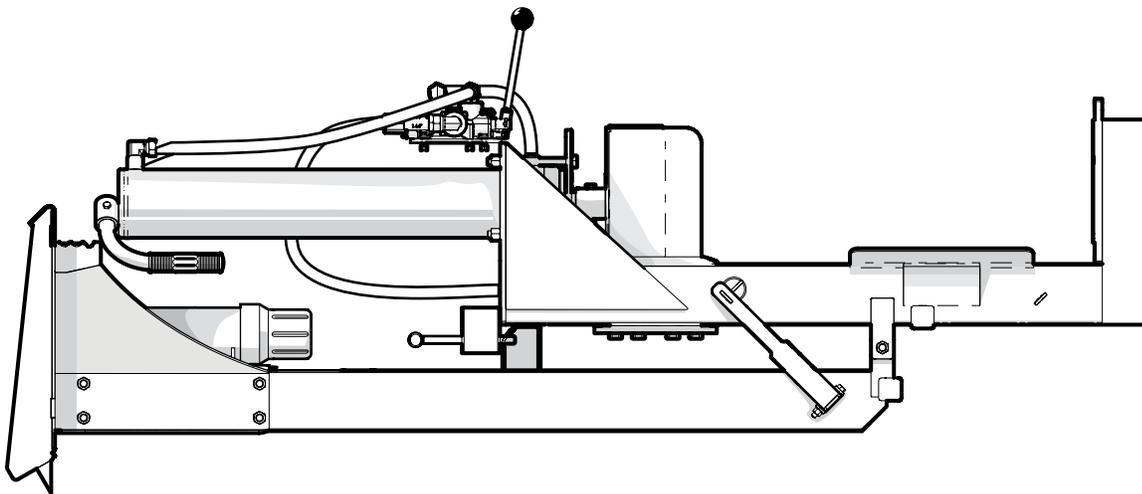


OPERATOR'S MANUAL

WX470 Skid Steer Wood Splitter



1. Foreword

1.1 Introduction

Congratulations on your choice of a **Wallenstein Skid Steer Wood Splitter !**

This manual covers the Wallenstein WX470 wood splitter. WX470 splitters have a pivoting main frame that allows horizontal or fully vertical splitting.

Safe, efficient, and trouble-free operation of this Wallenstein product requires that anyone using or maintaining the machine reads and understands the Safety, Operation, Maintenance information contained within the Operator's Manual.

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.

Units of measurement in Wallenstein Equipment technical manuals are written as:
US Customary (SI metric)

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WARNING!

Do not attempt to start or operate the machine without thoroughly reviewing this manual for safe and proper operation.

Always keep this manual with the machine.

W034



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1.2 Delivery Inspection Report

Wallenstein Skid Steer Wood Splitter

To activate warranty, register your product at: www.wallensteinequipment.com

This form must be filled out by the dealer at the time of delivery, then signed by the dealer and customer.

The product manuals have been received by me and I have been thoroughly instructed as to care, adjustments, safe operation, and applicable warranty policy.

I have thoroughly instructed the buyer on the equipment care, adjustments, safe operation, and applicable warranty policy and reviewed the manuals.

Customer

Dealer

Address

Address

City, State/Province, ZIP/Postal Code

City, State/Province, ZIP/Postal Code

()

Phone Number

()

Phone Number

Contact Name

Model

Serial Number

Delivery date

1.2.1 Dealer Inspection Report

- _____ Check hydraulic splitter control functions
- _____ Check hydraulic cylinder extends freely
- _____ Check that all fasteners are tight
- _____ Check all hydraulic connections are tight
- _____ Grease all pivot points
- _____ Check frame is anchored to face plate correctly

Safety Checks

- _____ All safety decals installed
- _____ Guards and shields installed and secured
- _____ Review operating and safety instructions

1.3 Serial Number Location

Always give your dealer the serial number of your Wallenstein product when ordering parts or requesting service or other information.

The Serial Number Plate location is shown in the illustration. **Please record the product Model and Serial Number in the space provided below for easy reference.**

Record Product Information Here	
Model:	WX470
Serial Number:	

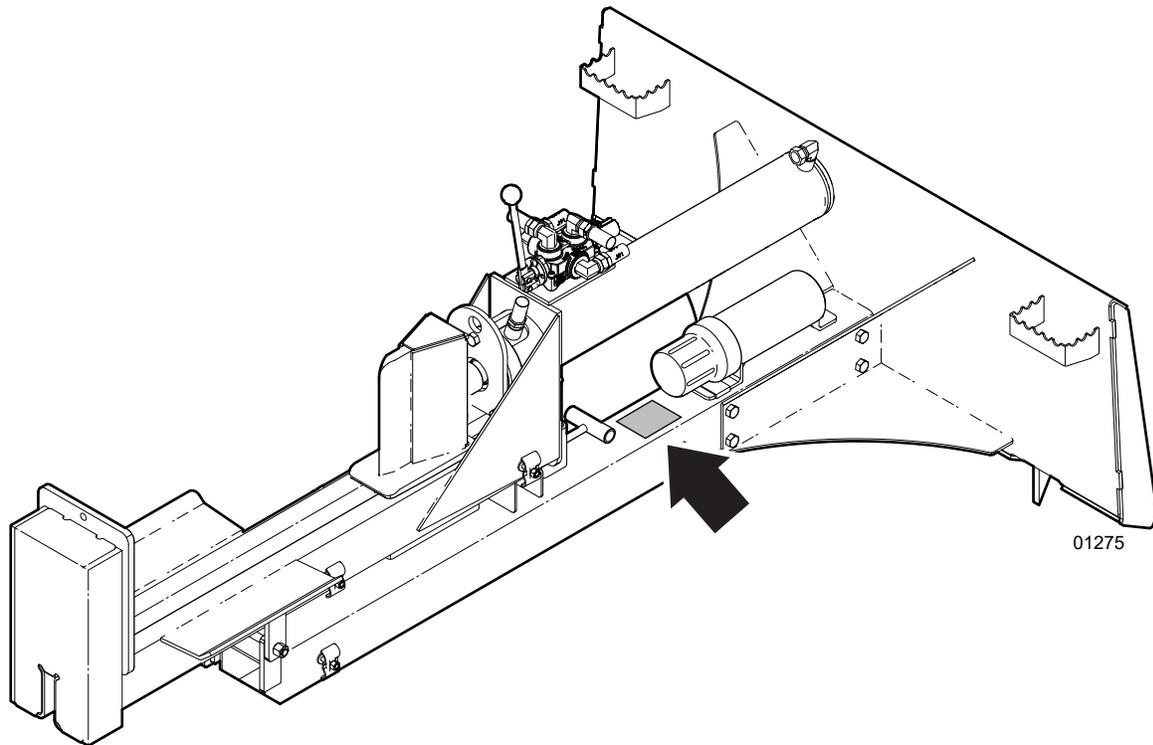
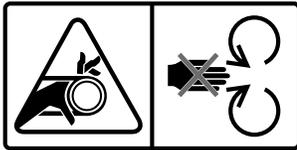


Fig. 1—Serial Number Plate Location

1.4 Types of Decals on the Machine

When getting familiar with the Wallenstein product, notice that there are numerous decals located on the machine. There are different types of decals for safety, information, and product identification. The following section explains what they are for and how to read them.

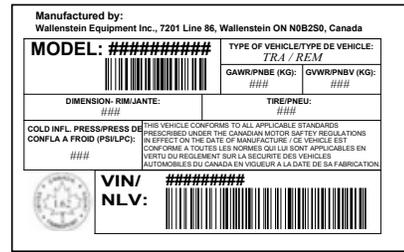
Safety Decals have a yellow background and are generally two panel. They can be either vertical or horizontal.



Safety Notice Decals are pictorial with a blue background and generally rectangular with single or multiple symbols. This decal informs what Personal Protective Equipment is required for safe operation.



Informative Decals are generally pictorial with a white **Product Decals** indicate machine model and serial number, and other important information.



See the section on safety signs for safety decal definitions. For a complete illustration of decals and decal locations, download the parts manual for your model product at www.wallensteinequipment.com.

2. Safety

2.1 Safety Alert Symbol

This Safety Alert Symbol means:

ATTENTION! BE ALERT!
YOUR SAFETY IS INVOLVED!

The Safety Alert Symbol identifies important safety messages on the Wallenstein Wood Processor 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.



2.2 Signal Words

The signal words **DANGER**, **WARNING** and **CAUTION** determine the seriousness level of the warning messages in this manual. The appropriate signal word for each message in this manual has been selected using the following guidelines:

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 machine 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.

