

WALLENSTEIN

BY EMB MFG INC.

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WX410



WX430



WX440



WX450



WX460



WX470 Vertical

SKID STEER MOUNTED WOODSPLITTER MODELS WX410, WX430, WX440, WX450, WX460 & WX470 OPERATOR'S MANUAL

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WALLENSTEIN

SKID STEER MOUNTED WOODSPLITTER WARRANTY

Effective on Wallenstein Products retailed on or after January 1, 2011.

Products must be registered on the Wallenstein website www.embmfg.com within 30 days of purchase to activate warranty.

This product is warranted to be free of defects in materials and workmanship under normal use and service, for a period of

Three (3) Years for Consumer One (1) Year for Commercial/Rental

from the date of purchase, when operated and maintained in accordance with the Operating and Maintenance Instructions supplied with this unit. **This warranty does not cover:** wearable parts, maintenance parts, or parts damaged by misuse or negligence. Engines are covered by the manufacturer of the engine and covered by the warranty period specified by that manufacturer. Warranty is limited to the repair of the product and/or replacement of parts.

Under no circumstances will the manufacturer be liable for any consequential damage or expense of any kind, including loss of profits. The manufacturer is under no circumstances liable for tow vehicle of any kind. The manufacturer is not liable for the maintenance of the product.

This warranty is extended only to the original purchaser. Warranty is void if repairs are attempted by anyone other than an Authorized Service Centre.

If a difficulty develops with the product, contact the local Wallenstein dealer from which you purchased the unit. Only Wallenstein Dealers are authorized to make repairs to the product or affect the replacement of defective parts, which will be done at no charge within a reasonable time after the receipt of the product. Unit or parts shall be returned at the customer's expense to the Authorized Service Centre. Damage in transit is not covered by warranty. Include the original purchase receipt with any claim (keeping a copy for your files).

The distributor's liability under warranty is limited to the repair of the product and/or replacement of parts and is given to the purchaser in lieu of all other remedies including incidental and consequential charges. There are no warranties, expressed or implied, other than those specified herein. For engine service contact your local engine dealer.

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WARRANTY IS VOID IF NOT REGISTERED

**To activate warranty, register your product online at
www.embmfg.com**

WALLENSTEIN
SKID STEER MOUNTED WOODSPLITTER

DELIVERY INSPECTION REPORT
(please print)

THIS FORM MUST BE FILLED OUT BY THE DEALER AND SIGNED BY BOTH THE DEALER AND THE CUSTOMER AT THE TIME OF DELIVERY.

Customer's Name _____ Dealer Name _____
Address _____ Address _____
City, State/Province, Code _____ City, State/Province, Code _____
Phone Number (____) _____ Phone Number (____) _____
Contact Name _____
Model _____
Serial Number _____
Delivery Date _____

DEALER INSPECTION REPORT

- ___ Check that Cylinder Extends Freely
- ___ Fasteners Tight
- ___ Hydraulic Fittings Tight - No Leaks
- ___ Hydraulic Lines Free and in Good Condition
- ___ Lubricate Wood splitter
- ___ Frame Anchored to Face Plate

SAFETY

- ___ All Decals Installed
- ___ Guards and Shields Installed
- ___ Review Operating and Safety Instructions

I have thoroughly instructed the buyer on the above described equipment which review included the Operator's Manual content, equipment care, adjustments, safe operation and applicable warranty policy.

Date _____ Dealer's Rep. Signature _____

The above equipment and Operator's Manual have been received by me and I have been thoroughly instructed as to care, adjustments, safe operation and applicable warranty policy.

Date _____ Owner's Signature _____

To activate warranty, register your product online at
www.embmfg.com

SERIAL NUMBER LOCATION

Always give your dealer the serial number of your Wallenstein Skid Steer Mounted Woodsplitter when ordering parts or requesting service or other information.

The wood splitter is equipped with a serial plate where indicated. Please mark the number in the space provided for easy reference.



WX410 WX430



WX440 WX450 WX460



WX470

Model Number _____

Serial Number _____

1 INTRODUCTION

Congratulations on your choice of an Wallenstein Skid Steer Mounted Woodsplitter to compliment your log splitting operation. This equipment has been designed and manufactured to meet the needs of a discriminating buyer for the efficient splitting of wood.

Safe, efficient and trouble free operation of your Wallenstein Woodsplitter requires that you and anyone else who will be operating or maintaining the wood splitter, read and understand the Safety, Operation, Maintenance and Trouble Shooting information contained within the Operator's Manual.

In the event that you require replacement parts, go to www.embmfg.com and click on "Parts and Manuals" to download the latest parts manual for you model chipper, then call your dealer to order.

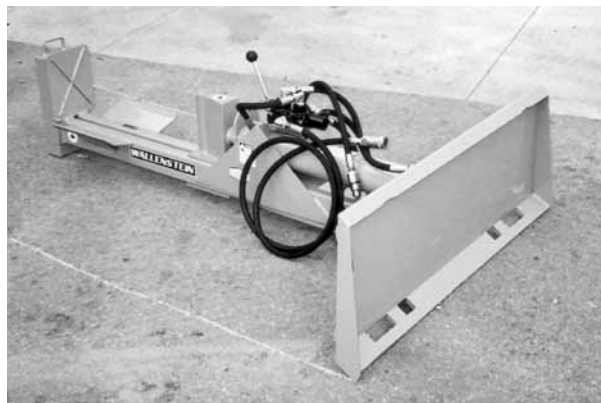
See page 41 for accessories. Call your dealer for pricing and availability



WX410/430



WX470 Horizontal



WX440/450/460



WX470 Vertical

This manual covers the Model WX410, WX430, WX440, WX450, WX460 AND WX470 Skid Steer Mounted Woodsplitter manufactured by Wallenstein. Use the Table of Contents or Index as a guide to locate required information.

Keep this manual handy for frequent reference and to pass on to new operators or owners. Call your Wallenstein dealer or the Distributor if you need assistance, information or additional copies of the manuals.

OPERATOR ORIENTATION - The directions left, right, front and rear, as mentioned throughout this manual, are determined when sitting in the operator's seat and facing toward the splitter.

2 SAFETY

SAFETY ALERT SYMBOL

This Safety Alert symbol means
ATTENTION! BECOME ALERT!
YOUR SAFETY IS INVOLVED!



The Safety Alert symbol identifies important safety messages on the Wallenstein Skid Steer Mounted Woodsplitter and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you?

3 Big Reasons

Accidents Disable and Kill
Accidents Cost
Accidents Can Be Avoided

SIGNAL WORDS:

Note the use of the signal words **DANGER**, **WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guide-lines:

DANGER - 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 wood splitter components which, for functional purposes, cannot be guarded.

WARNING - 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 - 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.

If you have any questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer or Wallenstein, 4144 Boomer Line, St. Clements, ON, N0B 2M0. Phone (519) 699-9283 or Fax (519) 699-4146.

SAFETY

YOU are responsible for the SAFE operation and maintenance of your Wallenstein Skid Steer Mounted Woodsplitter. **YOU** must ensure that you and anyone else who is going to use, maintain or work around the Woodsplitter be familiar with the using and maintenance procedures and related **SAFETY** information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be used while using the Woodsplitter.

Remember, **YOU** are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** using this equipment is familiar with the recommended using and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

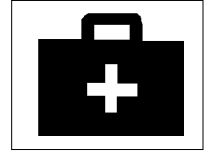
- Skid Steer Mounted Woodsplitter owners must give operating instructions to operators or employees before allowing them to operate the wood splitter, and at least annually thereafter.
- The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow these. Most accidents can be avoided.
- A person who has not read and understood all using and safety instructions is not qualified to use the wood splitter. An untrained operator exposes himself and bystanders to possible serious injury or death.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- Think SAFETY! Work SAFELY!

2.1 GENERAL SAFETY

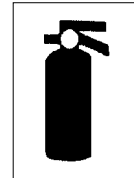
1. Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or servicing the Woodsplitter.



2. Have a first-aid kit available for use should the need arise and know how to use it.



3. Have a fire extinguisher available for use should the need arise and know how to use it.



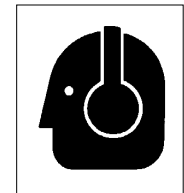
4. Do not allow riders.

5. Wear appropriate protective gear. This list includes but is not limited to:

- A hard hat
- Protective shoes with slip resistant soles
- Protective glasses, goggles or face shield
- Heavy gloves
- Wet weather gear
- Hearing Protection
- Respirator or filter mask



6. Install and secure all guards before starting.



7. Wear suitable ear protection for prolonged exposure to excessive noise.

8. Lower splitter frame, place all controls in neutral, stop engine, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or maintaining.


