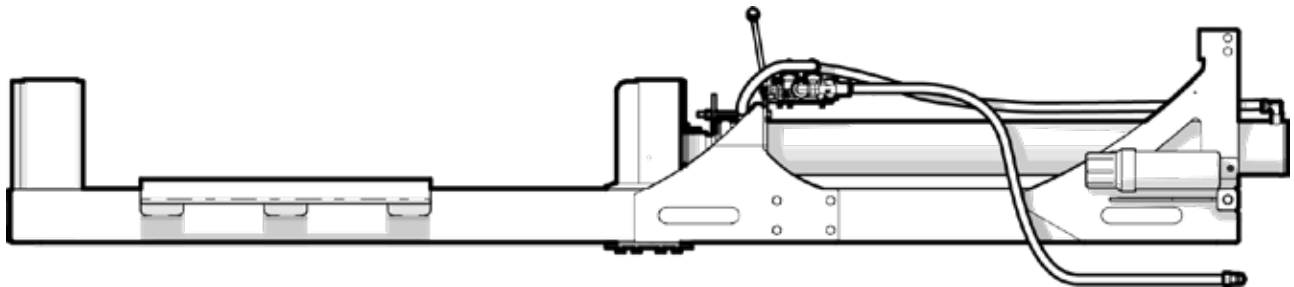
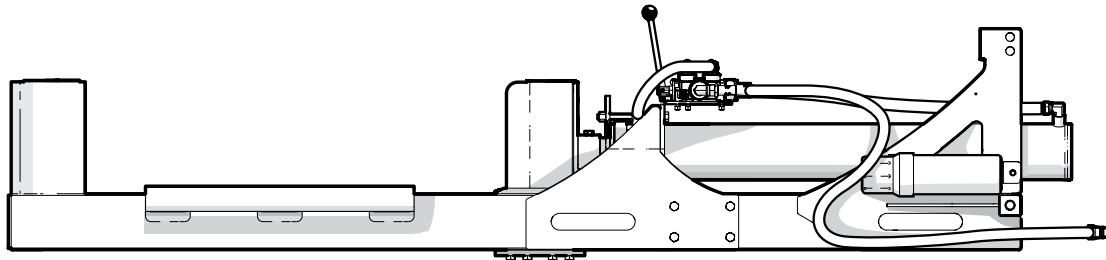
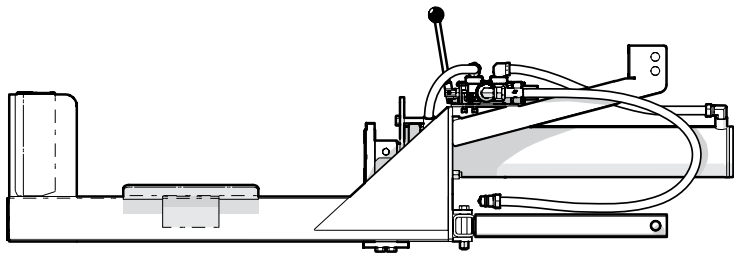


OPERATOR'S MANUAL

WX310, WX320, WX330 3-point Hitch Wood Splitter



1. Introduction

1.1 Foreword

Congratulations on choosing a **Wallenstein Three-point Hitch Wood Splitter!**

This high-quality machine is designed and manufactured to meet the needs of an efficient wood splitting operation.

This manual covers the Wallenstein WX310, WX320 and WX330 three-point hitch mounted wood splitters.

Model Variants Covered in this Manual

- **WX310** — 20 ton, horizontal splitting
- **WX320 / WX330** — 25 ton, horizontal splitting

The standard splitter models are equipped with an open-center hydraulic system. For tractors with a closed-center system, the splitters are equipped with a closed center control valve and the model is identified with a 'C'. For example, WX310C.

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

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

Wallenstein Equipment Inc. • © 2019

Review all safety, operation and maintenance information contained in this manual.

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 WX310, WX320, WX330, Three-point Hitch Wood Splitters

To activate warranty, register your product online at
<http://www.wallensteinequipment.com>

Customer's Name

Contact Name

Dealer Name

(_____) _____
Phone Number

Serial Number

_____/_____/_____
Delivery Date

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

Dealer's Rep. Signature

_____/_____/_____
Date

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

Owner's Signature

_____/_____/_____
Date

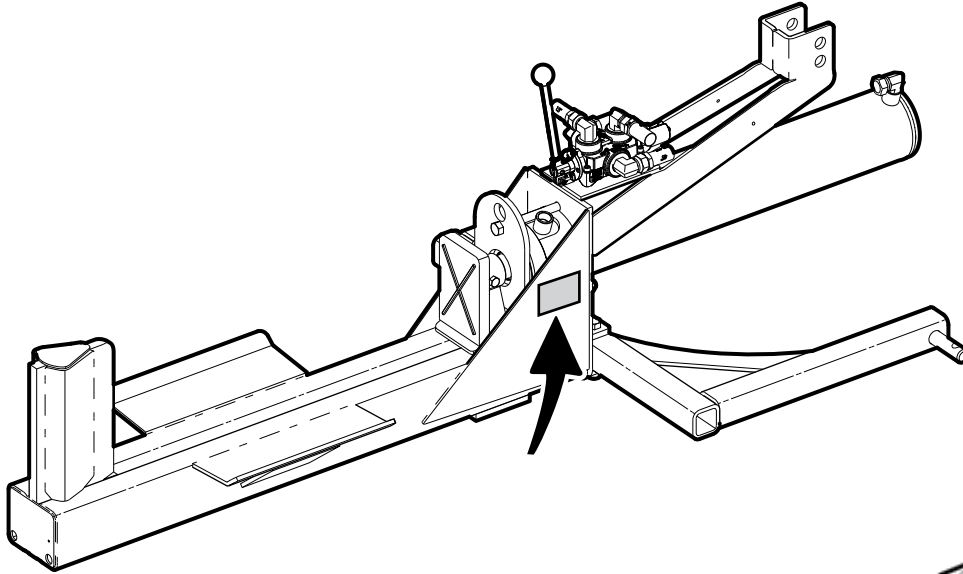
<input checked="" type="checkbox"/>	Pre-delivery Inspection
Inspect for damage from shipping. Immediately contact the shipping company if damage is found.	
Three-point Hitch Wood Splitter	
	Hydraulic Valve Control Function
	Hydraulic Cylinder Function
	All fasteners are Tight
	Hydraulic Connections are tight
Safety Checks	
	All Safety Decals Installed
	Guards and Shields Installed and Secured
	Review Operating and Safety Instructions

1.3 Serial Number Location

Always provide the model and serial number of your Wallenstein product when ordering parts, or requesting service or other information. The product information plate location for each model is shown in the illustrations below.

