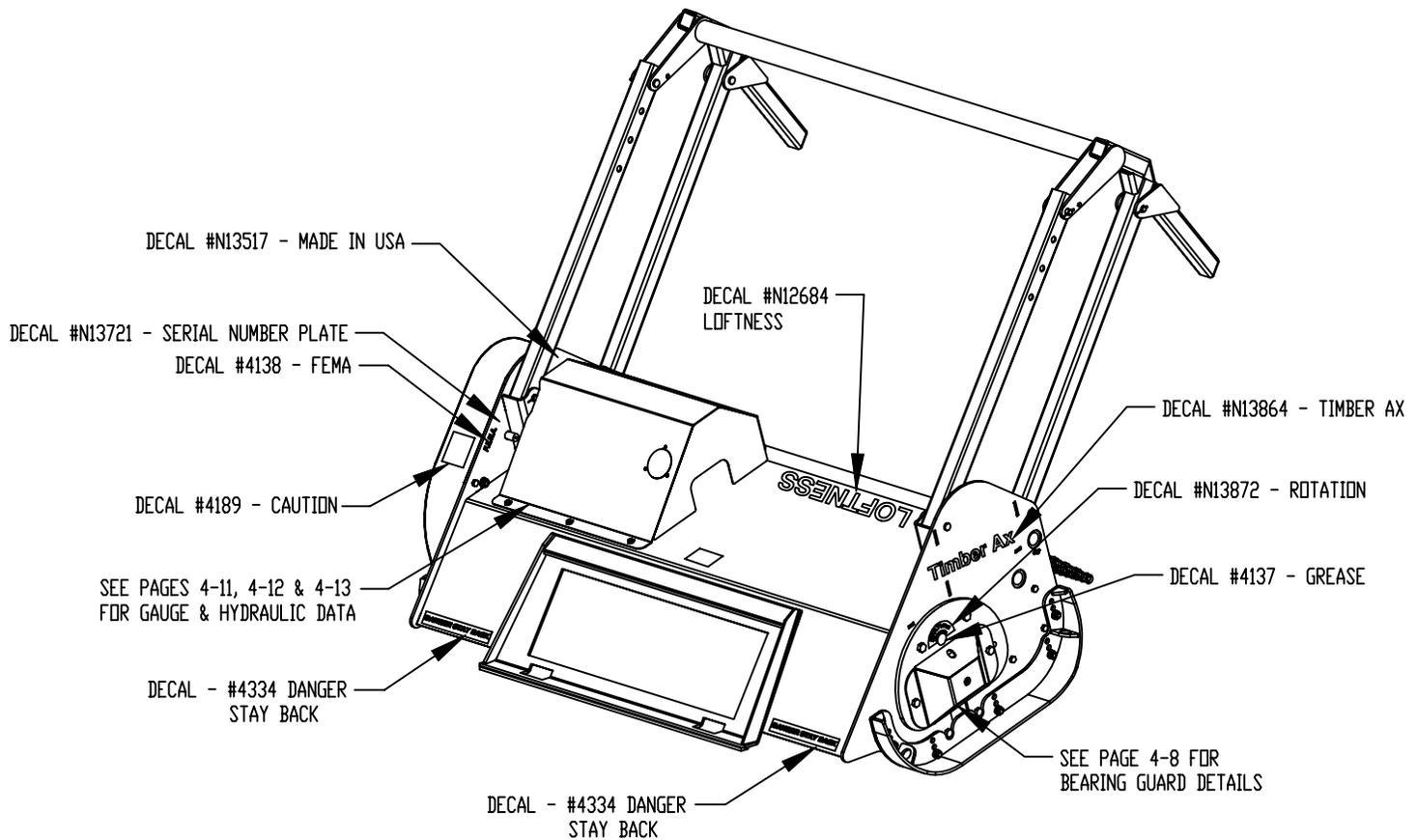
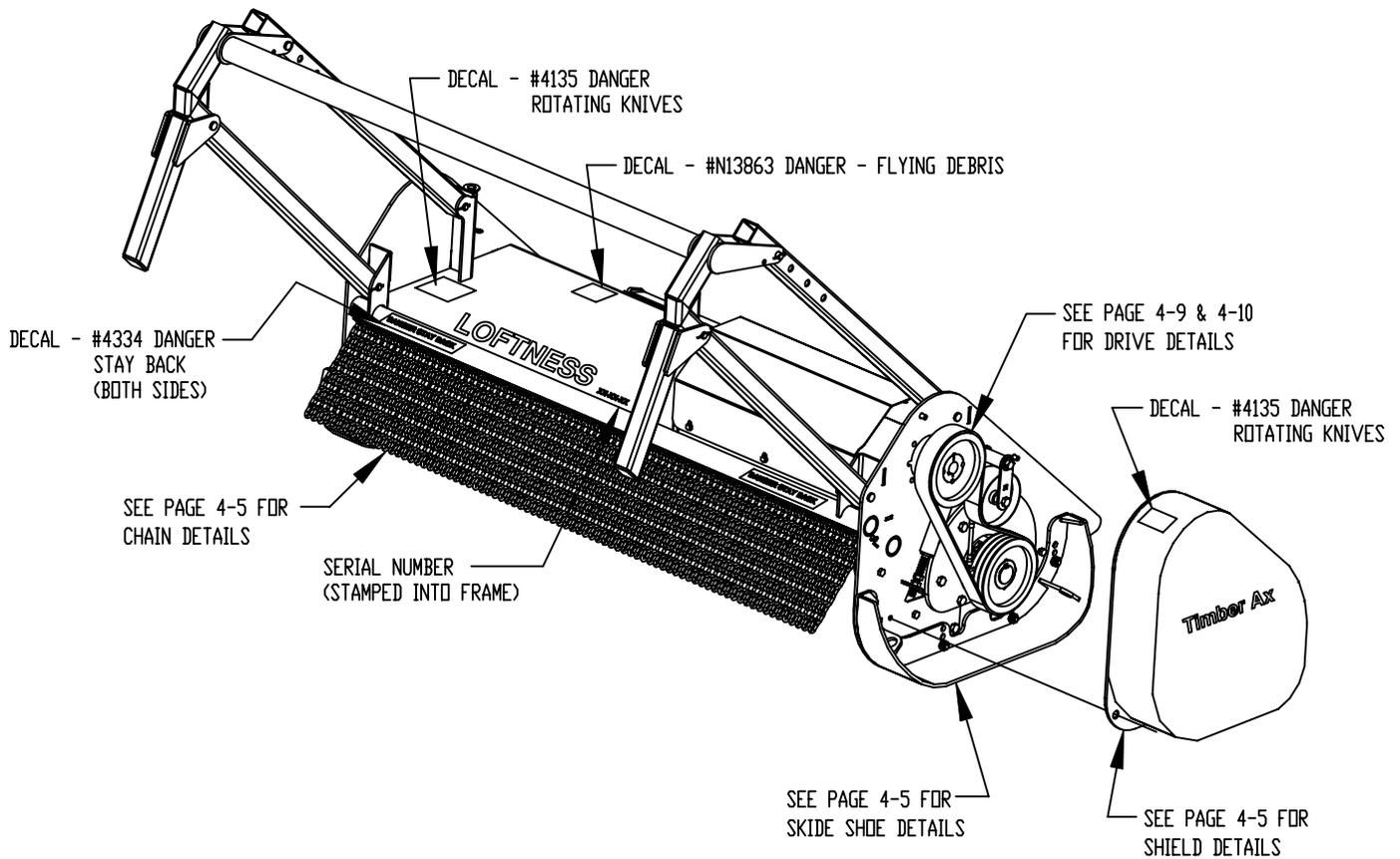
N13872



N13864

TIMBER AX TREE SHREDDER

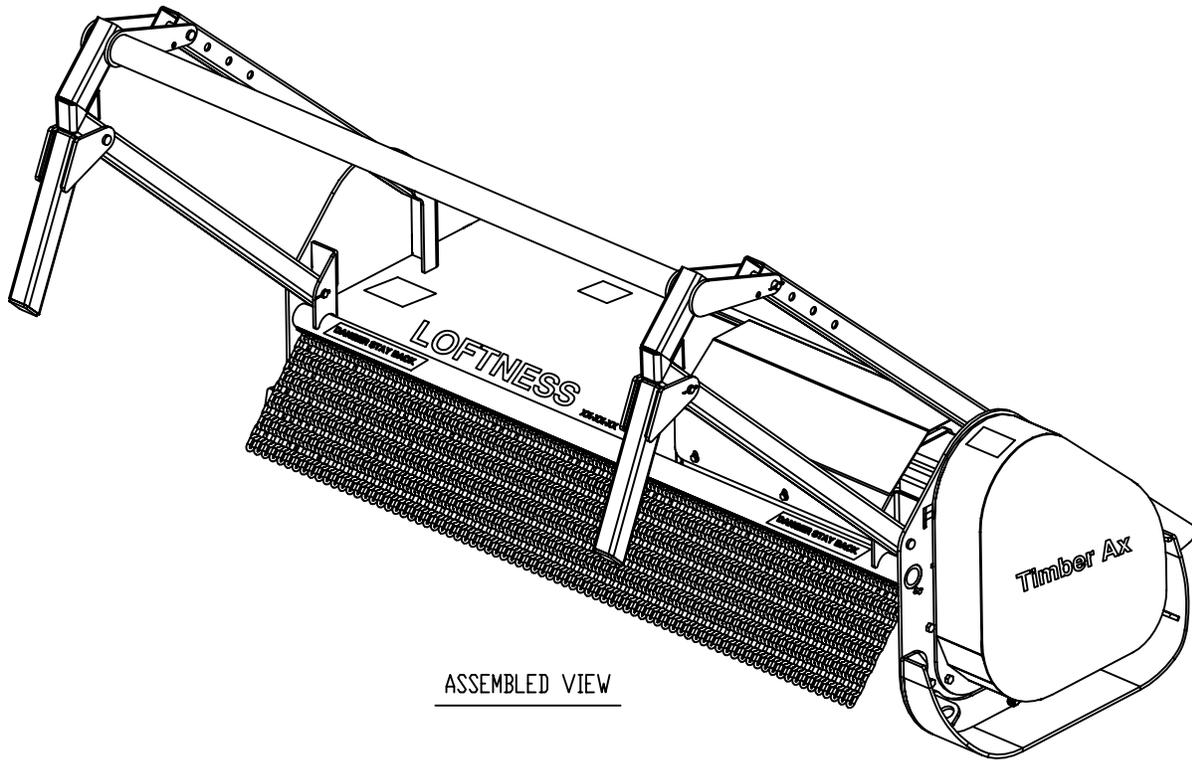
MODELS 43AXH, 53AXH, 63AXH, 73AXH, 83AXH