9. Clear the area of people, especially small children, before using the unit.

10. Review safety related items annually.

2.2 EQUIPMENT SAFETY GUIDELINES

1. Safety of the operator and bystanders is one of the main concerns in designing and developing equipment. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury or death, study the following precautions and insist those working with you, or for you, follow them.
2. In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be used in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.
3. Replace any safety sign or instruction sign that is not readable or is missing. Location of such safety signs is indicated in this manual.
4. Never use alcoholic beverages or drugs which can hinder alertness or coordination while using this equipment. Consult your doctor about using this wood splitter while taking prescription medications.
5. **Under no circumstances should young children be allowed to work with this equipment. Do not allow persons to use or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.** Review the safety instructions with all users annually.
6. This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible, properly trained and physically able person familiar with wood splitting and trained in this equipment's operations. If the elderly are assisting with work, their physical limitations need to be recognized and accommodated.
7. Never exceed the limits of a piece of wood splitting. If its ability to do a job, or to do so safely, is in question - **DON'T TRY IT.**
8. Do not modify the equipment in any way. Unauthorized modification may result in serious injury or death and may impair the function and life of the equipment.
9. Use a Skid Steer that is equipped with a Roll Over Protective Structure (ROPS) and a seat belt.
10. In addition to the design and configuration of this implement, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the wood splitter. Refer also to Safety Messages and operation instruction in each of the appropriate sections of the engine and wood splitter manuals. Pay close attention to the Safety Signs affixed to the skid steer and the wood splitter.

2.3 SAFETY TRAINING

1. Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator or bystander.
2. In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of this equipment.
3. It has been said, "The best safety feature is an informed, careful operator." We ask you to be that kind of an operator. It is the operator's responsibility to read and understand ALL Safety and Using instructions in the manual and to follow these. Accidents can be avoided.
4. **Working with unfamiliar equipment can lead to careless injuries. Read this manual before assembly or using, to acquaint yourself with the wood splitter. If this wood splitter is used by any person other than yourself, or is loaned or rented, it is the wood splitter owner's responsibility to make certain that the operator, prior to using:**
 - a. **Reads and understands the operator's manuals.**
 - b. **Is instructed in safe and proper use.**
5. Know your controls and how to stop power unit engine and wood splitter quickly in an emergency. Read this manual and the one provided with your skid steer.
6. Train all new personnel and review instructions frequently with existing workers. Be certain only a properly trained and physically able person will use the wood splitting. A person who has not read and understood all using and safety instructions is not qualified to use the wood splitter. An untrained operator exposes himself and bystanders to possible serious injury or death. If the elderly are assisting with the work, their physical limitations need to be recognized and accommodated.

2.4 SAFETY SIGNS

1. Keep safety signs clean and legible at all times.
2. Replace safety signs that are missing or have become illegible.
3. Replaced parts that displayed a safety sign should also display the current sign.
4. Safety signs displayed in Section 3 each have a part number in the lower right hand corner. Use this part number when ordering replacement parts.
5. Safety signs are available from your authorized Distributor or Dealer Parts Department or the factory.

How to Install Safety Signs:

- Be sure that the installation area is clean and dry.
- Be sure temperature is above 50°F (10°C).
- Determine exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

2.5 PREPARATION

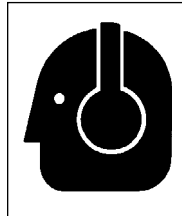
1. Never use the engine and wood splitter until you have read and completely understand this manual, the Skid steer Operator's Manual and each of the Safety Messages found on the safety signs on the skid steer and wood splitter.



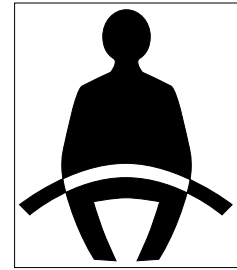
2. Personal protection equipment including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, adjustment, maintaining, repairing, removal, cleaning, or moving the unit. Do not allow long hair, loose fitting clothing or jewellery to be around equipment.

3. **PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS!**

Power equipment with or without equipment attached can often be noisy enough to cause permanent, partial hearing loss. We recommend that you wear hearing protection on a full-time basis if the noise in the Operator's position exceeds 80db. Noise over 85db on a long-term basis can cause severe hearing loss. Noise over 90db adjacent to the Operator over a long-term basis may cause permanent, total hearing loss. **NOTE:** Hearing loss from loud noise (from tractors, chain saws, radios, and other such sources close to the ear) is cumulative over a lifetime without



4. Operate the wood splitter only with a skid steer equipped with an approved Roll-Over-Protective Structure (ROPS). Always wear your seat belt when operating the skid steer. Serious injury or even death could result from falling off the skid steer - - particularly during a turnover when the operator could be pinned under the ROPS or the skid steer.



5. Review maps of underground utilities before starting to dig. Remove all sticks, stones, roots, and wires from working area before starting. Take care not to contact overhead and underground obstructions during operation.
6. Operate only in daylight or good artificial light.
7. Be sure wood splitter is properly mounted, adjusted and in good operating condition.
8. Ensure that all safety shielding and safety signs are properly installed and in good condition.

2.6 OPERATING SAFETY

1. Please remember it is important that you read and heed the safety signs on the Woodsplitter. Clean or replace all safety signs if they cannot be clearly read and understood. They are there for your safety, as well as the safety of others. The safe use of this wood splitter is strictly up to you, the operator.
2. All things with moving parts are potentially hazardous. There is no substitute for a cautious, safe-minded operator who recognizes potential hazards and follows reasonable safety practices. The manufacturer has designed this Woodsplitter to be used with all its safety equipment properly attached, to minimize the chance of accidents. Study this manual to make sure you have all safety equipment attached.
3. If a safety shield or guard is removed for any reason, it must be replaced before the wood splitter is again operated.
4. Always lock face plate to front of loader when attaching to prevent movement during operation.
5. Clear the work area of objects which might be picked up and snagged or entangled in the wood splitter. Do not operate on slippery, wet, muddy or icy surfaces. Good footing prevents slipping and tripping.
6. Do not allow bystanders within 20 feet of wood splitter during operation. Wood chips can fly out and injure others.
7. Do not step over or straddle splitter during operation.
8. Do not try to split more than one log at a time. The extra log can fly out and cause injury.
9. Keep your fingers and hands away from cracks in the log that can open while splitting.
10. Always load logs by holding on the sides, not the top and bottom.
11. Do not load the splitter when the wedge is in motion.
12. Do not try to split logs across the grain. Some kinds can burst or splinter and fly out of wood splitter causing injury.
13. For uneven cut logs, always place the wide end down and the most square kind against the splitting wedge.
14. Never carry, lift or move people on loader or frame.
15. Always use two people to handle heavy, unwieldy components during assembly, installation, removal or moving.
16. Never place any part of your body where it would be in danger if movement should occur during assembly, installation, operation, maintaining, repairing, removal or moving.
17. Do not walk or work under a raised wood splitter or attachment unless it is securely blocked or held in position. Do not depend on the skid steer hydraulic system to hold the wood splitter or attachment in place.
18. Never use alcoholic beverages or drugs which can hinder alertness or coordination while operating this equipment. Consult your doctor about operating this wood splitter while taking prescription medications.
19. Do not allow riders on this wood splitter at any time. There is no safe place for any riders.
20. Before you operate the wood splitter, check over all hydraulic lines, hoses, connections and components. Replace any worn or damaged parts immediately. Tighten all leaking fittings.
21. Never allow children to operate or be around this wood splitter.
22. Do not operate on slopes or hillsides. Sloping terrain can cause logs to roll or slip.
23. Keep hands, feet, hair, jewellery, and clothing away from all moving and/or rotating parts.
24. Review safety instructions annually.

2.7 TRANSPORT SAFETY

1. Comply with state and local laws governing safety and transporting of wood splitting on public roads.
2. The use of flashing amber lights is acceptable in most localities. However some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements.
3. At all times, when driving the tractor and equipment on the road or highway under 20 mph (32 kph) use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem. Do not exceed 20 mph (32 kph). Reduce speed on rough roads and surfaces.
4. Do not drink and drive.
5. Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc. Watch for traffic when operating near or crossing roadways.
6. Turn into curves or go up or down hills only at a low speed and a gradual steering angle. Slow down on rough or uneven ground.
7. Never allow riders on either skid steer or wood splitter.

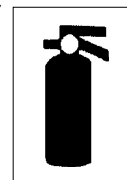
2.8 MAINTENANCE SAFETY

1. Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
2. Follow good shop practices.
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.