IMPORTANT – To avoid confusing equipment protection with personal safety messages, a signal word **IMPORTANT** indicates a situation that if not avoided, could result in damage to the machine.

2.3 Why SAFETY is important

Three Big Reasons:

- **Accidents Disable and Kill**
- **Accidents Cost**
- **Accidents Can Be Avoided**

The policy of Wallenstein Equipment Inc. is to produce products that are safe and reliable. However, even when using well-engineered equipment, there is always an element of risk. To minimize the risks and always promote safety, this section of the operator's manual details safety rules that must always be followed and obeyed.

YOU are responsible for the **SAFE** operation and maintenance of your Wallenstein Trailer Wood splitter. **YOU** must ensure that you and anyone else who is going to use, maintain or work around the wood splitter be familiar with the operating and maintenance procedures and related safety information contained in this manual. This manual provides good safety practices that should be followed while using the Wallenstein trailer wood splitter.

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 use 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.

2.4 Safety Rules

Provide operating instructions to operators or employees before allowing them to operate the machine. Review these instructions annually.

- Read and understand ALL Safety and Operating instructions in the manual and follow them. The most important safety device on this equipment is a SAFE operator.



- Review safety related items annually with all personnel who are operating the machine or performing maintenance.
- Wear appropriate Personal Protective Equipment (PPE). The suggested equipment includes but is not limited to the following:
 - Hearing Protection
 - Protective glasses, goggles, or face shield
 - Heavy work gloves
 - Protective shoes with slip resistant soles

- Prolonged exposure to loud noise may cause permanent hearing loss. Wear hearing protection on a full-time basis. Noise over 85 dB on a long-term basis can cause severe hearing loss. Prolonged exposure to noise 90 dB or above can cause permanent, total hearing loss.



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



- Read and understand all safety signs located on the machine before operating, servicing, adjusting, or cleaning.
- Inspect and secure all guards before starting.
- Inspect and secure all guards before starting.
- Have a fire extinguisher available for use should the need arise. Know how to use it.



- Do not expect a person who has not learned all operation and safety instructions to use the machine. An untrained operator is not qualified and is exposed to possible serious injury or death. It is the owner's responsibility to make sure to the operator has familiarity and understanding of the machine.

2.5 Equipment Safety Guidelines

The 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.

As the operator, you can avoid many accidents by observing the following precautions in this section. To avoid personal injury or death, study the following precautions and insist everyone follows them.

Always place the machine in a **Safe Condition** before performing any service, maintenance work, and storage preparation.

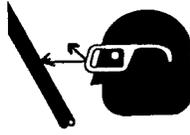
SAFE CONDITION

1. Lower splitter to ground.
2. Shut off hydraulics.
3. Shut off the engine.
4. Be sure all components have stopped moving.
5. Set the parking brake.
6. Remove and retain the ignition key.

- Never use equipment with safety shields removed. Keep all shields in place. If shield removal becomes necessary for repairs, reinstall the shield prior to use.
- Replace any safety sign or instruction sign that is not readable or is missing. Location of safety signs is indicated in this manual.
- Do not allow anyone other than a responsible, properly trained and physically able person to operate this machine. This equipment is dangerous to children and persons unfamiliar with its operation.
- 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.
- Never exceed the limits of the machine. If its ability to do the job or to do it safely is in question—**STOP IMMEDIATELY!**
- Make sure that all the components in the hydraulic system are kept in good condition and are clean.
- Before applying pressure to the system, make sure all components are tight, and that lines, hoses and couplings are not damaged.



- 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.
- 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.
- 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.
- Relieve pressure in the hydraulic system before working it.



- Determine a safe work area location:
 - Area must be clear of stones, branches or hidden obstacles that might cause a tripping, hooking, or snagging hazard.
 - Ground should be firm and level.
- Operate only in daylight or good artificial light.
- Make sure machine is properly adjusted and in good operating condition.
- Keep bystanders away at a safe distance at least 20 ft (6 m) from work zone. Mark the zone with safety cones.
- Be aware of overhead hazards: branches, cables, electrical wires.
- Perform the **Pre-operation Checklist** procedure before starting work (see *Pre-operation Checks on page 21*)

2.6 Safety Training

- The best safety feature is an informed, careful operator—we ask you to be that kind of operator. It is the operator's responsibility to read, understand and follow ALL safety and operation instructions in the manual.



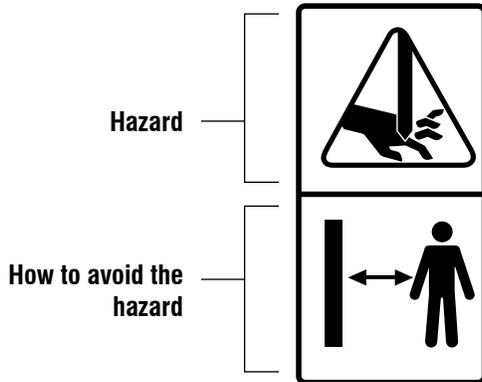
- Train all new personnel and review instructions frequently with existing workers. Only properly trained and physically able operators should use this equipment. **A person who has not read and understood all operation and safety instructions is not qualified to use the machine.** Untrained operators expose themselves and bystanders to possible serious injury or death. If elderly people are assisting with the work, their physical limitations need to be recognized and accommodated.
- Learn the controls and how to stop the machine quickly in an emergency.
- If this machine is loaned or rented, it is the machine owner's responsibility to make certain that every operator:
 - Reads and understands the owner's manual
 - Is instructed in safe and proper use of the equipment
 - Understands and knows how to perform the Safe Condition procedure

2.7 Being Prepared

- Determine where the split wood is going to be piled ahead of time. Make sure it does not interfere with the splitting operation.
- Pre-cut logs so wood is ready to load into the splitter. Do not run a chain saw and the splitter at the same time.

3. Safety Signs

The top (or left-hand) panel shows the safety alert (the potential hazard), and the bottom (or right-hand) panel shows the message (how to avoid the hazard).



3.1 Safety Sign Locations

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

Practicing good safety means becoming familiar with safety signs and warnings and being aware of the situations that require alertness.

Think SAFETY! Work SAFELY!

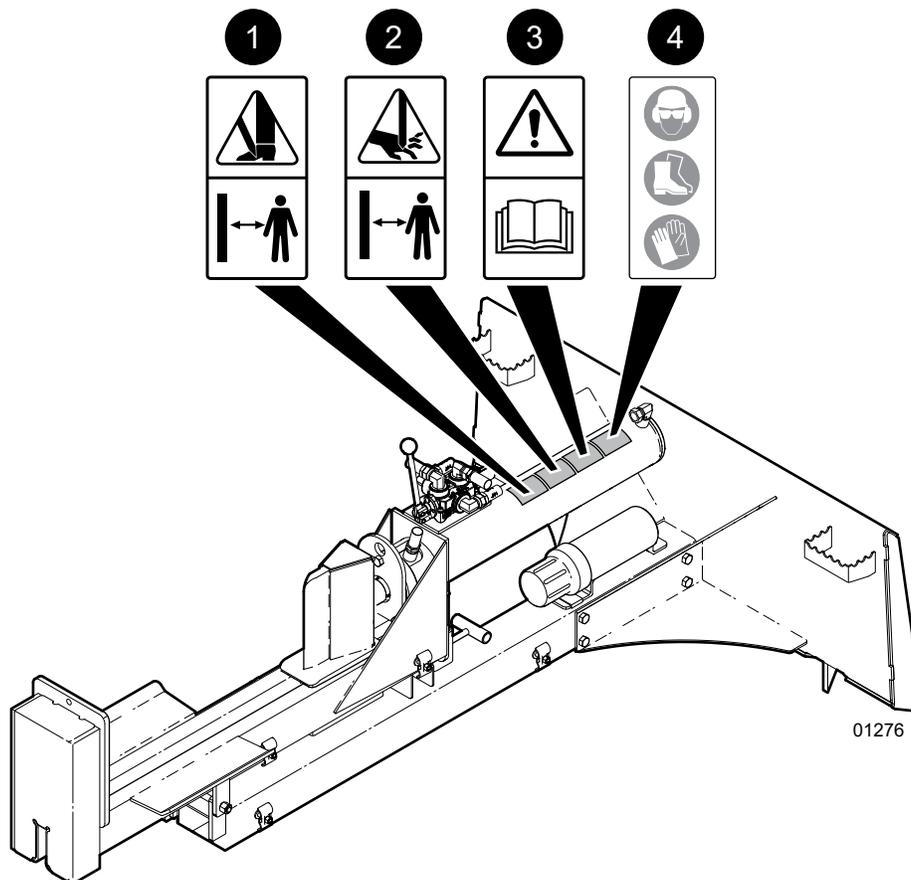


Fig. 2—Safety Decal Locations

3.2 Safety Sign Explanations

1. Warning!

Keep feet away from falling split wood. Always wear steel toed foot wear while machine is operating to avoid serious personal injury.