THIS ILLUSTRATION PAGE IS A GENERAL OVERVIEW OF THE HYDRAULIC BRUSH SHREDDER. 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 DISSASSEMBLY OF THE SHREDDER PARTS AND ALSO WILL REFER TO THESE PAGES AS PICTORIAL GUIDES IN SERVING.

TIMBER AX TREE SHREDDER MAIN BODY PARTS LIST

MODELS 43AXH, 53AXH, 63AXH, 73AXH, 83AXH



ASSEMBLED VIEW

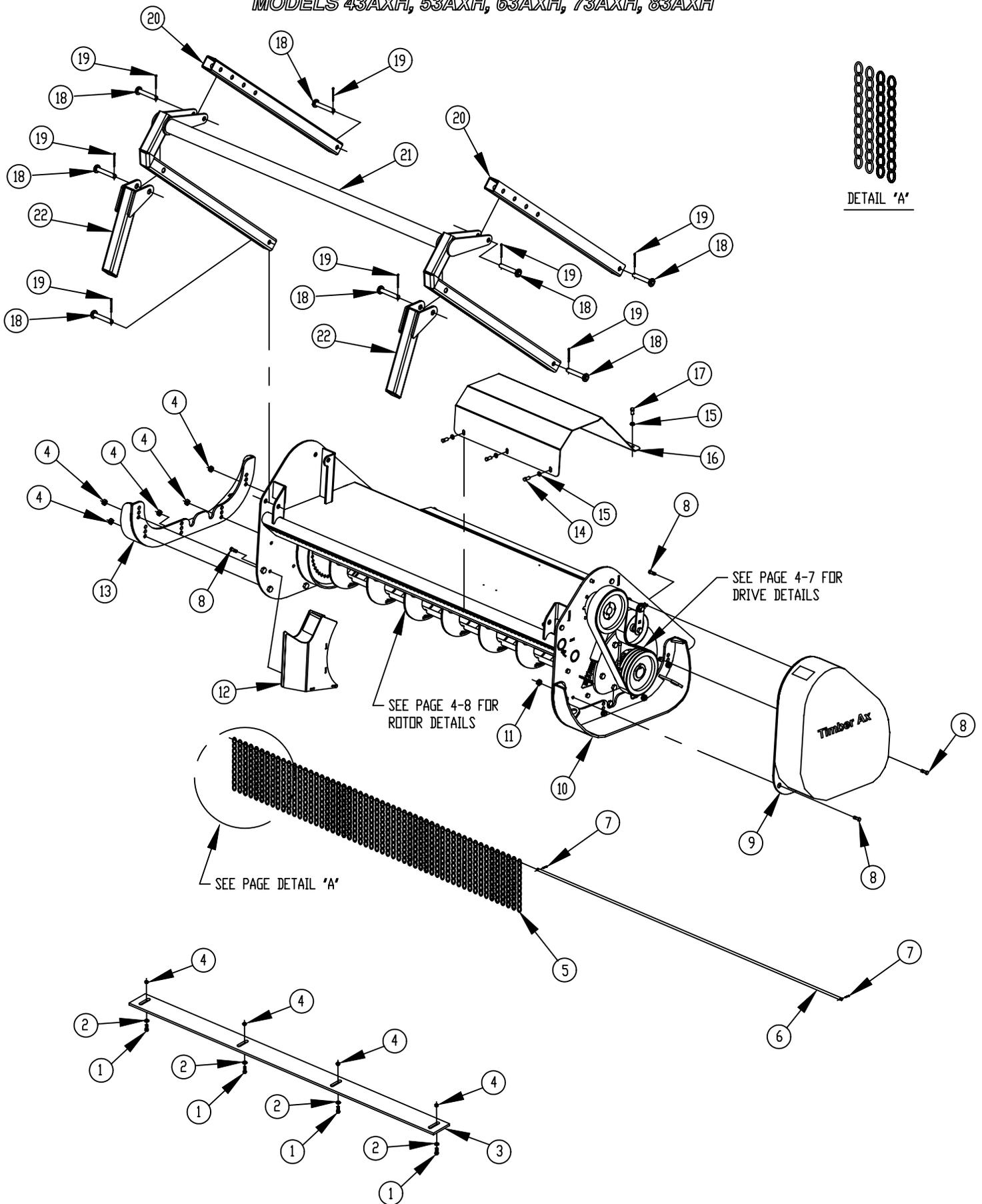
NOTE:

TO ORDER SERVICE PARTS, SELECT THE ITEM NUMBER FROM PAGE 4-5, THEN REFER TO THIS PAGE FOR THE PART NUMBER, QUANTITY AND PARTS DESCRIPTION TO INSURE THE CORRECT PARTS WILL BE SHIPPED.

23	1	N16130	FEED, GUIDE LEFT (NOT SHOWN)	8	11	4011	BOLT, 1/2" X 1" GRADE 5
22	2	N16153	PULLER	7	2	4375	PIN, ROLL 3/16" X 1"
21	1	N16206	PUSHER, TIMBER AX (83')	6	1	N16214	ROD, CHAIN (83')
	1	N16011	PUSHER, TIMBER AX (73')		1	N16018	ROD, CHAIN (73')
	1	N16207	PUSHER, TIMBER AX (63')		1	N16215	ROD, CHAIN (63')
	1	N16208	PUSHER, TIMBER AX (53')		1	N16216	ROD, CHAIN (53')
	1	N16209	PUSHER, TIMBER AX (43')		1	N16217	ROD, CHAIN (43')
	20	2	N16021		TUBE, LONG PUSHER	5	89
19	8	4099	PIN, COTTER (1/8" X 1-1/2')	79	N13800		CHAIN, 5/16" DEFLECTOR (73')
18	8	N16043	PIN, 3/4" X 3-3/4"	69	N13800		CHAIN, 5/16" DEFLECTOR (63')
17	3	4415	BOLT, 3/8" X 1/2" GRADE 5	59	N13800		CHAIN, 5/16" DEFLECTOR (53')
16	1	N16046	GUARD, GAUGE	49	N13800		CHAIN, 5/16" DEFLECTOR (43')
15	6	4064	WASHER, 3/8" FLAT	4	12	4057	NUT, 5/8" UNF LOCK
14	3	4193	BOLT, 3/8" X 3/4" GRADE 5	3	1	N13922	PLATE, CUTTER (83')
13	1	N16015	SKID, RIGHT 3'		1	N13796	PLATE, CUTTER (73')
12	1	N16121	FEED, GUIDE RIGHT (SHOWN)		1	N13898	PLATE, CUTTER (63')
11	4	4250	NUT, 1/2" STD		1	N13942	PLATE, CUTTER (53')
10	1	N16017	SKID, LEFT 3'		1	N13968	PLATE, CUTTER (43')
9	1	N16014	COVER, BELT	2	4	4062	WASHER, 2" O.D. X 11/16" I.D. X 1/4" THK
ITEM	QTY	PART NO	DESCRIPTION	1	12	4042	BOLT, 5/8" UNF X 2" LG. GRADE 8
				ITEM	QTY	PART NO	DESCRIPTION

