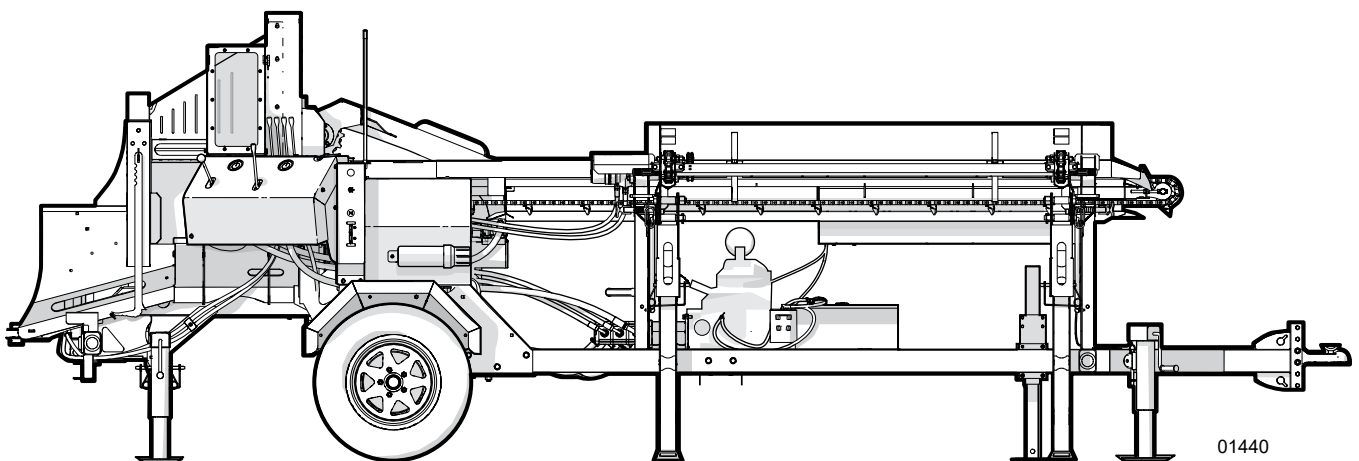


# OPERATOR'S MANUAL

S/N 2E9US1110MS080073 to 2E9US1110MS080078

## WP1624 Firewood Processor

P3 PULSE™ TECHNOLOGY



Rev Feb-2022

Part Number: Z97106\_En

**WALLENSTEIN**

# 1. Introduction

## 1.1 Foreword

### **Congratulations on choosing a Wallenstein WP1624 Wood Processor!**

This high-quality machine is designed and manufactured to meet the needs of a proficient timber or woodlot industry.

The Wallenstein WP1624 Wood Processor improves firewood productivity, ergonomics and minimizes handling. The firewood processor saves time and money while reducing the risk of physical strain.

The WP1624 consists of a hydraulic power source, live deck, infeed conveyor, and wood splitter. A KOHLER® gas engine drives hydraulic pumps to power the system. P3 Electronic controller maximizes saw cutting performance. Integrated stacking conveyors are available in 8 ft (2.4 m) and 12 ft (3.6 m) lengths. Trailer-type conveyors are available in 16 ft (4.8 m) and 24 ft (7.3 m) lengths.

Logs are set onto the live deck and deck chains carry them to the infeed conveyor. The conveyor moves the logs ahead into the saw. The saw cuts the blocks to length and they fall into the splitting cradle. The wedge then splits the logs and the pieces are pushed out onto a pile or conveyor (if equipped).

The WP1624 can split wood up to 24" (61 cm) in length. See *Specifications on page 67* for more product information.

Safe, efficient, and trouble-free operation of your Wallenstein wood processor requires that you and anyone else who will be using or maintaining the wood processor, read and understand the Safety, Operation, Maintenance and Trouble Shooting 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.



### **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.**

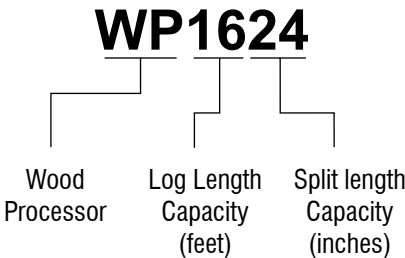
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Cutting chain information courtesy of Oregon® Products. For more information on this and other products, visit [OregonProducts.com](http://OregonProducts.com)

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## **Model Configuration**



## Table of Contents

<b>1. Introduction.....</b>	<b>2</b>	<b>8. Operating Instructions .....</b>	<b>38</b>
1.1 Foreword .....	2	8.1 Starting the Engine .....	38
1.2 Delivery Inspection Report.....	4	8.2 Cold Weather Start-up .....	38
1.3 Serial Number Location .....	5	8.3 Live Deck .....	39
1.4 Types of Decals on the Machine .....	6	8.4 Infeed Conveyor .....	40
<b>2. Safety .....</b>	<b>7</b>	8.5 Top Roller .....	40
2.1 Safety Alert Symbol.....	7	8.6 Conveyor Start-up (if equipped) .....	41
2.2 Signal Words.....	7	8.7 Cutting .....	42
2.3 Why SAFETY is Important.....	7	8.8 Bar Oil Flow Rate, Adjusting.....	44
2.4 Safety Rules.....	7	8.9 Splitting.....	44
2.5 Operating Safety.....	8	8.10 Cycling logs through quickly:.....	47
2.6 Equipment Safety Guidelines .....	9	8.11 Transporting.....	48
2.8 Making the Work Area Safe.....	14	8.12 Storage.....	51
2.9 Sign-Off Form .....	15	<b>9. Service and Maintenance.....</b>	<b>52</b>
2.10 Safety Sign Explanations .....	16	9.1 Recommended Fluids and Lubricants .....	52
2.11 Replacing Damaged Safety Signs .....	21	9.2 Maintenance Interval Schedule.....	53
<b>4. Familiarization.....</b>	<b>22</b>	9.3 Lubrication .....	53
4.1 To the New Operator or Owner.....	22	9.4 Hydraulic Oil – Changing .....	55
4.2 Job Site Familiarization .....	22	9.5 Engine.....	57
4.3 Operator Orientation .....	22	9.6 Engine Air Cleaner .....	57
5.1 Machine Components.....	23	9.7 Battery .....	58
<b>5. Controls .....</b>	<b>25</b>	9.8 Axles and Suspension .....	59
5.1 Engine Controls.....	25	9.9 Saw Chain Maintenance .....	59
5.2 Hydraulic Controls.....	26	9.10 Saw Lubrication .....	61
5.3 Operator's Platform / Seat.....	28	9.11 Infeed Conveyor Chain Tension, Adjusting .....	61
5.4 Integrated Conveyor .....	28	9.12 Live Deck Chain Tension, Adjusting .....	61
<b>6. Machine Set-up .....</b>	<b>29</b>	9.13 Live Deck Drive Chain Tension, Adjusting .....	62
6.1 Machine Positioning at Site.....	29	9.14 Conveyor Chain Tension, Adjusting.....	63
6.2 Live Deck, Lowering.....	30	9.15 Electrical System – General .....	64
6.3 Block Dropper .....	31	9.16 Welding.....	64
6.4 Log Stop Guide .....	32	<b>10. Troubleshooting Guide .....</b>	<b>65</b>
6.5 Saw Shield.....	32	<b>11. Specifications.....</b>	<b>67</b>
6.6 Integrated Conveyor .....	32	11.1 Machine Specifications.....	67
<b>7. Pre-start Checks .....</b>	<b>34</b>	11.2 Machine Dimensions .....	69
7.1 Before Starting the Engine .....	34	11.3 Common Bolt Torque Values .....	70
7.2 Fuel Level Check .....	35	11.5 Hydraulic Fitting Torque.....	71
7.3 Engine Oil Level Check .....	35	11.4 Wheel Lug Nut Torque .....	71
7.4 Hydraulic Oil Level Check .....	36	<b>12. Product Warranty.....</b>	<b>72</b>
7.5 Chain Saw Bar Oil level.....	36	<b>13. Alphabetical Index .....</b>	<b>73</b>
7.6 Saw Chain – Checking.....	36		
7.7 Machine Break-In .....	37		

## 1.2 Delivery Inspection Report

### Wallenstein WP1624 Trailer Firewood Processor

To activate warranty, register your product at: [www.wallensteinequipment.com](http://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, applicable warranty policy, and have 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

_____ Engine Starts and Runs	_____ Verify Bar Oiler Motor Functions and Oils Saw Chain after Reservoir is Filled
_____ All Valve Controls Function	_____ Verify Function of Trailer Turn, Signal, and Stop Lights
_____ All Cylinders and Motors Function	_____ Grease Machine
_____ Wedge Height Adjuster Functions	_____ Review Operating and Safety Instructions
_____ Live Deck Chains Tight	<b>Safety Checks</b>
_____ Infeed Chains Tight	_____ All Safety Decals Installed
_____ All Fasteners Tight	_____ Guards and Shields Installed and Secured
_____ Saw Chain Tensioned Properly	_____ Retainer Installed through Hitch Points
_____ Hydraulic Connections Tight	_____ Tire Pressure Correct
_____ Bar Oil Reservoir Filled, or User Instructed to Fill. Flow Control Open	_____ All Jacks Function
	_____ Wheel Lug Torque Checked
	_____ Operation of Running / Brake Lights Checked

## 1.3 Serial Number Location

Always provide 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. **For future reference, record your product Serial Number in the space provided below.**

Record Product Information Here	
Model:	WP1624
Serial Number:	

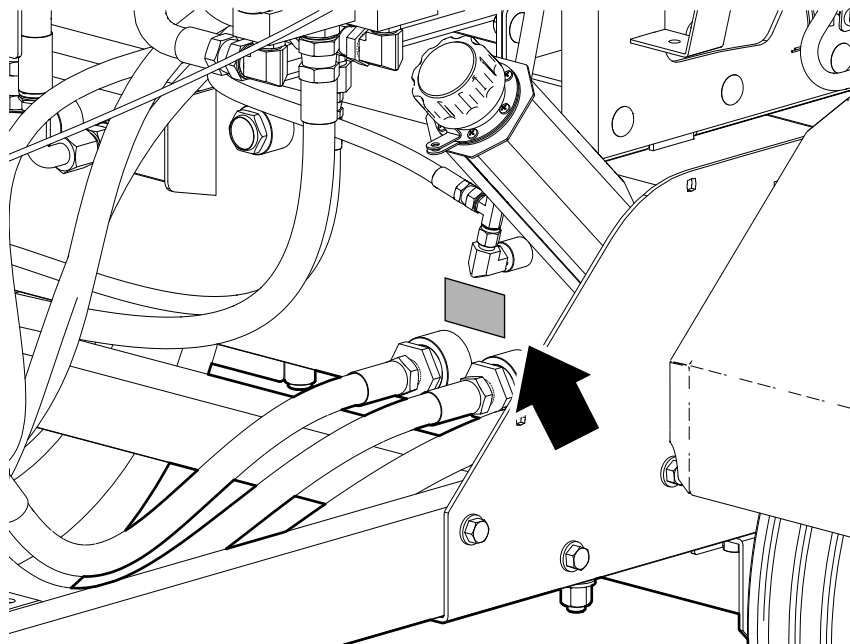


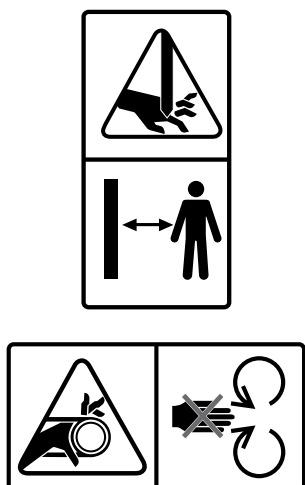
Fig. 1 – Serial Number Plate Location

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## 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.

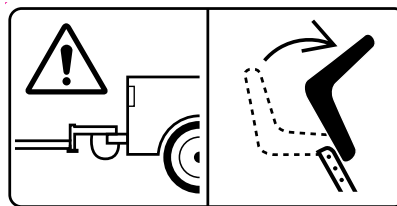
**Safety Decals** have a yellow background and are generally two panel. They can be either vertical or horizontal.



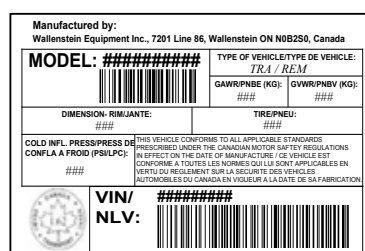
**Safety Notice** decals have a blue background and are generally rectangular with single or multiple symbols. This decal shows suggested PPE requirements for safe operation.



**Informative** decals have a white background and can vary in the number of panels. These decals provide operating information on a feature of the machine.



**Product** decals are associated with the product and carry various messages such as model, serial number, and manufacturer.



**Maintenance** decals have a green background. They can have various messages and vary in the number of panels. These decals indicate the maintenance type and can indicate the service interval. Maintenance decals are further explained in the Service and Maintenance section.



For complete illustrations of decal locations on the machine, download the parts manual for this product model at [www.wallensteinequipment.com](http://www.wallensteinequipment.com).

## 2. Safety

### 2.1 Safety Alert Symbol

This Symbol means:

#### ATTENTION! BE ALERT ! YOUR SAFETY IS INVOLVED !

The Safety Alert Symbol identifies important safety messages on the Wallenstein product 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 can disable and kill**
- **Accidents can cause financial hardship**
- **Accidents can be avoided**

**YOU** are responsible for the SAFE operation and maintenance of your Wallenstein trailer wood processor. **YOU** must ensure that you and anyone else who is going to use, maintain or work around the wood processor 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 this machine.

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 operating 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

- It is the operator's responsibility to read, understand and follow ALL safety and operation instructions in this manual. If you do not understand any part of this manual and require assistance, contact your dealer, distributor, or Wallenstein Equipment.



- **Do not allow anyone to use this machine until they have read this manual. Operator's must have a thorough understanding of the safety precautions and of how the machine works.** Review the safety instructions with all users annually.
- The operator of this wood processor must be a responsible, physically able person familiar with machinery and trained in this machine's operation.
- Provide instructions to anyone else who is going to operate the machine. This equipment is dangerous to anyone unfamiliar with its operation.
- Review safety related items annually with all personnel who will be operating or performing maintenance.
- Make sure all safety signs on the machine are understood before operating, servicing, adjusting, or cleaning. Safety sign explanations are on 16. Being unfamiliar with a machine can lead to injuries.
- Replace any safety sign or instruction sign that is not readable or is missing. The location of all safety signs is indicated on 16.
- Never exceed the limitations of the machine. If its ability to do the job, or to do it safely is in question—**STOP!**
- Inspect and secure all guards before starting.
- Set the chain saw bar oil flow rate before operating the saw.
- Check saw chain tension every three hours of operation. Sharpen chain daily.
- Do not modify the equipment in any way. Unauthorized modifications may affect the integrity of the machine or the ability of the machine to perform as designed. Modifications can impair safety or function. They can affect the life of the equipment and void warranty.
- Have a first-aid kit available for use should the need arise.
- Have a fire extinguisher available for use should the need arise and know how to use it.
- Check the machine is clear of debris prior to starting the engine.
- Review safety related items annually with all personnel who will be operating or performing maintenance.
- Handle logs with respect and be aware of other operators in the area.
- Do not touch hot engine parts, muffler cover, hoses, engine body, or engine oil during operation and after the engine has been shut off. Contact may cause burns.



## 2.5 Operating Safety

It is important that you read and pay attention to the safety signs on the wood processor. Clean or replace all safety signs if they cannot be clearly read and understood. They are there for your safety, as well as the safety of others. The safe use of this machine is strictly up to you, the operator.

All machines with moving parts are potentially hazardous. There is no substitute for a cautious, safe-minded operator who recognizes potential hazards and follows reasonable safety practices.

- Always wear appropriate Personal Protective Equipment (PPE). This equipment includes but is not limited to the following:
  - A hard hat
  - Heavy gloves
  - Hearing protection
  - Protective shoes with slip resistant soles
  - Protective glasses, goggles, or face shield



- The best safety feature is an informed, careful operator—we ask you to be that kind of an operator. It is the operator's responsibility to read, understand and follow ALL safety and operation instructions in the manual. Accidents can be avoided.
- Train all operators to be familiar with equipment's operation. The operator should be a responsible, properly trained and physically able person familiar with machinery. If the elderly are assisting with work, their physical limitations need to be recognized and accommodated.



- Wear hearing protection on a full-time basis. Prolonged exposure to loud noise may cause permanent hearing loss!
  - Noise over 85 dB on a long-term basis can cause severe hearing loss.
  - Noise over 90 dB adjacent to the Operator over a long-term basis may cause permanent, total hearing loss.
- Keep bystanders away at a safe distance at least 20 ft (6 m) from stacking zone. Mark the zone with safety cones.
- Determine a safe work area / trailer location:
  - Ground should be firm and level.
  - Area must be clear of stones, branches or hidden obstacles that might cause a tripping, hooking, or snagging hazard.
  - There must be no overhead hazards such as branches, cables, electrical wires and so on.
- Determine a safe split stack location:
  - Stack split wood on level ground. Make sure it does not interfere with safe operation of the machine.
- Precut to length and de-limb logs so they are ready to load onto the live deck.
- Operate the machine in daylight or good artificial light only.
- Make sure machine is properly stationed, adjusted and in good operating condition.
- Store fuel well away from the material pile.
- Perform the **Pre-operation Checks** procedure before starting work (see 34).
- Position machine so prevailing winds blow engine exhaust fumes away from operator's station.
- Do not operate on hillsides or when working area is cluttered, wet, muddy, or icy to prevent slipping and tripping. Keep working area clean and free of debris.
- Stop engine if leaving the machine unattended.
- Make sure all guards, deflectors and shields are installed before starting and operating the machine.
- Operate the machine only when physically fit and not under the influence of alcohol, drugs or medicines that can cause drowsiness.
- Avoid loose fitting clothing, loose or uncovered long hair, jewelry, and loose personal articles. These can get caught in moving parts.
- Do not allow anyone within the work or danger zone during operation.
- Place machine in a **Safe Condition** before servicing or repairing. See *Safe Condition* on page 9.



- Do not try to process more than one log at a time. The extra log can move unexpectedly and cause injury.
- Use a peavey or the provided hookaroon to reposition cut logs in the splitting chamber. Handle logs using a peavey for positioning.
- Do not try to split logs across the grain. Some logs can burst or splinter and fly out of the machine causing injury.
- When loading the live deck, do not position logs farther left than the safety whip. Be aware of others in the area when operating heavy equipment.
- Do not attempt to saw a log that is not firmly clamped in position. Chain could break and fly into pieces. Stop and reposition the log so it is stable.

## 2.5.1 Safe Condition

Throughout this manual, we talk about a '*Safe Condition*'. What this means is parking the machine in a manner that makes it safe to service or repair.

**Place the machine in a Safe Condition before performing any service, maintenance work or storage preparation by performing the following:**

### SAFE CONDITION

1. Clear infeed conveyor and splitting hopper.
2. Release all controls and ensure all components have stopped moving.
3. Shut off the engine. Disconnect spark plug lead. Disconnect negative (-) battery cable from battery.
4. Relieve hydraulic system pressure by actuating controls.