3. Make sure there is plenty of ventilation. Never operate the tractor in a closed building. The exhaust fumes may cause asphyxiation.
4. Before working on this wood splitter, lower the boom / bucket to the ground, place all controls in neutral, shut off the engine, set the park brake and remove the ignition key.
5. Never work under equipment unless it is blocked securely.
6. Use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance work.
7. Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not be responsible for injuries or damages caused by use of unapproved parts and/or accessories.

8. A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.

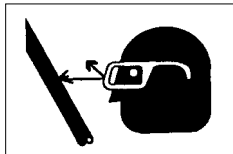


9. Periodically tighten all bolts, nuts and screws and check that all fasteners are properly torqued.
10. When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.

2.9 HYDRAULIC SAFETY

1. Make sure that all the components in the hydraulic system are kept in good condition and are clean.
2. Before applying pressure to the system, make sure all components are tight, and that lines, hoses and couplings are not damaged.
3. Do not attempt any makeshift repairs to the hydraulic lines, fittings or hoses by using tapes, clamps or cements. The hydraulic system operates under extremely high pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.

4. Wear proper hand and eye protection when searching for a high pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak.



5. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.
6. Relieve pressure on hydraulic system before maintaining or working on system.

2.10 STORAGE SAFETY

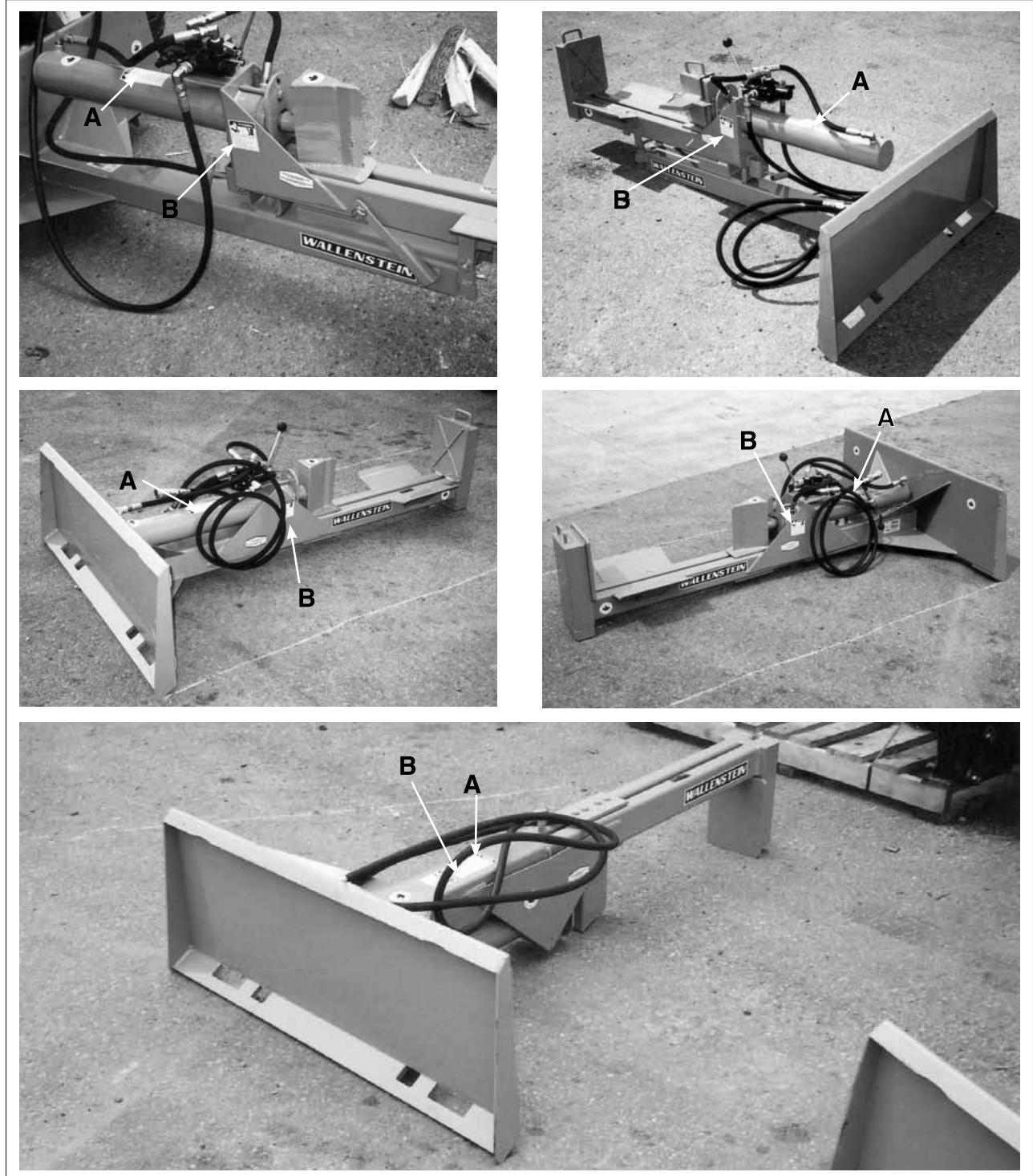
1. Store the unit in an area away from human activity.
2. Do not allow children to play on or around the stored wood splitter.
3. Store the unit in a dry, level area. Support the frame with planks if required.

3 SAFETY SIGN LOCATIONS

3.1 THREE PANEL SAFETY SIGNS

The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!




REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

A

⚠ CAUTION

- Read Operator's Manual before using.
- Move controls in neutral, stop engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or maintaining.
- Install boom lock pin before servicing, repairing or maintaining.
- Do not allow anyone within 20 feet of machine during operation. Keep children away.
- Wear appropriate safety gear including but not limited to face shield, heavy gloves and steel toed shoes with slip-resistant soles.
- Operate only on level ground.
- Do not operate on hillsides or when the working area is cluttered, wet, muddy or icy to prevent slipping or tripping.
- Do not place hands or feet between log and wedge/stripper or base.
- Keep all hydraulic components in good working order.
- Stop engine when leaving splitter unattended.
- Review safety instructions annually.



#Z94036

B

⚠ WARNING

**MOVING WEDGE HAZARD
KEEP AWAY**

To prevent serious injury or death from moving wedge:

- Keep hands and feet away from between logs and wedge or base.
- Keep others away.
- Stop engine and relieve hydraulic pressure before servicing machine.