TIMBER AX TREE SHREDDER MAIN BODY ILLUSTRATION

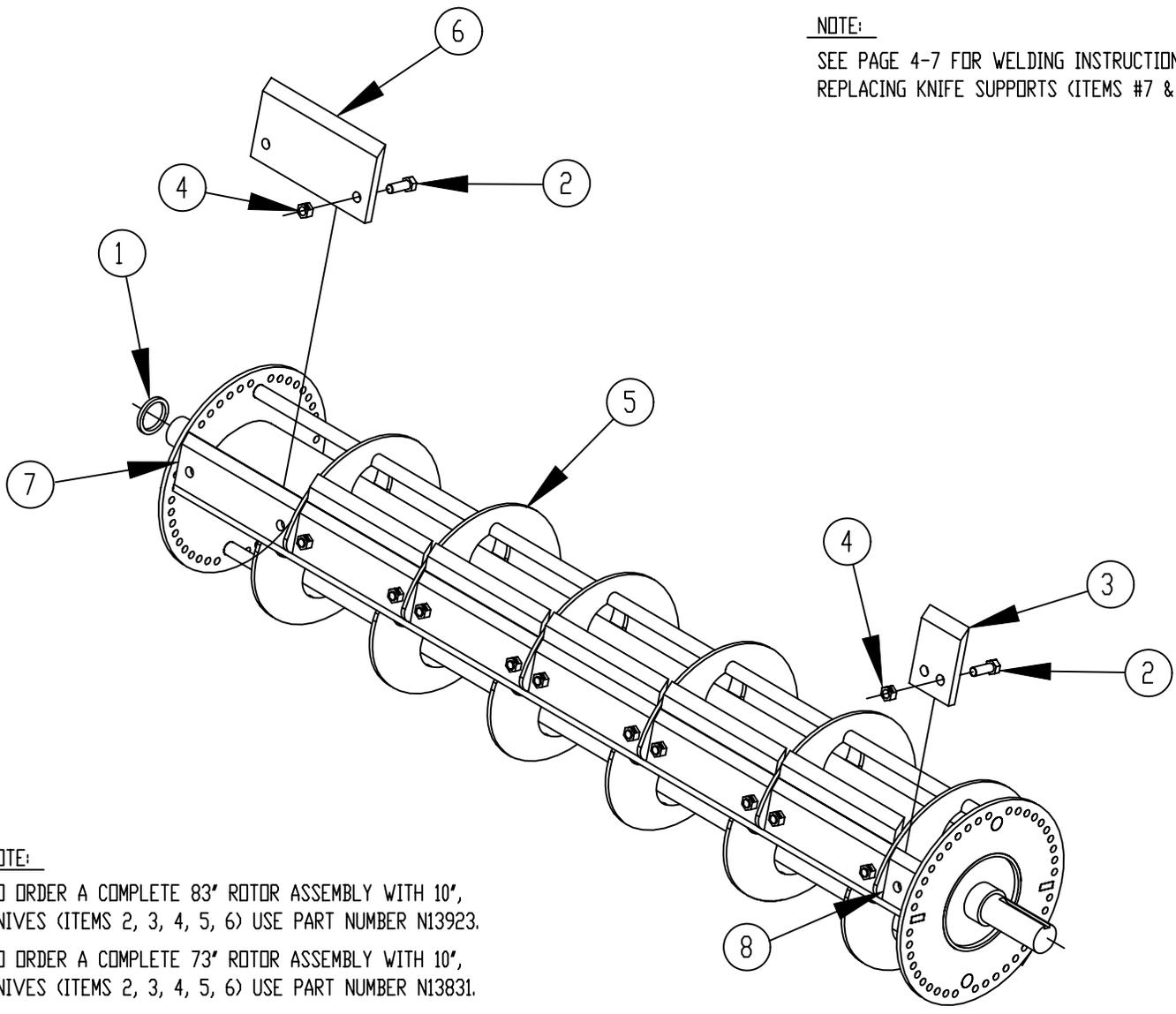
MODELS 43AXH, 53AXH, 63AXH, 73AXH, 83AXH



NOTE:

TO ORDER SERVICE PARTS, SELECT THE ITEM NUMBERS FROM THOSE LISTED ABOVE, THEN REFER TO PAGE 4-4 FOR THE PART NUMBER, QUANTITY AND PARTS DESCRIPTION TO INSURE THE CORRECT PARTS WILL BE SHIPPED.

TIMBER AX TREE SHREDDER ROTOR



NOTE:
SEE PAGE 4-7 FOR WELDING INSTRUCTIONS ON REPLACING KNIFE SUPPORTS (ITEMS #7 & 8).

NOTE:
TO ORDER A COMPLETE 83' ROTOR ASSEMBLY WITH 10" KNIVES (ITEMS 2, 3, 4, 5, 6) USE PART NUMBER N13923.
TO ORDER A COMPLETE 73' ROTOR ASSEMBLY WITH 10" KNIVES (ITEMS 2, 3, 4, 5, 6) USE PART NUMBER N13831.
TO ORDER A COMPLETE 63' ROTOR ASSEMBLY WITH 10" KNIVES (ITEMS 2, 3, 4, 5, 6) USE PART NUMBER N13899.
TO ORDER A COMPLETE 53' ROTOR ASSEMBLY WITH 10" KNIVES (ITEMS 2, 3, 4, 5, 6) USE PART NUMBER N13943.
TO ORDER A COMPLETE 43' ROTOR ASSEMBLY WITH 10" KNIVES (ITEMS 2, 3, 4, 5, 6) USE PART NUMBER N13969.

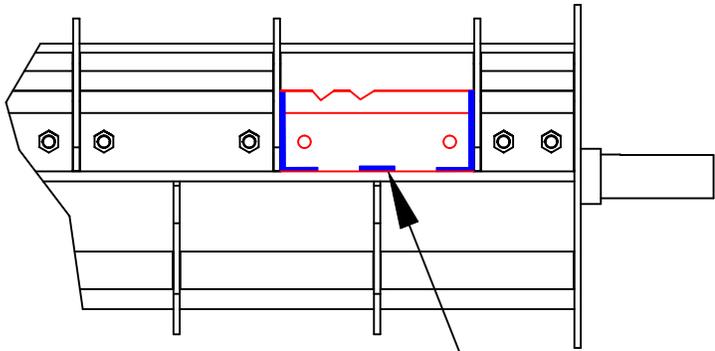
NOTE:
TO REPLACE THE KNIFE SUPPORTS (ITEMS #7 & 8), REFER TO PAGE 4-11 FOR COMPLETE INSTALLATION INSTRUCTIONS.

8	1	N13829	SUPPORT, SHORT KNIFE (SERVICE PART)
7	1	N13828	SUPPORT, 10" KNIFE (SERVICE PART)
6	16	N13804	KNIFE, 10" (83')
	14	N13804	KNIFE, 10" (73')
	12	N13804	KNIFE, 10" (63')
	10	N13804	KNIFE, 10" (53')
	8	N13804	KNIFE, 10" (43')
	5	1	N13924
1		N13832	ROTOR, 73' W/O 10" KNIVES
1		N13900	ROTOR, 63' W/O 10" KNIVES
1		N13944	ROTOR, 53' W/O 10" KNIVES
1		N13970	ROTOR, 43' W/O 10" KNIVES
ITEM	QTY	PART NO	DESCRIPTION

4	36	4057	NUT, 5/8" UNF LOCK (83')
	32	4057	NUT, 5/8" UNF LOCK (73')
	28	4057	NUT, 5/8" UNF LOCK (63')
	24	4057	NUT, 5/8" UNF LOCK (53')
	20	4057	NUT, 5/8" UNF LOCK (43')
3	2	N13802	KNIFE, 5"
2	36	4042	BOLT, 5/8" UNF X 2" HEX HD GR 8 (83')
	32	4042	BOLT, 5/8" UNF X 2" HEX HD GR 8 (73')
	28	4042	BOLT, 5/8" UNF X 2" HEX HD GR 8 (63')
	24	4042	BOLT, 5/8" UNF X 2" HEX HD GR 8 (53')
	20	4042	BOLT, 5/8" UNF X 2" HEX HD GR 8 (43')
1	1	N16445	BUSHING, SPACER
ITEM	QTY	PART NO	DESCRIPTION

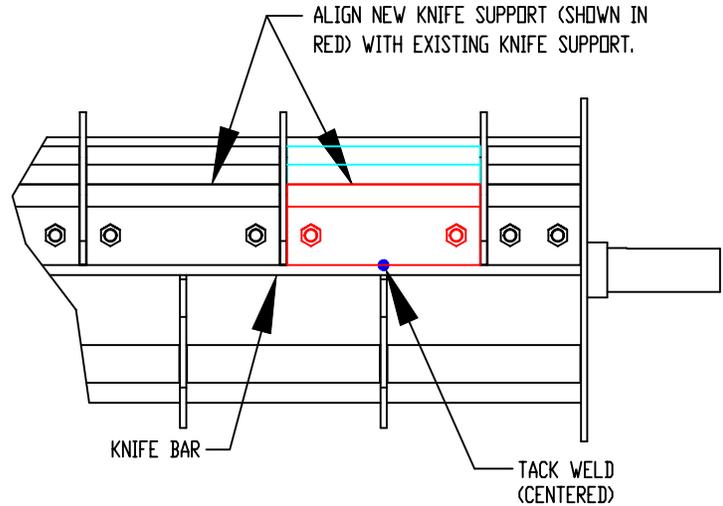
TIMBER AX KNIFE SUPPORT REPLACEMENT

STEP 1



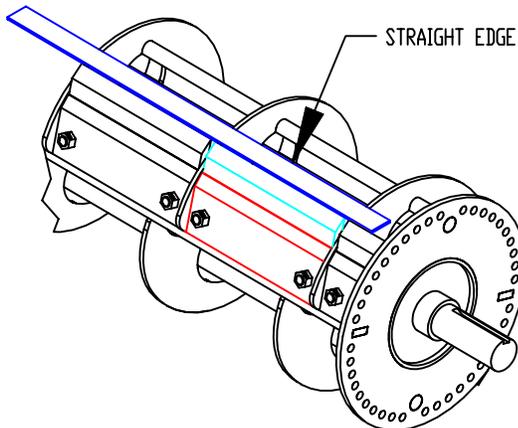
TO REMOVE BROKEN KNIFE SUPPORT GRIND OFF ALL WELDS IN AREAS. (HIGH LIGHTED IN DARK BLUE)

STEP 2



- 1) ATTACH KNIFE (SHOWN IN LIGHT BLUE) TO KNIFE SUPPORT (SHOWN IN RED)
- 2) ALIGN THE BACK EDGE OF THE REPLACEMENT KNIFE SUPPORT WITH THE EXISTING KNIFE SUPPORTS.
- 3) TACK WELD AT THE CENTER OF THE KNIFE SUPPORT TO THE KNIFE BAR.