## 2.6 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.

- Replace any safety sign or instruction sign that is not readable or is missing. Location of such safety signs is indicated in this manual.
- Never allow young children to work with this equipment. Do not allow persons to use this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works. Review the safety instructions with all users annually.

- Never exceed the limitations of the machine. If its ability to do the job, or to do it safely is in question—**STOP!**

## 2.6.1 Maintenance Safety

Always place the machine in a safe service position before performing any service or maintenance work, storage preparation, or hooking / unhooking. See *Safe Condition on page 9*.

### Follow good shop practices:

- Have at least two workers present when performing maintenance on this equipment. Never work alone in case an emergency should arise.
- Keep service area clean and dry.



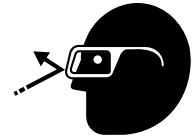
- Never operate the engine in a closed building. Make sure there is plenty of ventilation. Exhaust fumes can cause asphyxiation.
- Never work under unsupported equipment.
- Use only genuine OEM replacement parts. The manufacturer is not responsible for injuries or damage resulting from non-approved parts or accessories.
- Make sure all safety shields and devices are re-installed when a maintenance or service procedure is finished.
- Do not use gasoline or diesel fuel when cleaning any parts. Use a regular cleanser.
- Use proper tools that are in good condition. Make sure the procedure is understood before performing any service work.

## 2.6.2 Hydraulic System Safety

- Make sure that all the components in the hydraulic system are kept clean and in good condition.
- Make sure all components are tight, and that lines, hoses and couplings are not damaged before applying pressure to the system.
- Do not use a hand to check for hydraulic oil leaks. Hydraulic fluid escaping under pressure can penetrate the skin causing serious injury. Use a piece of cardboard.



- Wear proper hand and eye protection when searching for a high-pressure hydraulic leak.



- Seek medical attention immediately if injured by a concentrated high-pressure stream of hydraulic fluid. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.
- Do not attempt any makeshift repairs to the hydraulic lines, fittings, or hoses by using tape, clamps, or cements. Doing so can cause sudden failure and create a hazardous and unsafe condition.
- Relieve pressure on the hydraulic system before working it. The hydraulic system operates under extremely high pressure.
- Replace any hydraulic hose immediately that shows signs of swelling, wear, leaks, or damage before it bursts.
- Do not bend or strike high-pressure lines, tubes, or hoses, or reinstall them in a bent or damaged condition.
- Check to make sure hydraulic hoses are not worn or damaged and are routed to avoid chafing.
- Never adjust a pressure relief valve or other pressure-limiting device to a higher pressure than specified.

## 2.6.3 Storage Safety

- Store the unit in an area away from human activity.
- Do not allow children to play on or around the stored machine.
- Consult the engine owner's manual for storage information on the engine.

## 2.6.4 Transport Safety

- Comply with provincial / state laws governing safety and transporting of machinery on public roads.
- Do not exceed a safe travel speed. Slow down for rough terrain and cornering.
- Do not transport or move the wood processor with the engine running.
- Make sure all latch handles are secure.
- Make sure the trailer is hitched positively to the towing vehicle and a retainer is used through the hitch mechanism.
- Make sure safety chains between the hitch and the towing vehicle are crossed under the tongue and properly attached.
- Inspect wheel rims for dents or damage. Check wheel lug torque. Refer to table at the back of this manual.
- Inspect tires for cuts or damage. Check tire pressure and adjust if required. Refer to specification on the tire sidewall.
- Make sure the stability jacks are raised and secured with the latch pin.
- Inspect all access panels and guards to ensure they are secured.
- Check fuel and hydraulic tank caps are on tight to prevent spills while transporting.
- Clean off all debris from the machine.
- Check that all the lights, reflectors and other lighting requirements are installed and in good working condition.
- Never allow riders on the machine.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, and so on.
- Watch for traffic when near or crossing roadways.
- Perform a final circle check before transporting.

## 2.6.5 Refueling Safety

- Fuel is highly flammable. Handle with care.
- Stop the engine and allow it to cool for five minutes before Refueling. Clean up spilled fuel before restarting engine.
- Do not refuel the machine while smoking or when near open flame or sparks.
- Fill fuel tank outdoors.
- Prevent fires by keeping machine clean of accumulated trash, grease, and debris.
- Do not overfill the fuel tank. Fill until the fuel level is visible 1/2" (12 mm) below the filler neck to leave room for expansion.
- If fuel is spilled, wipe it away carefully and wait until it has dried before starting the engine.
- After refueling, make sure that the fuel cap is on securely to prevent spillage.



## 2.6.6 Tire Safety

- Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.
- Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
- Have a qualified tire dealer or repair service perform required tire maintenance.
- When replacing worn tires, make sure they meet the original tire specifications.

## 2.6.7 Chain Saw Safety

A chain saw is inherently hazardous. Potential injuries can be minimized by using proper personal protective equipment and safe operating procedures.

Good cutting action results and chain life increases with correct chain tension. If too loose, a chain can derail; if too tight a chain can bind.

Proper chain lubrication prolongs the life of the saw and increases safety.

Sharpen the saw if:

- The chain tends to track sideways while cutting.
- The cut shows fine powder instead of chips.
- There is a burnt wood smell.

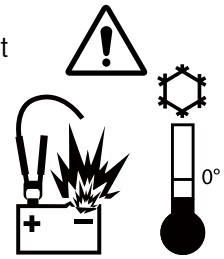
Never use a saw chain that:

- Has broken twice.
- Is severely damaged.
- Has excessive saw chain stretch.
- Has broken or cracked components.
- Has loose rivet joints. If you can rotate the rivets with your fingers, they are too loose.

## 2.6.8 Battery Safety

- Wear gloves and safety glasses or face shield when working on or near batteries.
- Use a battery carrier to lift the battery or place hands at opposite corners to avoid spilling acid through the vents.
- Avoid contact with battery electrolyte:
  - **External Contact:** Flush immediately with water.
  - **Eye Contact:** Flush with water for 15 minutes. Get prompt medical attention. Clean up any spilled electrolyte immediately.
- Avoid contact with battery posts, terminals, and related accessories. They contain lead and lead compounds, chemicals known to cause harm. Wash hands immediately after handling.
- Keep all sparks and flames away from batteries. Gases given off by electrolyte is explosive.
- To avoid injury from spark or short circuit, disconnect battery ground cable before servicing any part of the electrical system.

- Frozen batteries can explode and result in death or serious injury. Do not jump start or charge a frozen battery. Let battery thaw before charging.



## 2.6.9 Gas Engine Safety

- **DO NOT** operate engine in an enclosed area. Exhaust gases contain carbon monoxide, which is an odorless and deadly gas.
- **DO NOT** place hands or feet near moving or rotating parts.
- **DO NOT** choke carburetor to stop engine. Whenever possible, gradually reduce engine speed before stopping.
- **DO NOT** tamper with governor springs, governor links or other parts which may increase the governed speed. Engine speed is selected by the original equipment manufacturer.
- **DO NOT** check for spark with spark plug or spark plug wire removed.
- **DO NOT** crank engine with spark plug removed. If engine is flooded, crank until engine starts.
- **DO NOT** strike flywheel with a hard object or metal tool as this may cause flywheel to shatter in operation. Use proper tools to service engine.
- **DO NOT** operate engine without a muffler or heat shield. Inspect periodically and replace if damaged.
- **DO NOT** operate engine with an accumulation of wood chips, dirt, or other combustible materials in the muffler area.
- **DO NOT** use this engine on any forest covered, brush covered, or grass covered unimproved land unless a spark arrester is installed on the muffler. The arrester must be maintained in effective working order by the operator. In the state of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal land.
- **DO NOT** touch hot muffler or cooling fins. Contact may cause burns.
- **DO NOT** run engine with air cleaner or air cleaner cover removed. Engine damage can result.

## Be sure to:

- Remove the wire from the spark plug when servicing the engine or equipment to prevent accidental starting. Disconnect the negative wire from the battery terminal.
- Keep cylinder fins and governor parts free of grass and other debris which can affect engine speed.
- Examine muffler periodically to be sure it is functioning effectively. A worn or leaking muffler should be repaired or replaced, as necessary.
- Use fresh gasoline. Old fuel can gum carburetor and cause poor performance.
- Check fuel lines and fittings frequently for cracks or leaks. Replace if necessary.

## 2.6.10 Welding Safety

- If welding repairs are required, have them performed by a trained welder with proper service instructions. Know the material to be welded and select the correct welding procedure and materials (electrodes, rods, wire) that provide a weld metal strength equivalent to the parent material.
- Work with extra care when welding, grinding or torch cutting near flammable objects.
- Welding on painted surfaces releases dangerous fumes and results in a poor weld joint that can result in failure and potential accidents. Always remove paint from areas to be welded.
- Heated paint gives off poisonous gases. Therefore, paint must be removed from an area with a radius of at least 4" (10 cm) before carrying out welding, grinding or gas cutting. In addition to the health hazard, the weld is of inferior quality and strength if the paint is not removed.

### Methods and precautionary measures when removing paint:

Blasting—use respiratory protective equipment and protective goggles.

Paint remover or other chemicals—use a portable air extractor, respiratory protective equipment, and protective gloves.

Grinding—use a portable air extractor, respiratory protective equipment and protective gloves and goggles.

## 2.8 Making the Work Area Safe

When processing logs with this machine, create a safe work area around the entire operation. The work area should be split up into the following zones, based on the level of safety awareness:

1. **Safe Zone** – This is the area outside the work area perimeter for bystanders or anyone not directly involved with the work. The Safe Zone has minimal potential hazards.
2. **Work Zone** – Workers helping the operator wearing the appropriate PPE are allowed in this area. The Work Zone is outside of the Danger Zone with limited hazards.
3. **Danger Zone** – Only workers are allowed in the Danger Zone and must always make eye contact with the operator before entering. Unauthorized workers or bystanders are not allowed in the Danger Zone due to the hazards present.
4. **Operator Zone** – Only the operator should be in the Operator Zone.

Follow these important points to keep bystanders and workers safe from hazards.

- Establish a Safe Zone perimeter around the work area and mark with safety cones. The perimeter should be at least 10 ft (3 m) from any hazard within the work area.
- Never allow workers or bystanders to approach the processor while in operation without first signaling the operator.
- Keep all bystanders in the Safe Zone and never allow them in the Danger or Work zones.
- Always operate the processor controls from the Operator Zone located at the control panel.
- Only the operator can authorize entry into the Danger Zone. The operator must first ensure it is safe to enter.
- Always be aware of coworkers. Make eye contact and have a hand signal scheme worked out.
- Use extreme caution around the material stacks. Stacked logs could roll in unpredictable ways.
- Be aware of split wood stacks. Split wood can tumble off the pile.

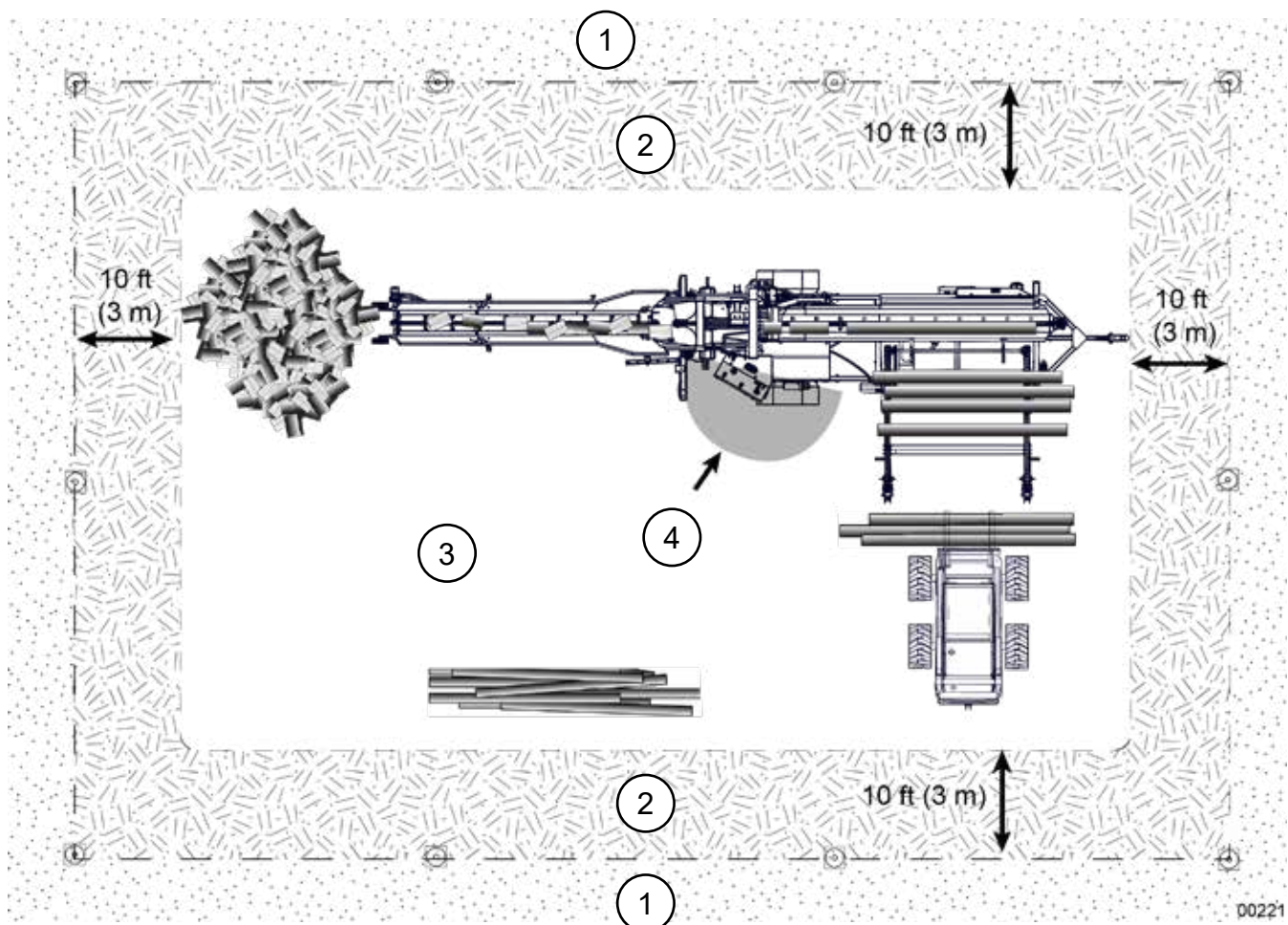


Fig. 2– Work Area divided into Zones

## 2.9 Sign-Off Form

Wallenstein Equipment Inc. follows the general safety standards specified by the International Organization for Standardization (ISO).

Anyone who is going to use or service this wood processor must read and clearly understand ALL Safety, Usage and Maintenance information presented in this manual. Do not use or allow anyone else to use this machine until such information has been reviewed. Review this information annually before the season start-up.

Make these periodic reviews of safety and operation a standard practice for all equipment. An untrained operator is unqualified to use this machine.

A sign-off sheet is provided to keep a record of personnel that have read and understand the information in the Operator's Manual and that have been instructed in the operation of the equipment.

[illegible]

## 2.10 Safety Sign Explanations

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).

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

**Think SAFETY! Work SAFELY!**

**IMPORTANT!** If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied.

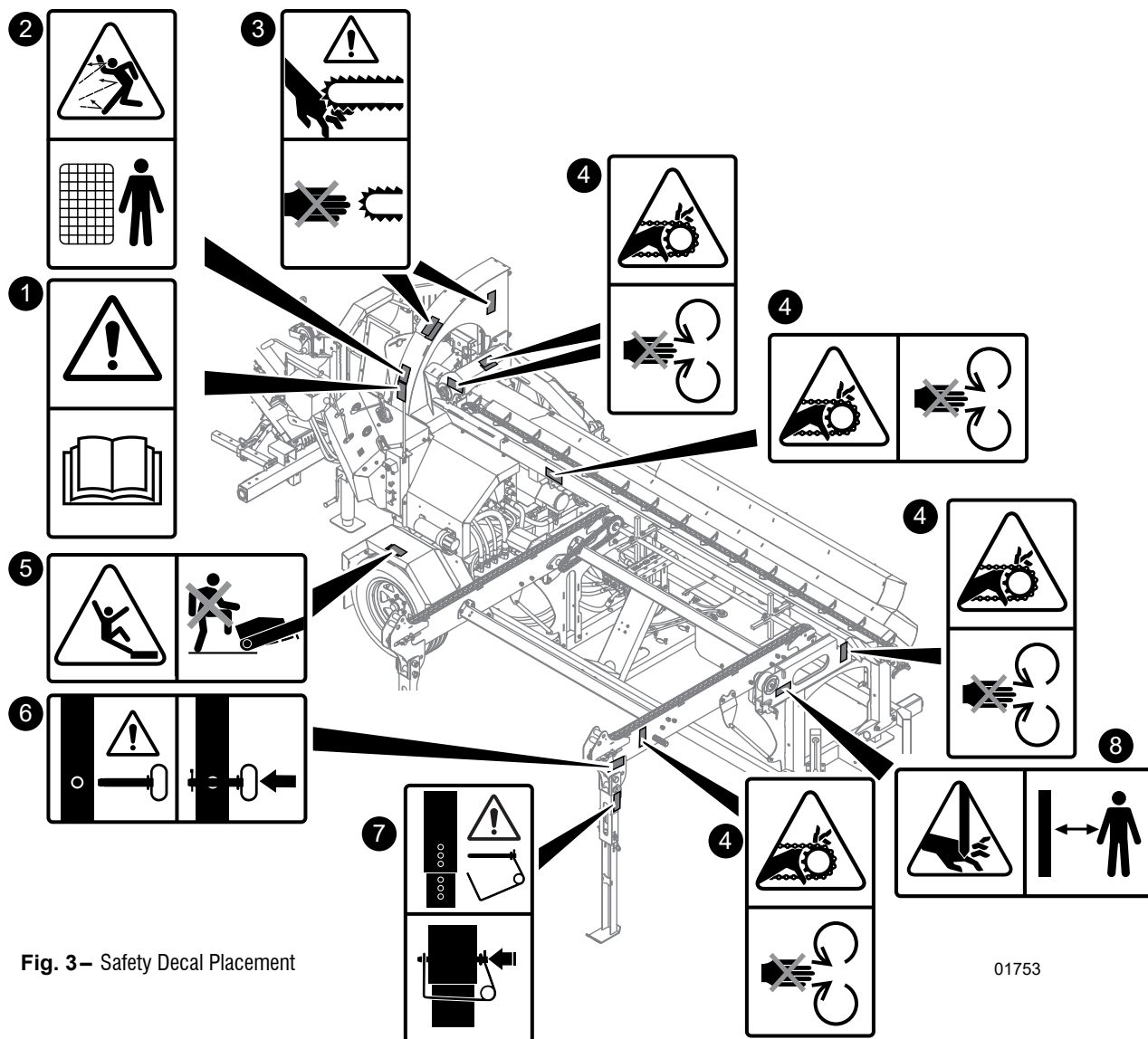
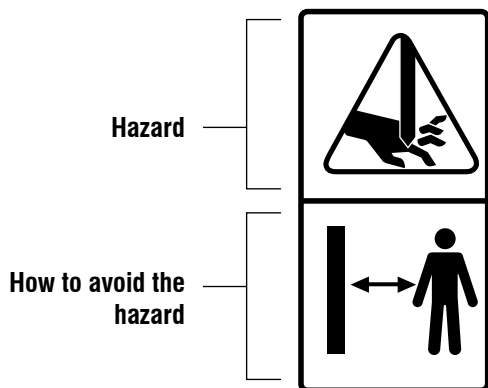


Fig. 3– Safety Decal Placement

01753

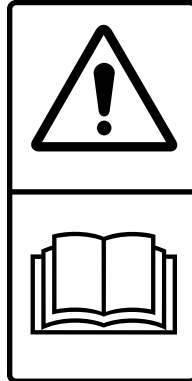
**IMPORTANT!** If parts are replaced that have safety signs on them, new signs must be applied. Safety signs must always be replaced if they become damaged, are removed, or become illegible.