2. Warning!

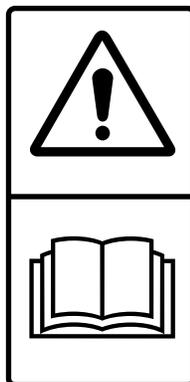
Pinch point / crushing danger! Keep your hands away from all moving parts during and after split operation! Never try to clear a jammed log with your hands! Wait for all moving parts to come to a complete stop before loading or clearing obstructions.



3. Caution!

Refer to the operator's manual. Read ALL operating instructions in the manual and learn the meaning of ALL safety signs on the machine.

The best safety feature is an informed operator.



4. Warning!

Always wear appropriate Personal Protective Equipment when using this machine. For example:

- A hard hat
- Heavy gloves
- Hearing protection
- Protective shoes with slip resistant soles
- Protective glasses, goggles, or face shield



IMPORTANT! If parts are replaced that have safety signs on them, new signs must be applied. Safety signs must always be replaced if they become damaged, are removed, or become illegible.

Safety signs are included in the product decal kit available from your authorized dealer. Decals are not available separately.

3.3 Replacing Damaged Safety Signs

- Always replace safety signs that are missing or have become illegible. Replacement safety signs are available from your authorized distributor, dealer parts department, or the factory.
- Always keep safety signs clean and legible.
- Parts replaced that had a safety decal on them must also have the safety sign replaced.

Procedure

Installation area must be clean and dry. Make sure the surface is free of grease or oil. Ambient temperature must be above 50 °F (10 °C).

 **NOTE:** *Determine exact position before removing the backing paper on the decal.*

1. Peel the decal off the backing sheet.
2. Align the decal with an edge on the machine if possible.
3. Starting on one edge, carefully press the center of the exposed sticky backing in place, smoothing it out as you work from one side to the other.
4. Use a squeegee, credit card or similar to smooth it out. Work from one end of the decal to the other end.

Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

4. Familiarization

4.1 To the New Operator

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 machine. Follow all safety instructions exactly.

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 use the machine.

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

IMPORTANT! Make sure all operators understand how to put the wood splitter in a Safe Condition before working with this machine. See Safe Condition *page 9*.

4.2 Training

Each operator must be trained in the proper set-up and operating procedures before using the machine.

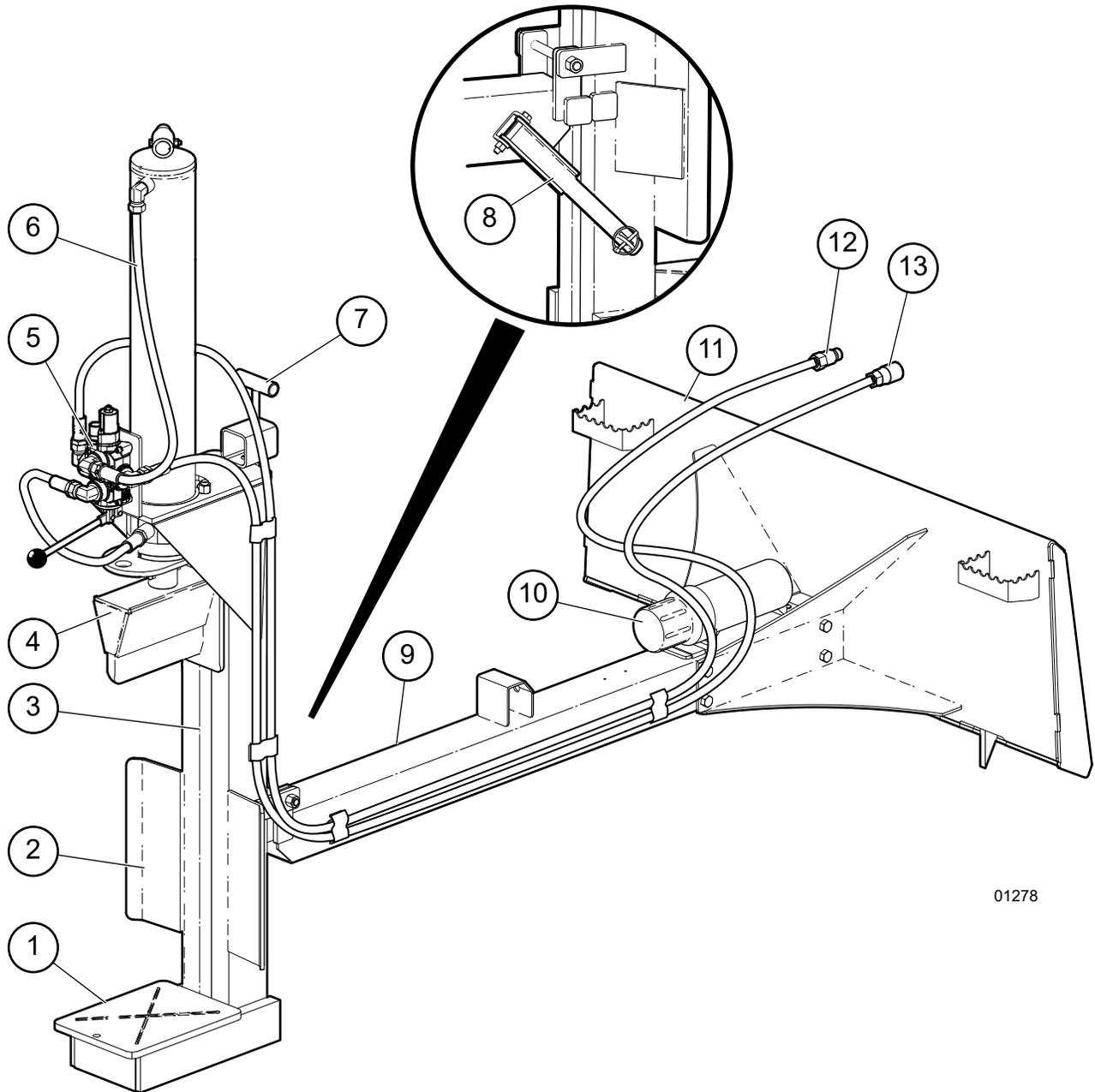
1. Move the unit to a large open area to allow the operator to become familiar with control functions and machine response.
2. Do not allow untrained operators to use the machine. They can endanger themselves and others, or damage property and the machine.

4.3 Job Site Familiarization

It is the responsibility of the operator to be thoroughly familiar with the work site prior to starting.

1. Check for close or cramped work space. Be sure there is sufficient space and clearance for the machine to operate.
2. Organize the working area to minimize movement.
3. Position the machine so prevailing winds blow engine exhaust fumes away from operator's station.

4.4 Splitter Components



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Fig. 3—Wood Splitter Components

- | | | |
|-------------------------|---------------------------------|------------------------|
| 1. Anvil | 6. Hydraulic Cylinder | 11. Mounting Plate |
| 2. Log Saddle | 7. Splitter Frame Latch | 12. Return (OUT) Line |
| 3. Tilting Splitter Bed | 8. Locking Latch | 13. Pressure (IN) Line |
| 4. Sliding Wedge | 9. Splitter Frame | |
| 5. Control Valve | 10. Product Manual Storage Tube | |

5. Controls

IMPORTANT! Before starting work with the wood splitter, become familiar with the location and function of all controls.

5.1 Hydraulic Valve

The control valve extends and retracts the wedge to split the wood. The lever on the valve has three positions—Extend, Neutral, and Retract.