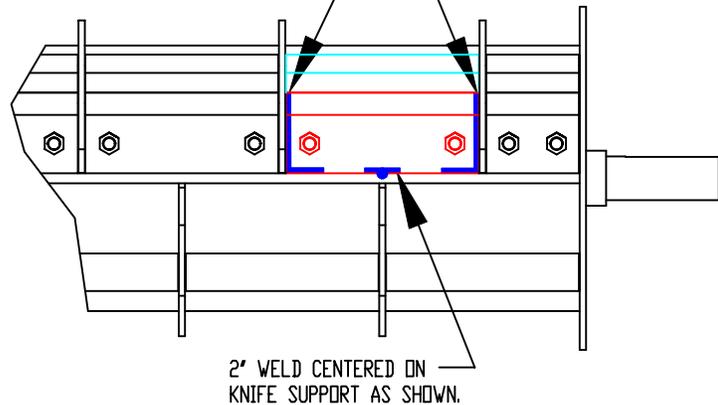
STEP 3



- 1) CHECK, USING A STRAIGHT EDGE ACROSS THE BACK EDGE OF THE KNIVES, THAT ALL KNIVES ARE ALIGNED.

STEP 4

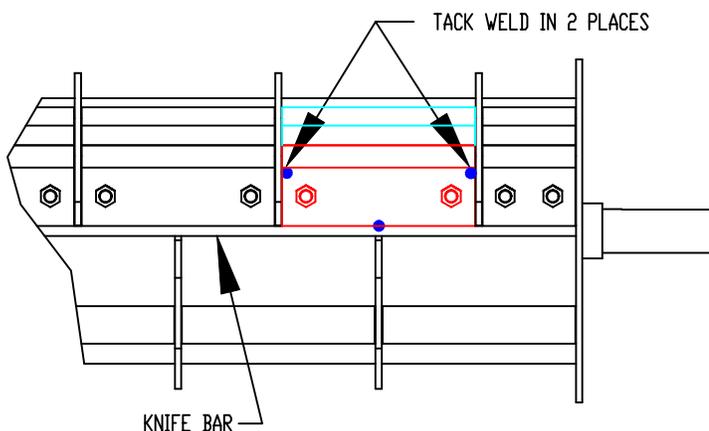
START WELDING AT THE TOP & WELD DOWNWARD AROUND THE CORNER AS SHOWN. TO MAINTAIN ROTOR BALANCE, MAKE MULTIPLE WELDING PASSES TO FILL THE BEVELED WELD AREA TO MATCH EXISTING FACTORY WELDS.



NOTE:

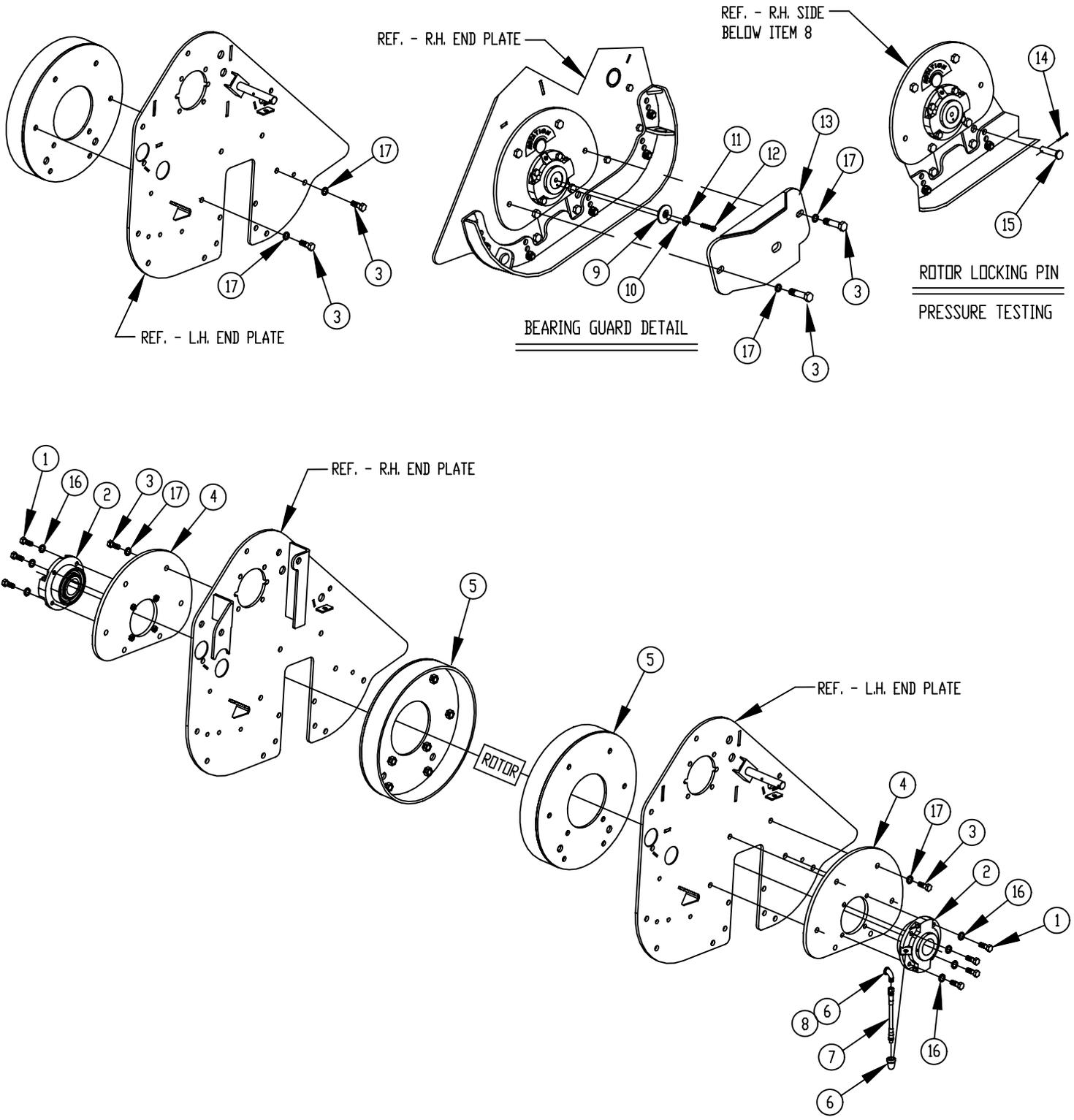
REPLACEMENT OF KNIFE SUPPORTS WILL REQUIRE A STEP BY STEP PROCEDURE, AS SHOWN ABOVE, TO INSURE A CORRECT INSTALLATION.

ROTOR WILL NEED TO BE REBALANCED AFTER REPLACEMENT OF ANY KNIFE SUPPORTS.



- 1) TACK WELD THE KNIFE SUPPORT IN TWO PLACES, AS SHOWN ABOVE, AFTER ALIGNING THE KNIVES.