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

### 1. 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.

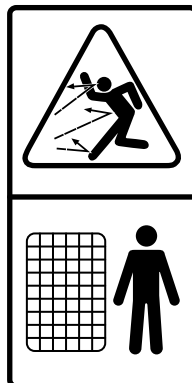
The best safety feature is an informed operator.



### 2. Warning!

Risk of wood chips or pieces flying out of this area causing personal injury.

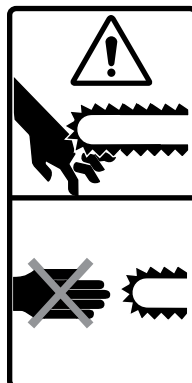
Stay behind protective screen.



### 3. Warning!

Risk of serious personal injury resulting from contact with chain saw.

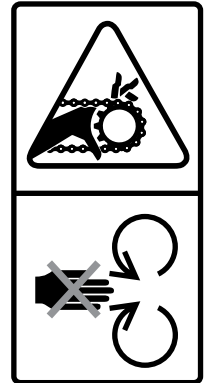
Keeps hands clear!



### 4. Warning!

Risk of hands being pinched or caught in drive chain resulting in serious injury.

Keeps hands clear of this area.



### 5. Warning!

Risk of falling off machine causing personal injury.

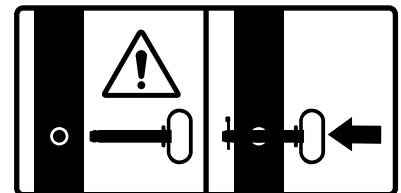
Do not step or stand on this surface. Use provided steps and hand holds.



### 6. Warning!

Risk of machine moving unexpectedly when support leg pin is removed. Personal injury could result.

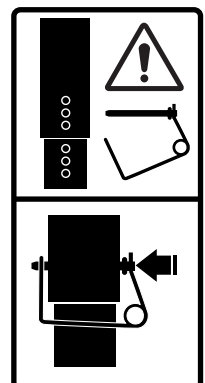
Install pin and secure with pin keeper.



### 7. Warning!

Risk of machine moving unexpectedly when support leg pin is removed. Personal injury could result.

Install pin and secure with safety latch.



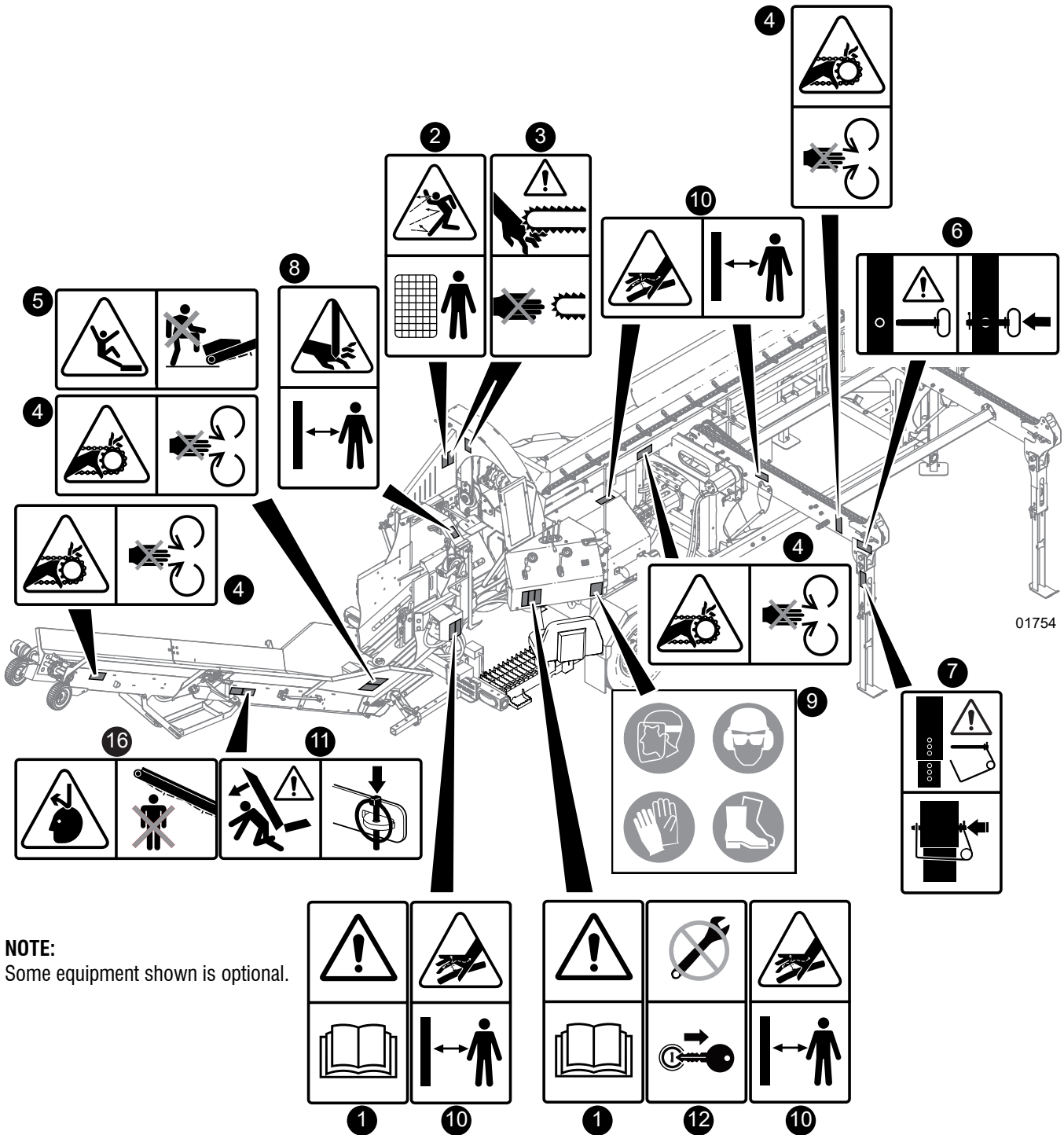
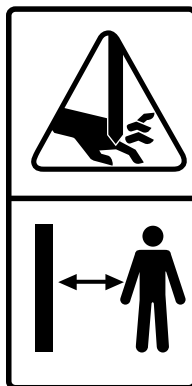


Fig. 8– Safety Decal Placement

## 8. Warning!

**Risk of hands being crushed in this area.**

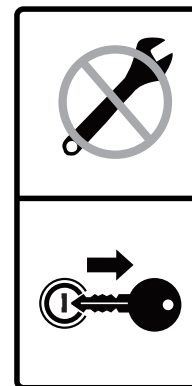
Keep hands clear of all moving parts.



## 12. Warning!

**Risk of serious injury or death if the engine is not shut off during maintenance procedures.**

Shut off the engine and remove the key.



## 9. Safety Notice

**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



## 13. Warning!

**Risk of explosion.**

Do not refuel the machine while smoking or when near open flame or sparks. Serious injury can result.



## 10. Warning!

**Risk of high-pressure hydraulic fluid piercing exposed skin.**

Do not check for leaks with hand or fingers. Serious injury can result.



## 14. Warning!

**Risk of burns to exposed skin from hot surfaces.**

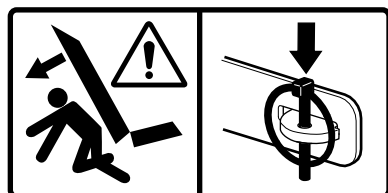
Stay clear of hot exhaust system.



## 11. Warning!

**Risk of injury from falling equipment.**

Install latch during transport.



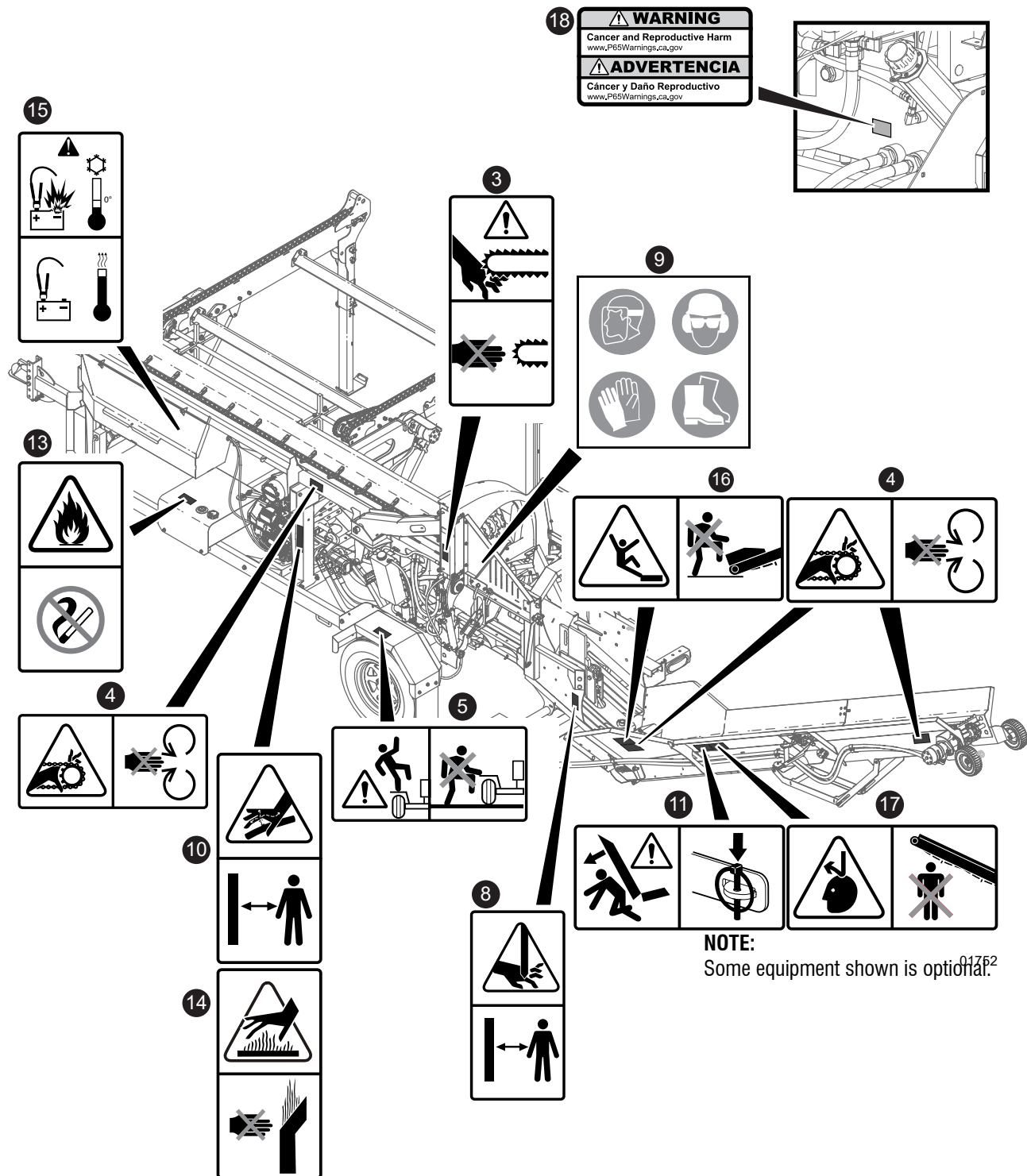
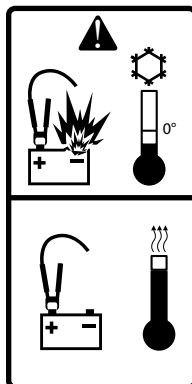


Fig. 9– Safety Decal Placement

## 15. Warning!

**Charging a frozen battery can cause it to explode.**

Warm the battery to 60 °F (16 °C) before charging.



## 16. Warning!

Risk of injury from falling off equipment.

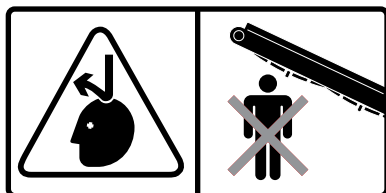
Do not climb or step on conveyor.



## 17. Warning!

**Risk of injury from falling off equipment.**

Do not climb or step on conveyor.



## 18. Warning!

**Risk of cancer or reproductive harm.**



The machine materials contain chemicals or machine operation may produce gases or dust that are identified by the state of California as causes of cancer, birth defects, or other reproductive harm.

This warning is required by the state of California, USA to comply with Proposition 65: the Safe Drinking Water and Toxic Enforcement Act of 1986.

## 2.11 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).



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

The Wallenstein WP1624 Wood Processor is designed to process cut logs into split firewood. Logs are loaded onto the live deck and moved onto a conveyor where they are fed into the saw. The saw cuts the logs to length and the wood blocks fall into the splitting chamber. The split wood is moved away from the machine on a conveyor (if equipped).

Power to drive the machine is provided through the gas engine and hydraulic pump.

### 4.1 To the New Operator or Owner

**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. Untrained operators are not qualified to use the machine.**

Many features incorporated into this machine are the result of suggestions made by Wallenstein customers. Read this manual carefully to learn how to use the wood processor safely. Following the instructions in this manual along with a good maintenance program can provide many years of trouble-free service.

**IMPORTANT! Make sure all operators understand how to put the machine in a safe service position before servicing or repairing. See *Safe Condition* on page 9.**

### 4.2 Job Site Familiarization

It is the responsibility of the operator to be thoroughly familiar with the work site prior to starting. Prevent the chance or possibility of problems or accidents by avoiding unsafe situations.

Some items operators should check include, but are not limited to:

1. Avoid close or cramped work spaces. Be sure there is sufficient space and clearance for the machine.
2. Position the machine so prevailing winds blow engine exhaust fumes and chain saw chips away from operator's station.
3. Choose flat and level ground and make sure the machine is level before operating.
4. Avoid muddy or soft ground as the jacks will sink in. If unavoidable, use boards or plates to increase the surface area of the jack feet.

### 4.3 Operator Orientation

**IMPORTANT! When describing controls throughout this manual, the directions for left-hand, right-hand, backward and forward are determined when standing at the operator controls facing the direction of forward machine travel.**

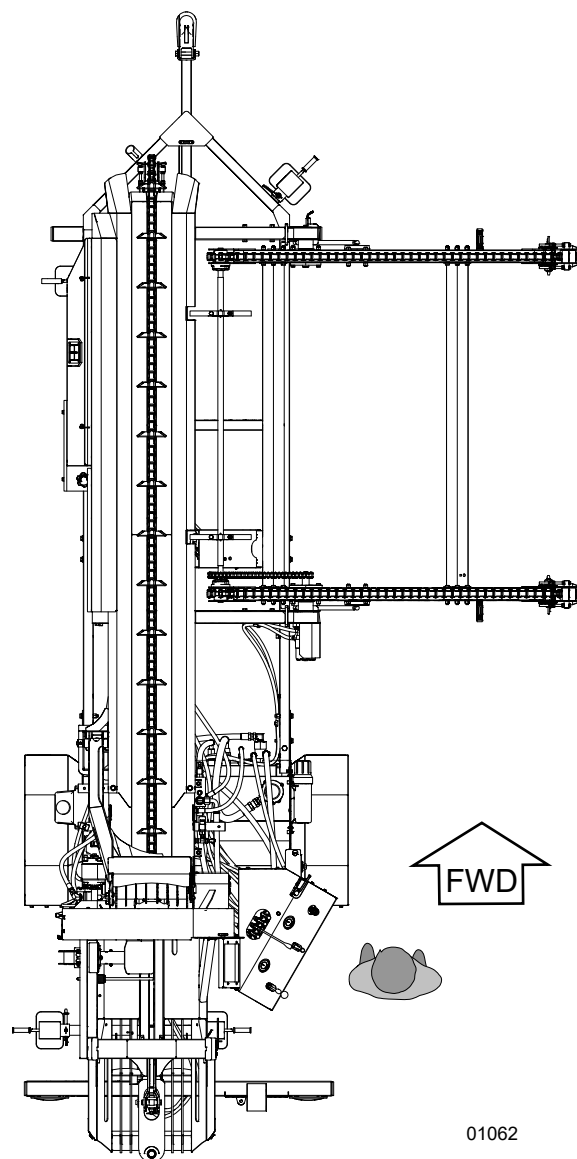
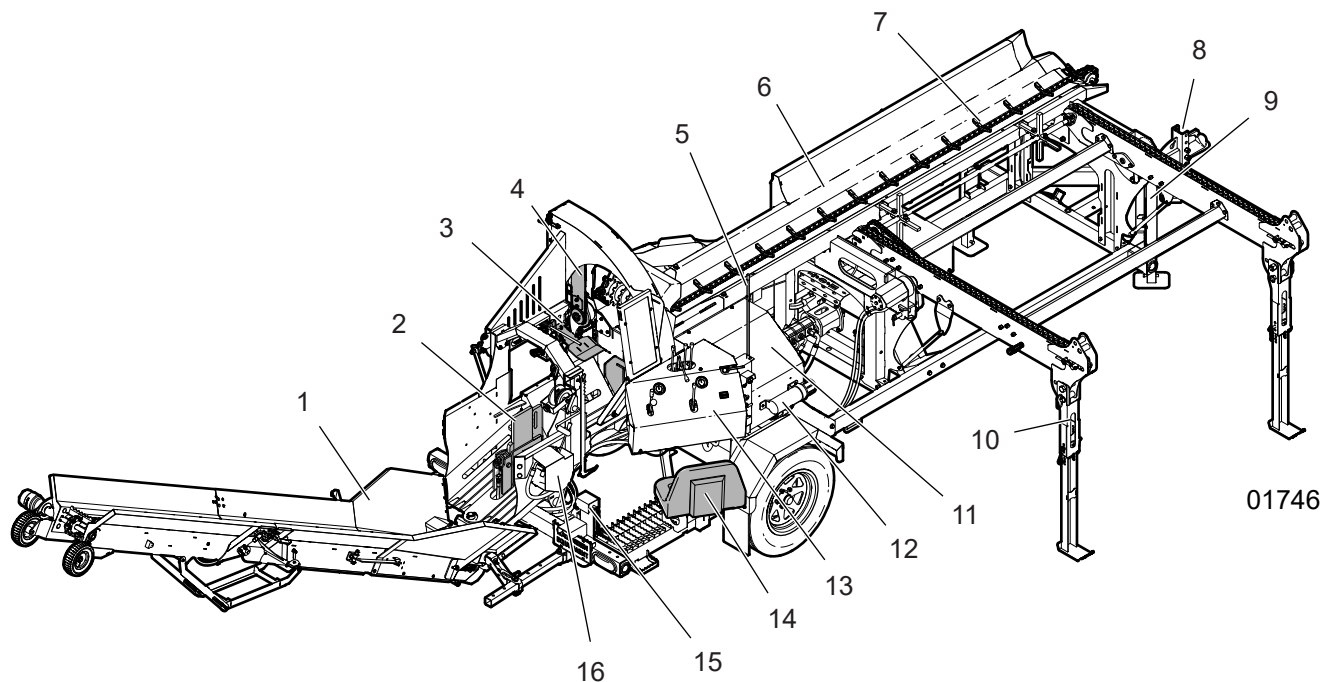


Fig. 4 – Direction of forward machine travel

## 5.1 Machine Components



Some items shown are accessories or optional equipment.