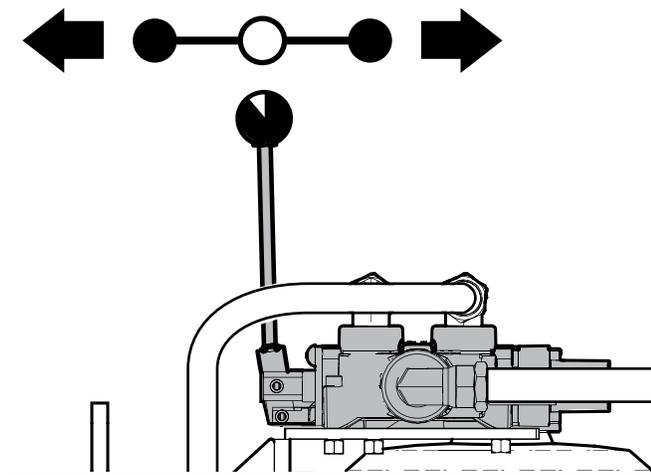
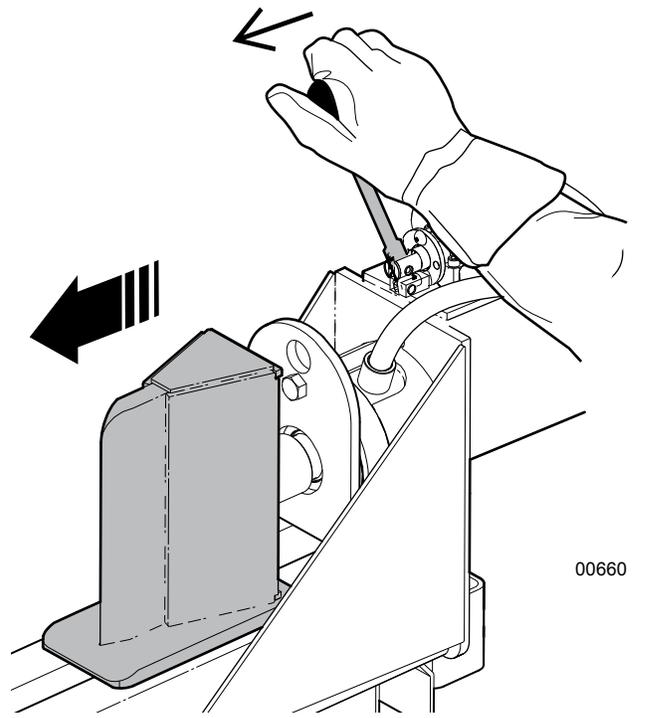


Fig. 4—Extend—Neutral—Retract

Extend

- Push the lever forward (toward the wood) and hold to extend the wedge and split the wood.
- Releasing the lever returns it to Neutral.

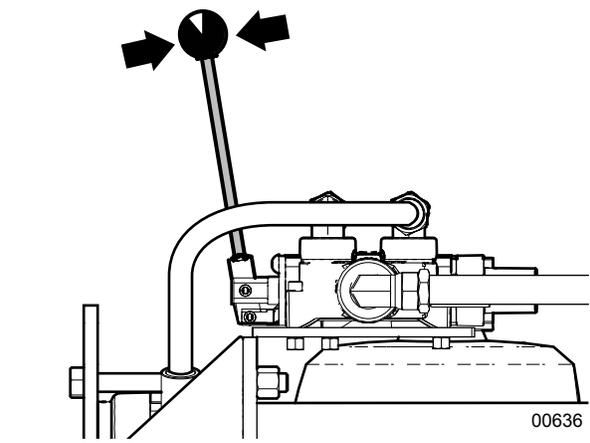


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Fig. 5—Extend Wedge to split Wood

Neutral Position

- Neutral is the center position on the valve.
- The wedge stops moving when the valve lever is moved to Neutral.
- The valve lever can be moved to Neutral from Extend or Retract at any time.



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Fig. 6—Center (Neutral) Position

Retract

- Pull the lever fully backwards to retract the wedge. The valve detent holds the lever in Retract allowing a hands-free return cycle.
- The valve lever spring-returns to Neutral when released from auto-retract.

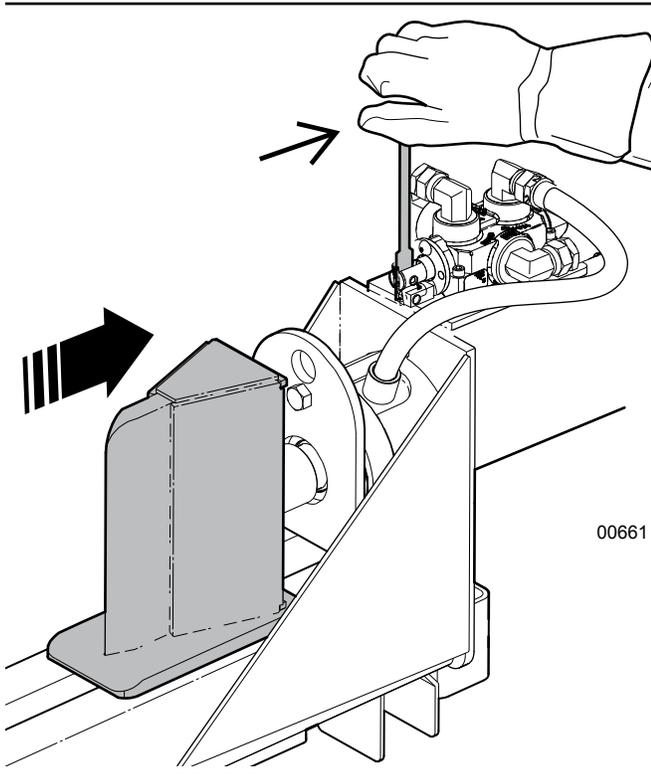


Fig. 7—Retract Wedge

5.2 Stroke Limiter Accessory

(As equipped)

The Stroke Limiter accessory improves productivity when splitting shorter pieces. It stops the cylinder from fully returning to the home position.

5.2.1 Stroke Limiter Adjustment

1. Place a typical sized log on the splitter bed, then start / apply power to the wood splitter.
2. Using the hydraulic control, move the wedge up to the log, but stop approximately 3" (8 cm) from it.
3. Shut off the engine. Make sure the hydraulic control lever is in the neutral position.
4. Loosen the hex set screw on the rod adjusting collar, and move the rod up to the wedge. (This is the set position at which the wedge stops on the return cycle.) Tighten the hex screw.
5. Test the set up by cycling the wedge through its path. Split a log then put the hydraulic lever into the return (detent) position. The lever should trip the hydraulic control and the ram stops at the set position. Adjust as required.

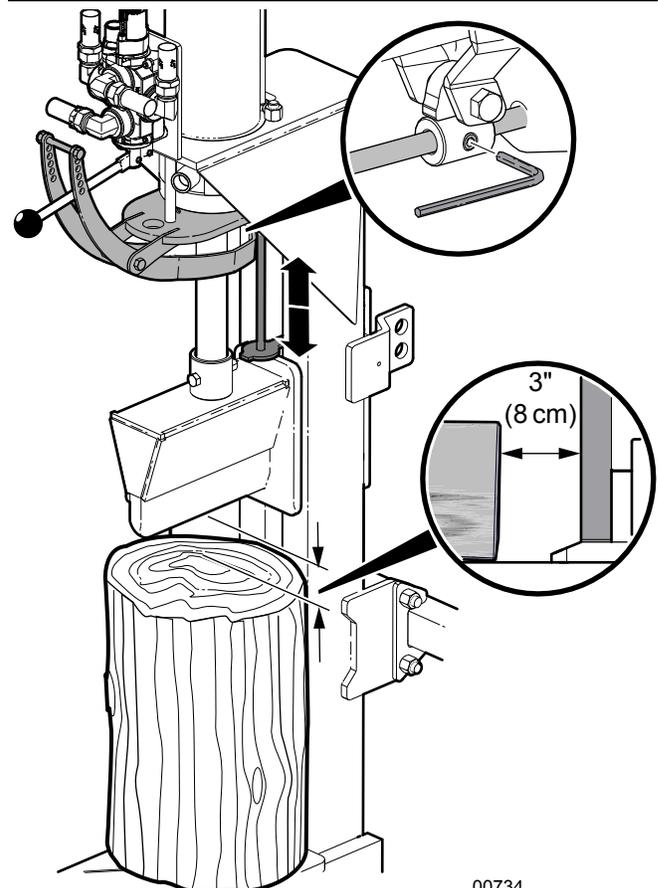


Fig. 8—Stroke Limiter

5.3 Splitter Frame Latch

WX470 splitters are designed with a pivoting main frame that allows horizontal or fully vertical splitting. To rotate the frame to vertical, follow these steps.

1. Remove the lynch pin from the locking latch and swing it out of the way. (See below.)
2. While standing beside the controls, release the splitter beam by pulling the spring loaded frame latch outward.
3. At the same time, grab the cylinder end and tip the splitter beam assembly up towards the vertical position.
4. Continue tipping, while placing your foot on the frame as a brace until splitter is in the full vertical position.
5. Swing the locking latch around over the lock tab on the splitter frame. Insert the lynch pin. (See right.)