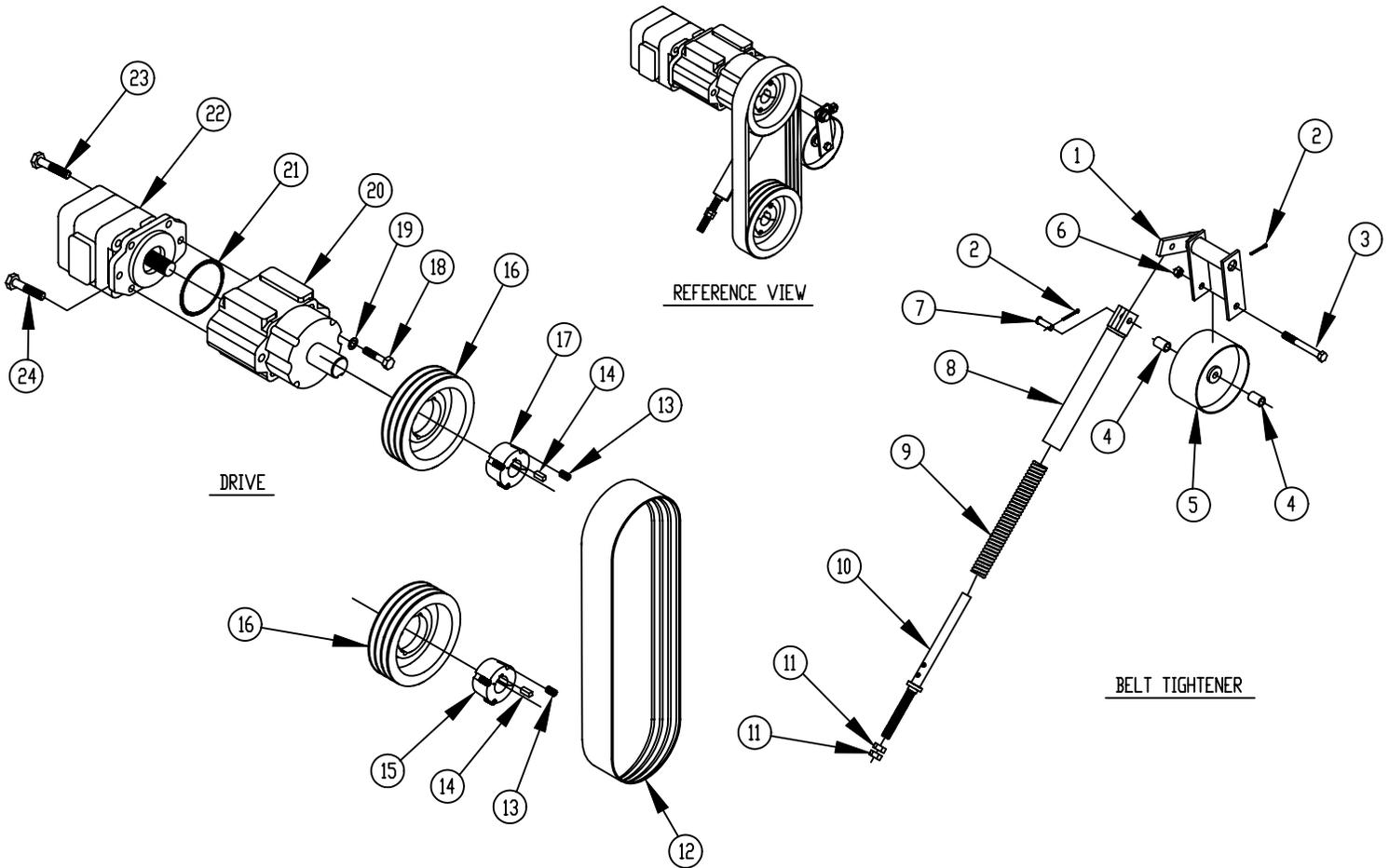
TIMBER AX TREE SHREDDER MISC PARTS



17	12	N16473	WASHER, 5/8" NORD-LOCK
16	8	N16472	WASHER, 1/2" NORD-LOCK
15	1	N16442	PIN, ROTOR LOCK
14	1	4336	CLIP, HAIRPIN (1/8" X 2-1/4")
13	1	N16058	GUARD, BEARING
12	1	4468	CAPSCREW, 1/2"-20 UNF X 1-1/4" FLAT HEAD
11	1	4076	WASHER, 1/2" EXTERNAL TOOTH COUNTERSINK LOCK
10	1	4085	PIN, ROLL (3/16" X 3/4")
9	1	4075	WASHER, 2-5/8" O.D. BEARING RETAINING
ITEM	QTY	PART NO	DESCRIPTION

8	1	4304-10	FITTING, BULKHEAD GREASE (NOT SHOWN)
7	1	4304	HOSE, 15" GREASE (W/FITTINGS)
6	4	4472	ELBOW, 1/8" 90° STREET
5	2	N16435	ANTIWRAP, PILOTTED
4	2	N16437	MOUNT, BEARING PILOTTED
3	12	N16354	BOLT, 5/8" UNF X 2-1/4" HEX HD GR 8
2	2	N/A	ZERK, GREASE (INCLUDED W/N16417 NOT SHOWN)
	2	N16417	BEARING, 2-3/16" PILOT ROLLER
1	8	N16475	BOLT, 1/2" UNF X 2" HEX HD GR 8
ITEM	QTY	PART NO	DESCRIPTION

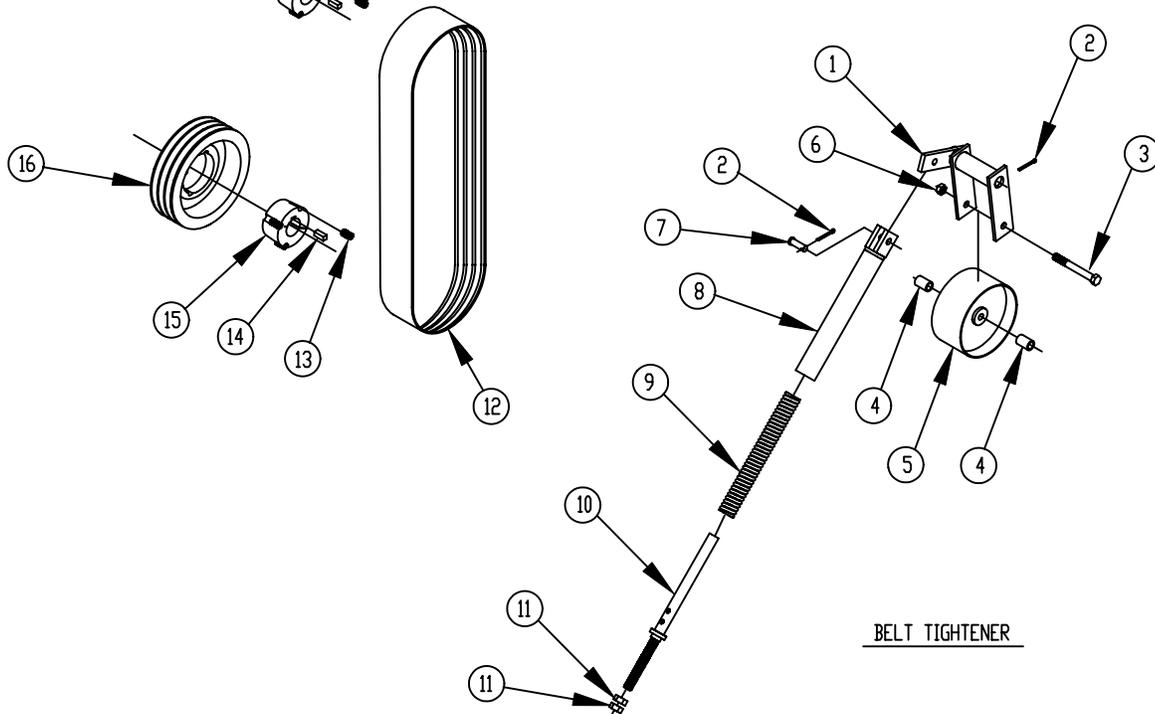
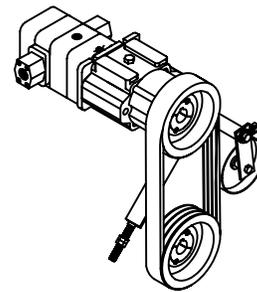
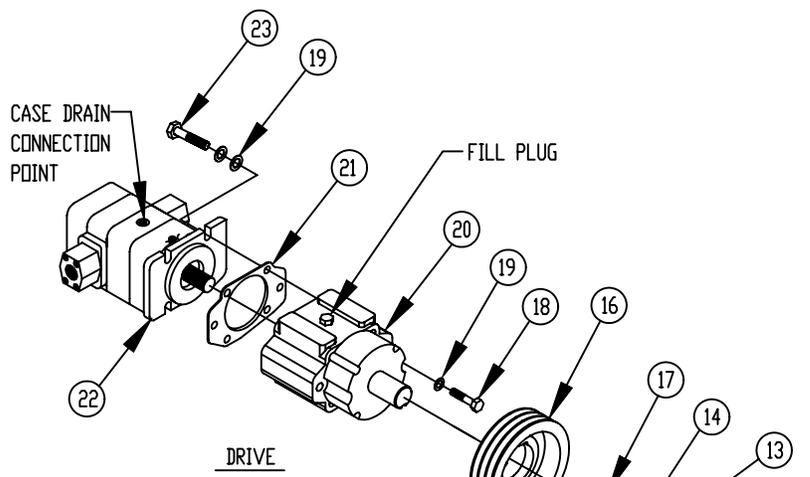
TIMBER AX TREE SHREDDER DRIVE



NOTE:
THE TWO BOLTS, PART NUMBER #4513, ARE ONLY USED
IN THE BOTTOM TWO HOLES OF THE HYDRAULIC MOTOR.

24	2	4513	BOLT, 1/2" UNC X 1-1/4" HEX HD GR 8	17	1	8126	BUSHING, 1-1/2" TAPERLOCK KEYED (INCLUDES 13)
23	4	4466	BOLT, 1/2" UNC X 1-1/2" HEX HD GR 8	16	2	N16134	SHEAVE, 3B X 8.6" TAPERLOCK (3 - BAND)
22	1	N10916	MOTOR, COMMERCIAL (6.35 CU IN)	15	1	8165	BUSHING, 2-3/16" TAPERLOCK KEYED (INCLUDES 13)
	1	N10915	MOTOR, COMMERCIAL (5.71 CU IN)	14	2	7121-02	KEY, 3/8" X 1-3/4" (INCLUDED W/15 & 17)
	1	N10914	MOTOR, COMMERCIAL (5.08 CU IN)	13	6	8128-10	SCREW, 1/2" X 1" SET TAPERLOCK (INCLUDED W/15 & 17)
	1	N10913	MOTOR, COMMERCIAL (4.44 CU IN)	12	1	N16136	BELT, 3B X 65" GOODYEAR (3 - BAND)
	1	N10912	MOTOR, COMMERCIAL (3.93 CU IN)	11	2	4438	NUT, 5/8" UNC STD GR 8
	1	N10911	MOTOR, COMMERCIAL (3.44 CU IN)	10	1	7525	ROD, BELT TIGHTENER
	1	N10910	MOTOR, COMMERCIAL (2.95 CU IN)	9	1	8067	SPRING, TIGHTENER
	1	N10909	MOTOR, COMMERCIAL (2.46 CU IN)	8	1	9163	TUBE, BELT TIGHTENER
	1	N10908	MOTOR, COMMERCIAL (1.97 CU IN)	7	1	4392	PIN, 1/2" X 1-1/4"
	1	N10907	MOTOR, COMMERCIAL (1.47 CU IN)	6	1	4055	NUT, 5/8" UNC LOCK
21	1	N11859	SEAL, O-RING (#243)	5	1	N16135	PULLEY, IDLER 6-1/2" OD (3 - BAND)
20	1	N10533	ADAPTER, OVERHUNG LOAD MOTOR (INCLUDES 21)	4	2	N16140	SPACER, 11/16" ID X 29/32" LG (3 - BAND)
19	2	4068	WASHER, 1/2" SAE FLAT GR 8	3	1	4419	BOLT, 5/8" UNC X 5-1/2" HEX HD GR5
18	2	4013	BOLT, 1/2" UNC X 1-1/2" HEX HD GR 5	2	2	4095	PIN, 5/32" X 2" COTTER
ITEM	QTY	PART NO	DESCRIPTION	ITEM	QTY	PART NO	DESCRIPTION
1	1	N16138	BRACKET, BELT TIGHTENER (3 - BAND)				