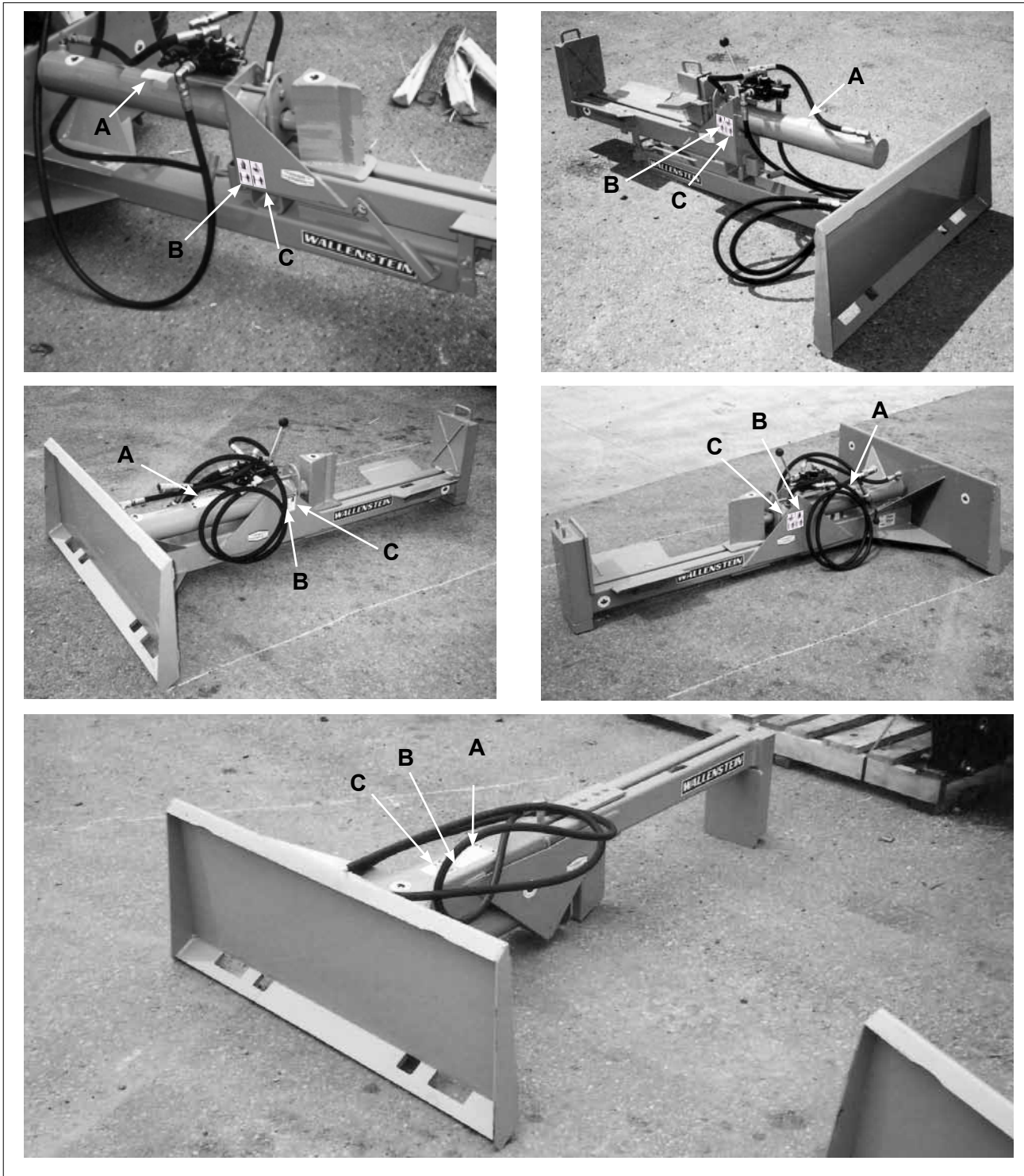


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3.2 TWO PANEL SAFETY SIGNS

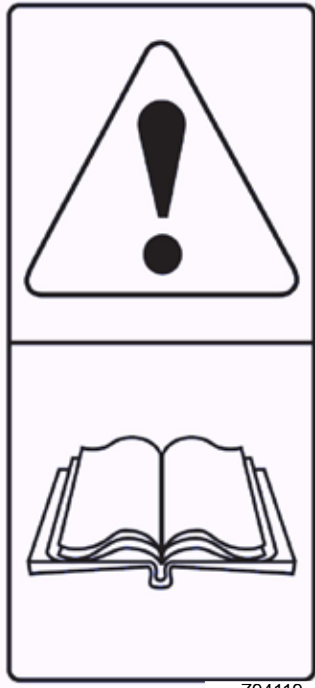
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- Think SAFETY! Work SAFELY!



REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

A



B



C



4 OPERATION

4.1 TO THE NEW OPERATOR OR OWNER

The Wallenstein Skid Steer Mounted Woodsplitter is designed to split any kind of wood or log. Be familiar with the wood splitter before starting.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment. It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the wood splitter.

It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the wood splitter. Follow all safety instructions exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the work site. Untrained operators are not qualified to operate the wood splitter.

Many features incorporated into this wood splitter are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the wood splitter safely and how to set it to provide maximum field efficiency. By following the operating instructions in conjunction with a good maintenance program, your Woodsplitter will provide many years of trouble-free service.



OPERATING SAFETY

- Read and understand the Operator's Manual and all safety signs before operating, servicing, adjusting, repairing or unplugging.
- Do not allow riders.
- Install and secure all guards and shields before starting or operating.
- Keep hands, feet, hair and clothing away from moving parts.
- Place all controls in neutral, stop tractor engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
- Place all tractor and wood splitter controls in neutral before starting.
- Always wear the appropriate personal safety equipment when operating splitter including but not limited to hard hat, safety shoes, face shield and heavy gloves.
- Clear the area of bystanders, especially small children, before starting.
- Do not operate on slopes or side hills.
- Keep working area clean, neat and dry to prevent slipping and tripping.
- Keep all mechanical and hydraulic components in good condition. Do not operate with leaks or damaged components.
- Load splitter by holding logs on the side rather than the top and bottom.
- Do not split wood across the grain.
- Review safety instructions with all operators annually.

4.2 WOOD SPLITTER COMPONENTS

The Wallenstein Skid Steer Woodsplitter consists of a wedge on the end of a hydraulic cylinder for splitting wood or logs. The remote on the skid steer is used to provide pressurized oil to the valve and cylinder to split the wood or log. The WX470 Splitter can be used in vertical or horizontal configuration.

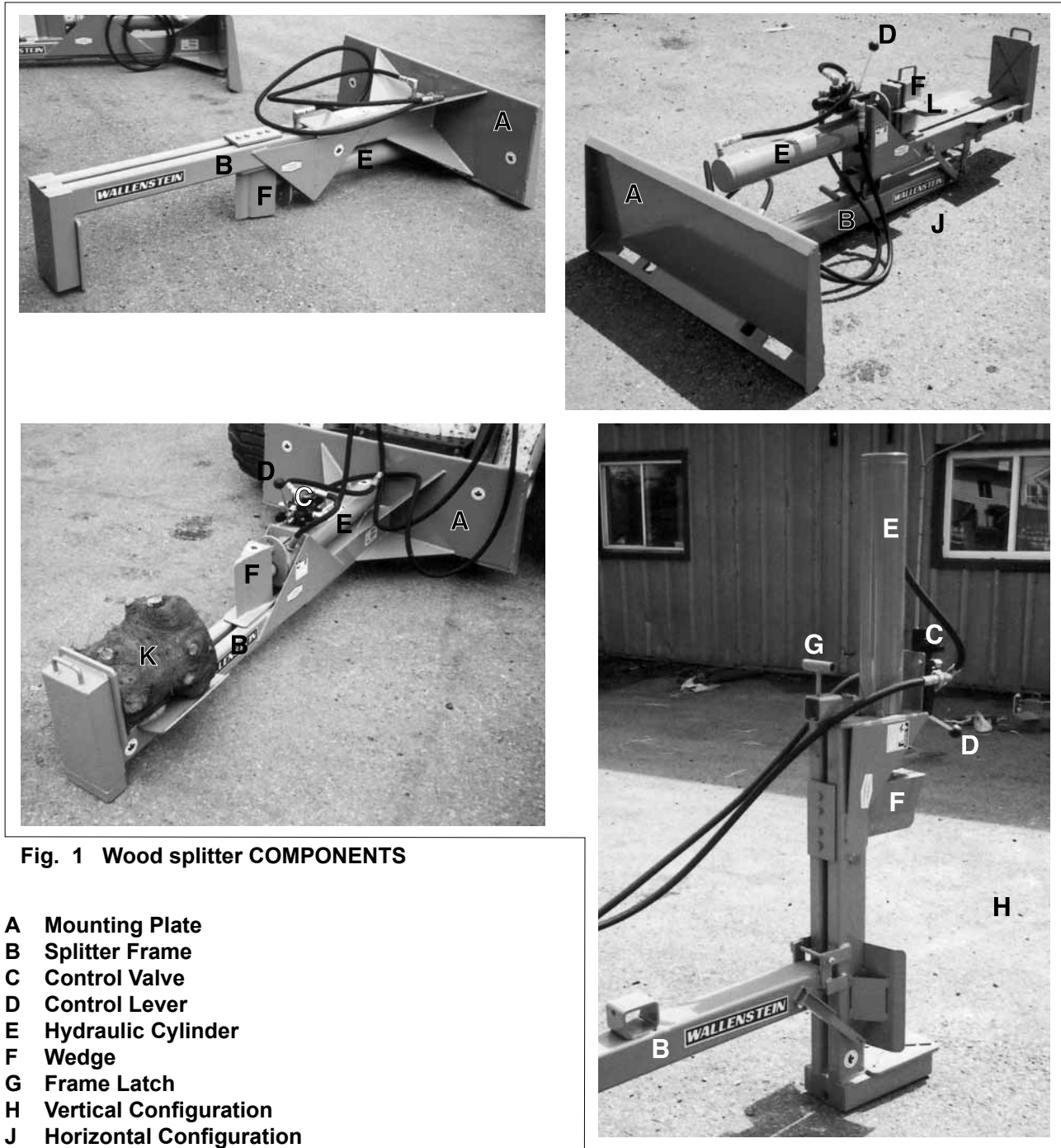


Fig. 1 Wood splitter COMPONENTS

- A Mounting Plate
- B Splitter Frame
- C Control Valve
- D Control Lever
- E Hydraulic Cylinder
- F Wedge
- G Frame Latch
- H Vertical Configuration
- J Horizontal Configuration
- K Log
- L 4 Segment Wedge (optional)

4.3 WOOD SPLITTER BREAK-IN

Although there are no operational restrictions on the Woodsplitter when used for the first time, it is recommended that the following mechanical items be checked:

A. After operating for 1 and 5 hours:

1. Check all nuts, bolts and other fasteners. Tighten to their specified torque.
2. Check the condition of all hydraulic lines, hoses and fittings. Replace any that are damaged. Re-route those that are rubbing, pinched or crimped. Tighten any fitting that is leaking.
3. Check for entangled material. Remove all entangled material before resuming work.
4. Check the oil level in the hydraulic reservoir in the skid steer. Add as required.