For future convenience, record the product Model and Serial Number in the spaces provided below.

WX310



WX320 / WX330

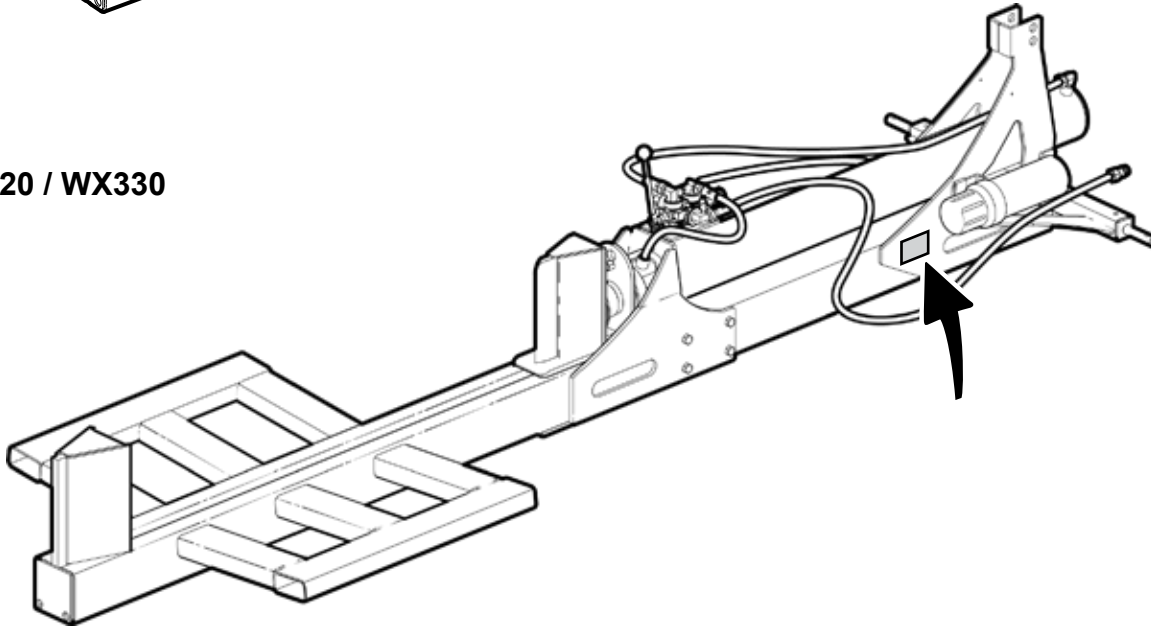


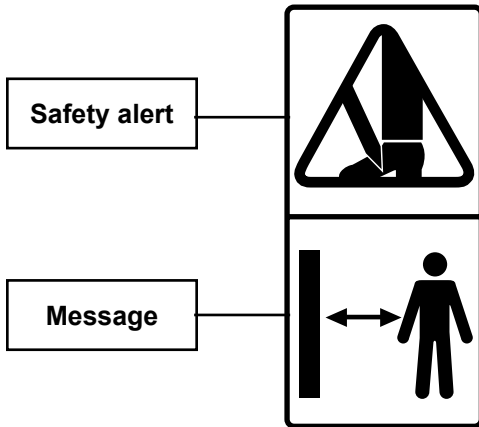
Fig. 1 – Product Information Plate Location

Record Product Information Here	
Model:	
Serial Number:	

1.4 Decal Information

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.

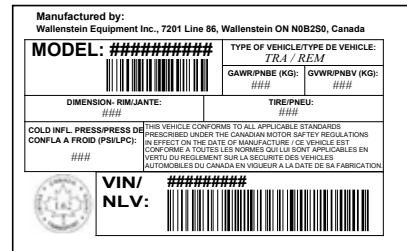
Safety Decals are pictorial with a yellow background and generally two panel. The top panel shows the safety alert (the potential hazard) and the bottom panel shows the message (how to avoid the hazard).



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.



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 splitter 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.

 **NOTE:** *(plus text) – indicates an additional explanation for an element of information.*

2.3 Why is SAFETY 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 promote safety at all times, this section of the operator's manual details a number of 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 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.

2.4 Safety Rules

- **DO** give operating instructions to operators or employees before allowing them to operate the machine.
- **DO** 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. 
- **DO** review safety related items annually with all personnel who are operating the machine or performing maintenance.

- **DO** 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

- **DO** have a first-aid kit available should the need arise and know how to use it.



- **DO** read and understand all safety signs located on the machine before operating, servicing, adjusting, or cleaning.

- **DO** have a fire extinguisher available should the need arise. Know how to use it.



- **DO NOT** expect a person who has not read and understood 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.
- **DO NOT** allow riders during transport.
- **DO NOT** risk injury or death by ignoring good safety practices. **DO** think SAFETY! Work SAFELY!

2.5 Equipment Safety Guidelines

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

SAFE CONDITION

- Lower splitter to the ground.
- Set tractor parking brake and shut off engine.
- Make sure all moving parts have stopped.
- Block or chock wheels.

1. 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.
2. Replace any safety sign or instruction sign that is not readable or is missing. Location of safety signs is indicated in this manual.
3. 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.
4. 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.
5. Never exceed the limits of the machine. If its ability to do the job or to do it safely is in question—**STOP IMMEDIATELY!**

2.6 Safety Training

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


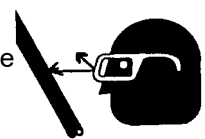


2. Train all new personnel and review instructions frequently with existing workers. Only properly trained and physically able operators should use this equipment. **A person who has not read and understood all operation and safety instructions is not qualified to use the machine.** Untrained operators 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.

3. Learn the controls and how to stop the machine quickly in an emergency.
4. 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 Hydraulic System 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 can 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 in the hydraulic system before working on it.