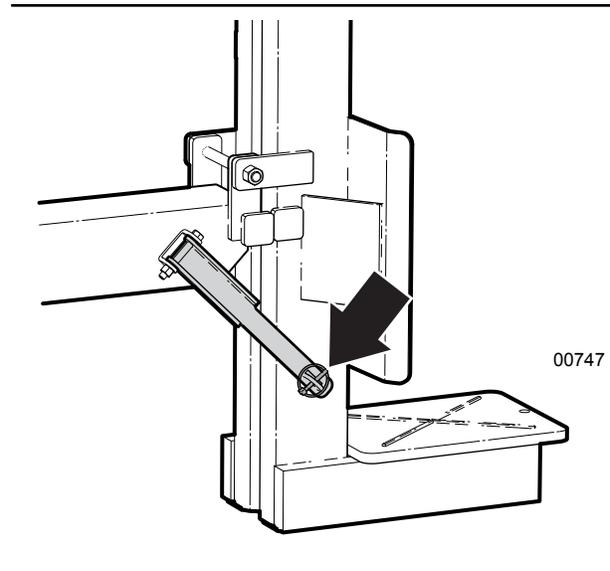


Fig. 9—Locking Latch in Place

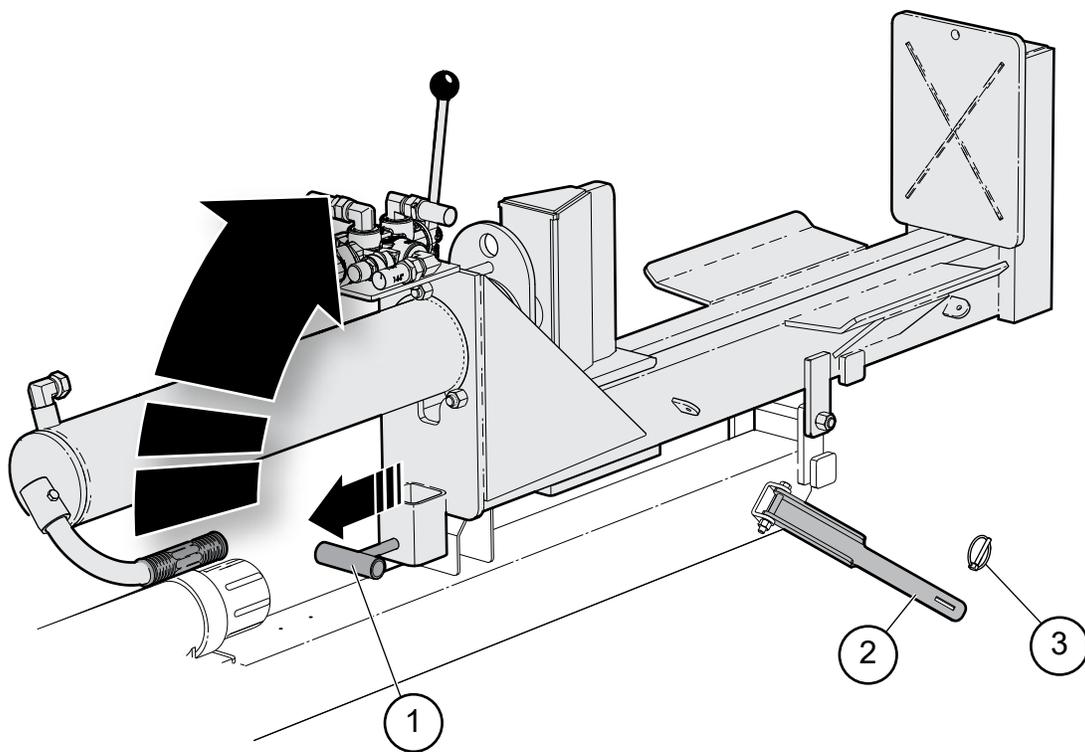


Fig. 10—Rotate Splitter to Vertical

1. Splitter Frame Latch
2. Locking Latch
3. Lynch pin

6. Operating Instructions

6.1 Safety Rules

- **Wear appropriate personal protective equipment. Tie back long hair, remove jewelry, and avoid loose fitting clothing. Prolonged exposure to loud noise can cause permanent hearing loss! Wear hearing protection on a full-time basis when using this machine.**
- **Never place any part of your body where it would be in danger if movement should occur during assembly, installation, operation, maintenance, repairing, unplugging, or moving.**
- **Set Safe Condition before servicing, repairing or maintaining. See page 8.**
- **Do not run machine inside a closed building to prevent asphyxiation from engine exhaust.**
- **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.**
- **Do not allow bystanders within 20 feet (6 meters) of wood splitter during operation. Wood chips can fly out and injure others.**
- **Do not step over or straddle splitter during operation.**
- **Do not try to split more than one log at a time. The extra log can fly out and cause injury.**
- **Keep your fingers and hands away from cracks in the log that can open while splitting.**
- **Always load logs by holding on the sides, never the ends.**
- **Do not reach into or load the splitter when the wedge is in motion.**
- **When splitting logs cut unevenly, place the wide end down and the squarest end towards the splitting wedge.**
- **Do not try to split logs across the grain. Some types can burst or splinter and fly out of wood splitter causing injury.**
- **When splitting logs cut unevenly, split with the squarest end towards the splitting wedge.**
- **Do not walk or work under a raised wood splitter or attachment. Do not depend on the skid steer hydraulic system to hold the wood splitter or attachment in place.**
- **Never consume alcohol or drugs while operating this equipment. Consult your doctor about operating this wood splitter while taking prescription medications.**

6.2 Equipment Matching

To ensure the safe and reliable operation of the wood splitter, it is necessary to match it with a skid steer with the correct specifications. Use the following information as a guide in safely matching the wood splitter to your skid steer.

Lifting capacity

The skid steer must be able to easily lift and handle the weight of the wood splitter. The WX470 weighs 315 lb (143 kg).

Skid Steer Weight

Generally, a 40–90 hp skid steer will have sufficient weight to provide stability for the unit when splitting or transporting. **Do not use lighter equipment than recommended.**

Hydraulic System Requirements

Recommended hydraulic oil flow is 10 gpm US (38 Lpm)

6.3 Controls

The skid steer auxiliary hydraulic circuit provides power to the wood splitter control valve.

Before starting to work, all operators should familiarize themselves with the location and function of the wood splitter controls. Review the *Controls* section of your Skid Steer operator's manual for further information.

6.4 Attaching / Unhooking

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 remote hydraulic pressure and return connections on the front of the cab frame.

The wood splitter should always be set on level, dry ground free of debris and other foreign objects. When attaching the Woodsplitter to the skid steer, follow this procedure:

1. Make sure there is enough room and clearance to safely drive up to the splitter.
2. Align the skid steer face plate to splitter mounting plate.
3. Drive up to the wood splitter and seat the top of the face plate into the mounting plate of the wood splitter.
4. Raise the loader and tilt the face plate until it is fully seated in the mounting plate.
5. Ensure the wood splitter mounting plate is securely latched to skid steer face plate by engaging the lock pins.
6. Clean any dirt from the hose couplers and connect them to the skid steer connectors. The protective caps on the hoses are colored to indicate function—red is the pressure line, blue is return.
7. Route the hoses and secure them to the loader frame to prevent any pinching or chafing as the loader cycles.