4.4 PRE-OPERATION CHECKLIST

Efficient and safe operation of the Woodsplitter requires that each operator reads and understands the operating procedures and all related safety precautions outlined in this section. A pre-operation checklist is provided for the operator. It is important for both the personal safety and maintaining good mechanical condition that this checklist is followed.

Before operating the wood splitter and each time thereafter, the following areas should be checked off:

1. Lubricate the wood splitter per the schedule outline in Section 5 Service and Maintenance.
2. Use only a skid steer of adequate power and weight to operate the wood splitter.
3. Check that the wood splitter is properly attached to the skid steer. Be sure the lock pins on the loader face plate are fully engaged to secure the Woodsplitter to the loader.
4. Check the oil in the reservoir of the skid steer. Add as required.
5. Check the condition of all hydraulic lines, hoses and fittings. Replace any that are damaged. Re-route those that are rubbing, pinched or crimped. Tighten any fitting that is leaking.
6. Check all parts for entangled material. Remove entangled material.
7. Install and secure all guards, doors and covers before starting.
8. Review the "controls" section in the skid steer operator's manual to be familiar with the control settings and functions before operating wood splitter.

4.5 EQUIPMENT MATCHING

To insure the safe and reliable operation of the Woodsplitter, it is necessary to use a skid steer with the correct specifications. Use the following list as a guide in selecting a skid steer to use on the wood splitter.

1. Horsepower:

Although horsepower is not required to operate the woodsplitter, it does establish the total weight for wood splitter stability. Do not exceed the woodsplitter power specifications.

2. Tractor Weight:

By following the recommendations for the skid steer power, the skid steer will have sufficient weight to provide stability for the unit when splitting or transporting.

3. Hydraulic System:

The skid steer hydraulic system must be capable of 10 - 16 gpm (38 - 61 lpm) at 3000 psi (20,700 kPa).

Table 1: Model vs. Skid Steer HP

Model	Recommended Skid Steer Horsepower
WX410	40 - 90
WX430	40 - 90
WX440	40 - 90
WX450	40 - 90
WX460	40 - 90
WX470	40 - 90

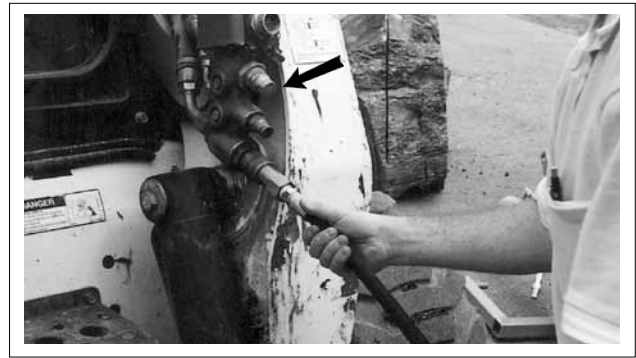


Fig. 1 HYDRAULIC OUTLETS (typical)

4.6 CONTROLS

Before starting to work, all operators should familiarize themselves with the location and function of the controls.

1. Skid Steer Controls:

The Skid Steer provides hydraulic power to the wood splitter whenever it is used.

Always review the "controls" section of the Skid Steer operator's manual to be familiar with the location, settings and function of the controls..

- a. Use the hydraulic controls in the cab to move the cylinder in and out when splitting with the **WX410 & WX430** inverted models. Direct the flow through the front outlets.
- b. Place the remote hydraulic circuit in detent to provide hydraulic power to the control valve on **all other model splitters (WX440 WX450 WX460 WX470)**.

2. Splitter Hydraulic Control:

This 3-position spring-loaded-to-center-neutral lever controls the flow of oil to the cylinder. Move the lever toward the base and hold for the cylinder ram to extend and split the wood. Move the lever away from the base and hold to retract the cylinder ram. Release the lever and it will return to its centered neutral position and the cylinder ram will stop moving.



Fig. 2 WX410 WX430



WX440 WX450 WX460 Horizontal



WX470 Horizontal / Vertical

Fig. 3 HYDRAULIC VALVE

4.7 ATTACHING / UNHOOKING SKID STEER

The wood splitter is shipped from the factory in a basic, universal configuration that allows it to be mounted to any model skid steer. However, the skid steer must be equipped with a remote hydraulic outlet on the front of the cab frame.

The Woodsplitter should always be located on a level, dry area that is free of debris and other foreign objects. When attaching the Woodsplitter to the skid steer, follow this procedure:

1. Make sure that all bystanders, especially small children are clear of the work area.
2. Make sure there is enough room and clearance to safely drive up to the splitter.
3. Drive up to the splitter while aligning the skid steer face plate to splitter mounting plate
4. Secure the mounting:
 - a. Drive into the mounting plate.
 - b. Seat the top of the face plate into the mounting plate of the Woodsplitter.
 - c. Raise the loader and tilt the face plate until it is fully seated in the mounting plate.
5. Ensure the woodsplitter mounting plate is securely latched to skid steer face plate by engaging the lock pins.

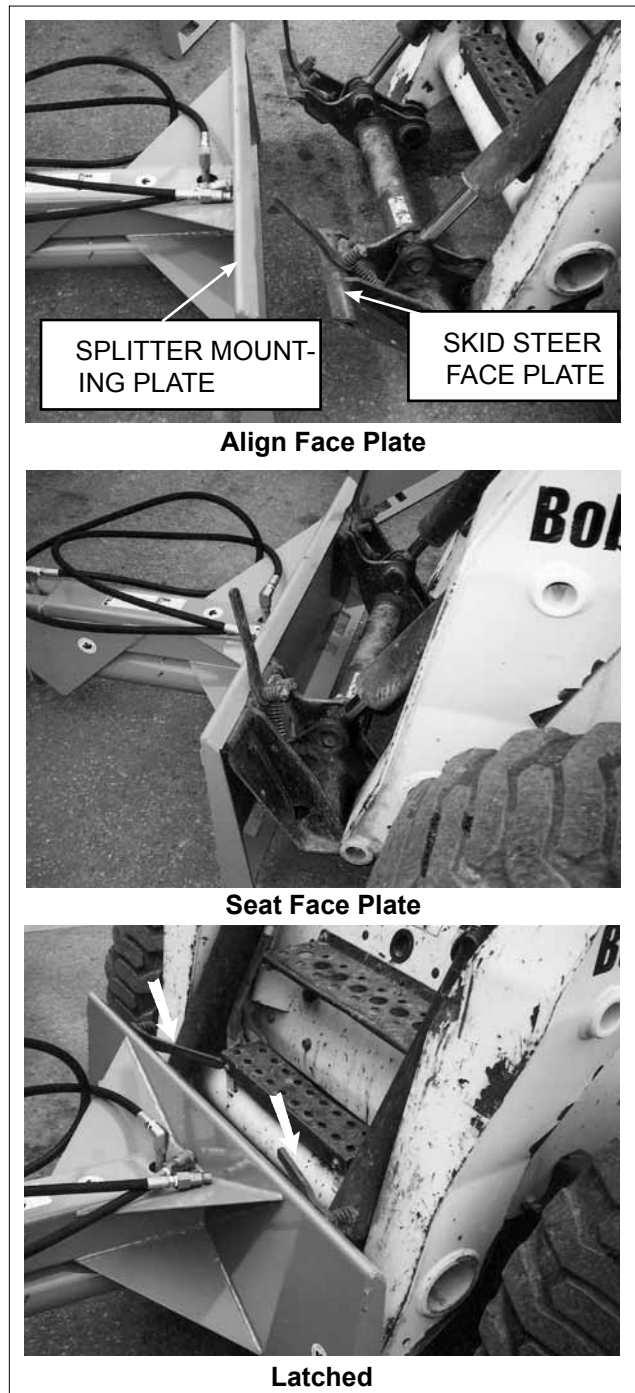


Fig. 4 MOUNTING

6. Connect the hydraulics:

NOTE

Clip the plastic ties securing the hoses for shipping if this is the first time the splitter is mounted.

- a. Use a clean rag or paper towel to clean the dirt from the couplers on the hose ends and the skid steer.
- b. Connect the hoses to the skid steer couplers. Be sure the couplers are securely seated.
- c. Route and secure the hoses along the frame with clips, tape or plastic ties to prevent binding and pinching. Be sure to provide slack for tilting.