2.8 Be Prepared

1. Determine where the split wood is going to be piled ahead of time. Make sure it does not interfere with safe loading of wood into the splitter.
2. Precut logs so wood is ready to load into the splitter. Do not run a chain saw and the splitter at the same time.
3. 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.
4. Operate only in daylight or good artificial light.
5. Make sure machine is properly adjusted and in good operating condition.
6. Perform the **Pre-operation Checklist** before starting work (see *Pre-operation Checklist on page 23*).
7. Do not operate on hillsides or when working area is cluttered, wet, muddy or icy to prevent slipping and tripping. Operate only on level ground.
8. Position machine so prevailing winds blow engine exhaust fumes away from the operator.
9. Do not operate machine inside a closed building to prevent asphyxiation from engine exhaust.
10. Stop tractor engine when leaving the machine unattended.

3. Safety Signs

3.1 Safety Sign Locations

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!

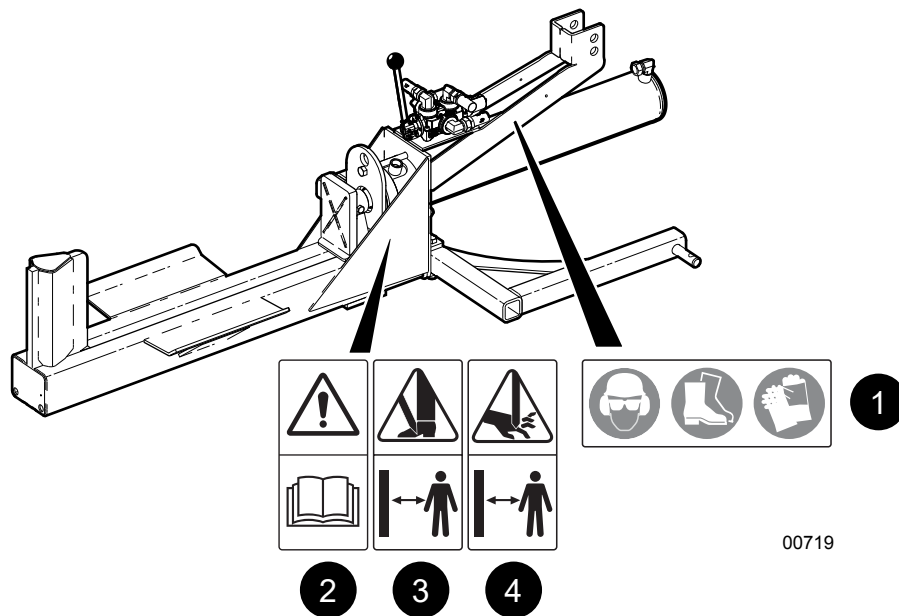


Fig. 2– Safety Decal Locations (typical for WX310, WX320, WX330 models)

3.2 Safety Sign Explanations

1. Warning!

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

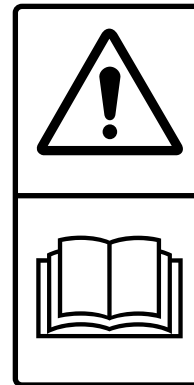
- A hard hat
- Heavy gloves
- Hearing protection
- Protective shoes with slip resistant soles
- Protective glasses, goggles or face shield



2. 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.



3. 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.



4. Warning!

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



3.3 Replacing Damaged Safety Signs

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or have become illegible.
- Parts that were replaced with a safety decal on them must also have the safety sign replaced.
- Replacement safety signs are available from your authorized Distributor or Dealer Parts Department or the factory.

3.3.1 How to Install Safety Signs

Ambient temperature must be above 50 °F (10 °C) to install decals.

1. Clean and dry the installation area.
2. Determine exact position before removing the backing paper.
3. Peel back the corner of the backing paper.
4. Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
5. Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
6. 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*.

4.1.1 Training

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

Move the unit to a large open area to allow the operator to become familiar with control functions and machine response. Untrained operators can endanger themselves and others, or damage property and the machine.

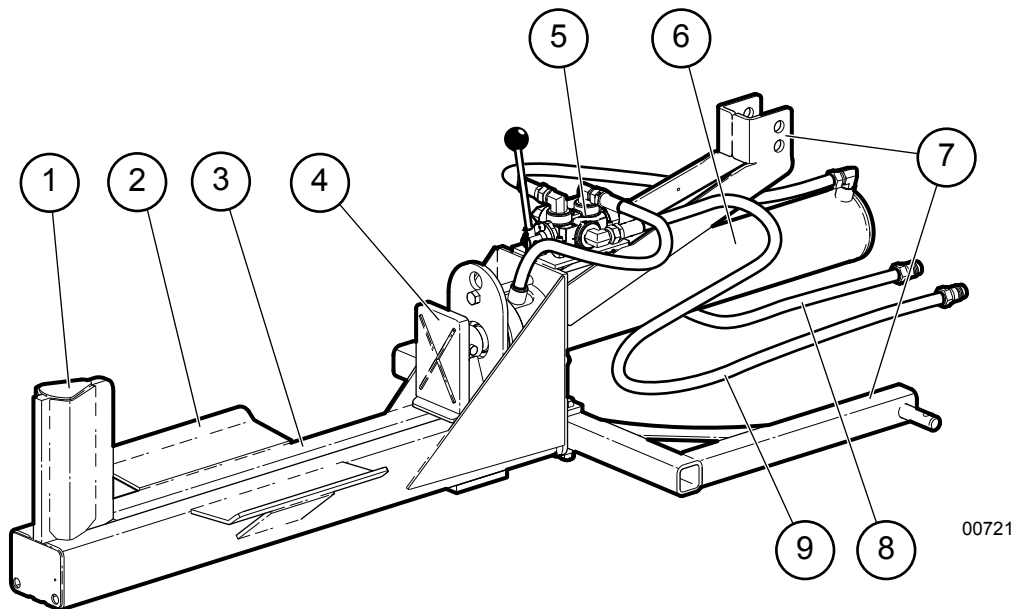
4.1.2 Job Site Familiarization

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.