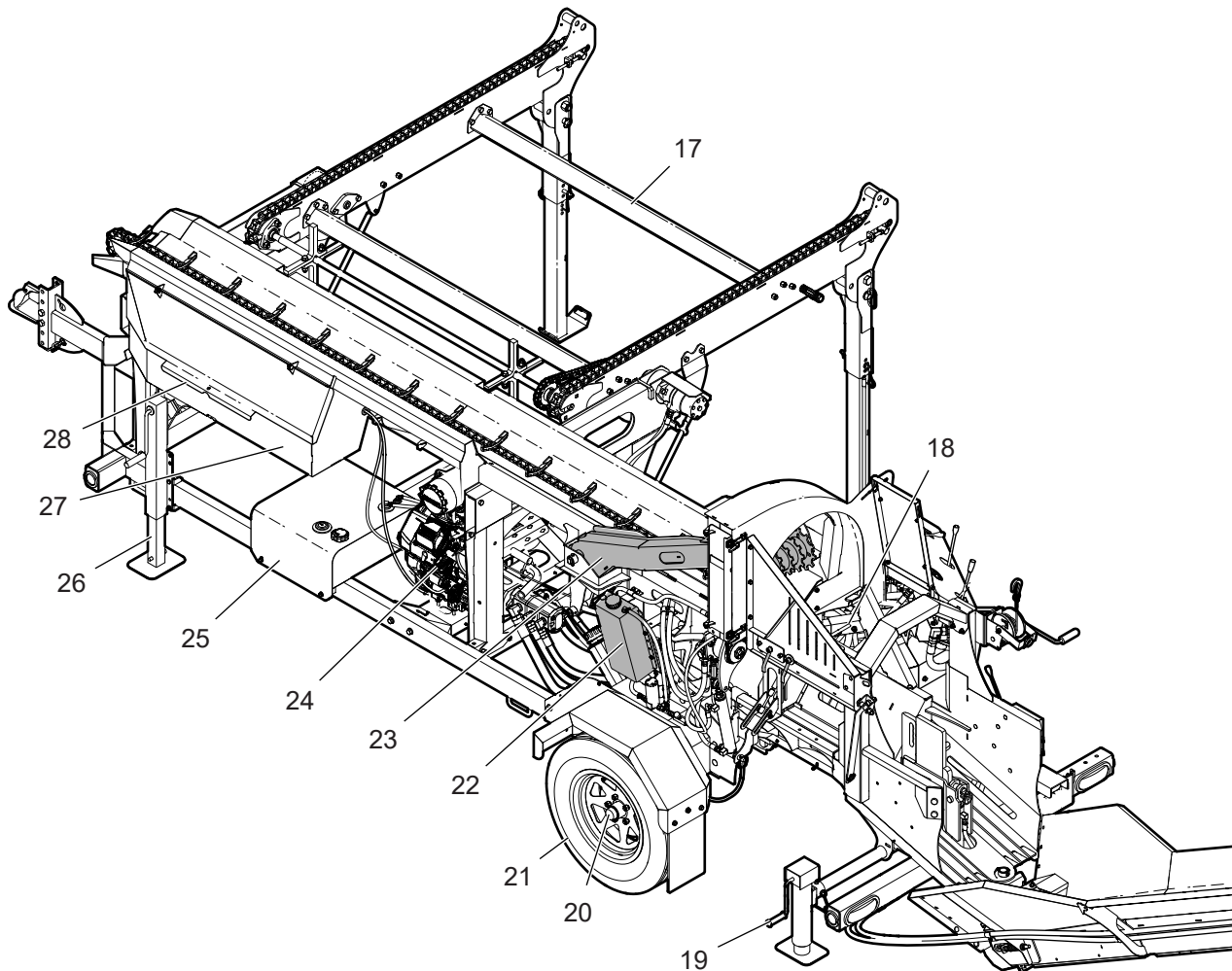


**Fig. 10–WP1624 Components**

- |                                   |                                   |   |
|-----------------------------------|-----------------------------------|---|
| 1. Integrated Conveyor (optional) | 7. Infeed Conveyor Chain          | 13. Operator Control Panel                      |
| 2. Splitting Wedge Assembly       | 8. Adjustable Trailer Hitch       | 14. Operator Seat Accessory                     |
| 3. Block Dropper                  | 9. Crank Jack                     | 15. Crank Jack                                  |
| 4. Chain Saw                      | 10. Live Deck Supports            | 16. Conveyor Hydraulic Control Valve (optional) |
| 5. Safety Whip                    | 11. Hydraulic Oil Reservoir Cover |   |
| 6. Infeed Conveyor                | 12. Manual Tube                   |   |



Some items shown are accessories or optional equipment.



**Fig. 11 – WP1624 Components**

- |  |                              |
|--|------------------------------|
| 17. Live Deck                                  | 23. Top Roller Assembly      |
| 18. Block Dropper and Log Stop Guide           | 24. Engine – Vanguard® 29 hp |
| 19. Crank Jack                                 | 25. Fuel tank                |
| 20. Axle – Full Flex; 4000 lb; Electric Brakes | 26. Crank Jack               |
| 21. Tires – ST205/75R15 LRD                    | 27. Battery                  |
| 22. Chain Saw Oil Reservoir                    | 28. Tool Box                 |

## 5. Controls

### 5.1 Engine Controls

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

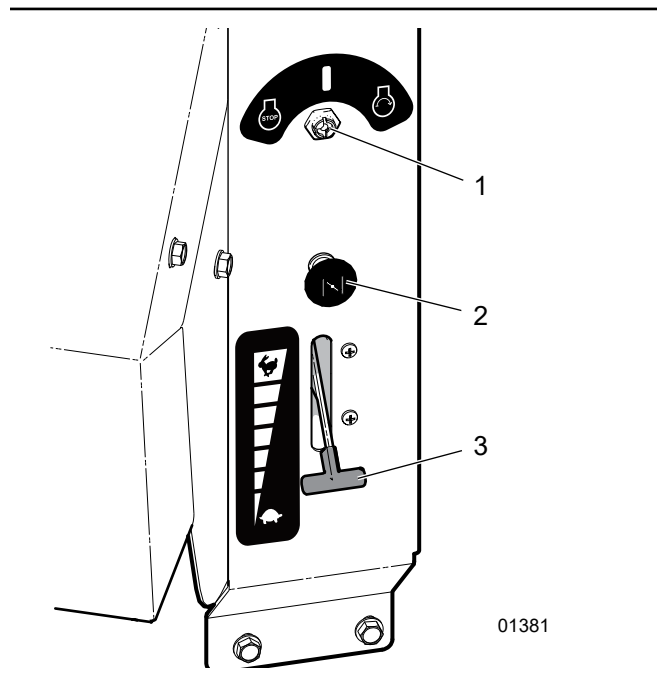


Fig. 5—Engine Controls

1. Ignition Switch
2. Choke Control
3. Engine Throttle

#### 1. Ignition Switch

This key-operated switch controls the electric power to the engine.



**STOP** – Turn key fully counterclockwise to stop the electrical system power and turn the engine off.



**ON** – Turn clockwise to the on (run) position at the detent. This is the position where the engine operates.



**START** – Turn fully clockwise to engage the starter solenoid and start the engine. Release the key when the engine starts and it spring-returns to the center *on* position.

#### 2. Choke Control

This push/pull knob controls the position of the choke.

- Pull the knob out (close the choke) to start a cold engine.
- Push the knob in (open the choke) as the engine warms.

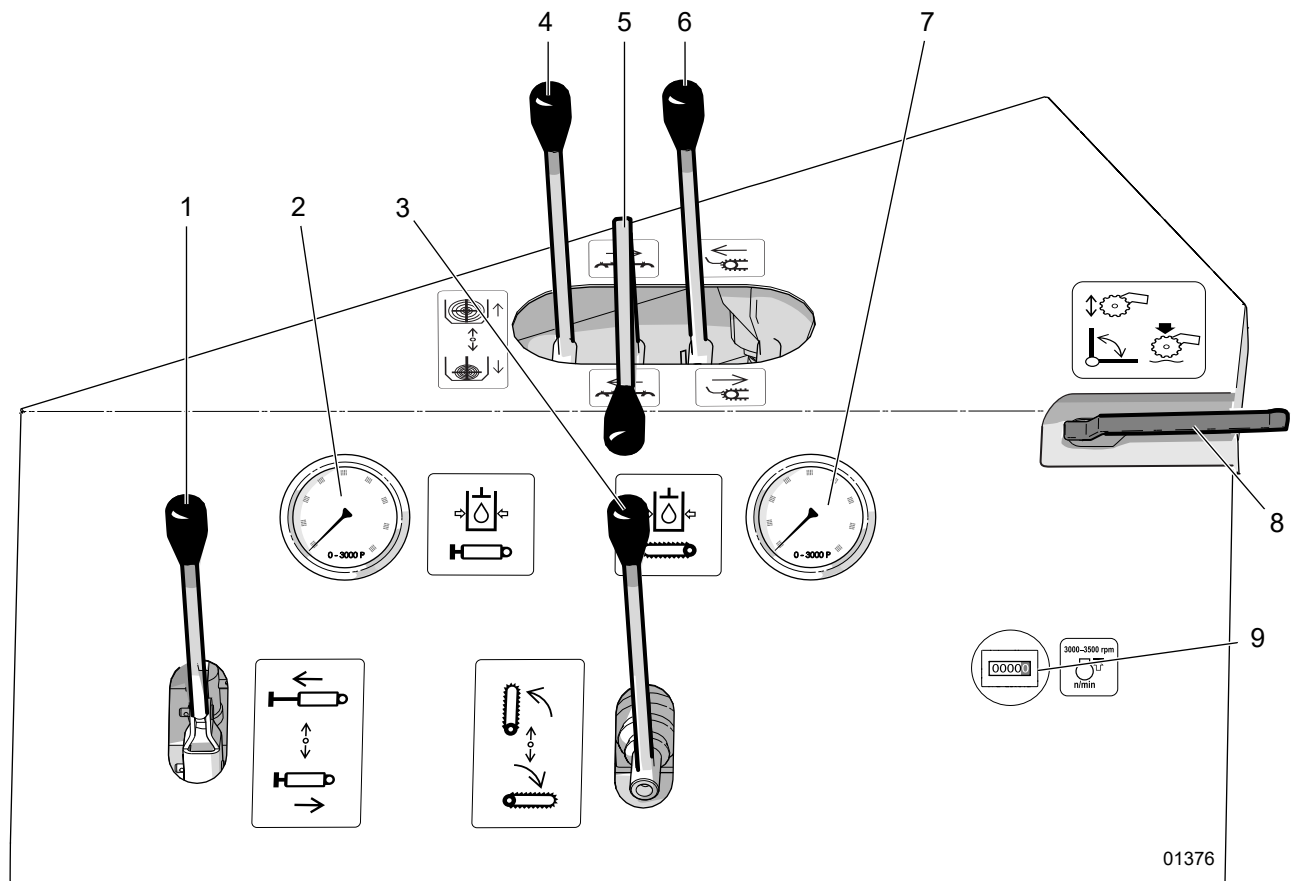
Always push the knob fully in when operating the machine. Refer to the engine manufacturer's manual for complete starting details.

#### 3. Engine Throttle

This lever controls the engine speed.

- Pull the lever up to increase engine speed and push down to decrease it.

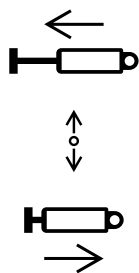
## 5.2 Hydraulic Controls



**Fig. 12—Hydraulic Controls**

- |  |   |
|--|---|
| 1. Splitter Cylinder Control Valve Lever     | 6. Live Deck Feed Control Lever               |
| 2. Splitter Circuit Hydraulic Pressure Gauge | 7. Chain Saw Circuit Hydraulic Pressure Gauge |
| 3. Saw Control Valve Lever                   | 8. Top Roller Clamp Handle                    |
| 4. Splitter Wedge Height Control Lever       | 9. Tachometer / Hour Meter                    |
| 5. Infeed Conveyor Control Lever             |   |

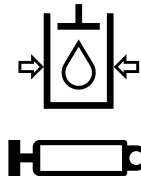
### 1. Splitter Cylinder Control Valve Lever



This lever controls the splitter.

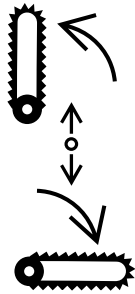
- Push the lever forward away from the operator to extend the splitter cylinder. Pull it back to retract.
- Pull the lever back fully to the detent to auto-retract. The lever kicks out to the neutral when the cylinder is fully retracted.

### 2. Splitter Circuit Hydraulic Pressure Gauge



This gauge indicates the splitter cylinder circuit operating pressure.

### 3. Saw Control Valve Lever

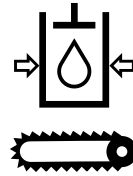


This lever controls the saw to cut logs.

- Push the lever forward away from the operator to raise/stop the saw.
- Pull the lever back to lower the saw and cut the log.

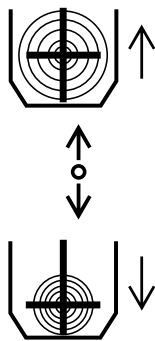
The Top Roller Clamp clamps down on the log to hold it as the cut is made.

Saw performance is maximized with P3 integrated electronic controller.



This gauge indicates the saw circuit operating pressure.

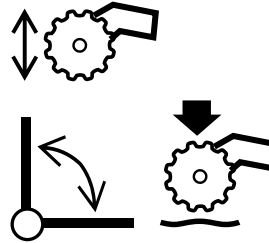
### 4. Splitting Wedge Height Control Lever



This lever controls the Splitting Wedge height. Adjust up or down to suit log size.

- Push the lever forward away from the operator to raise the wedge for larger logs.
- Pull the lever back to lower the wedge for smaller logs. The wedge can be used as a two-way splitter for very small logs.

### 8. Top Roller Clamp Handle



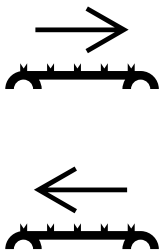
This valve lever clamps / unclamps the Top Roller. The Top Roller can hold a log down and follow its contour as it is cut, then move up out of the way when starting the next log.

In the *Clamped* position, the roller maintains down force on the log as the saw is raised and lowered with each cut. The roller arm follows the contour of the log as it is moved forward on the Infeed Conveyor.

In the *Unclamped* position, the Top Roller raises up fully out of the way when the saw is raised (for example before starting on a larger diameter log). When the saw is lowered the arm lowers the roller down on the log.

- Pull the lever horizontal to clamp down on the log. Push the lever up vertical to unclamp.

### 5. Infeed Conveyor Control Lever



This lever controls the log infeed conveyor chain.

- Push the lever upward to reverse logs out.
- Push the lever down to advance logs into the saw.

### 9. Tachometer / Hour Meter

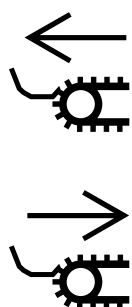
3000–3500 rpm



This gauge displays engine rpm when operating. With the engine shut down and the ignition key turned on, it displays operating hours.

Use the hour meter as an indicator for service intervals.

### 6. Live Deck Feed Control Lever



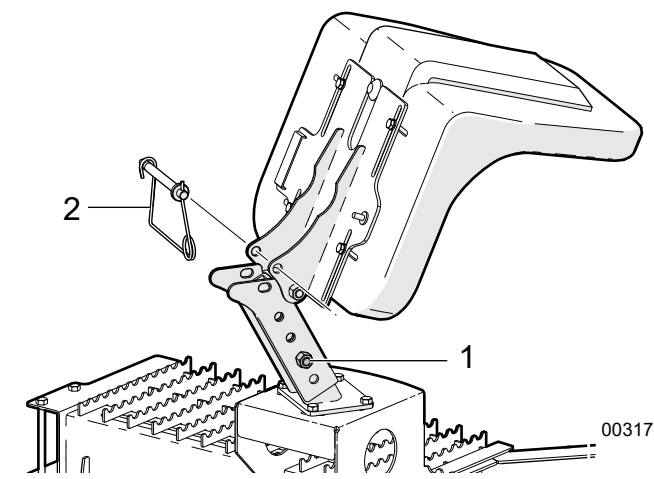
This lever controls the live deck that feeds logs onto the infeed conveyor.

- Push the lever forward to feed logs onto the infeed conveyor.
- Pull the lever back to reverse the live deck.

### 7. Chain Saw Circuit Hydraulic Pressure Gauge

## 5.3 Operator's Platform / Seat

An operator's seat provides an adjustable seated work area.



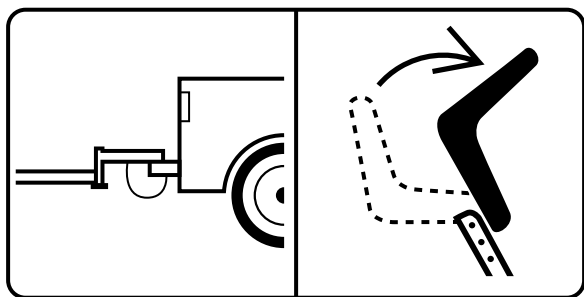
**Fig. 6—Operator's Seat**

1. Height Adjuster Bolt
2. Snap Lock Pin

### Adjust Seat Height

- Remove the height adjuster bolt, set the desired the height and reinsert the bolt.

**IMPORTANT!** When transporting the wood processor on a roadway or when the seat is not in use, pull the snap lock pin and lean the seat over. Reinsert the pin to secure it out of the way.