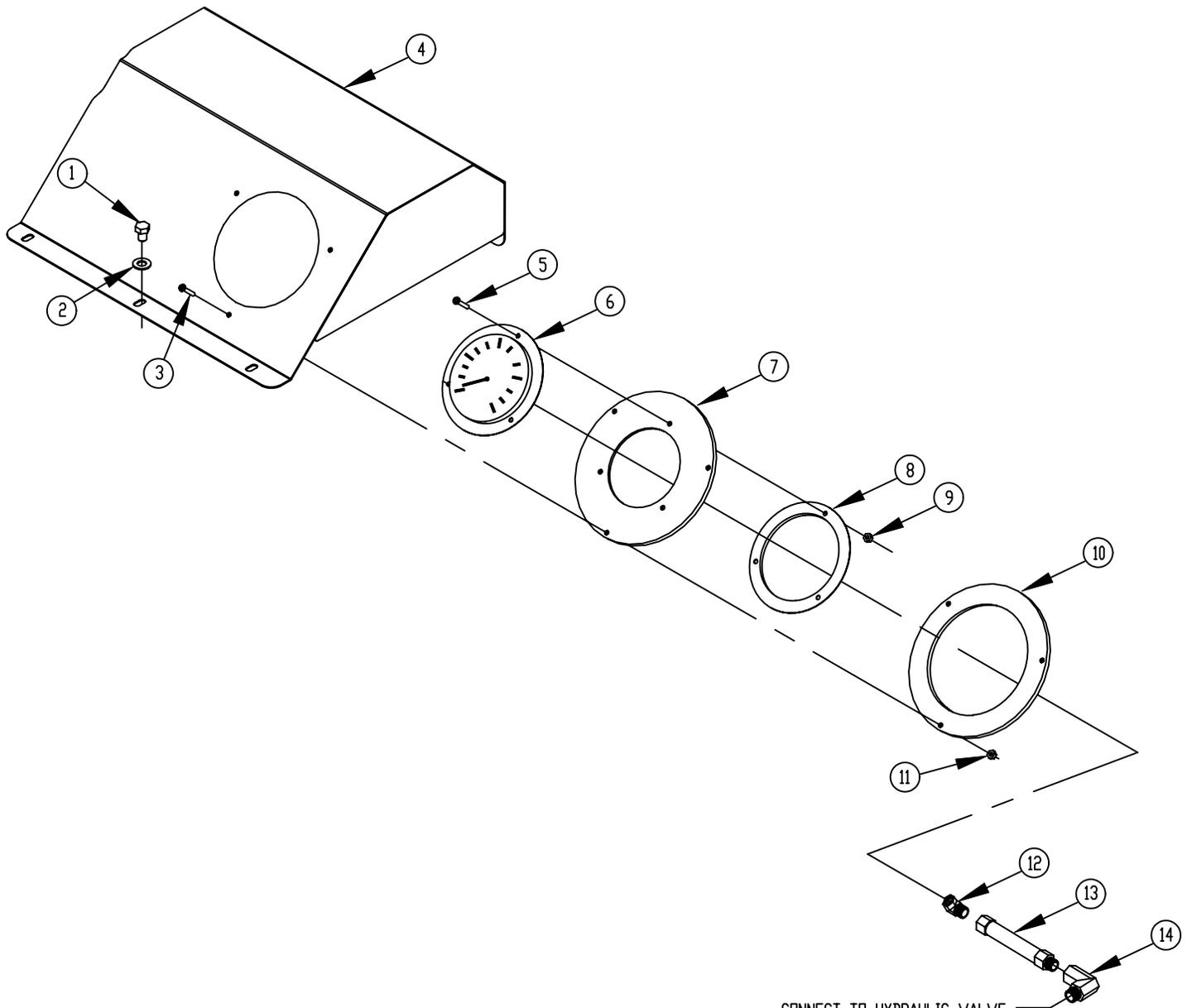
5000 PSI TIMBER AX TREE SHREDDER DRIVE



23	4	4466	BOLT, 1/2" UNC X 1-1/2" HEX HD GR 8
22	1	N16001	MOTOR, APIS (#26 27-31 GPM)
	1	N12770	MOTOR, APIS (#27 32-37 GPM)
21	1		GASKET (INCLUDED W/N11678)
20	1	N11678	ADAPTER, OVERHUNG LOAD MOTOR (INCLUDES 21)
19	10	4068	WASHER, 1/2" SAE FLAT GR 8
18	4	4013	BOLT, 1/2" UNC X 1-1/2" HEX HD GR 5
17	1	8126	BUSHING, 1-1/2" TAPERLOCK KEYED (INCLUDES 13)
16	2	N16134	SHEAVE, 3B X 8.6" TAPERLOCK (3 - BAND)
15	2	8165	BUSHING, 2-3/16" TAPERLOCK KEYED (INCLUDES 13)
14	2	7121-02	KEY, 3/8" X 1-3/4" (INCLUDED W/15 & 17)
13	6	8128-10	SCREW, 1/2" X 1" SET TAPERLOCK (INCLUDED W/15 & 17)
ITEM	QTY	PART NO	DESCRIPTION

12	1	N16136	BELT, 3B X 65" GOODYEAR (3 - BAND)
11	2	4438	NUT, 5/8" UNC STD GR 8
10	1	8067	SPRING, TIGHTENER (72" - 96")
9	1	7525	ROD, BELT TIGHTENER
8	1	9163	TUBE, BELT TIGHTENER
7	1	4392	PIN, 1/2" X 1-1/4"
6	1	4055	NUT, 5/8" UNC LOCK
5	1	N16135	PULLEY, IDLER 6-1/2" OD (3 - BAND)
4	2	N16140	SPACER, 11/16" ID X 29/32" LG (3 - BAND)
3	1	4419	BOLT, 5/8" UNC X 5-1/2" HEX HD GR5
2	2	4092	PIN, 5/32" X 2" COTTER
1	1	N16138	BRACKET, BELT TIGHTENER (3 - BAND)
ITEM	QTY	PART NO	DESCRIPTION