4.2 Machine Components

WX310

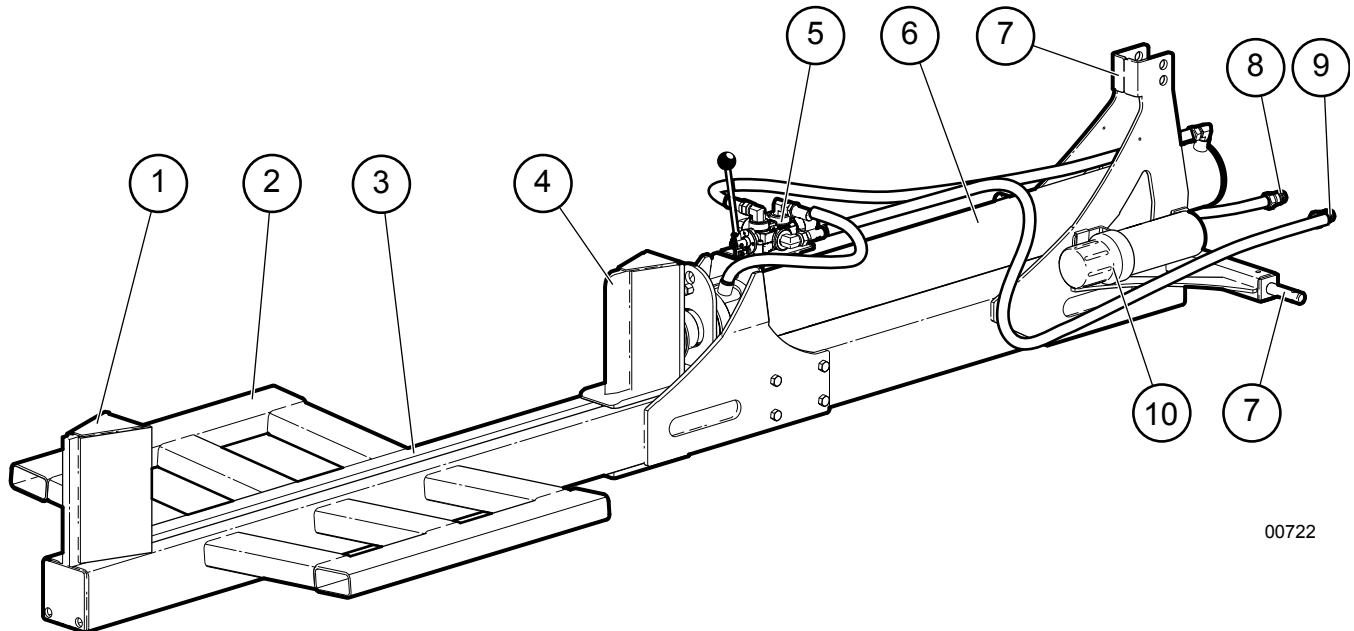


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Fig. 3 – WX310 Wood Splitter Components

1. Wedge
2. Log Saddle
3. Splitter Bed
4. Push Block
5. Hydraulic Control Valve
6. Hydraulic Cylinder
7. Category I, Three-point Hitch Frame
8. Return (OUT) Hydraulic Hose
9. Pressure (IN) Hydraulic Hose

WX320, WX330



00722

Fig. 4–WX320, WX330 Wood Splitter Components

1. Anvil
2. Log Saddle
3. Splitter Bed
4. Wedge
5. Hydraulic Control Valve
6. Hydraulic Cylinder
7. Category I, Three-point Hitch Frame
8. Return (OUT) Hydraulic Hose
9. Pressure (IN) Hydraulic Hose
10. Storage Tube for Product Manual

5. Controls

5.1 Hydraulic Valve

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

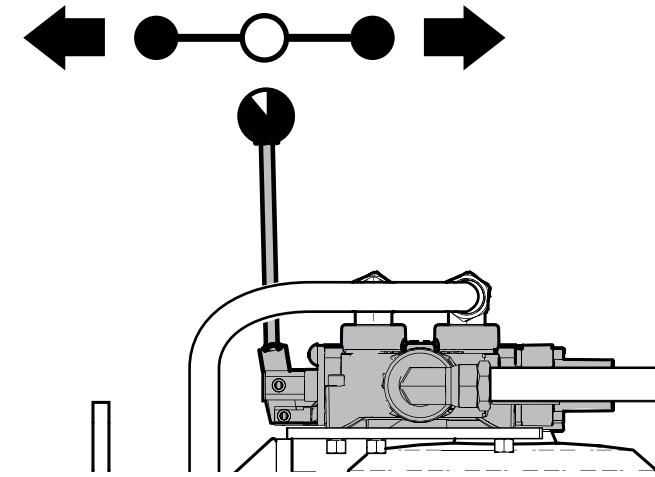


Fig. 5—Splitter Control Valve

Extend

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

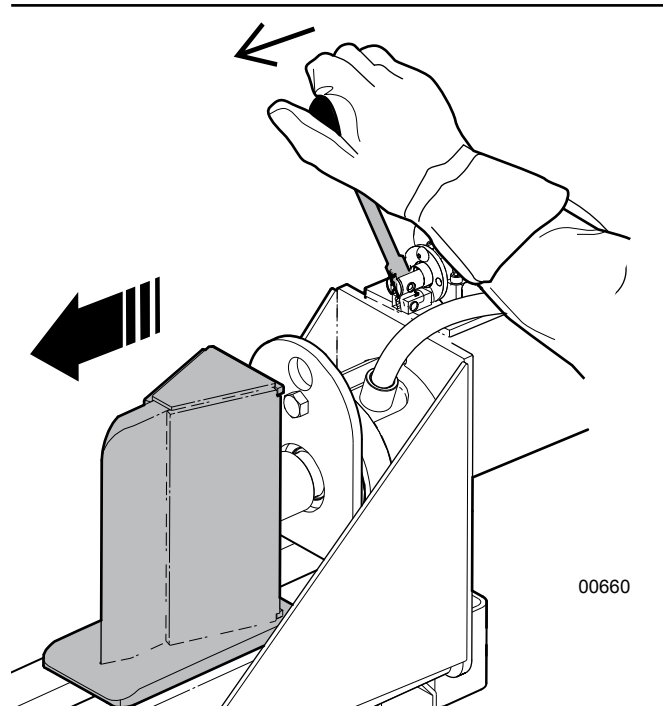


Fig. 6—Extend Wedge to split Wood

Neutral Position

- Neutral is the center position on the valve.
- The wedge / push block 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.