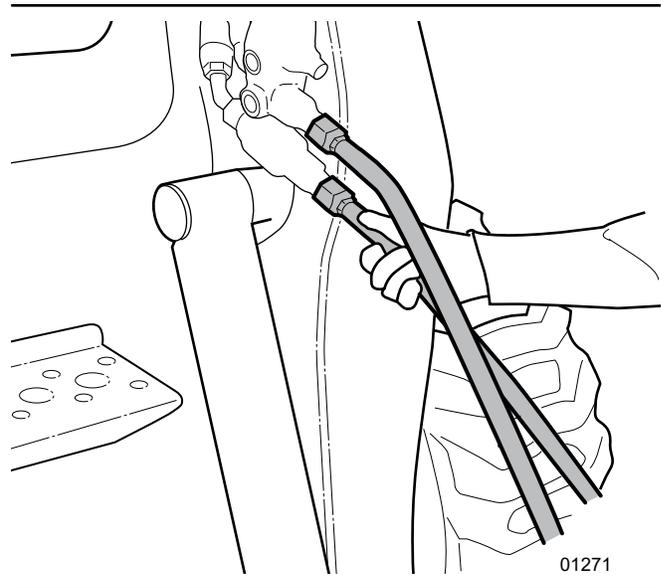


Fig. 11—Connect pressure and return hoses

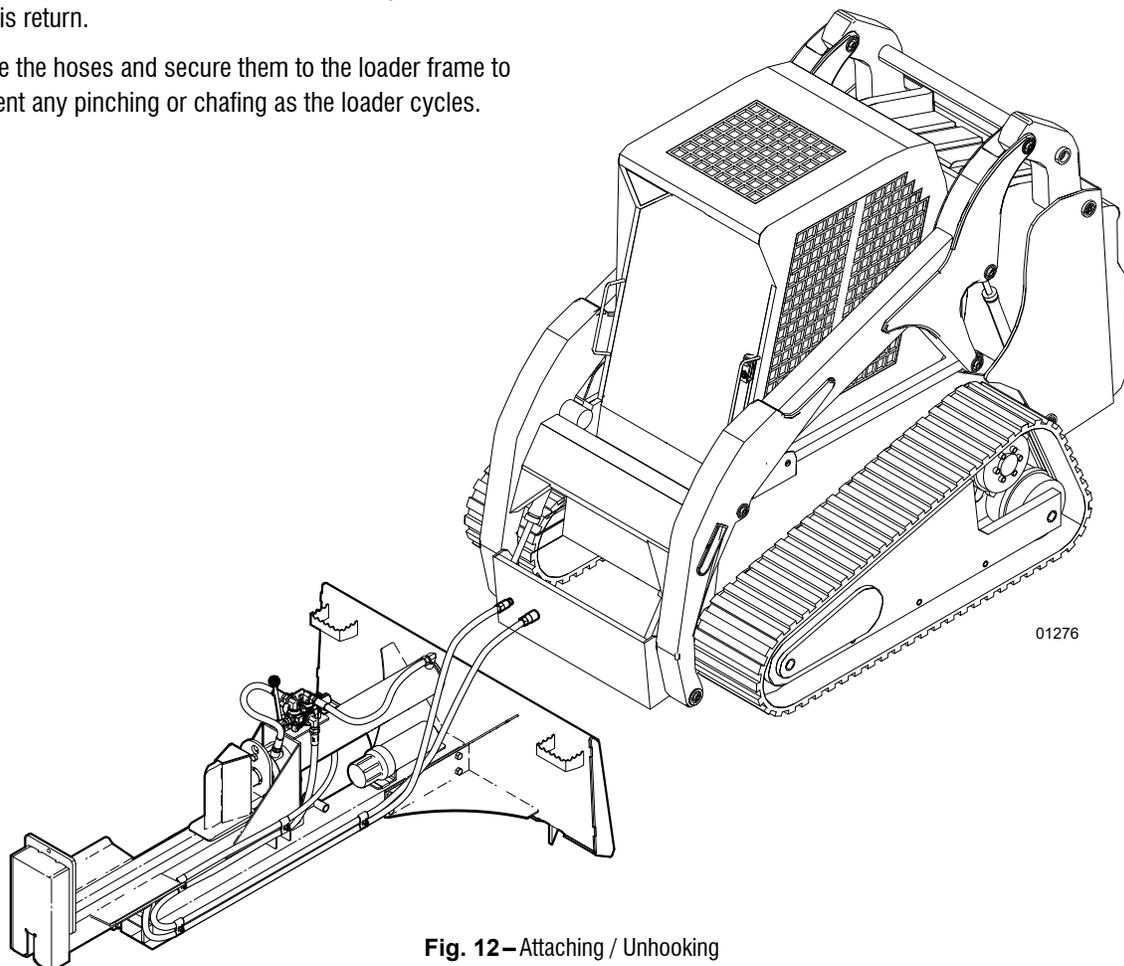


Fig. 12—Attaching / Unhooking

6.5 Pre-operation Checks

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

1. Lubricate the wood splitter before using it.
2. Make sure the skid steer is of adequate power and weight to operate the wood splitter. See page 19.
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 wood splitter to the loader.
4. Check the oil level in the skid steer hydraulic reservoir. 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 and remove any entangled material.
7. Install and secure all guards, doors and covers before starting.
8. Review the *Controls* section in your skid steer operator's manual. Be familiar with the control settings and functions before operating wood splitter.

6.6 Splitter Operation

Safety Rules

- Do not operate on slopes or side hills.
- Keep all mechanical and hydraulic components in good condition. Do not operate with leaks or damaged components.
- Clear the area of bystanders.
- Place skid steer drive system in neutral before beginning.
- Do not split wood across the grain.
- Keep your working area clear to prevent tripping.

6.7 Splitting Logs

IMPORTANT! Park the wood splitter on a level, dry work area free of debris and other objects.

Position the splitter so the prevailing wind blows engine exhaust away from the operator.

1. Make sure working area is clear of stones, branches or other obstacles.
2. Pre-cut logs to desired block size, ready to load onto splitter bed.
3. Determine where the split wood is going to be piled. Make sure that location does not interfere loading splitter.
4. Move skid steer into and splitter into a working position, set the splitter to a comfortable work height. Apply the park brake.
5. Move the throttle to its mid-range position. Place the working hydraulic circuit in detent.

6.7.1 Log Placement



Risk of pinching or crushing hazard between the wedge or push block and the log!

Never place hands at the ends of the log. Always grasp logs by the sides when loading or removing.

W035

- Always grasp the log by the sides not the ends when placing in or removing logs from the splitter. This minimizes the chance of getting fingers, hands or an arm between the wedge and the log.



Risk of pinching or crushing hazard! The worker loading the splitter MUST be the only one in control of the hydraulic cylinder and splitting wedge.

Only one worker should operate and load the wood splitter.

W036

6.7.2 Horizontal Splitting

1. Place wood or log on the splitter.
2. Push control lever forward and hold to split wood.
3. Release the lever when the log splits or cylinder reaches full stroke and stops.
4. Pull the lever back to retract the wedge. The detent holds the lever until the cylinder fully retracts, allowing hands-free operation.

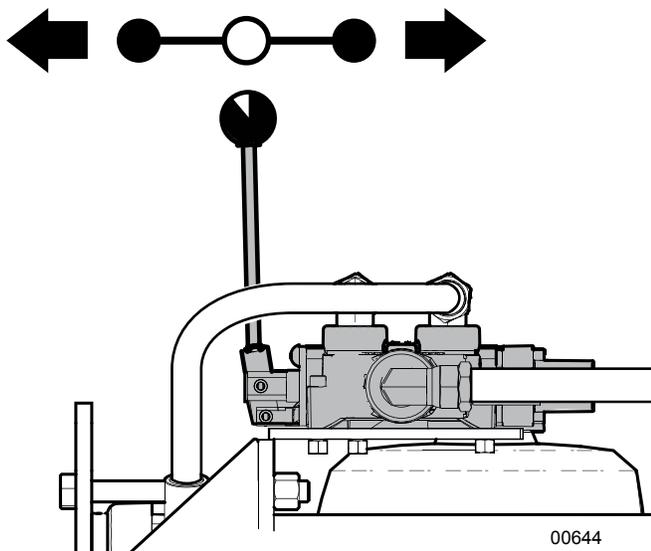


Fig. 13—Hydraulic Control Valve Positions

IMPORTANT! Do not hold the valve lever to extend or retract the cylinder once it has reached the end of its stroke. Doing so can overheat the oil.

5. If the log is large enough to require another split, reposition and repeat steps.

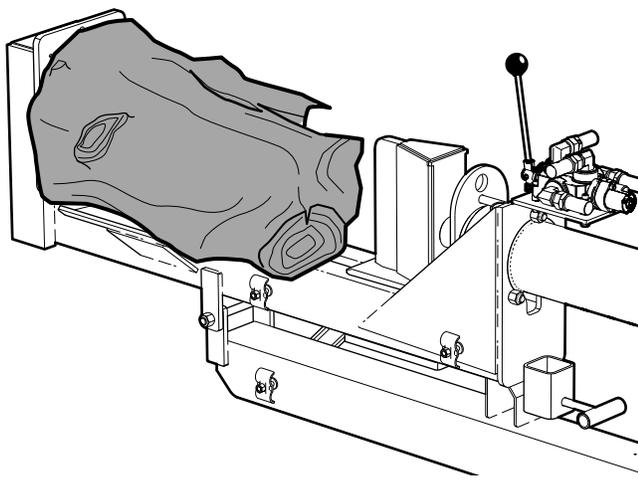


Fig. 14—Single Blade Wedge

6. Pile the split wood close to the working area, but do not allow pieces to pile up and clutter the area. A cluttered working area can lead to tripping and an accident.

6.7.3 Vertical Splitting

! WARNING!

Risk of pinching or crushing hazard between the wedge or push block and the log!

Never place hands at the ends of the log. Always grasp logs by the sides when loading or removing.