TIMBER AX HYDRAULIC PRESSURE GAUGE & SHIELD

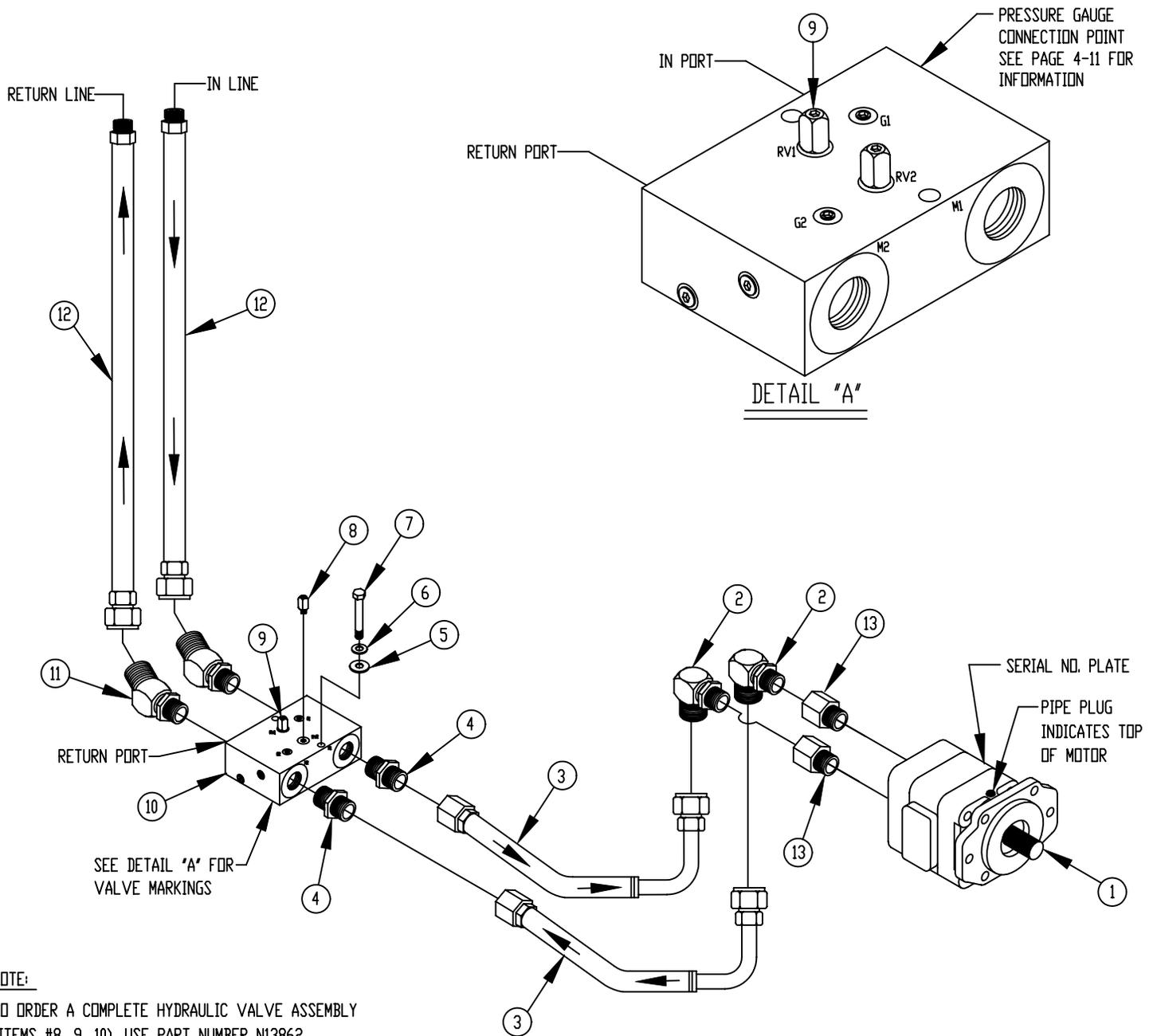


CONNECT TO HYDRAULIC VALVE
 REFER TO PAGE 4-12 FOR STANDARD HYDRAULICS
 AND PAGE 4-13 FOR 5000 PSI HYDRAULICS
 CONNECTION POINT.

14	1	N16066	ELBOW, 90° #6 MALE O-RING TO #6 FEMALE PIPE
13	1	N16067	HOSE, 1/4" X 24' (5000 PSI)
12	1	N16162	ELBOW, 1/4" NPT 90° STREET
11	3	N16334	NUT, NYLON INSERT #10
10	1	N16335	FLANGE, MOUNT #10
9	3	N16133	NUT, NYLON INSERT #8
8	1	N16331	FLANGE, MOUNT GAUGE #8
ITEM	QTY	PART NO	DESCRIPTION

7	1	N16332	FLANGE, MOUNT GAUGE
6	1	N16163	GAUGE, 0-6000 PSI (4" DIA)
5	3	N16132	BOLT, #8-32 X 1" BUTTON HEAD CAPSCREW
4	1	N16046	GUARD, GAUGE
3	3	N16333	BOLT, #10-32 X 3/4" BUTTON HEAD CAPSCREW
2	5	4064	WASHER, 3/8" FLAT
1	3	4415	BOLT, 3/8" X 1/2" GRADE 5
ITEM	QTY	PART NO	DESCRIPTION

STANDARD HYDRAULIC DRIVE - TIMBER AX



NOTE:

TO ORDER A COMPLETE HYDRAULIC VALVE ASSEMBLY (ITEMS #8, 9, 10), USE PART NUMBER N13862.

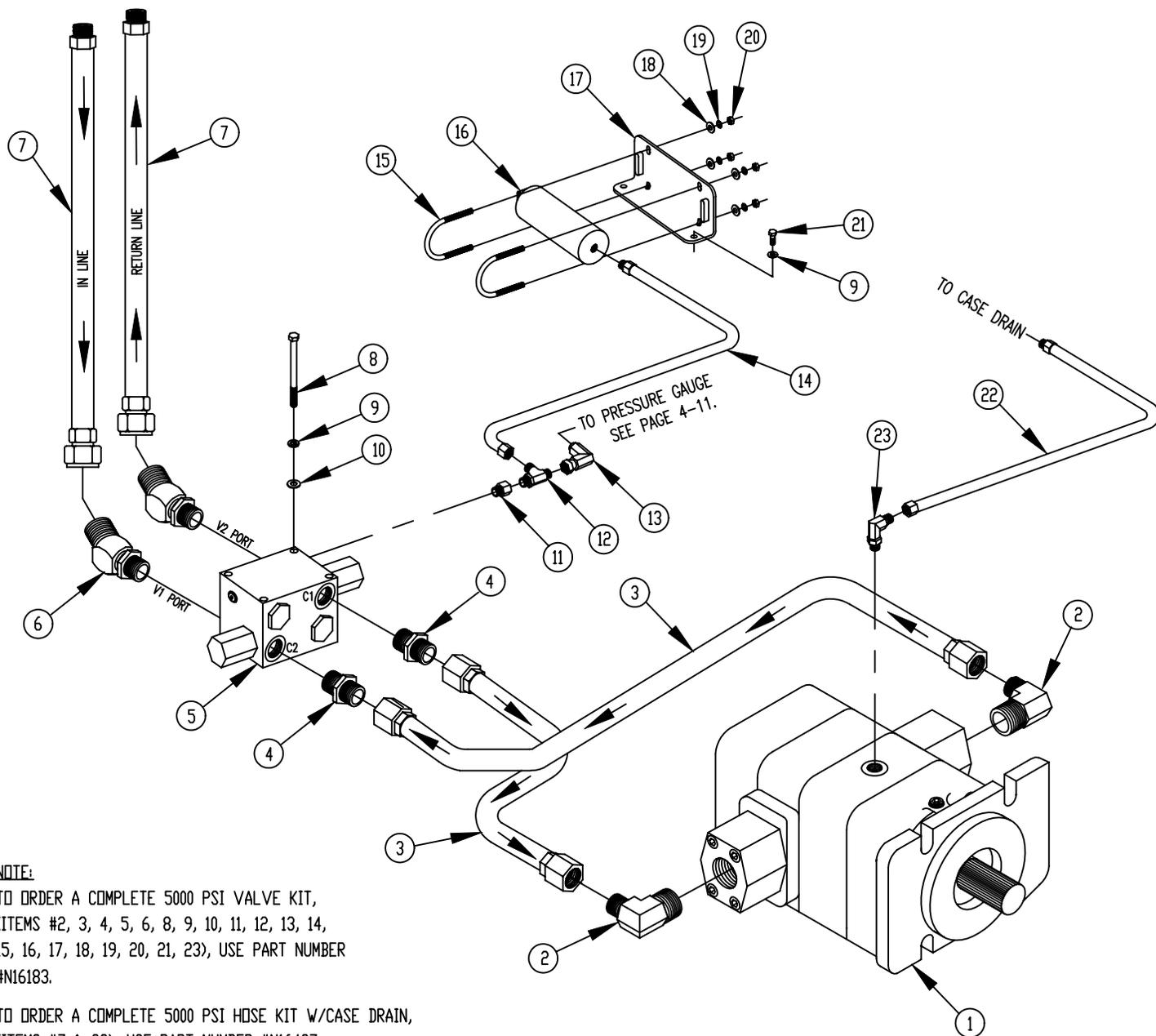
REDUCER, ITEM #13 PART NUMBER N11694, WILL ONLY BE USED WITH HYDRAULIC MOTORS N10913 AND N10914.

TO ORDER A COMPLETE STANDARD VALVE KIT (3500 PSI), (ITEMS #2, 3, 4, 5, 6, 7, 8, 9, 10, 11), USE PART NUMBER #N16184.

TO ORDER A COMPLETE 3500 PSI HOSE KIT W/O CASE DRAIN, (ITEM # 12), USE PART NUMBER #N16488.

13	2	N11694	REDUCER, 1-5/16-12 O-RING TO 1-1/16-12 O-RING	7	2	4313	BOLT, 3/8" X 2-1/2" LG, GRADE 5
12	2	N16238	HOSE, 3/4 X 102" HYDRAULIC (3/4 FJIC X 3/4 MBD)	6	2	4065	WASHER, 3/8" LOCK
11	2	N16174	ELBDW, 45° 12 MJ TO 16 DRB	5	2	4064	WASHER, 3/8" FLAT
10	1	N14116	BODY, VALVE CROSS PORT RELIEF (INCLUDED W/N13862)	4	2	N13881	ADAPTER, 16 MB O-RING TO 12 MJ JIC
9	1	N13878	VALVE, RELIEF 3000 PSI (INCLUDED W/N13862)	3	2	N13871	HOSE, HYDRAULIC (3/4" x 44" LG)
8	1	N13877	VALVE, RELIEF 500 PSI (INCLUDED W/N13862)	2	2	N11945	ELBDW, 90° 1-1/16 O-RING TO 1-1/16 M JIC
ITEM	QTY	PART NO	DESCRIPTION	ITEM	QTY	PART NO	DESCRIPTION
				1			MOTOR, HYDRAULIC (REFERENCE - SEE PAGE 4-9)

5000 PSI HYDRAULIC DRIVE - TIMBER AX



NOTE:
 TO ORDER A COMPLETE 5000 PSI VALVE KIT,
 (ITEMS #2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14,
 15, 16, 17, 18, 19, 20, 21, 23), USE PART NUMBER
 #N16183.