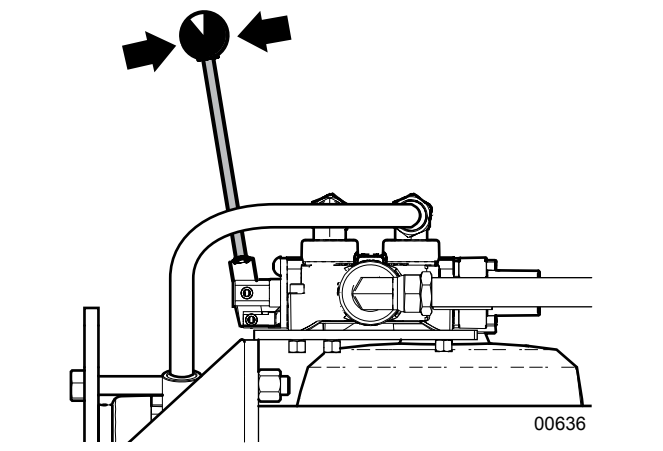


Fig. 7—Center (Neutral) Position

Retract

- Pull the lever fully backwards to retract the wedge / push block. 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.

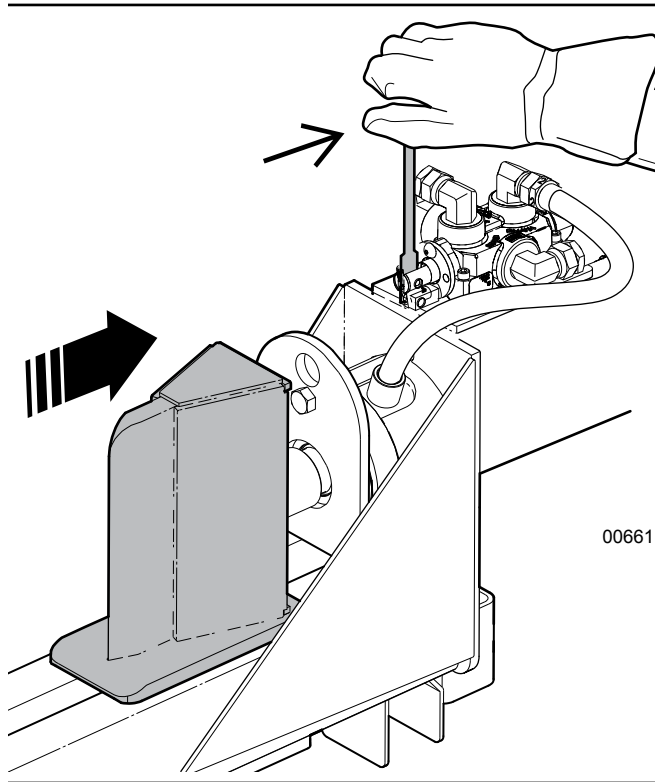


Fig. 8 – Retract Wedge

5.2 Stroke Limiter Accessory

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. Move the push block / wedge up to the log, but stop approximately 3" (8 cm) away from it.
3. Shut off the engine. Make sure the hydraulic control lever is in the neutral position.
4. On the rod adjusting collar, loosen the hex set screw and move the rod up to the push block / 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 push block / wedge through its path. Split a log then put the hydraulic lever into the return (detent) position. The lever should trip the hydraulic control so the wedge / push block stops at the set position. Adjust as required.

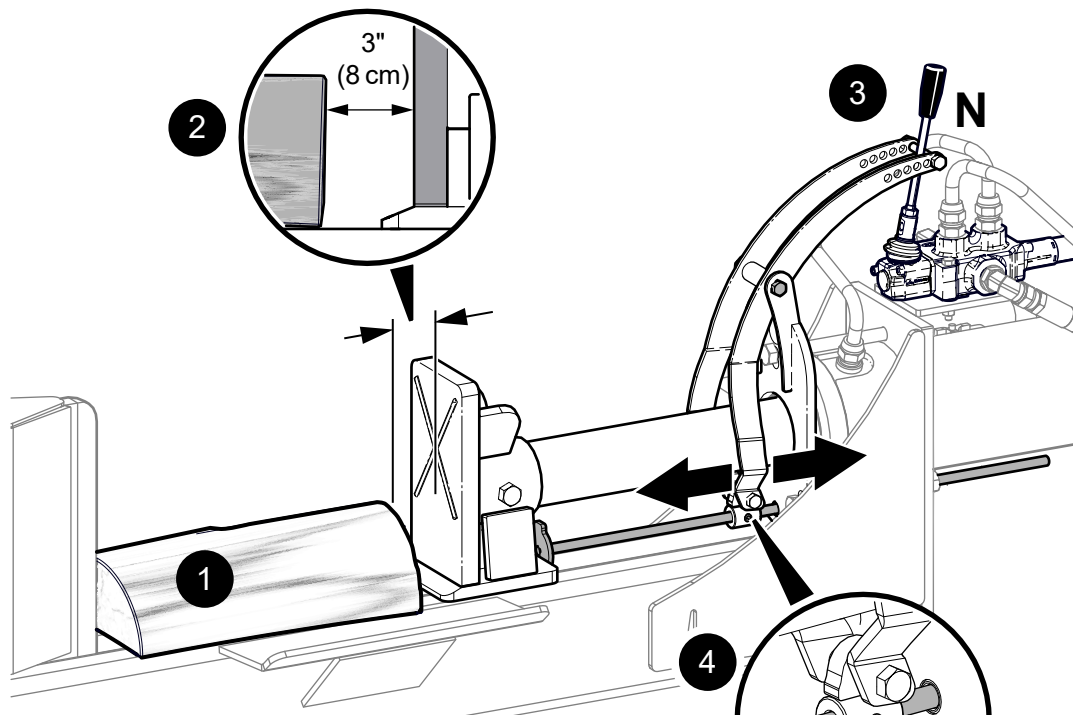


Fig. 9 – Splitter Stroke Limiter

6. Operating Instructions

The operator has the responsibility of being familiar with all operating and safety procedures and following them.