7. Raise the loader and frame.

8. Reverse the above procedure when unhooking.

9. Place planks or boards under the chipper frame for extra support if required.



Hoses



Connect couplers



Safely route hoses

Fig. 5 HYDRAULICS



Fig. 6 MOUNTED

4.8 FIELD OPERATION



OPERATING SAFETY

- Read and understand the Operator's Manual and all safety signs before operating, servicing, adjusting, repairing or unplugging.
- Do not allow riders.
- Install and secure all guards and shields before starting or operating.
- Keep hands, feet, hair and clothing away from moving parts.
- Place all controls in neutral, stop tractor engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
- Place all tractor and wood splitter controls in neutral before starting.
- Always wear the appropriate personal safety equipment when operating splitter including but not limited to hard hat, safety shoes, face shield and heavy gloves.
- Clear the area of bystanders, especially small children, before starting.
- Do not operate on slopes or side hills.
- Keep working area clean, neat and dry to prevent slipping and tripping.
- Keep all mechanical and hydraulic components in good condition. Do not operate with leaks or damaged components.
- Load splitter by holding logs on the side rather than the top and bottom.
- Do not split wood across the grain.
- Review safety instructions with all operators annually.

Follow this procedure when using the splitter:

1. Prepare the Skid Steer and splitter (refer to section 4.7)
2. Attach splitter to the skid steer (refer to Section 4.7).
3. Review and follow the pre-operation checklists (refer to Section 4.4).
4. Review the location and function of all controls (refer to Section 4.6)
5. Review the work site and plan the project before starting.
6. Transport the splitter to the worksite (refer to Section 4.10).

7. Lower the loader to move the splitter closer to the ground.

8. **Starting:**

a. WX410 Model:

- Climb into cab and start engine (refer to skid steer manual.).
- Engage the remote outlet hydraulic circuit.
- Increase engine speed to mid or 3/4 RPM.
- Use the controls in cab to move the cylinder ram and splitting wedge.

b. WX440, WX460 and WX470 Models:

- Climb into cab and start engine (refer to skid steer manual.).
- Engage the remote outlet hydraulic circuit and place in detent.
- Set the skid steer controls to allow for remote operation (refer to skid steer manual for details.).
- Use the lever on the hydraulic valve to move the cylinder ram and wedge.
- Release the lever when the wood or log splits into 2 pieces or the wedge reaches the base and the wedge will stop.

9. **Emergency Stopping:**

In case of an emergency, lower the frame to the ground and stop engine (for the WX410). For the WX440, WX460 and WX470, climb into cab and stop engine. Be sure to resolve and correct the emergency situation before resuming work. Do not take chances in an emergency.



WX410



WX470 Horizontal



WX470 Vertical

Fig. 7 STARTING/STOPPING

10. Log Placement:

A. For the WX410 & WX430 Model:

- a. Move the skid steer and position the frame over wood or log.
- b. Lower the frame to position the wood or log.
- c. Split the wood or log.



Positioning



Splitting

Fig. 8 LOG PLACEMENT (WX410)

B. For the WX440, WX450, WX460 and WX470 Models:

- a. Always grasp the log by the sides when placing in the splitter. This will minimize the chance of the operator getting their fingers or arm between the wedge and the log.
- b. Always wear the appropriate safety gear when working around the wood splitter. This includes but is not limited to:
 - Hard hat for protection to the head.
 - Face mask for protection to the face and eyes from flying chips.
 - Heavy gloves for protection from slivers, chips and pinching.
 - Safety shoes with slip resistant soles for protection to the feet and toes from dropped logs and pieces of wood. Slip resistant soles reduce the change of slipping.



Horizontal



Vertical

Fig. 9 LOG PLACEMENT (WX470)

11. Wedge Configuration:

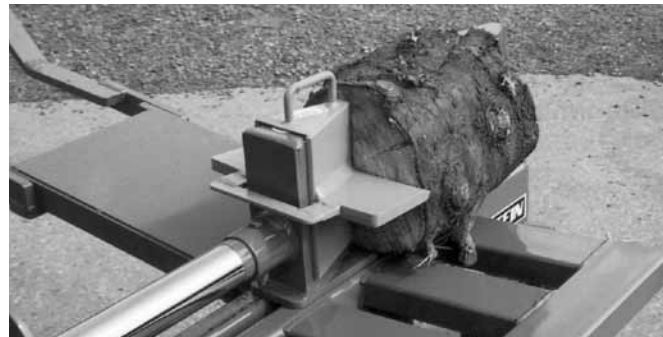
All Woodsplitters come from the factory equipped with a single blade wedge. An optional 4 segment wedge is available that fits over the single blade. A slip-on or bolt-on version is available. It can be used at any time with smaller logs or pieces of wood.

NOTE

The 4 segment wedge is NOT available on the WX410 or WX430.



Single



4-Way Slip-On (Typical)



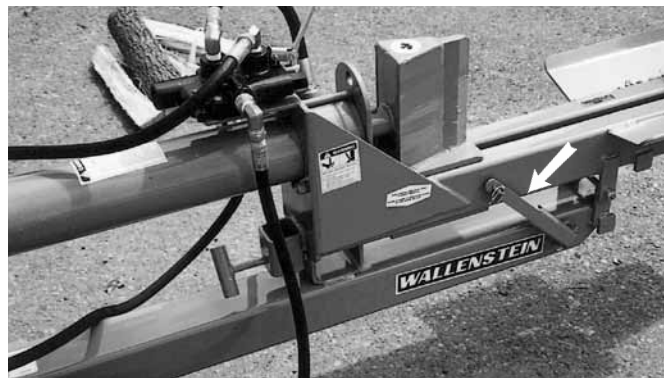
4-Way Bolt-On

Fig. 10 WEDGES

12. Horizontal to Vertical:

The WX470 Model is designed with a pivoting latching main frame that allows it to be used in the horizontal or vertical configuration.

- a. Raise the frame above the ground.
- b. Release the frame lock bracket.
- c. Release the frame anchor latch.
- d. Move the frame into the vertical configuration.
- e. Engage the frame lock bracket and secure.
- f. Lower frame and support base on the ground.



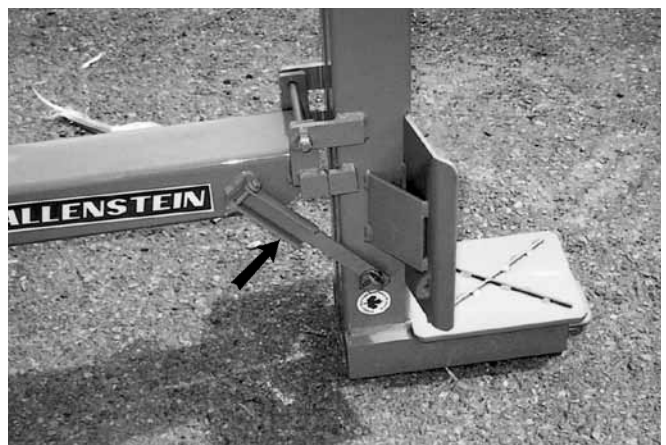
Lock Bracket



Frame Latch



Vertical



Lock Bracket

Fig. 11 HORIZONTAL TO VERTICAL

13. Operating Hints:

- a. Hold the hydraulic lever in the wedge extend direction until the wedge reaches the base or the log/wood splits. Move it in the opposite direction to retract the wedge.
- b. Always keep the working area neat and clean to prevent tripping. Pile the split and unsplit wood in piles close to the working area. Do not allow pieces to pile up and clutter the area. A cluttered working area can lead to tripping and an accident. Do not take chances with safety.
- c. Do not place the splitter on muddy, icy, wet or cluttered surfaces. Each can lead to slipping or tripping and cause accidents.
- d. Lubricate the plate under the wedge slider each time the wood splitter is used to improve wear and reduce friction and/or binding.



Horizontal



Vertical

Fig. 12 WORK PLACE

- e. Secure the frame lock bracket before using the WX470 in the vertical configuration.



Fig. 13 FRAME LOCK BRACKET

4.10 TRANSPORTING



TRANSPORT SAFETY

- Comply with state and local laws governing safety and transporting of wood splitting on public roads.
- The use of flashing amber lights is acceptable in most localities. However some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements.
- At all times, when driving the tractor and equipment on the road or highway under 20 mph (32 kph) use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem. Do not exceed 20 mph (32 kph). Reduce speed on rough roads and surfaces.
- Do not drink and drive.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc. Watch for traffic when operating near or crossing roadways.
- Turn into curves or go up or down hills only at a low speed and a gradual steering angle. Slow down on rough or uneven ground.
- Never allow riders on either skid steer or wood splitter.

Wallenstein Woodsplitters are designed to be easily and conveniently moved from work site to work site. When transporting, follow this procedure:

1. Be sure all bystanders are clear of the wood splitter.
2. Be sure that the wood splitter is hitched positively to the skid steer and retainer latches are engaged.
3. Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the road shoulder, if permitted by law.
4. Make sure the SMV (Slow Moving Vehicle) emblem and all lights and reflectors required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.
5. It is not recommended that the wood splitter be transported faster than 20 mph (32 kph).
6. Do not allow riders on the Woodsplitter or skid steer.