W035

1. Place wood or log on the splitter anvil.
2. Push control lever down and hold to split wood.
3. Release the lever when the log splits or cylinder reaches full stroke and stops.
4. Pull the lever back up to retract the wedge. The detent holds the lever until the cylinder fully retracts, allowing hands-free operation.
5. If the log is large enough to require another split, reposition and repeat steps.

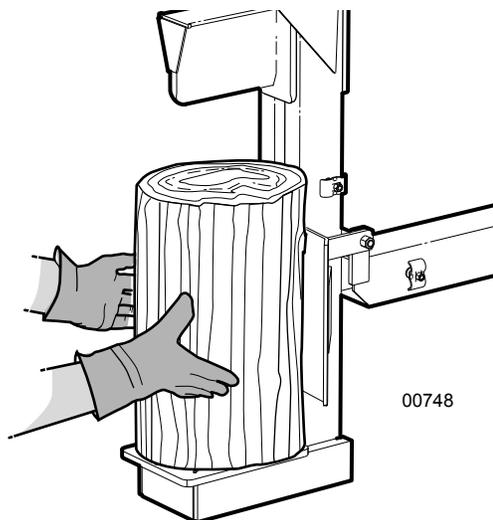


Fig. 15—Log Placement

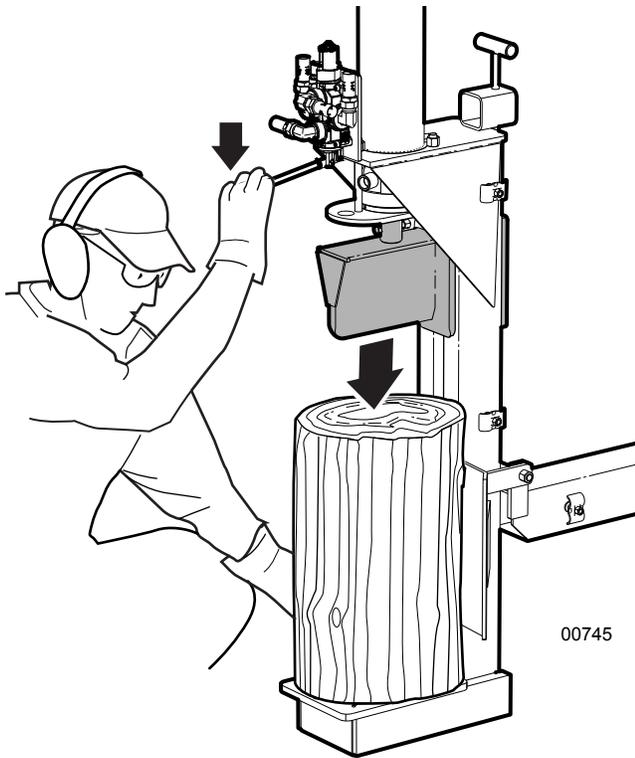


Fig. 16—Vertical Splitting

6.8 Wood Splitter Break-in Period

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

After operating for 1–5 hours:

1. Check all nuts, bolts, and other fasteners. Tighten to their specified torque. See page 28.
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. See page 29.
3. Check and remove any entangled material.
4. Check the oil level in the skid steer hydraulic reservoir. Add as required.

6.9 Transporting

6.9.1 Transport Safety

1. Comply with local laws governing safety and transporting of machinery on public roads.
2. Clean all debris off the splitter. Remove any tools or other loose items.
3. Never allow riders on the machine.
4. Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, and so on.
5. Watch for other traffic when near or crossing roadways.
6. Do not drink and drive.
7. Before transporting, perform a walk-around inspection to ensure everything is safe.

6.9.2 Prepare for Transport

- Make sure the pivoting main frame is fully lowered to horizontal. The lock pin in the pivoting splitter beam must be fully engaged.
- Swing the locking latch up to engage the tab on the splitter frame. Insert the lynch pin.

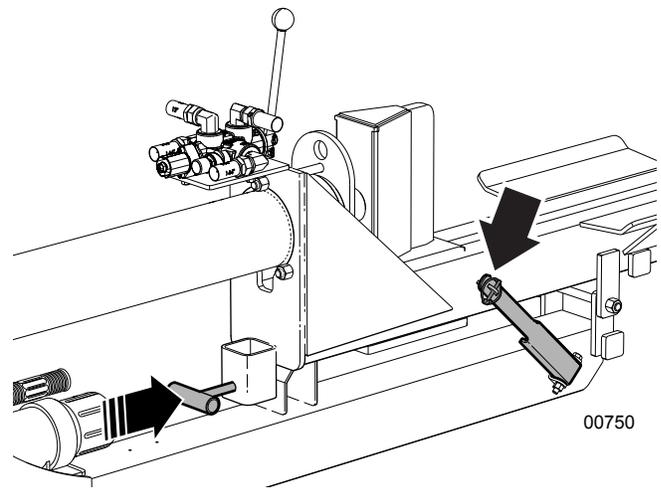


Fig. 17—Lock Pin and Latch Engaged

- Clean all debris from the splitter that could fall off in transport.
- Always be in compliance with all applicable local regulations when transporting.

6.10 Storing the Wood Splitter

After the season's use and the wood splitter is going to be put away in storage, it should be thoroughly inspected and prepared. Repair or replace any worn or damaged components to prevent any unnecessary down time at the start of next season.

The wood splitter can have a long, trouble-free life by following these steps:

1. Place the splitter in the horizontal configuration. Fully retract the cylinder ram.
2. Thoroughly wash the machine using a pressure washer to remove all dirt, mud, debris, and residue.
3. Inspect the wedge, cylinder ram, anvil and wear plates for damage or entangled material. Repair or replace damaged parts. Remove all entangled material.
4. Touch up all paint nicks and scratches to prevent rusting.
5. Store the machine in an area away from human activity. Select an area that is dry, level and free of debris to park the wood splitter. Set it down on wood blocking.
6. If the wood splitter is not stored inside a building, cover with a waterproof tarp. Tie securely in place.
7. Do not allow children to play on or around the stored machine.

6.11 Removing from Storage

1. Review and follow the Pre-operation Checks. See *page 21*.
2. Review safety and operation procedures. See *page 21*.

7. Service and Maintenance

WARNING!

Risk of serious personal injury. Stop engine before performing ANY service or maintenance procedure. Reinstall all covers and guards removed before putting machine back into service.

W033

7.1 Maintenance Safety

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.
- 
- Never operate the machine in a closed building. The exhaust fumes may cause asphyxiation.
 - Before servicing or repairing, place the machine in a **Safe Condition**. See *page 8*.
 - Never work under equipment unless it is properly supported.
 - When performing any service or maintenance work always use appropriate PPE.
 - Where replacement parts are necessary, use only OEM parts to restore your equipment to original specifications. Wallenstein Equipment is not responsible for injuries or damages caused by use of unapproved parts or accessories.
 - When completing a maintenance or service function, make sure all safety shields and devices are installed before placing splitter in service.
 - When cleaning any parts, do not use gasoline. Use a cleanser designed for that purpose.
 - Always use proper tools in good condition. Make sure you understand how to use them before performing any service work.

7.2 Maintenance Schedule

As Required

Check the condition of all hydraulic lines, hoses and fittings. Replace any that are damaged.

Remove any entangled material from splitter.

Check that all fasteners are tight.

Every 100 hours or Annually

Grease wedge slide on splitter bed and pivot points..

Clean machine. Remove debris and entangled material.

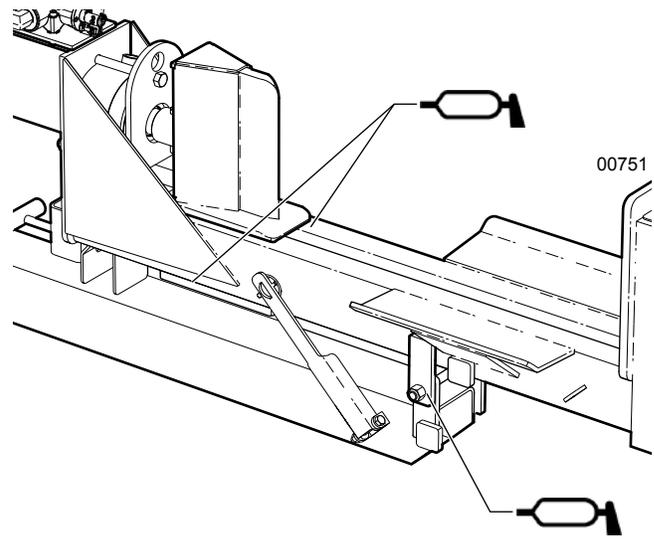


Fig. 18–Splitter Bed Slide

8. Troubleshooting

The following table lists some problems that may be encountered, with possible causes and solutions.