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

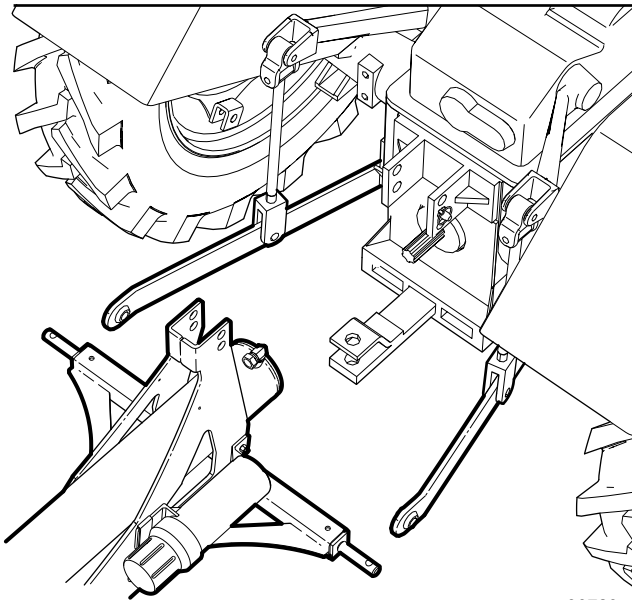
6.1 Attaching to Tractor

! WARNING!

Never let anyone stand between the tractor and the implement during hitching. Too fast of an approach or the operator's foot slipping from the clutch can lead to injury or fatality to the person standing nearby.

W048

IMPORTANT! Removing the drawbar may be required for clearance.

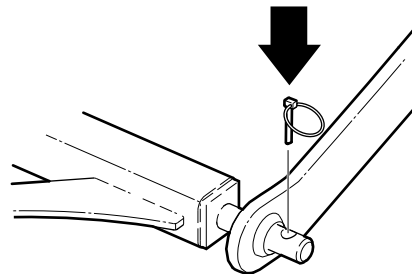
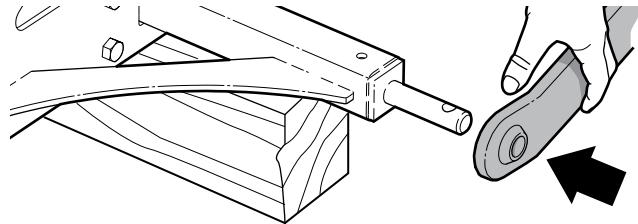


00729

Fig. 10—Reverse in line with Splitter

1. On the tractor, place the 3-point hitch lift arms in their full sway position, then reverse the tractor up to the splitter. The tractor needs to be exactly in-line with the mounting points of the splitter otherwise attaching the 3-point hitch may require moving the implement from side to side.

2. When reversing, lower/raise the lift arms so that they are level with the lower attachment points on the splitter.
3. Back up slowly and align the balls in the lift arms to the pins on the splitter.
4. Apply the tractor park brake.
5. Starting on one side, push the floating ball on the tractor's lift arms over the lower attachment pin on the splitter.



00752

Fig. 11—Attach Lift Arms and Lynch Pins

6. Do the other side in the same manner, keeping the lift arms even. Insert lynch pins on both sides to secure the splitter to the tractor.
7. Attach the tractor top link to the upper attachment point on the splitter. Insert the pin and lynch pin.
8. As with any implement, the turnbuckle on the top link may need to be adjusted to level the splitter. Raise the implement just off the ground to check. Adjust top link length as required.

If not already done, level the splitter front and rear, and side to side using the lift arm jackscrew arm and the top link turnbuckle. The splitter bed should always be horizontal during operation.

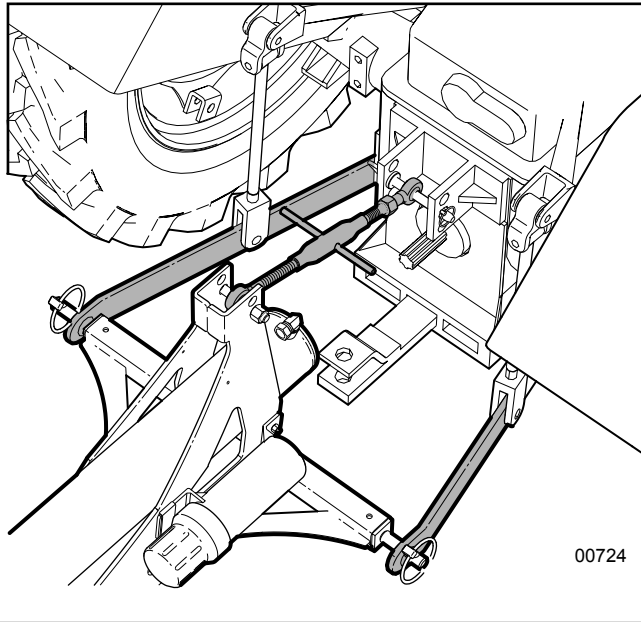


Fig. 12—Attached to Tractor

6.2 Connecting Hydraulic Hoses

WARNING!

Hydraulic oil under pressure can penetrate the skin or eyes causing serious injury.

- Tighten all connections before applying pressure.
- Search for leaks with a piece of cardboard or wood, not your hand. Take care to protect hands and body from high-pressure fluids. Wear a face shield or goggles for eye protection.
- If an accident occurs, see a doctor familiar with this type of injury immediately.

W1000

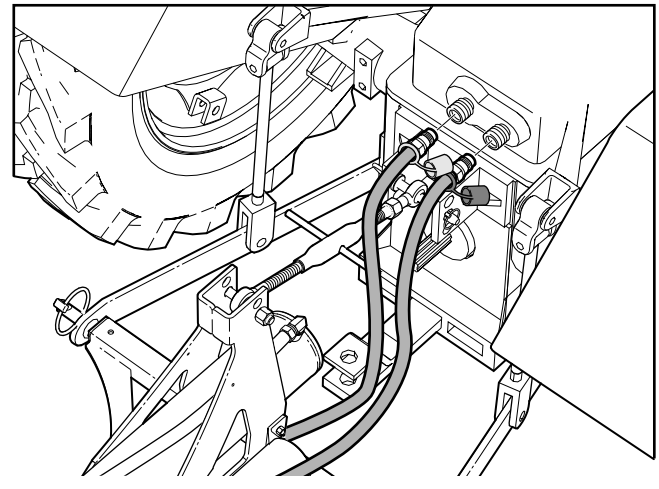


Fig. 13—Connecting Hydraulic hoses

1. Clean any dirt from the quick-disconnect couplers on the tractor.
2. Route the splitter hoses along the tractor hitch to avoid binding and pinching, then connect them to the tractor couplers. The protective caps on the hoses are colored to indicate function—red is the pressure line, blue is return.



As an additional check, the ports on the control valve are labeled IN (pressure from tractor) and OUT (return to tractor).