TO ORDER A COMPLETE 5000 PSI HOSE KIT W/CASE DRAIN,
 (ITEMS #7 & 22), USE PART NUMBER #N16487.

23	1	N16173	ELBOW, 90° #10 DRB X #8 MJ	12	1	N16169	TEE, #6 O-RING X #6 MJ O-RING X #6 JIC
22	1	N16248	HOSE, 3/8" X 126" (8 FJX X 8 MDRB) 4000 PSI W/SHIELD	11	1	N16168	REDUCER, 7/8"-14 O-RING X 9/16"-18 O-RING
21	2	4415	BOLT, 3/8" X 1-1/2" GRADE 5	10	4	4064	WASHER, 3/8" FLAT
20	4	4237	NUT, STD 5/16"	9	4	4065	WASHER, 3/8" LOCK
19	4	4228	WASHER, LOCK 5/16"	8	4	4455	BOLT, 3/8" X 4-1/2" LG, GRADE 5
18	4	4460	WASHER, FLAT 1/4"	7	2	N16247	HOSE, 3/4 X 108" (12 FJX X 12 MDR) 5000 PSI W/SHIELD
17	1	N16128	MOUNT, ACCUMULATOR	6	2	N16174	ELBOW, 45° #12 MJ TO #16 DRB
16	1	N16074	ACCUMULATOR, 5000 PSI/10 C.I.	5	1	N16073	VALVE, 5000 PSI 16 COUNTER BALANCE
15	2	N16125	U-BOLT, 5/16" X 2-1/2" X 3-1/2"	4	2	N13881	ADAPTER, 16 MB O-RING TO 12 MJ JIC
14	1	N16166	HOSE, 3/8" X 24 (#6 FJX X #8 MDR) 5000 PSI W/SHIELD	3	2	N16167	HOSE, HYDRAULIC (3/4" X 44" LG) 5000 PSI W/SHIELD
13	1	N16170	ELBOW, 90° #6 FJX X #6 FP	2	2	N13876	ELBOW, 90° 16 MDR TO 12MJ
ITEM	QTY	PART NO	DESCRIPTION	1			MOTOR, 5000 PSI HYDRAULIC (REF - SEE PAGE 4-10)
ITEM	QTY	PART NO	DESCRIPTION				

SERVICE NOTES

TIMBER AX STARTER KIT #N13906

The Timber Ax starter kit contains the following items:

<u>Part No.</u>	<u>Oty.</u>	<u>Description</u>
N13804	4	Knife, Timber Ax (9-5/8")
N13802	2	Knife, Timber Ax (4-5/8")
N13870*	1	Tachometer
4042	6	Bolt, 5/8 UNF x 2" Grade 8
4057	6	Nut, 5/8" UNF Top Lock
N16137*	1	Gauge, 0 – 6000 PSI Pressure
N13879*	1	Bushing (Mounted on Gauge)
N13880*	1	Bushing (Mounted on Gauge)
N/A	2	Caps, Aluminum (Bushing Covers)
N13996	1	Gauge, Angle Knife
N/A	1	Tube, Loctite (Small)
N14867	1	Operator's Manual & Parts Book (Warranty Included)
4187	6	Pin, 3/4" x 4-1/4" Plated
4099	4	Pin, Cotter 1/8" x 1-1/2"
4336	2	Clip, Hairpin 1/8" x 2-1/4"
N16279*	1	Case, Protective Gauge

*To order the "Diagnostic Gauge Kit" only (Parts N13870, N16137, N13879, N13880 & N16279), use part number N16340.

COMMERCIAL HYDRAULIC MOTOR INSTALLATION INSTRUCTIONS

1. Use the motor selection chart to select the proper hydraulic motor to correspond with the GPM flow rating of the loader to be used.
2. Install O-ring (PN / N11859) in groove at rear of the bearing block (PN / N10533). It may be helpful to use grease to hold the O-ring in position.
3. Start the motor output shaft into the splined coupler of the bearing block and carefully slide the motor forward till the motor mounting flange mates with the mounting surface of the bearing block. Be sure the O-ring stayed in position and didn't get damaged.
(Note: The body of the motor is offset from the output shaft. Install with the belly side of the motor hanging down.)
4. Install 2 / 1-1/4" x 1/2" UNC Gr. 8 bolts in the lower 2 holes of the motor mount.
(Note: It may be necessary to grind a corner off the head of the 1-1/4" bolts to allow clearance for installation into the lower 2 holes of the motor mounting flange.)
5. Install 4 / 1-1/2"x 1/2" UNC Gr.8 bolts in the remaining 4 mounting holes.
Use a thread locking compound to assure that all 6 bolts will stay securely fastened.
6. Using a staggered pattern, tighten all 6 bolts to 50 ft.lbs. of torque, then to 75 ft.lbs., and finally to the maximum torque setting of 100 ft.lbs.
7. Replace hydraulic fittings and hoses as shown in the operator's manual.
8. Follow the Dealer Pre-Delivery Set-up Instruction sheet to prepare the cutter for operation.
9. After carefully checking for hydraulic leaks, the cutter should be ready to go.

(Note: Because there is no shaft seal used with this motor setup, it is extremely important to protect the internal parts of the spare motors from foreign materials by enclosing the complete motor in a plastic bag or other sealed container.)

Motor Selection Chart 1-1-03

Please Note: Theoretical Rotor Speed in RPM's @ 95% Efficiency

GPM	Motor Number	Displacement	Loftness Part Number	Flail & BMO Rotor RPM	Timber Ax Rotor RPM
10	1	1.47	10907	1930	1493
11				2123	1642
12				2316	1791
13	2	1.97	10908	1872	1448
14				2016	1560
15				2161	1671
16				2305	1782
17	3	2.46	10909	1961	1517
18				2076	1606
19				2192	1695
20				2307	1784
21	4	2.95	10910	2020	1562
22				2116	1637
23				2212	1711
24				2308	1785
25	5	3.44	10911	2062	1595
26				2145	1659
27				2227	1722
28				2310	1786
29	6	3.94	10912	2089	1615
30				2161	1671
31				2233	1727
32				2305	1782
33	7	4.46	10913	2099	1624
34				2163	1673
35				2227	1722
36				2290	1771
37				2354	1821
38	8	5.1	10914	2114	1635
39				2170	1678
40				2225	1721
41				2281	1764
42				2337	1807
43	9	5.74	10915	2126	1644
44				2175	1682
45				2225	1720
46				2274	1759
47				2323	1797
48				2373	1835
49	10	6.23	10916	2232	1726
50				2277	1761
51				2323	1796
52				2368	1832
53				2414	1867
54				2459	1902
55	11	7.2	13928	2168	1676
56				2207	1707
57				2246	1737
58				2286	1768
59				2325	1798
60				2365	1829
High Pressure Motors Only					
27	26	3.76	16001	2038	1576
28				2113	1634
29				2188	1693
30				2264	1751
31				2339	1809
32	27	4.26	12770	2131	1648
33				2198	1700
34				2265	1751
35				2331	1803
36				2398	1855
37				2464	1906

TIMBER AX

DEALER PRE-DELIVERY SET-UP INSTRUCTIONS

1. Before hooking up to Timber AX, Check the relief valve setting of the auxiliary hydraulic circuit on the loader. Adapt a hydraulic pressure gauge to the appropriate quick coupler and install in the pressure outlet of the high flow hydraulic circuit. Engage the switch or lever for the auxiliary hydraulic circuit with engine running at approximately half throttle and record the PSI reading. Compare to factory specs. If reading falls short of factory specifications you will need to address that with the loader's manufacturer.
2. After establishing the relief setting of the loader being used, place a mark (paint stripe or colored tape) on the face of the AX pressure gauge at a reading approximately 500 PSI less than the relief setting and instruct the operator to try to avoid operating above that mark. This will help him operate more efficiently and help to avoid overheating the hydraulic oil.
3. Hook loader up to Timber AX mount plate. Install 2 hoses ($\frac{3}{4}$ x approximately 7ft) from the pressure side of the loader to the rear port of the Timber AX valve, and from the front port of the valve back to the return side of the auxiliary outlets. (NOTE: On High Pressure Models AXH-26 / -27, pressure line goes to port "B" and port "A" is the return line back to the loader.) If possible, route the hoses down the back of the machine to a point even with the mounting plate hinge point, then back up to the outlets. This allows the hoses to bend at the hinge point rather than stretching, shortening, and getting tangled as the machine is rotated. Secure with straps to avoid pinch points.
4. Start machine and check that rotor shaft is rotating the correct direction. The end of the rotor shaft is visible on the right end of the machine. Refer to the arrow on the rotation decal to be sure rotor is turning Counter Clockwise looking at the right end of the machine.
5. Use a electronic or mechanical tachometer (access thru the bearing guard) to check the rotor speed with engine at full throttle. Rotor RPM should approximately match the speed called for on the Motor Selection Chart for the GPM specified for the loader being used. The rotor RPM should fall within a range of 200 RPM higher than the goal, or 100 RPM less than the goal. If it is outside this recommended range, it may be necessary to disconnect the AX and test the hydraulic output of the loader with a Flow Meter to see if it corresponds with the factory specifications. If performance falls short, you may need to contact loader manufacturer for assistance, or call Loftness for other options.
6. Set the Push Bar in it's most forward position. This is the most desirable set-up for almost all situations.
7. The TIMBER AX should be ready to cut.