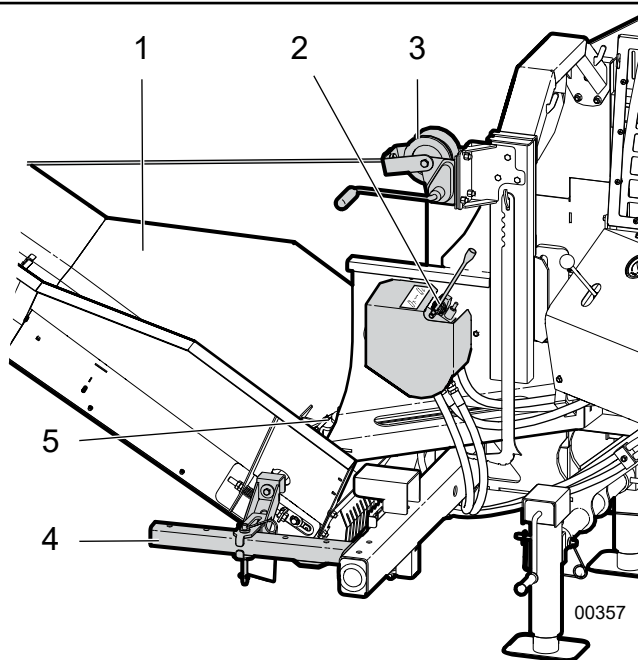
## 5.4 Integrated Conveyor

### (If equipped)

Accessory conveyors are available for the wood processor in 8 ft (2.4 m) and 12 ft (3.6 m) lengths. The conveyor is pinned to the rear of the wood processor and provides a 50° swing angle to stack split wood.

A hydraulic control valve powers the conveyor, and height is adjusted with a hand winch. The conveyor angle is changed by pulling the snap lock pin and pushing the conveyor to one side or the other.

- Push the valve lever into the detent to activate the conveyor. The conveyor chain operates at one speed.
- If the conveyor becomes jammed, it is possible to run the chain backwards for **SHORT** periods of time only to clear it. To do that, hold the wedge height lever all the way down. At the same time, move the conveyor control lever in the opposite direction from the detent.



**Fig. 7—Conveyor Controls**

1. Conveyor Hopper
2. Hydraulic Control Valve
3. Hand Winch
4. Conveyor Angle Guide and Snap Lock Pin
5. Conveyor Pivot

## 6. Machine Set-up

### 6.1 Machine Positioning at Site

#### CAUTION!

**Park the machine so prevailing winds blow exhaust gases / fumes away from the operator.**

W006

Select a work site outside or in a well-ventilated area. Make sure the ground is firm and level.

**IMPORTANT!** Always park the wood processor at the work site on solid, level ground. Use the jack legs to take weight off tires and keep machine stable.

- Park the wood processor so log loading equipment has easy access to the live deck, and split wood can be carried from the conveyor.
- Plan for the cleanup and removal of wood chips and sawdust.

#### WARNING!

**Never use the Trailer Breakaway Switch as a parking brake. The switch is there to safely stop the trailer in the event it becomes accidentally disconnected from the tow vehicle.**

**Using it as a parking brake when un-hooked drains the machine's battery and would then cause it to be ineffective in an emergency. Once the battery charge depletes, the brakes release and the trailer could move unexpectedly.**

W042

- Use the bubble level on the front of the trailer frame as a guide to park the machine in a level area.

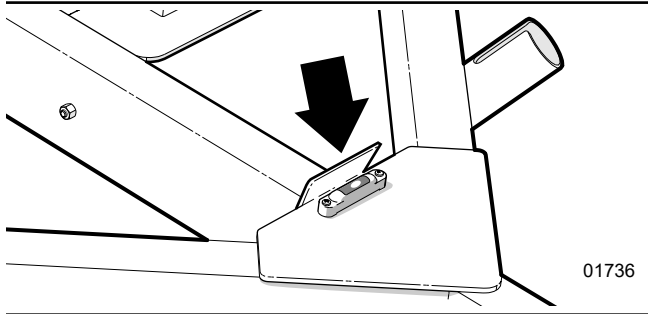


Fig. 13—Bubble Level on Frame

### Procedure

1. Block or chock the wheels so the machine cannot roll.
2. Crank the front jack to raise the hitch coupler and unhook the tow vehicle from the wood processor.

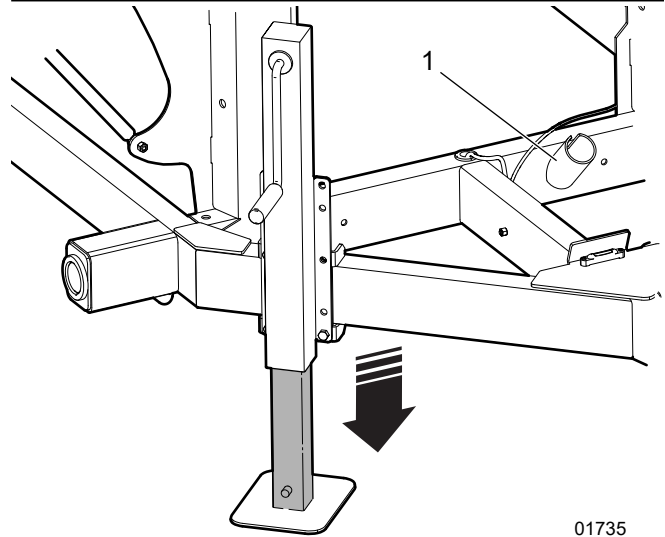
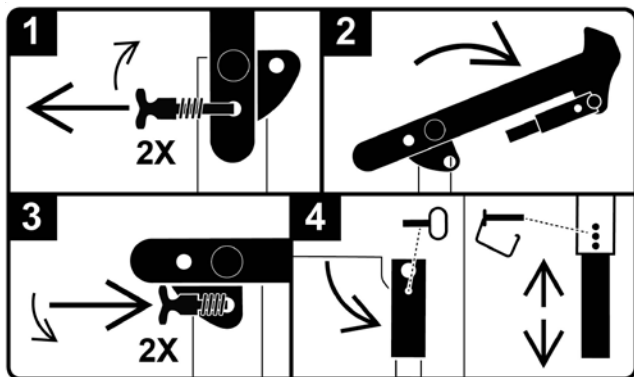


Fig. 14—Front Crank Jack

1. Trailer Electrical Harness Plug Storage
3. Disconnect safety chains, breakaway device cable, and wire harness. Place the harness plug end in the storage socket.
4. Move the tow vehicle out of the way.
5. Crank all jacks until all jack feet are firmly into the ground so the weight of the machine is off the tires.
6. Adjust jacks at the front and back to level the wood processor.

## 6.2 Live Deck, Lowering



Live deck folding force is less than 50 lb (23 kg).

### Procedure:

1. Pull and lock out pins on both sides of the live deck.

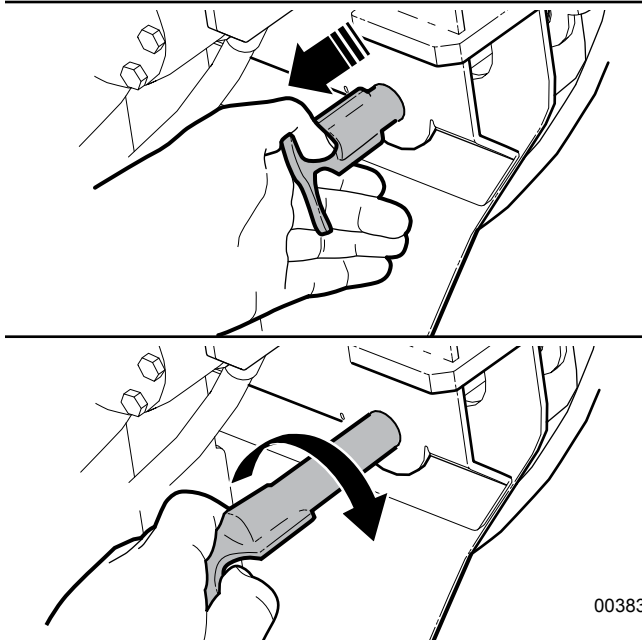


Fig. 15—Live Deck Locking Pins

2. Pull the live deck down using the handles on the sides.

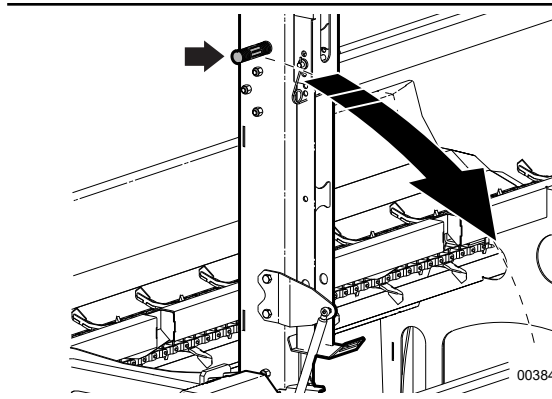


Fig. 16—Live Deck Handles

3. Pull, turn and reinsert the deck pins to lock it in position.

**IMPORTANT!** The live deck locking pins must be pinned in place to prevent the live deck from moving during operation.

### Support Legs

4. Remove the hitch pins and swing both support legs under the live deck. Reinsert the hitch pins.

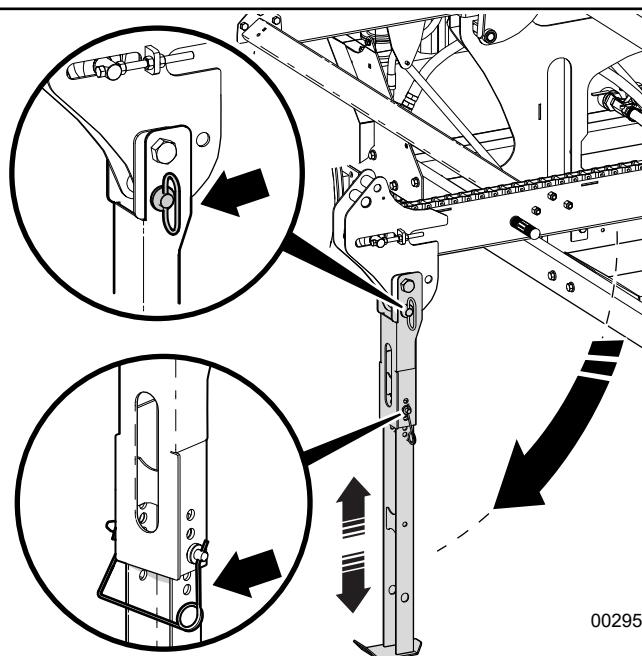


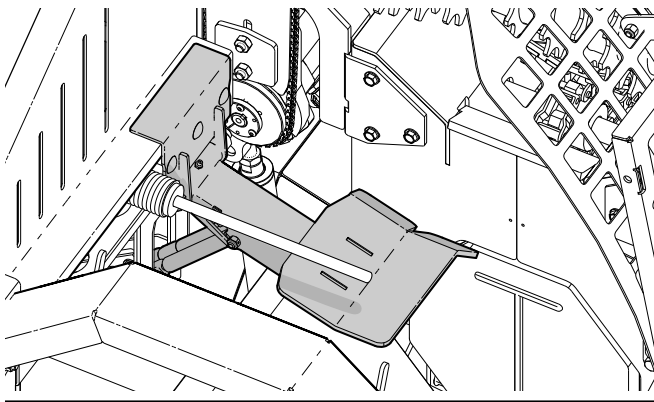
Fig. 17—Live Deck Support Legs

5. Remove the snap lock pins and adjust leg height so the deck is properly supported. Try to get the deck as level as possible. Reinsert the pin.

**IMPORTANT!** Live Deck Support Legs must be pinned in place under the deck during operation. Place blocking under legs if required to keep deck level and on a solid footing.

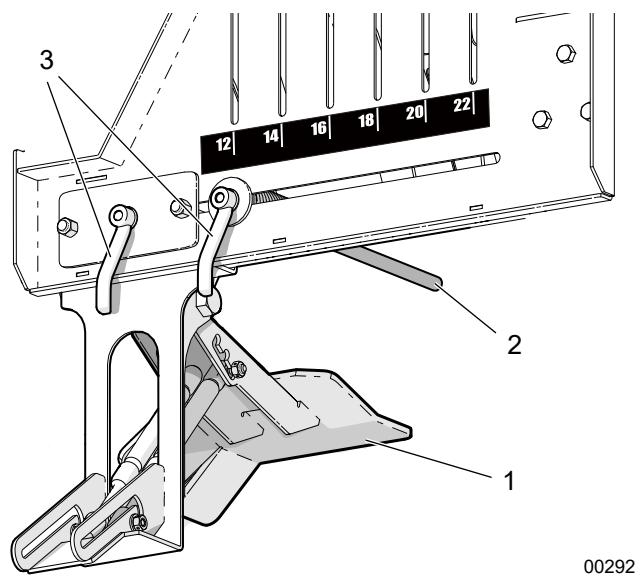
## 6.3 Block Dropper

- The block dropper is mounted on the back of the splitting hopper. When the saw cuts the end of the log off, the block dropper helps it fall squarely into the hopper, preventing jams.



**Fig. 18—Block Dropper**

- The block dropper (1) works in conjunction with the Log Stop guide (2).



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**Fig. 19—Block Dropper and Log Stop Guide**

1. Block dropper
2. Log stop guide
3. Lock Handles

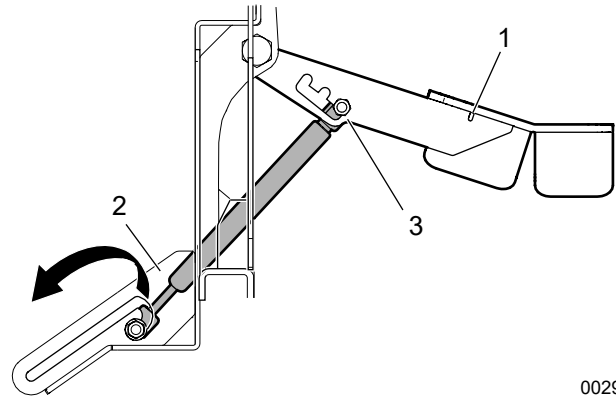
### 6.3.1 Block Dropper, Adjusting

Set the block dropper for typical log size. The gas struts can be adjusted together or independent of each other.

If the log does not fall squarely into the splitting hopper, adjust as required:

1. First try setting one strut as active. Lift the block dropper paddle (1) and slide the end of one strut down the slot (2) so it is inactive. No tools are required to do this.
2. If one support is not adequate, try setting both struts as active.
3. If further adjustment is required, use tools to adjust strut at position (3).

If the block dropper is not required altogether, retract it out of the way. Lift and slide both base ends of the gas struts down the slot (2).



00293

**Fig. 20—Block Dropper Adjustment**

1. Block Dropper Arm
2. Base Support
3. Block Weight Adjustment Positions



Gas struts can be adjusted or moved independent of each other to match block weight.

## 6.4 Log Stop Guide

Position the log stop guide for desired firewood length and consistent saw cuts.

- Turn the lock handle counterclockwise to loosen the guide. Move it into position, then turn the handle back clockwise to tighten it.

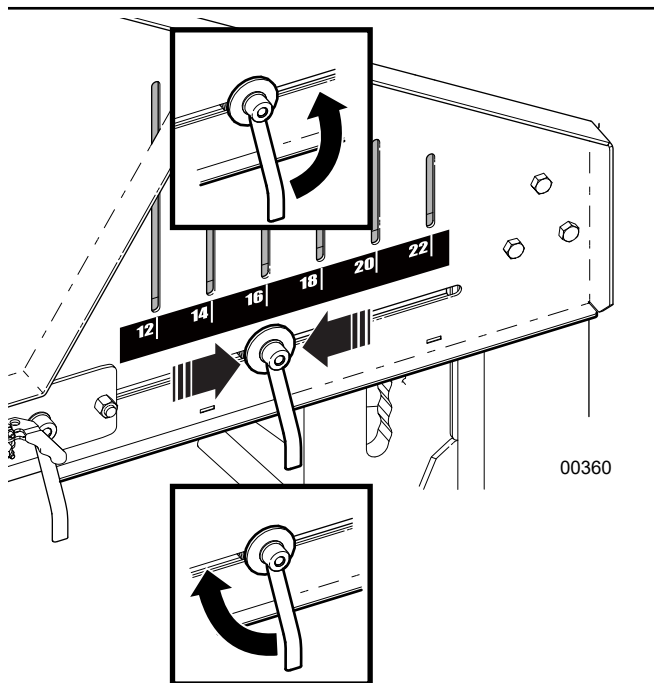


Fig. 21 – Log Stop Guide Lock Handle

- The spring-loaded indicator can be locked at any desired position along the slide. For reference, follow the decal on the back of the splitter hopper, or use the vertical slotted holes in the back plate. Each hole is 2 inches (5 cm) apart.
- Advance the log up to the stop for each cut.

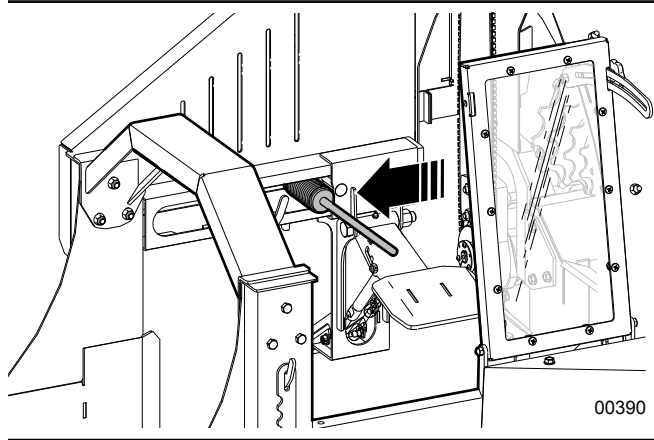


Fig. 22 – Log Stop Guide

## 6.5 Saw Shield

- Adjust the position of the saw chain shield as required.
- Replace the impact-resistant glazing if any scratches or other damage cause glare from the sun or obstruct the operator's view.

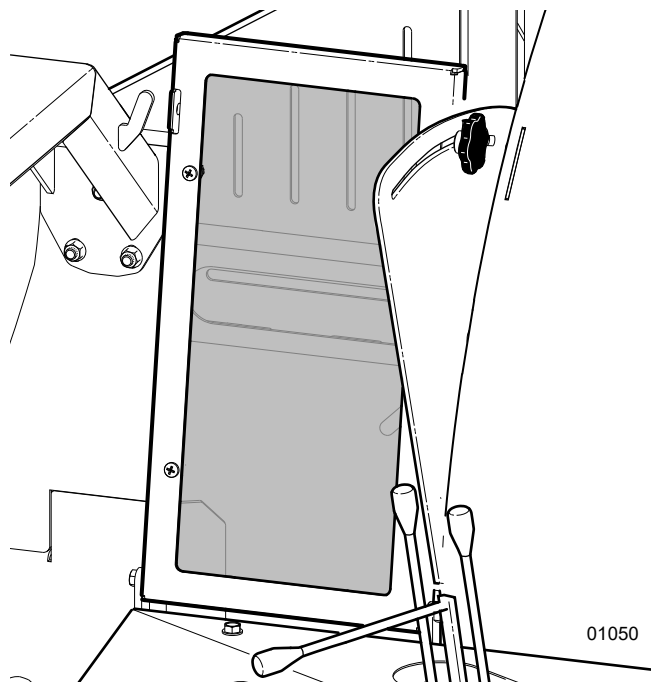


Fig. 23 – Saw Shield

## 6.6 Integrated Conveyor

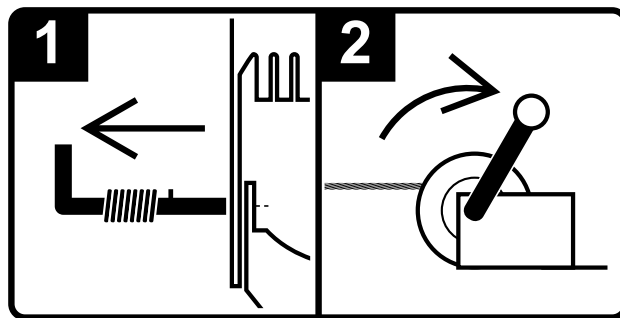
(If equipped)

### 6.6.1 Conveyor Height, Changing

Conveyor height is adjusted using the hand winch on the left-hand side. An internal brake holds the winch at the desired height.