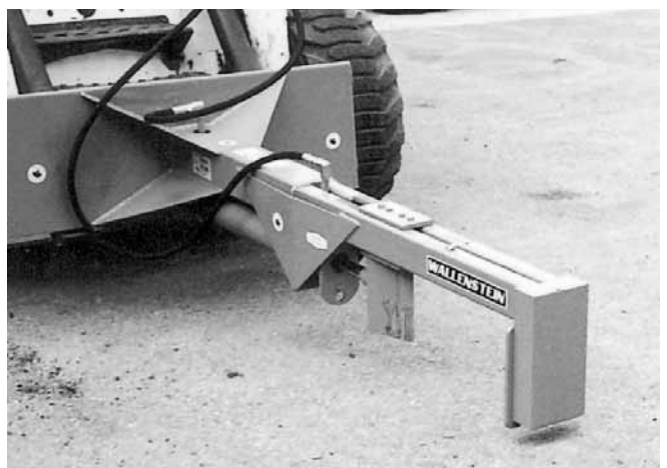


Fig. 14 TRANSPORT CONFIGURATION

7. During periods of limited visibility, use pilot vehicles and use extra lights on the wood splitter.
8. Always use hazard flashers on the tractor when transporting unless prohibited by law.

4.11 STORAGE



STORAGE SAFETY

- Store the unit in an area away from human activity.
- Do not permit children to play on or around the stored wood splitter.
- Store the unit in a dry, level area. Support the frame with planks if required.

4.11.1 PLACING IN STORAGE

After the season's use, the wood splitter should be thoroughly inspected and prepared for storage. Repair or replace any worn or damaged components to prevent any unnecessary down time at the start of the next season. To ensure a long, trouble-free life, this procedure should be followed when preparing the unit for storage:

1. Clear the area of bystanders, especially small children.
2. Thoroughly wash the wood splitter using a pressure washer to remove all dirt, mud, debris and residue.
3. Inspect the wedge, ram and frame for damage or entangled material. Repair or replace damaged parts. Remove all entangled material.
4. Lubricate all grease fittings. Make sure all grease cavities have been filled with grease to remove any water residue from washing.
5. Touch up all paint nicks and scratches to prevent rusting.
6. Select an area that is dry, level and free of debris.
7. Place blocks or planks under the frame if required.
8. Unhook from skid steer (See Section 4.7).
9. Apply a coat of heavy grease to exposed cylinder rams to prevent rusting.
10. If the wood splitter cannot be placed inside, cover with a waterproof tarpaulin and tie securely in place.

11. Store the wood splitter in an area away from human activity.
12. Do not allow children to play on or around the stored wood splitter.

4.11.2 REMOVING FROM STORAGE

When removing from storage and preparing to use, follow this procedure:

1. Clear the area of bystanders, especially small children and remove foreign objects from the wood splitter and work area.
2. Attach the skid steer to the splitter by following the procedure in Section 4.7.
3. Check
 - a. All hardware. Tighten as required.
 - b. All hydraulic lines, fittings and connections. Tighten as required.
4. Lubricate all grease fittings.
5. Remove grease from cylinder rams.
6. Replace any defective parts.
7. Go through the pre-operation checklist (section 4.4) before using.

5 SERVICE AND MAINTENANCE



MAINTENANCE SAFETY

- Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
- Follow good shop practices.
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.
- Make sure there is plenty of ventilation. Never operate the engine of the towing vehicle in a closed building. The exhaust fumes may cause asphyxiation.
- Before working on this wood splitter, shut off the engine, set the brake, and turn fuel valve off.
- Never work under equipment unless it is blocked securely.
- Always use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance work. Use heavy gloves when handling sharp components.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not be responsible for injuries or damages caused by use of unapproved parts and/or accessories.
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.
- Periodically tighten all bolts, nuts and screws and check that all electrical and fuel connections are properly secured to ensure unit is in a safe condition.
- When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.

5.1 FLUIDS AND LUBRICANTS

1. **Grease:**
Use an SAE multipurpose high temperature grease with extreme pressure (EP) performance. Also acceptable is an SAE multipurpose lithium base grease.
2. Your wood splitter can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture and other contaminants.

5.2 GREASING

Use the Maintenance Checklist provided to keep a record of all scheduled maintenance.

1. Use a hand-held grease gun for all greasing.
2. Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
3. Replace and repair broken fittings immediately.
4. If fittings will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fittings if necessary.

5.3 SERVICING INTERVALS

See service record and service illustration for service interval information. The period recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication or oil changes.

100 Hours or Monthly

Grease the frame slide.

Annually

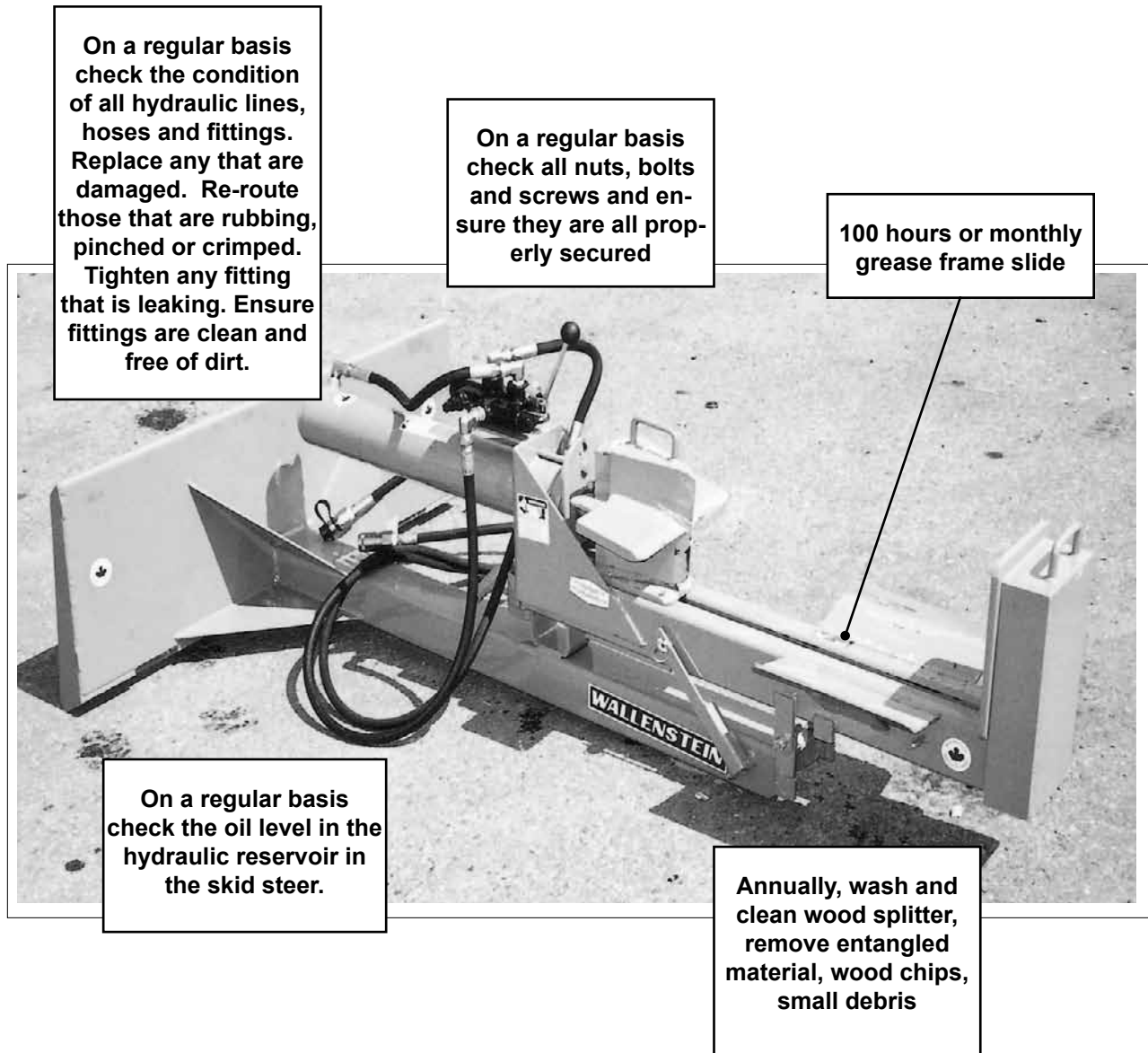
Wash and clean wood splitter.

IMPORTANT Do Not over grease.