3. Start up the tractor engine.
4. Move the splitter hydraulic lever to move the wedge.
5. If the wedge does not move in the same direction as the hydraulic lever, reverse the hoses.
6. Slowly raise the machine through its operating range to make sure that there is no interference or binding.
7. To unhook from the tractor, reverse the above procedure. Always park the machine in a dry, level area.

6.3 Operating Safety

There is no substitute for a cautious, safe-minded operator who recognizes potential hazards and follows reasonable safety practices. The operator must be in control of the machine at all times.

Read and obey the safety signs on the machine. Clean or replace them if they are not legible.

1. 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.

2. Never use engine-powered machinery indoors. Engine exhaust contains toxic carbon monoxide, which cannot be smelled or seen. Breathing carbon monoxide can be lethal.
3. Always load logs by grasping the bark side, not the cut ends.
4. Do not reach into or load the splitter when the wedge / push block is in motion.
5. Keep hands out of splitting area. Do not rest hands on the log being split.
6. Do not step over or straddle splitter during operation.
7. Do not try to split more than one log at a time. The logs can fly out and cause injury.
8. Keep your fingers and hands away from cracks in the log that can open while splitting.
9. Do not try to split logs across the grain. Some types of wood can burst or splinter causing pieces to be thrown causing injury.
10. For uneven cut logs, always place the square-cut end against the splitting wedge / push block.
11. Never place any part of your body where it would be in danger if machine movement should occur during assembly, installation, operation, maintenance, repairing or moving.

6.4 Before Start up


1. Clear the area of bystanders, especially small children.
2. Make sure each operator is trained and familiar with the set up and operation of the wood splitter.
3. Follow the Pre-Operation Checklist.
4. Review the Controls section (see *page 18*).
5. Survey the work site and position the wood splitter in a clear, level work area.
6. Set up the machine correctly. See *Set up*.

6.4.1 Pre-operation Checklist

Efficient and safe operation of the Wallenstein wood splitter 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. The checklist is important for both personal safety and keeping the wood splitter in good mechanical condition.

Before operating the machine and each time thereafter, check the following:

Pre-operation Checklist	
Wood splitter is mounted on a tractor with less than 100 horsepower.	
Extra weights are mounted on the front of the tractor, if required.	
Wood splitter is properly attached to the tractor. Retainers are installed in mounting pins.	
Check the wedge and block. Be sure they are not damaged, broken, or badly worn. Repair or replace as required.	
Check and remove any entangled material.	
Check for hydraulic leaks. Tighten connections or replace components to stop leaks.	
Check and tighten all fasteners. Make sure the equipment is in good condition.	
Check that appropriate equipment for personal protection is being used and in good condition.	
Check that jewelry, loose-fitting clothing are not worn. Make sure long hair is tied back.	

6.5 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. Precut 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 tractor into its working position, set the 3-point hitch and the splitter to a comfortable work height. Set the park brake.
5. Set the throttle in its mid-range position. Place the working hydraulic circuit in detent.

6.5.1 Log Placement

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

- 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.

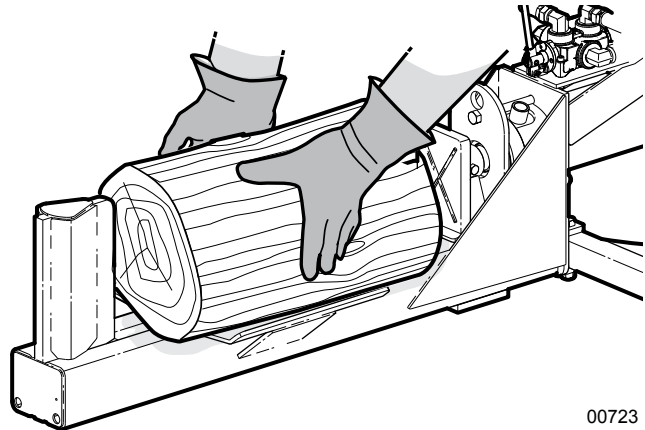
WARNING!

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

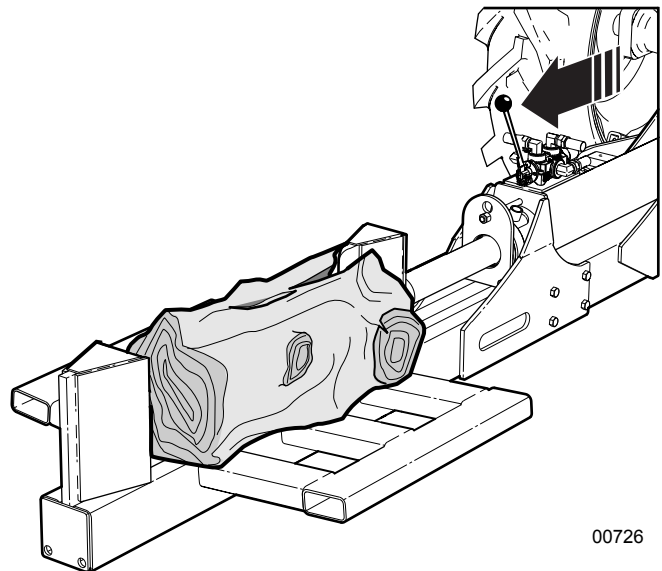
1. On the splitter, use the hydraulic control to fully retract the wedge / push block.
2. Place a log on the splitter.



00723

Fig. 14 – Correct Log Placement

3. Move the hydraulic lever toward the base and hold it while the wedge moves through the log.



00726

Fig. 15 – Single Blade Wedge

4. Release the lever when the log splits or cylinder reaches full stroke and stops.
5. Pull the lever back to retract the push block or wedge. The detent holds the lever until the cylinder fully retracts, allowing hands-free operation.