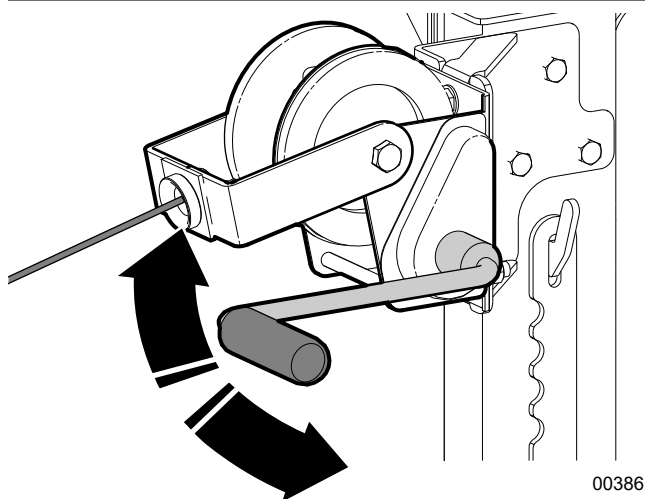
**To raise the conveyor:**

- Turn winch handle clockwise. (The winch ratchet clicks as the handle is turned.)



## To Lower the Conveyor:

- Turn the handle counterclockwise. (There is no clicking sound when lowering.)
- When the conveyor is at the desired height, turn the winch handle back in the clockwise direction to engage the brake until two clicks are heard.



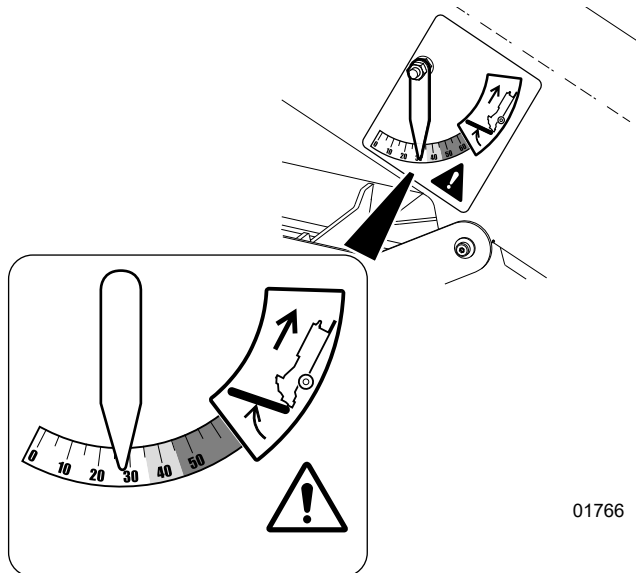
00386

Fig. 24—Conveyor Hand Winch

## Conveyor Working Height

Use the indicator on the left-hand side of the conveyor as a guide for a safe conveyor operating height.

Always keep the indicator in green zone on the decal.



01766

Fig. 25—Conveyor Angle Indicator

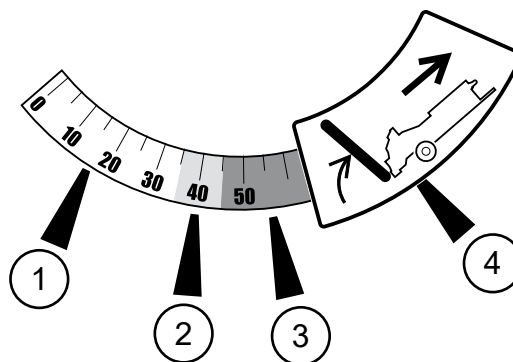
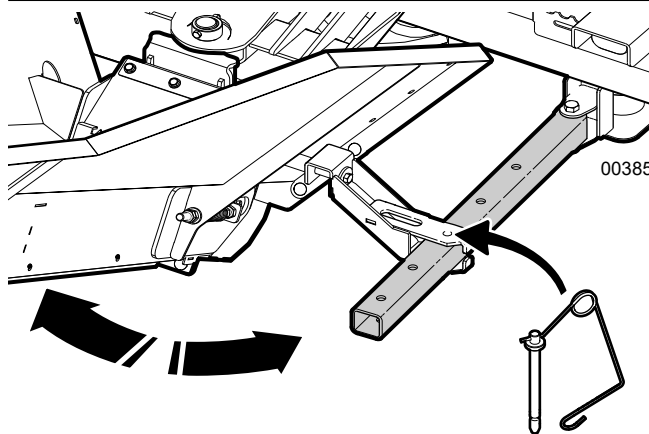


Fig. 26—Indicator Zones

1. Safe Working Angle (green)
2. Approaching Unsafe Working Angle (yellow)
3. Unsafe Working Angle (red)
4. Conveyor Travel Position

## Conveyor Angle, Changing

5. Remove snap lock pin and push conveyor to right or left to the desired angle.
6. Reinsert snap lock pin.



00385

Fig. 27—Changing Conveyor Angle

## 7. Pre-start Checks

Efficient and safe operation of the Wallenstein wood processor requires understanding operation and safety precautions outlined in this section.

Follow the pre-operation checklist for personal safety and to keep the machine in good mechanical condition.

Before operating the wood processor, check the following areas:

Area to check	✓
Check and lubricate the machine per the schedule outlined in the Maintenance Section. See 53.	
Check the splitting wedge and block. Inspect for damaged or broken components and excessive wear. Lubricate, repair, or replace as required.	
Check the saw chain. Look for broken or worn parts. Check the bar guide and chain tightness.	
Inspect the conveyor, infeed conveyor and live deck chains. Tighten chains if necessary. Look for broken or worn parts.	
Check and ensure that all covers, guards and shields are in place, secured and functioning as designed.	
Check and tighten all fasteners. Make sure equipment is working and in good repair.	
Check for hydraulic leaks. Tighten fittings or replace components to stop leaks.	
Make sure there is bar oil in the reservoir.	

### 7.1 Before Starting the Engine



**Hearing loss hazard. Prolonged exposure to loud noise may cause permanent hearing loss. Use suitable protection while operating the machine.**

W016

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

Although this machine is easy to use, each operator should review this section to get familiar with the detailed safety and operating procedures.

1. Make sure the machine is set up correctly. See Machine Set-up 29.
2. Check the engine oil level. See 35.
3. Check the hydraulic oil level. See 52.
4. Check the fuel level. See 35.
5. Check the bar oil level. See 36
6. Review the Safety Rules on 8. Make sure each operator is trained and familiar with the set up and operation of the machine. Review the Controls (see 26).
7. Clear the area of bystanders.

## 7.2 Fuel Level Check

**Check the fuel level daily.** A gauge on the top of the tank indicates fuel level. The fuel tank is located on the left-hand side of the machine below the tool box. Avoid running the tank dry.

Starting with a full tank helps to eliminate or reduce operating interruptions for refueling.

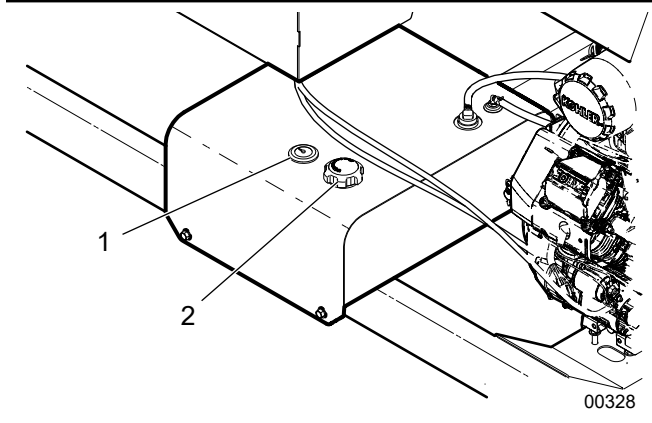


Fig. 28—Fuel Tank

1. Fuel Level Gauge
2. Fuel tank Cap

### 7.2.1 Refueling

Fuel tank capacity: 10 US gal (37 L).

#### **WARNING!**



Fuel vapors can explode causing injury or death. Do not smoke while refueling. Keep sparks, flames, and hot components away.

W027

Refuel in a well-ventilated area with the engine stopped. If the engine has been running, allow it to cool first. Never refuel the engine inside a building where gasoline fumes can be exposed to flames or sparks.

For fuel specification, see *Engine Fuel* on page 52. Refer to the engine manual for additional information on fuels.

#### Procedure:

1. Clean the area around fuel tank cap. Fill the tank to 1/2" (12 mm) below bottom of filler neck to provide space for any fuel expansion. **Do not overfill.**
2. Install fuel fill cap securely and wipe up any spilled fuel.



To help prevent running low on bar oil, top up reservoir every time fuel is added.

## 7.3 Engine Oil Level Check

**Check engine oil level daily.** Check with the machine parked on level ground and engine stopped.

**IMPORTANT!** Running the engine with a low oil level can cause engine damage that is not covered by warranty.

#### Procedure:

1. Remove the oil level dipstick and wipe it clean.
2. Fully insert the oil level dipstick, then remove it to check the oil level. Correct level is at the top of the full indicator on the dipstick.
3. If the oil level is low, remove the oil filler cap and slowly add oil. Wait one minute before rechecking level. **For recommended Engine Oils, see 52. Refer to the engine owner's manual for further information.**
4. Reinstall the oil level dipstick and oil filler cap.

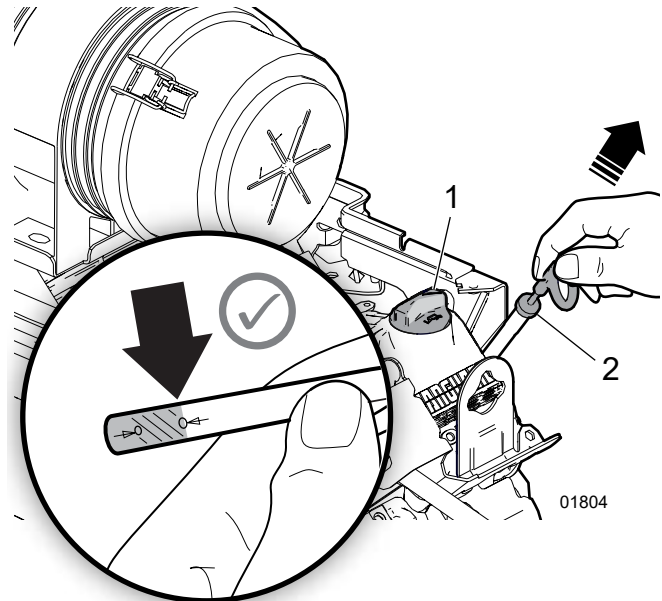


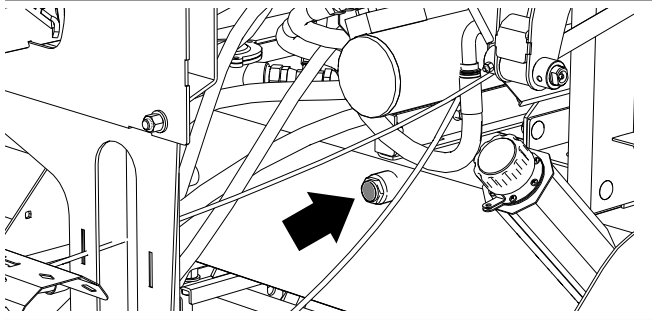
Fig. 29—Checking Engine Oil Level

1. Oil Filler Cap
2. Oil Level Dipstick

## 7.4 Hydraulic Oil Level Check

**Check hydraulic oil level daily.** The hydraulic oil tank sight glass is on the front of the tank. Check level with the engine stopped.

**The proper level is when the oil fills the glass window.** If the level is not visible in the sight glass, add oil.



**Fig. 30—Hydraulic Tank Oil Level Check**

1. Hydraulic Tank Filler Cap
2. Oil Level Sight Glass

**IMPORTANT!** Do not operate machine if oil level is not visible in the sight glass. Damage to the pump and other components can occur.

**Do not overfill the tank past the sight glass window.**

**IMPORTANT!** Hydraulic oil quality should be inspected every 50 hours. If the oil is dirty or smells burnt, it should be replaced.

**IMPORTANT!** Be aware of high oil temperatures. Temperatures higher than 180 °F (82 °C) could cause seal damage and degrade oil quality.

### 7.4.1 Adding Oil to the Tank

The hydraulic system uses **Dexron® III ATF**.

#### Procedure:

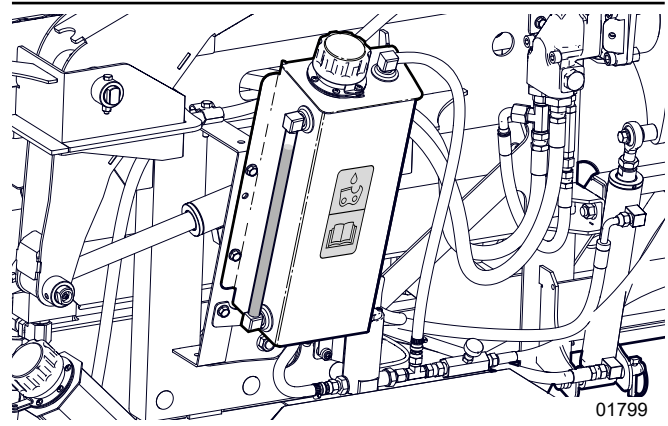
1. Clean the area around filler cap and remove it.
2. Use a clean funnel and add oil until the level just fills the sight glass window.
3. Install filler cap securely. Wipe up any spilled oil.

Check levels after changing filters or servicing hydraulic components.

## 7.5 Chain Saw Bar Oil level

**Check bar oil level regularly.** The bar oil reservoir is located on the left-hand side of the processor. Oil level is visible in the tube on the side of the reservoir. Reservoir capacity is 6-1/2 quarts (6.2 L).

Your cutting system operates in a challenging environment and depends on sufficient lubrication to minimize wear and extend the life of operation. At start up, allow adequate time for the oil from the reservoir to reach the cutting system.



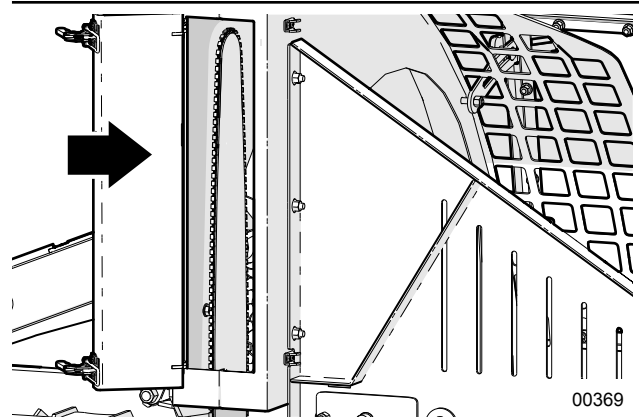
**Fig. 31—Bar Oil Reservoir**

Bar and chain oils provide adequate lubrication to the cutting system when used correctly.

**IMPORTANT!** The cutting system must use chain saw bar oil only. Hydraulic or engine oils do not provide adequate lubrication. Non-approved lubricants can void saw warranty.

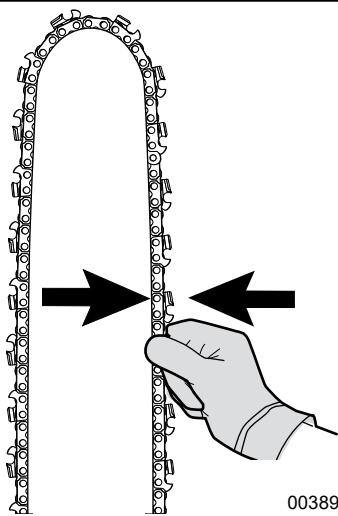
## 7.6 Saw Chain – Checking

**Check saw chain tension regularly.** To tension the saw chain, see 60.



**Fig. 32—Saw Access Door**

Grasp the chain at the midpoint of the guide bar and pull the saw chain away from the bar rails. The drive link tangs should nearly come out of the bar groove.



**Fig. 33**—Check Saw Chain Tension

- Inspect for broken, cracked, damaged, or missing saw chain components. Inspect loose rivets. If rivet can be turned by hand, it is too loose.
- Inspect for excessive stretch. Stretch is wear occurring to the flange of the rivet and the holes in drive links.
- Inspect the chain chassis for abnormal wear patterns, which are indicators of other cutting system issues with the guide bar and drive sprocket.



Refer to the **Oregon® Mechanical Timber Handbook** for additional information on the saw chain and bar. A copy of this manual can be found on the Wallenstein website under Technical Reference.

## 7.7 Machine Break-In

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

For new saw chain, check tension often during the first 10 minutes of use.

Consider transporting new and newly sharpened saw chain to and from the job site in a container with lubricant.

1. Lubricate your saw chain prior to use.
2. Increase saw speed gradually over the first 2–4 minutes of running time while cycling the guide bar, until bar oil is observed coming off the tip.
3. Check saw chain tension. Adjust if necessary.

### After 1–5 hours of operation:

4. Check all nuts, bolts, and other fasteners. Tighten to their specified torque.
5. Check hydraulic system for leaks. Tighten all leaking fittings and replace any leaking components.
6. Check machine fluid levels: Fuel, engine oil, and hydraulic oil reservoir. Top up as required.
7. Check for entangled material. Remove all entangled material before resuming work.

### After 20 hours of operation:

8. Repeat Steps 4 through 7 listed above.
9. Check and adjust the tension on all drive chains. Chains may stretch slightly as they wear in. See 62.
10. Go to the normal servicing and maintenance schedule as defined in the Maintenance Section. See 53.

### After 50 hours of operation:

- Re-tension Infeed Conveyor chain. See 61
- Re-tension the Live Deck chain. See 61.
- Re-tension the Integrated Conveyor chain (as equipped). See 63.

## 8. Operating Instructions

### 8.1 Starting the Engine

#### **! WARNING!**

Engine exhaust contains carbon monoxide, an odorless, poisonous gas. Breathing it can cause unconsciousness or death.