5.4 SERVICE ILLUSTRATION

See Service Record Chart

This illustration shows the general location of service points for all models in this manual.



IMPORTANT Do Not over grease.

6 TROUBLE SHOOTING

The Wallenstein Woodsplitter is designed to fit on the front of a skid steer loader and is used to split wood or logs. It is a simple and reliable system that requires minimal maintenance.

In the following section, we have listed many of the problems, causes and solutions to the problems that you may encounter.

If you encounter a problem that is difficult to solve, even after having read through this trouble shooting section, please call your local distributor or dealer. Before you call, please have this Operator's Manual from your unit and serial number ready.

PROBLEM	CAUSE	SOLUTION
Wedge moves slowly.	Pump worn out.	Replace pump.
	Low oil flow.	Increase engine RPM.
	Low oil level.	Check oil level. Add as required.
<hr/>		
Wedge doesn't move.	Wood jammed around wedge.	Remove wood.
	Low oil level.	Check oil level. Add as required.
<hr/>		
Wedge jumps.	Wedge frame jamming.	Lubricate wedge frame wear plate.

7 SPECIFICATIONS

7.1 MECHANICAL

400 SERIES SKIDSTEER MOUNTED WOODSPLITTERS						
MODEL	WX410	WX430	WX440	WX450	WX460	WX470
MOUNTING	Skidsteer Quick Attach					
CYLINDER DIAMETER	4"	4-1/2"	4"	4-1/2"	5"	4"
CYLINDER STROKE	24"	36"	24"	36"	24"	24"
SPLITTING FORCE @ 3000 psi	20 ton	25 ton	20 ton	25 ton	31 ton	20 ton
STANDARD VALVE TYPE	No Valve – Uses Skidsteer Aux.			Open Center with Auto Return Detent		
SPLITTER ORIENTATION	Inverted Horz.	Inverted Hoz.	Horizontal	Horizontal	Horizontal	Hor. & Vert.
SHIPPING WEIGHT	260 lb.	320 lb.	270 lb.	330 lb.	345 lb.	315 lb.
DIMENSIONS (LxWxH) (inches)	66 x 36 x 22	90 x 36 x 22	66 x 36 x 22	90 x 36 x 22	68 x 36 x 24	96 x 36 x 26
RECOM. MIN. HYD FLOW	10 gpm	13 gpm	10 gpm	13 gpm	16 gpm	10 gpm
OPTIONAL 4-WAY SPLITTING WEDGE	N/A	N/A	W4120	W4130	W4130	W4120

Fig. 25 MECHANICAL SPECIFICATIONS

7.2 HYDRAULIC FITTING TORQUE

Tightening Flare Type Tube Fittings *

1. Check flare and flare seat for defects that might cause leakage.
2. Align tube with fitting before tightening.
3. Lubricate connection and hand tighten swivel nut until snug.
4. To prevent twisting the tube(s), use two wrenches. Place one wrench on the connector body and with the second tighten the swivel nut to the torque shown.

Tube Size OD	Nut Size Across Flats	Torque Value•		Recommended Turns To Tighten (After Finger Tightening)	
		(N.m)	(lb-ft)	(Flats)	(Turn)
3/16	7/16	8	6	1	1/6
1/4	9/16	12	9	1	1/6
5/16	5/8	16	12	1	1/6
3/8	11/16	24	18	1	1/6
1/2	7/8	46	34	1	1/6
5/8	1	62	46	1	1/6
3/4	1-1/4	102	75	3/4	1/8
7/8	1-3/8	122	90	3/4	1/8

- The torque values shown are based on lubricated connections as in reassembly.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

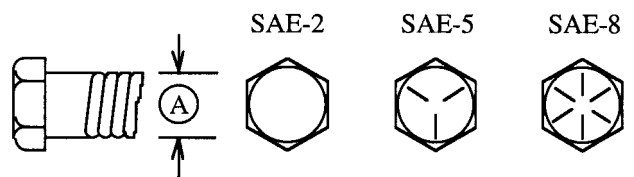
7.3 BOLT TORQUE

CHECKING BOLT TORQUE

The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

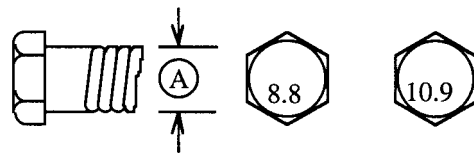
ENGLISH TORQUE SPECIFICATIONS

Bolt Diameter "A"	Bolt Torque*					
	SAE 2 (N.m) (lb-ft)		SAE 5 (N.m) (lb-ft)		SAE 8 (N.m) (lb-ft)	
1/4"	8	6	12	9	17	12
5/16"	13	10	25	19	36	27
3/8"	27	20	45	33	63	45
7/16"	41	30	72	53	100	75
1/2"	61	45	110	80	155	115
9/16"	95	60	155	115	220	165
5/8"	128	95	215	160	305	220
3/4"	225	165	390	290	540	400
7/8"	230	170	570	420	880	650
1"	345	225	850	630	1320	970



METRIC TORQUE SPECIFICATIONS

Bolt Diameter "A"	Bolt Torque*			
	8.8 (N.m) (lb-ft)		10.9 (N.m) (lb-ft)	
M3	.5	.4	1.8	1.3
M4	3	2.2	4.5	3.3
M5	6	4	9	7
M6	10	7	15	11
M8	25	18	35	26
M10	50	37	70	52
M12	90	66	125	92
M14	140	103	200	148
M16	225	166	310	229
M20	435	321	610	450
M24	750	553	1050	774
M30	1495	1103	2100	1550
M36	2600	1917	3675	2710

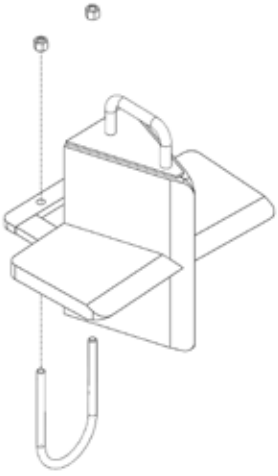
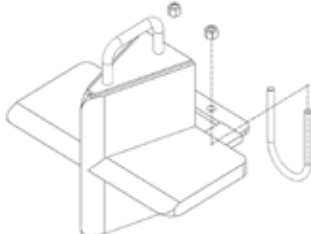


Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

* Torque value for bolts and capscrews are identified by their head markings.

8 ACCESSORIES

4 way splitting wedge, Boost your productivity and make quick work out of chunks by splitting four pieces at once. This is an ideal way to save time. Call your dealer for pricing and availability (4 way wedge not available for WX410 and WX430)

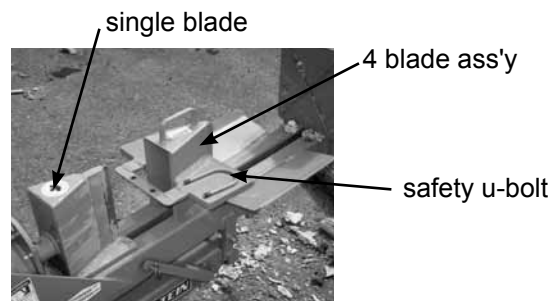
 <p>#W4120</p>	<p>#W4120 4 WAY SPLITTING WEDGE</p> <p>For models: WX440 & WX470 easy to install, slip over and attach safety bolt</p>
 <p>#W4130</p>	<p>#W4130 4 WAY SPLITTING WEDGE</p> <p>For models: WX450 & WX460 easy to install, slip over and attach safety bolt</p>

FOUR WAY SPLITTING WEDGE INSTALLATION:

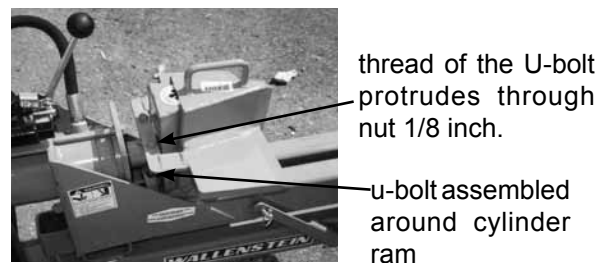
- Remove the mounting bracket and hardware.
- Place the 4 blade assembly over the single blade.
- Mount the safety U bolt bracket around the cylinder ram.
- Hand tighten locknuts then turn on with a wrench until the locking nylon grips securely or until the thread of the U-bolt protrudes through the nut **no further** than 1/8 inch.

Safety ubolt must be allowed to float free, do not tighten down ubolt.

For replacement parts, go to www.embmfg.com and click on "Parts and Manuals" to download the latest parts manual for you model chipper, then call your dealer to order.



Ubolt must be allowed to float free, do not tighten down ubolt.



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