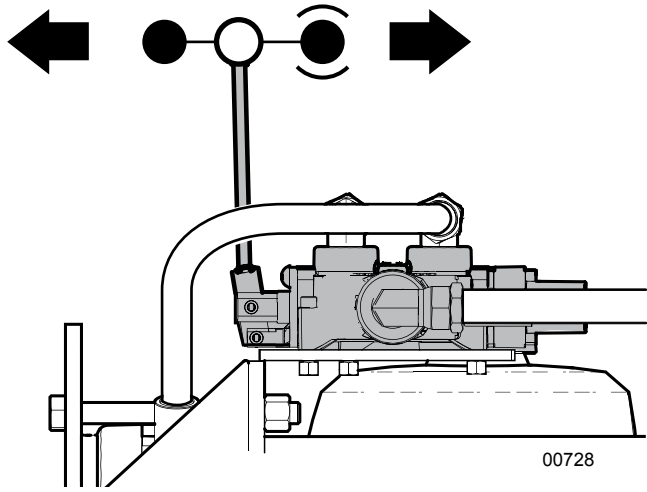


Fig. 16—Hydraulic Control Valve Positions

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.

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

Always keep the working area neat and clean to prevent tripping. Pile the split and un-split 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.

When the machine is new, lubricating the plate under the wedge slider can help improve wear and reduce binding. The splitter bed polishes itself once the paint is worn off.

6.6 Machine Break-In

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

After 1 hour of operation

1. Check that the wedge is adequately lubricated.
2. Check all nuts, bolts and other fasteners. Tighten to their specified torque level.
3. Check hydraulic system for leaks. Tighten leaking fittings and replace any leaking components.
4. Check for entangled material. Remove before resuming work.

After 8 hours of operation

5. Repeat the above steps.

6.7 Transporting

6.7.1 Transport Safety

1. Comply with local laws governing safety and transporting of machinery on public roads. Use amber flashing lights, slow moving vehicle (SMV) sign as required.
2. Do not exceed 20 mph (32 km/h). Reduce speed on rough roads and surfaces.
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. Plan your route to avoid heavy traffic.
6. Do not drink and drive.
7. Turn into curves or go up or down hills only at a low speed and at a gradual steering angle.

6.7.2 Prepare for Transport

- Clean all debris off the splitter. Remove any tools or other loose items.
- Perform a walk-around inspection to ensure everything is safe.
- A heavy load can cause instability of the tractor. Use extreme care during travel. Slow down on turns and watch out for bumps.
- The tractor may need front counterweights to balance the weight of the machine. Make certain that at least 20% of the tractor's weight is on the front wheels to maintain safe steering.
- Always be in compliance with all applicable local regulations when transporting.

7. 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. 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, push block 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. Set the wood splitter on wood blocks, so it is off the ground. This makes it easier to hook up next time. Select an area that is dry, level and free of debris. Store it in an area away from human activity.
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.

7.1 Removing from Storage

1. Review and follow the Pre-operation Checklist. See *page 23*
2. Review safety and operation procedures. See *page 8*.

8. Service and Maintenance

WARNING!

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

W033

8.1 Maintenance Safety

1. 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.



2. Never operate the machine in a closed building. The exhaust fumes may cause asphyxiation.
3. Before servicing or repairing, place the machine in a **Safe Condition**. See page 9.
4. Never work under equipment unless it is properly supported.
5. When performing any service or maintenance work always use appropriate personal protective equipment.
6. 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.
7. When completing a maintenance or service function, make sure all safety shields and devices are installed before placing splitter in service.
8. When cleaning any parts, do not use gasoline. Use a cleanser designed for that purpose.
9. Always use proper tools in good condition. Make sure you understand how to use them, before performing any service work.

8.2 Maintenance Schedule

As Required

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

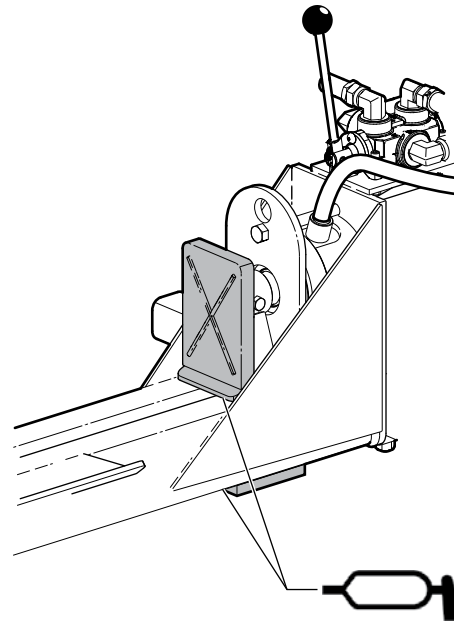
Remove any entangled material from splitter.

Check that all fasteners are tight.

Every 100 hours or Annually

Grease push block / wedge slide on splitter bed.

Clean machine. Remove debris and entangled material.



00740

Fig. 17 – Splitter Bed Slide

9. 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.
	Low engine speed.	Check throttle is setting.
Control handle does not go to neutral after rod is fully retracted.	Valve detent set too tight.	Valve detent adjustment required. Call technician.
	Hydraulic oil too cold.	Allow machine to warm up.
	Hydraulic fluid is contaminated.	Change hydraulic fluid and filter.
Control handle goes to neutral before rod is fully retracted.	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.	Second stage on pump not functioning.	Pump may need to be serviced or replaced. 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.

10. Specifications

10.1 Machine Specifications¹

Model	WX310	WX320	WX330
Mounting	3-point Hitch Mounted		
Splitter Cylinder Bore x Stroke	4" x 24" (102 mm x 609 mm)	4-1/2" x 36" (115 mm x 914 mm)	4-1/2" x 48" (115 mm x 1 220 mm)
Splitting Force @ 2550 psi (176 bar)	16 ton	20 ton	20 ton
Splitting Force @ 3000 psi (207 bar)	20 ton	25 ton	25 ton
Valve Type	Open center, with return detent (Optional closed center)		
Recommended minimum hydraulic flow	10 gpm (38 Lpm)	13 gpm (49 Lpm)	13 gpm (49 Lpm)
Splitter Orientation	Horizontal		
Weight	215 lb (98 kg)	375 lb (170 kg)	425 lb (193 kg)
Dimensions (L x W x H)	70" x 28" x 24" (178 cm x 71 cm x 61 cm)	96" x 30" x 24" (244 cm x 76 cm x 61 cm)	120" x 30" x 24" (305 cm x 76 cm x 61 cm)
Accessories	4-way Splitting Wedge		
	Stroke Limiter		

¹ Specifications subject to change without notice.


10.2 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



SAE Gr. 2



SAE Gr. 5



SAE Gr. 8

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



8.8



10.9

10.3 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	Flats	Turns
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.

11. 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



www.wallensteinequipment.com