Never operate engine in a closed, or even partly closed area. Exhaust gases can build up to dangerous levels.

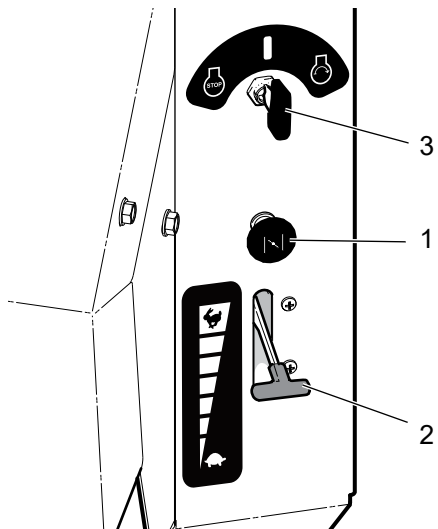
W072

Refer to the engine manufacturer owner's manual for further information.

- The wood processor should be set up to work, all pre-start checks completed and otherwise ready to operate.
- Check all hydraulic control levers are in neutral (out of detent).

#### Procedure:

1. Pull out (close) the choke (1) if the engine is cold.



00318

Fig. 34—Side Console

2. Move the throttle (2) up to 1/4 throttle position.
3. Turn the ignition key (3) clockwise to start the engine. Release the key when the engine starts. The key will return to the run position when released. Do not crank the engine continuously more than 10 seconds. Allow a 60 second interval between starting attempts.
4. Idle the engine for a few minutes to allow it to warm up. Gradually push the choke control knob in as the engine warms.

5. Increase throttle setting to 3000–3500 rpm. Maximum engine speed is required for smooth operation of hydraulics.

#### 8.1.1 Stopping Procedure

1. Stop cutting and splitting logs. Clear all split wood out. Let hydraulic controls go to their neutral position.
2. Move the throttle to idle position to slow the engine speed and allow it to cool down.
3. Turn off the ignition switch to stop the engine.

#### 8.1.2 Stopping in an Emergency

- Shut off the engine
- Set all hydraulic controls to neutral
- Correct fault situation before restarting engine and resuming work.

### 8.2 Cold Weather Start-up

In cold weather, the following methods can be used to warm up the Wood Processor before putting it to work.

#### Engine

- Use proper oil for temperature expected. See Recommended Engine Oils on 52.
- Disengage all possible external loads.
- Use fresh winter grade fuel. Winter grade fuel has higher volatility to improve starting.

After start-up, leave the engine speed at low idle for 30 seconds so that the oil has warmed enough to provide proper lubrication.

Gradually return choke control to OFF. Equipment may be operated during warm-up period, but it may be necessary to leave choke partially on until engine warms up.

#### Hydraulic System

**NOTE!** If oil in the hydraulic circuit is cold, hydraulic functions may move slowly.

Leave the engine at low idle speed. Warm the hydraulic oil by extending the splitter cylinder to the end of its stroke, then hold the valve part way open for about two minutes. Monitor the pressure gauge to keep it under 1000 psi.

Cycle all hydraulic functions. This warms the oil and circulates it through cylinders, motors, lines, and valves in the control circuits.

Move cylinders through their working range several times until the hydraulic functions operate normally. If functions remain sluggish, additional time may be required for warm-up.

## Chain Saw

Operate the saw slowly while cycling the guide bar until lubricant can be observed leaving the tip of the guide bar. Further warm the saw circuit by pushing the control valve forward and holding it there in the RAISE position to cycle oil back to the reservoir.

## 8.3 Live Deck

Load logs onto the live deck so the deck chains can drop them into the infeed conveyor trough, one at a time.

Push the valve lever forward to feed the log onto the infeed conveyor. Pull the lever back to reverse live deck.

**Maximum log length is 16 ft (5 m).**

**Minimum log length is 6 ft (1.8 m).**



If logs are shorter than 6 ft (1.8 m), load them from the other side.

- Do not stack logs. Try to keep logs square with the deck rails.
- Always load logs with the bigger end of the log towards the saw.
- Place logs on the live deck so weight is evenly distributed. Try to keep logs parallel to infeed conveyor trough.
- Use the **Safety Whip** as a guide when setting logs onto the live deck to avoid interfering with the operator's station.
- If more than one log drops into the conveyor trough, shut down the machine to remove the second log. Sometimes reversing the live deck allows the separator tines to grab the log out of the infeed and back onto the live deck.

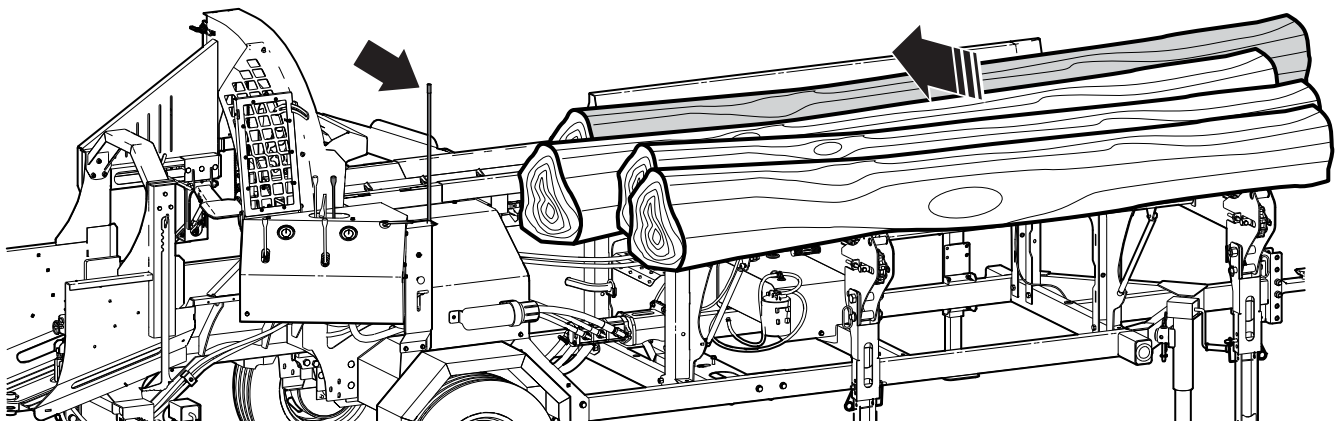


Fig. 58 – Safety Whip and Live Deck



## WARNING!

**Do not load logs longer than 16 ft (5 m) onto the live deck. They could fall off the deck and cause a crushing hazard.**

W045

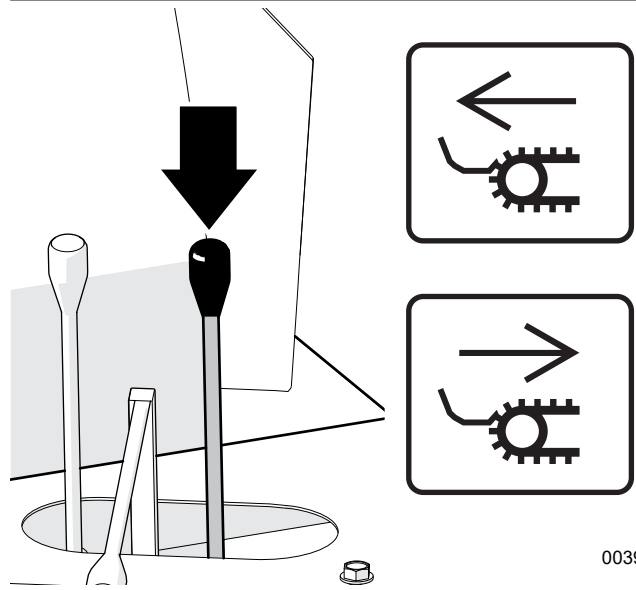


Fig. 35 – Live Deck Control Valve

**IMPORTANT! Set heavy logs onto the live deck carefully. Dropping them from a height could damage the deck and supports. Repeated pounding could also drive the support legs into the ground, resulting in an uneven deck.**

## 8.4 Infeed Conveyor

The infeed conveyor moves the log to the saw.

**IMPORTANT!** Before advancing the log, always make sure saw is raised **FULLY**. Running the log into the saw can damage it.

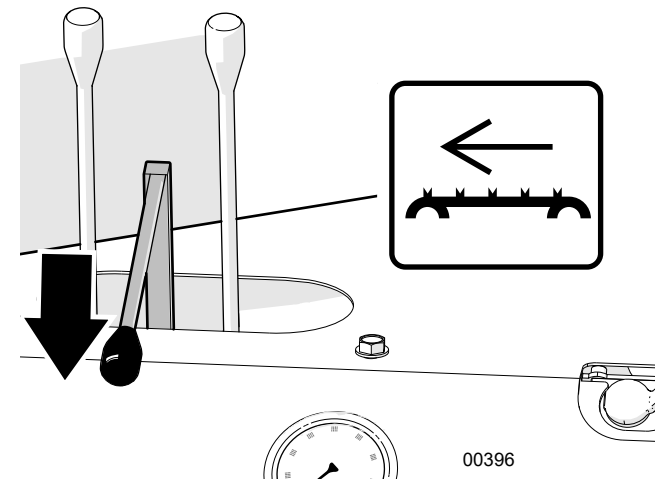


Fig. 36—Infeed Conveyor Control Valve

- Push the control valve handle down to advance the log up to the **Log Stop Guide**.
- If reversing the log is required, push the lever upward away from the operator.

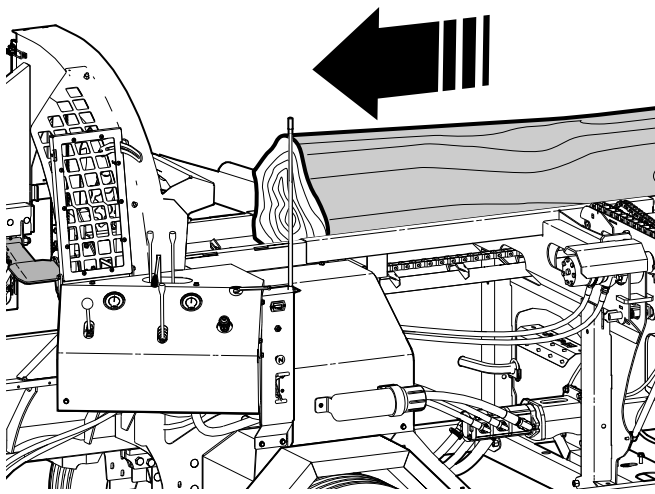


Fig. 37—Advance Log

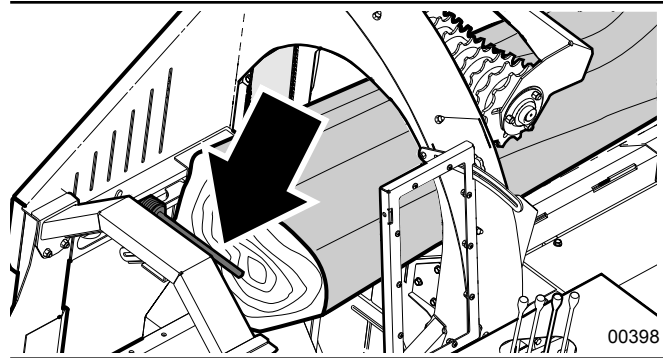


Fig. 38—Log Stop Guide

## 8.5 Top Roller

A hydraulic motor powers the top roller to work in series with the infeed conveyor. It assists feeding logs into the saw and starts and stops with the infeed conveyor.

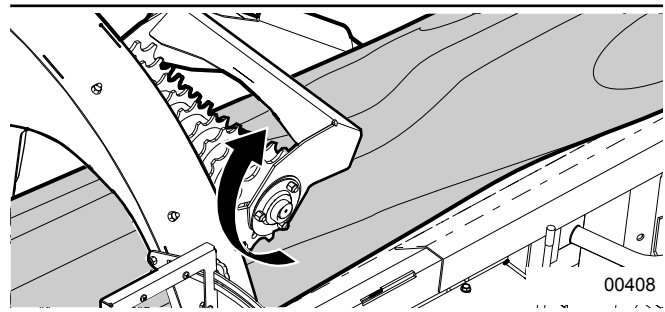


Fig. 39—Powered Top Roller

- Clamp the Top Roller down on the log by pulling the handle down to horizontal.

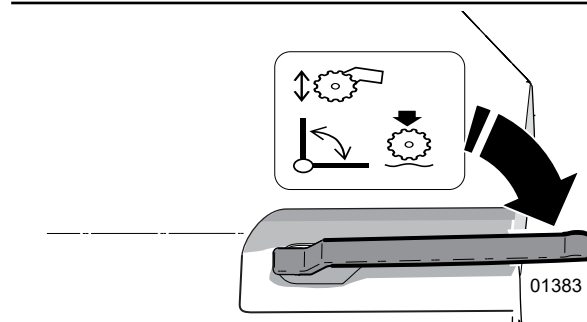


Fig. 40—Top Roller Clamped onto Log



The arm provides some down force on the roller to hold the log as saw cuts are made. The roller follows the contour of the log as it is advanced on the Infeed Conveyor.

- When starting a new log, push the lever back up vertical.



With the lever *vertical* (roller unclamped) the clamp arm holds its raised position unless the saw is moved. Pulling the saw down to cut, the roller clamps down on the log.

When unclamped, the clamp arm starts to raise when the saw reaches the home position.

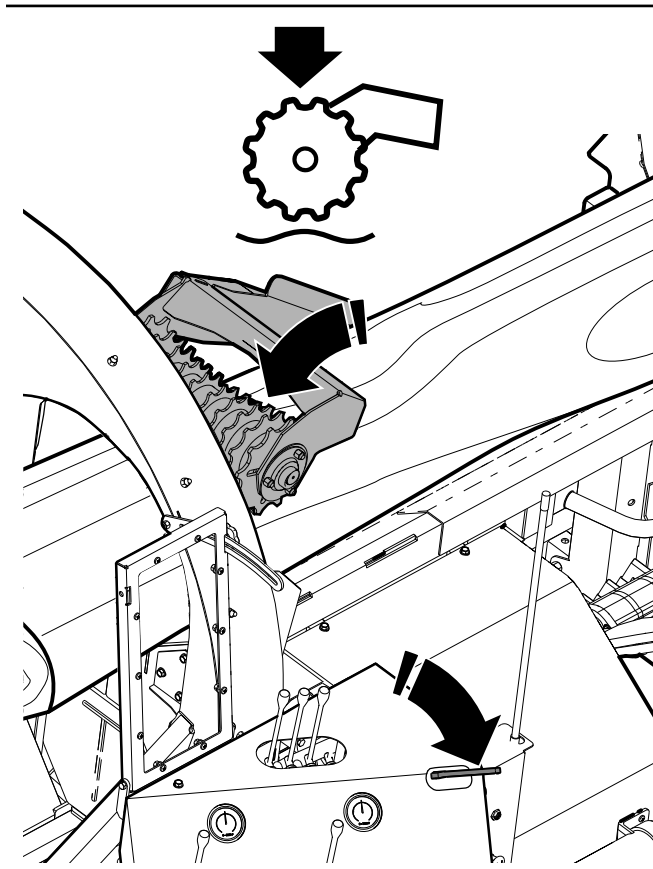


Fig. 41 – Top Roller Lift Arm Clamped Down on Log

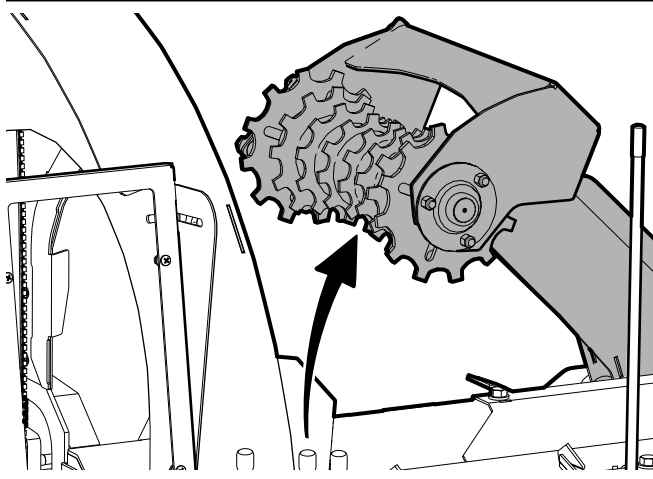


Fig. 42 – Top Roller Clear for Next Log

## 8.6 Conveyor Start-up (if equipped)

- If equipped with the integrated conveyor, pull the conveyor control lever back towards the operator.

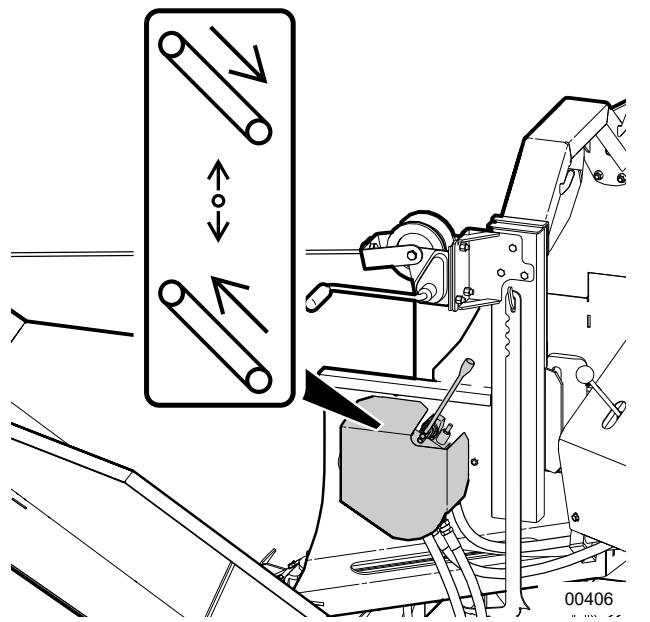


Fig. 43 – Conveyor Control Lever

## 8.7 Cutting

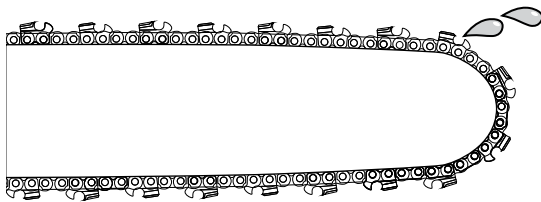
### **WARNING!**



Risk of serious injury or death from flying debris or shot from broken saw chain. Stay behind protective shields when cutting. Keep ground personnel and bystanders outside perimeter of work area.