If a problem persists after reading through the Troubleshooting section, contact the local dealer, distributor, or Wallenstein Equipment. Have the machine serial number ready.

Problem	Cause	Solution
Cylinder rod moves slowly or does not move. Screeching or hissing noise.	No hydraulic oil pressure.	Oil filter plugged. Change filter.
		Low hydraulic oil level. Add oil.
		System relief pressure setting too low. Call technician.
	Wood jammed around wedge.	Shut machine off and safely remove wood.
Control handle does not go to neutral after rod is fully retracted.	Low engine speed.	Check throttle is setting.
	Valve detent set too tight.	Valve detent adjustment required. Call technician.
	Hydraulic oil too cold.	Allow machine to warm up.
Control handle goes to neutral before rod is fully retracted.	Hydraulic fluid is contaminated.	Change hydraulic fluid and filter.
	Detent set too loose.	Valve detent adjustment required.
Control handle does not go to neutral when released.	Control may be damaged.	Control may need service or be replaced. Call technician.
Cylinder stops on contact with wood.	Hydraulic circuit malfunctioning.	Call technician.
Wedge or push block jumps.	Wedge or push block frame jamming.	Lubricate slider wear plates.
Leaking hydraulic hose.	Hose loose, worn, or damaged.	Tighten or replace hose.
Leaking cylinder.	Seals worn.	Seal replacement may be required. Call technician.
Cylinder rod moves in wrong direction.	Hydraulic hoses hooked-up incorrectly.	Reverse hose connections.
Hydraulic system behaves erratically.	Incorrect control valve.	Check whether tractor hydraulic system is open-center or closed. Match control valve accordingly.

9. Specifications

9.1 Machine Specifications¹

WX470	
Split Force	20 ton
Recommended Hydraulic Oil Flow	10 gpm US (38 Lpm)
Split Opening	24" (61 cm)
Orientation	Horizontal / Vertical
Average Splitter Cycle Time	7 Seconds (depends on flow from skid steer)
Full Cycle	13 Seconds (depends on flow from skid steer)
Cylinder Diameter	4" (10 cm)
Wedge Height	9" (23 cm)
Total Weight	315 lb (143 kg)
Dimensions (L x W x H)	96" x 36" x 26" (244 cm x 91 cm x 66 cm)
Mounting System:	Universal Quick Attach

¹ Specifications subject to change without notice.

9.2 Common Bolt Torque Values

Checking Bolt Torque

The tables shown give correct torque values for various bolts and capscrews. Tighten all bolts to the torque values specified in the table, unless indicated otherwise. Check tightness of bolts periodically.

IMPORTANT! If replacing hardware, use fasteners of the same grade.

IMPORTANT! Torque figures indicated in the table are for non-greased or non-oiled threads. Do not grease or oil threads unless indicated otherwise. When using a thread locker, increase torque values by 5%.

 **NOTE:** Bolt grades are identified by their head markings.

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



Metric Bolt Torque Specifications				
Bolt Diameter	Torque Value			
	Gr. 8.8		Gr. 10.9	
	lbf•ft	N•m	lbf•ft	N•m
M3	0.4	0.5	1.3	1.8
M4	2.2	3	3.3	4.5
M6	7	10	11	15
M8	18	25	26	35
M10	37	50	52	70
M12	66	90	92	125
M14	83	112	116	158
M16	166	225	229	310
M20	321	435	450	610
M30	1,103	1 495	1,550	2 100



9.3 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. Hand-tighten swivel nut until snug.
4. To prevent twisting the tube, use two wrenches. Place one wrench on the connector body and tighten the swivel nut with the second. Torque to values shown.

If a torque wrench is not available, use the FFFT (Flats From Finger Tight) method.

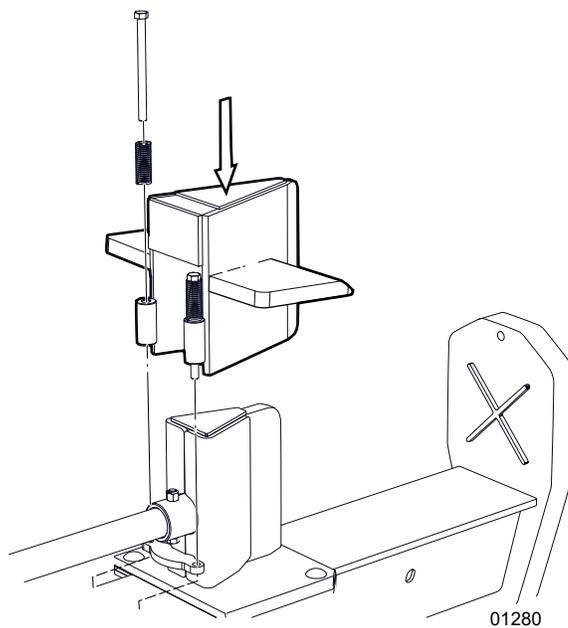
Hydraulic Fitting Torque					
Tube Size OD	Hex Size Across Flats	Torque value		Flats From Finger Tight	
		Inches	Inches	lbf•ft	N•m
3/16	7/16	6	8	2	1/6
1/4	9/16	11–12	15–17	2	1/6
5/16	5/8	14–16	19–22	2	1/6
3/8	11/16	20–22	27–30	1-1/4	1/6
1/2	7/8	44–48	59–65	1	1/6
5/8	1	50–58	68–79	1	1/6
3/4	1-1/4	79–88	107–119	1	1/8
1	1-5/8	117–125	158–170	1	1/8

Values shown are for non-lubricated connections.

10. Accessories

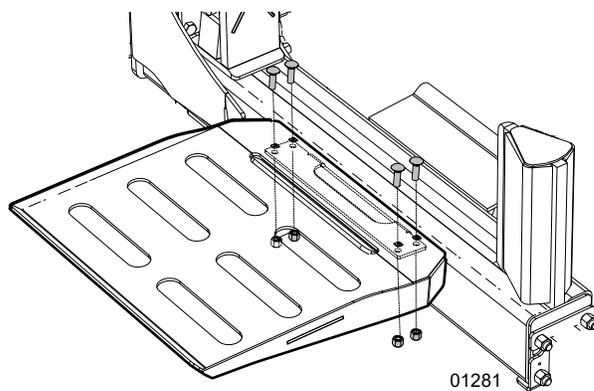
4-way Splitting Wedge

W4120



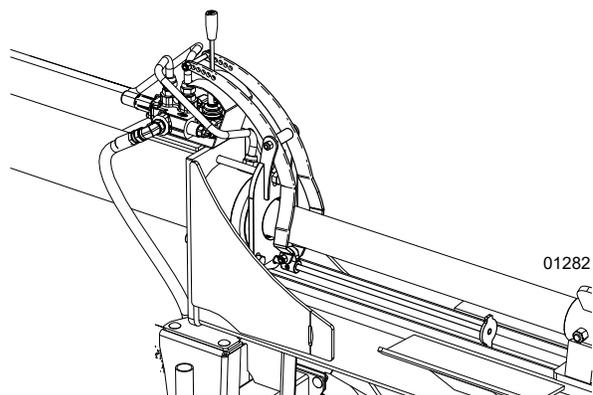
Clamp-on Shelf

W4211



Stroke Limiter

W4213



11. Product Warranty



LIMITED WARRANTY

Wallenstein products are warranted to be free of defects in materials and workmanship under normal use and service, for a period of

Five Years for Consumer Use

Two Years for Commercial/Rental Use

from the date of purchase, when operated and maintained in accordance with the operating and maintenance instructions supplied with the unit. Warranty is limited to the repair of the product and/or replacement of parts.

This warranty is extended only to the original purchaser and is not transferable.

Repairs must be done by an authorized dealer. Products will be returned to the dealer at the customer's expense. Include the original purchase receipt with any claim.

This warranty does not cover the following:

- 1) Normal maintenance or adjustments
- 2) Normal replacement of wearable and service parts
- 3) Consequential damage, indirect damage, or loss of profits
- 4) Damages resulting from:
 - Misuse, negligence, accident, theft or fire
 - Use of improper or insufficient fuel, fluids or lubricants
 - Use of parts or aftermarket accessories other than genuine Wallenstein parts
 - Modifications, alteration, tampering or improper repair performed by parties other than an authorized dealer
 - Any device or accessories installed by parties other than an authorized dealer
- 5) Engines. Engines are covered by the manufacturer of the engine for the warranty period they specify. For the details of your engine warranty, see your engine owner's manual. Information about engine warranty and service is also available in the FAQ section at www.wallensteinequipment.com

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