W044

**IMPORTANT!** Allow adequate time during start up for bar oil to reach the chain.

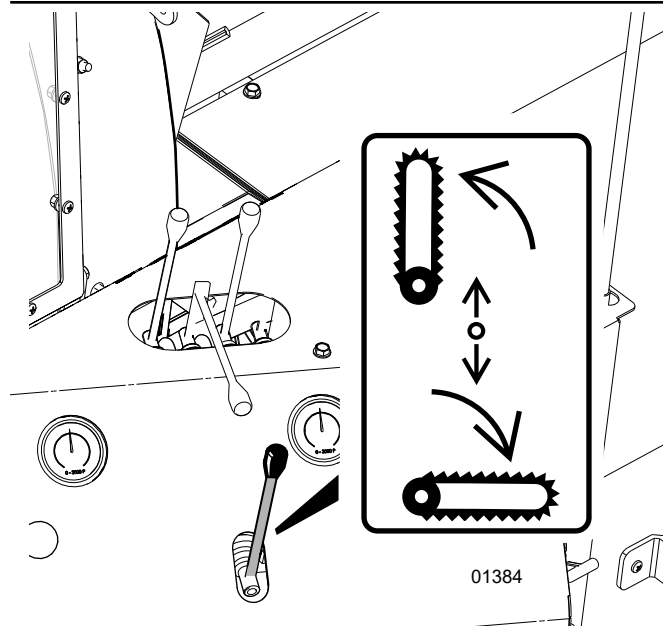


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**Fig. 44—Bar Oil**

**IMPORTANT!** In cold weather run the saw slowly while cycling the guide bar until lubricant can be observed leaving the tip of the guide bar. Warm the saw circuit oil by holding the saw control valve lever forward in the **RAISE** position to cycle oil back to the reservoir.

- Pull the Saw Control lever back towards you to lower the saw and cut the log. The saw chain starts as the saw begins to move. The top roller holds the log in place. When the log is cut through, the block falls into the splitting cradle.
- Push the lever forward to raise the saw out of the way, ready for the next cut. The saw chain stops as the saw is raised. The top roller keeps a slight amount of down pressure on the log at all times unless the arm is unclamped when the saw is raised.



**Fig. 45—Saw Control Lever**

**IMPORTANT!** When cutting, make sure bar oil is visible coming off the tip of the saw. If not, adjust the bar oil flow rate. See 34.

Always make sure the saw chain is sharp and in good working order.

**IMPORTANT!** At shut down or breaks, relieve saw chain tension to prevent damage to the cutting system (saw motor, bar tip, saw chain chassis) as the saw chain cools and contracts.

**IMPORTANT!** Check saw chain tension regularly. Only tension saw chain when it is cool. Steel expands when hot and contracts as it cools. As a result, it could cause damage to your guide bar or saw motor if tensioned when hot.

**IMPORTANT!** To check saw chain tension, grasp the chain at the midpoint of the guide bar and pull the saw chain away from the bar rails. The drive link tangs should nearly come out of the bar groove.

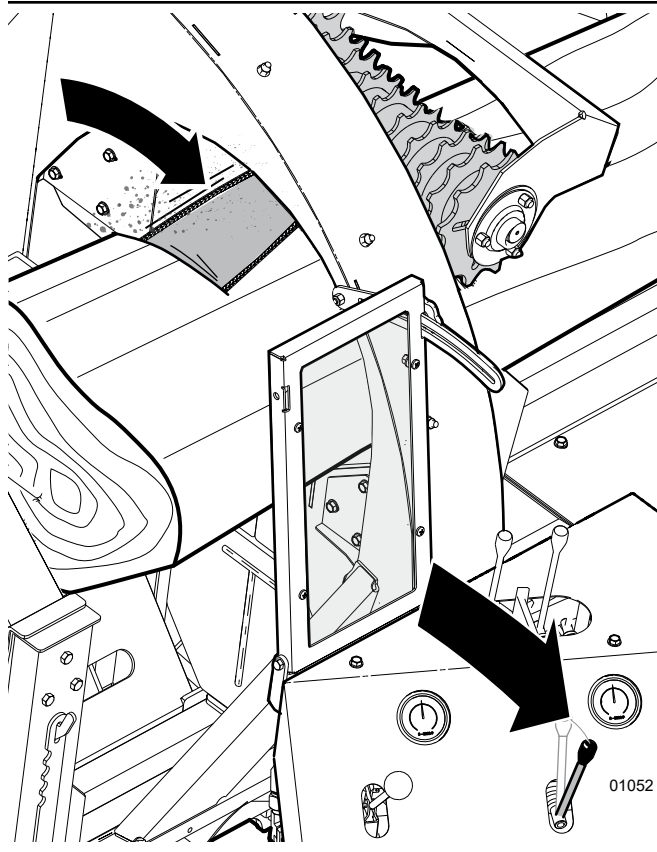


Fig. 46 – Cutting the Log

### 8.7.1 Saw Chain, Loosening

**IMPORTANT!** At shut down or breaks, relieve saw chain tension to prevent damage to the cutting system (saw motor, bar tip, saw chain chassis) as the saw chain cools and contracts.



A tool is provided in the toolbox for the bar nuts and bar chain tensioner.

1. Open the saw access door.

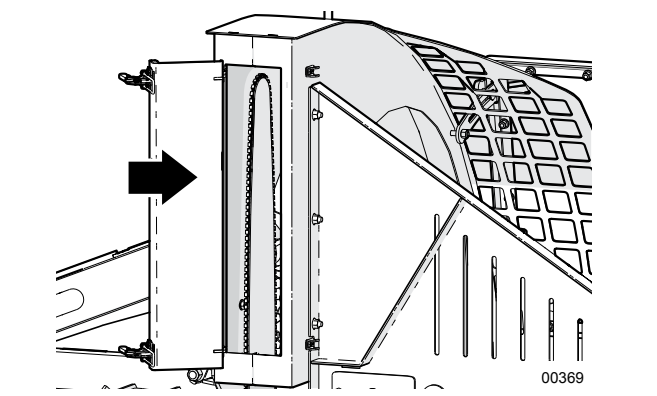


Fig. 47 – Saw Access Door

2. Loosen off bar nuts.

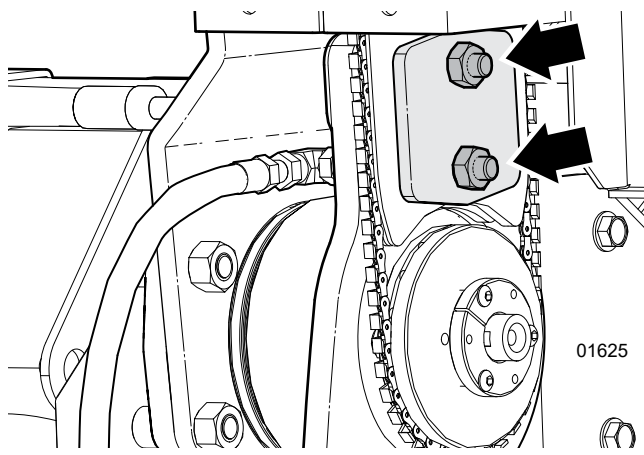


Fig. 48 – Bar Nuts

3. Turn adjusting screw counterclockwise to loosen chain.

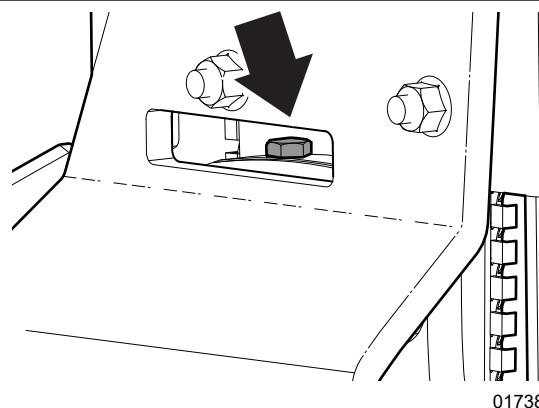
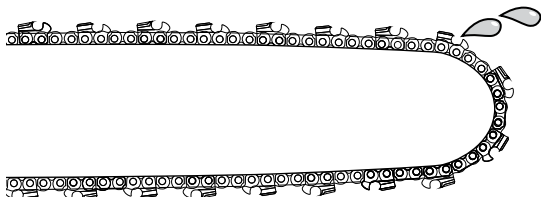


Fig. 49 – Adjusting Screw

## 8.8 Bar Oil Flow Rate, Adjusting

Adjust bar oil flow rate by opening or closing the flow control valve on the side of the bar oil reservoir. Ambient temperatures affect oil flow rate. Adjust as required.

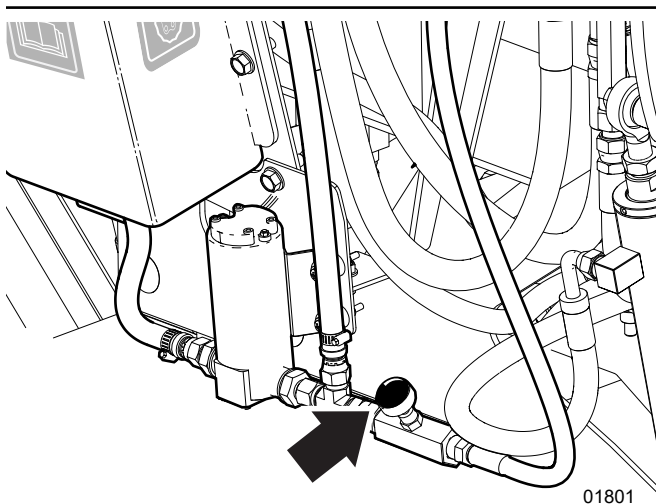
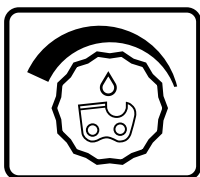
**Bar oil should be visible coming off the end of the saw chain during operation.**



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Fig. 50—Bar Oil

- Turn the knob out counterclockwise to increase oil flow to the saw.
- Turn it in clockwise to decrease the oil flow rate.



01801

Fig. 51—Bar Oil Flow Control



Biodegradable bar oil is recommended.  
Reservoir capacity is 6-1/2 US qt (6.2 L).

## 8.9 Splitting

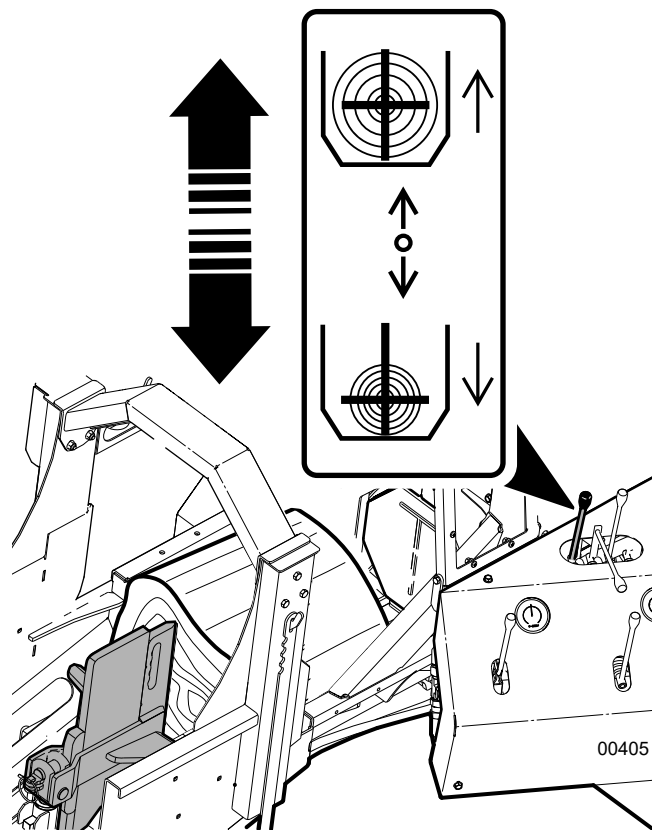
### Wedge Height, Adjusting

The control lever is on the upper part of the control panel, to the far left-hand end. Wedge height can be quickly adjusted while working.



A 6-way splitting wedge is available as an accessory. To change the wedge, see 46.

- Center wedge height on the log. Raise or lower depending on log size.



00405

Fig. 52—Adjust Wedge Height



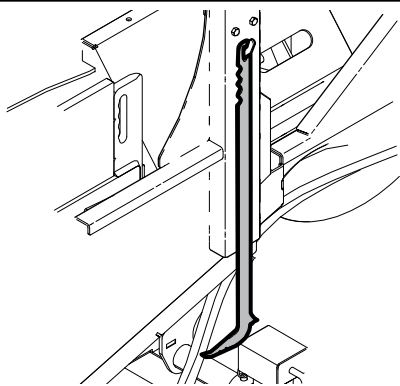
### CAUTION!



**Risk of pinching or crushing hazard! Never reach into the splitting cradle to reposition a log. Use a log peavey, hookaroon or another tool.**

W043

Use the **Hookaroon** when repositioning logs. Use it to extend reach and keeps hands away from machinery.



00294

Fig. 53 – Hookaroon



If the firewood is less than 24", it is not necessary to push the block completely through the splitting wedge. Split it partially, then let the next block following finish it.  
For the best efficiency, advance the log for the next cut as the splitter is retracting.

## End of the Log

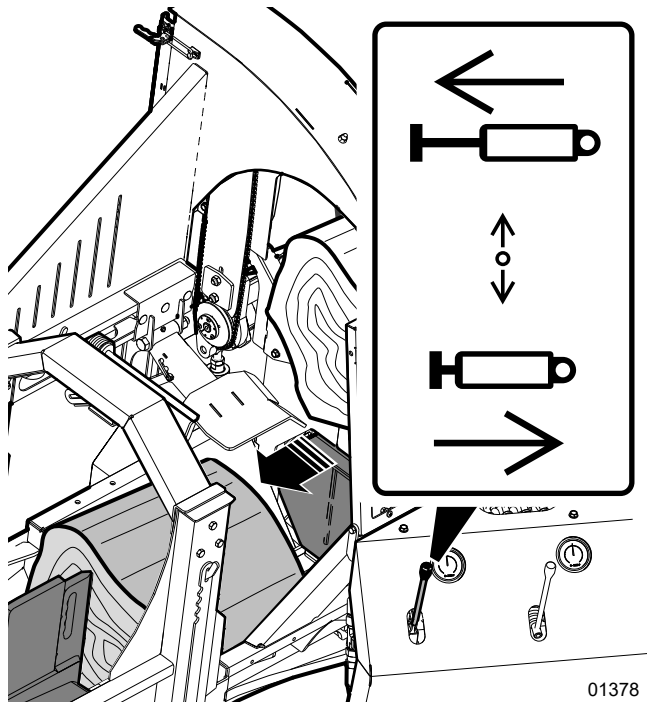
4. Use the length guide on the side of the infeed conveyor as a reference for final log cuts. The guide indicates the length of log remaining, measured from the saw.

## Split the Log

1. Push the splitter control lever forward to split the log. Push the log most of the way through the wedge. When there is enough space in the splitting cradle for the next block, retract the cylinder.
2. Pull the lever fully back into the detent. (The lever resets to neutral once the cylinder is fully retracted.)

## Advance the Log

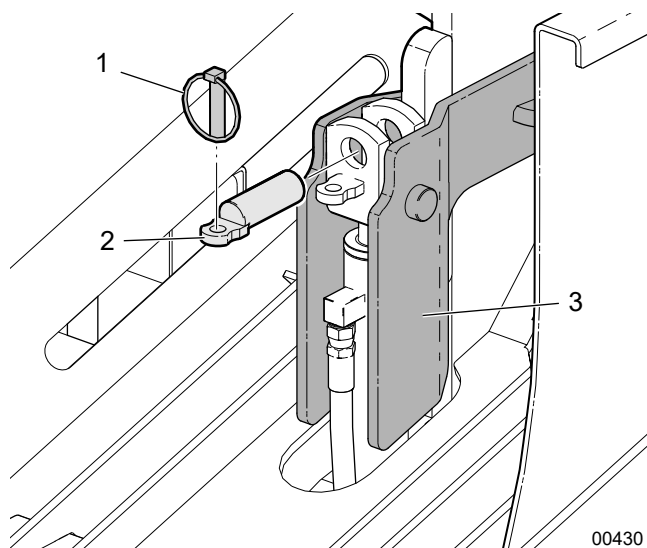
3. Push the infeed conveyor valve handle down to advance log up to stop guide, ready for the next cut.



01378

Fig. 54 – Splitter Control Lever

## 8.9.1 Splitting Wedge, Changing



**Fig. 55—**Splitting Wedge

1. Lynch Pin
2. Wedge Pin
3. Splitting Wedge

Either a 4-way or 6-way wedge can be used on the splitter. To change it, follow these steps:

1. Remove lynch pin (1).
2. Lift and support the wedge (3), then remove the wedge pin (2).
3. Lift the wedge up over the support to remove it.
4. Install the wedge in the reverse manner.
5. Push the next block through the wedge to finish the split of the first. The split wood is shoved out onto the conveyor as each additional log moves through the machine.
6. Continue advancing and cutting up to the end of the log.

## 8.10 Cycling logs through quickly:

1. Advance the log to the stop.
2. Cut the log off so it falls into the splitter cradle.
3. Split the block while advancing the log up to the stop again.

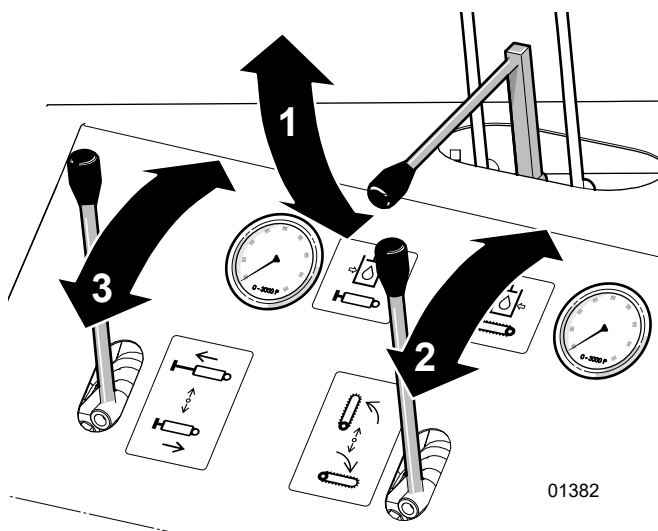


Fig. 56—Infeed Conveyor, Saw Cut, and Splitter Controls

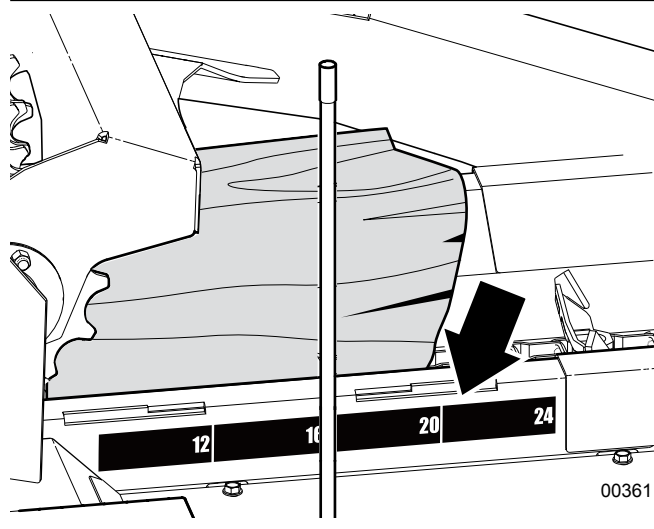


Fig. 57—Length Guide on Operator Side of Infeed Conveyor

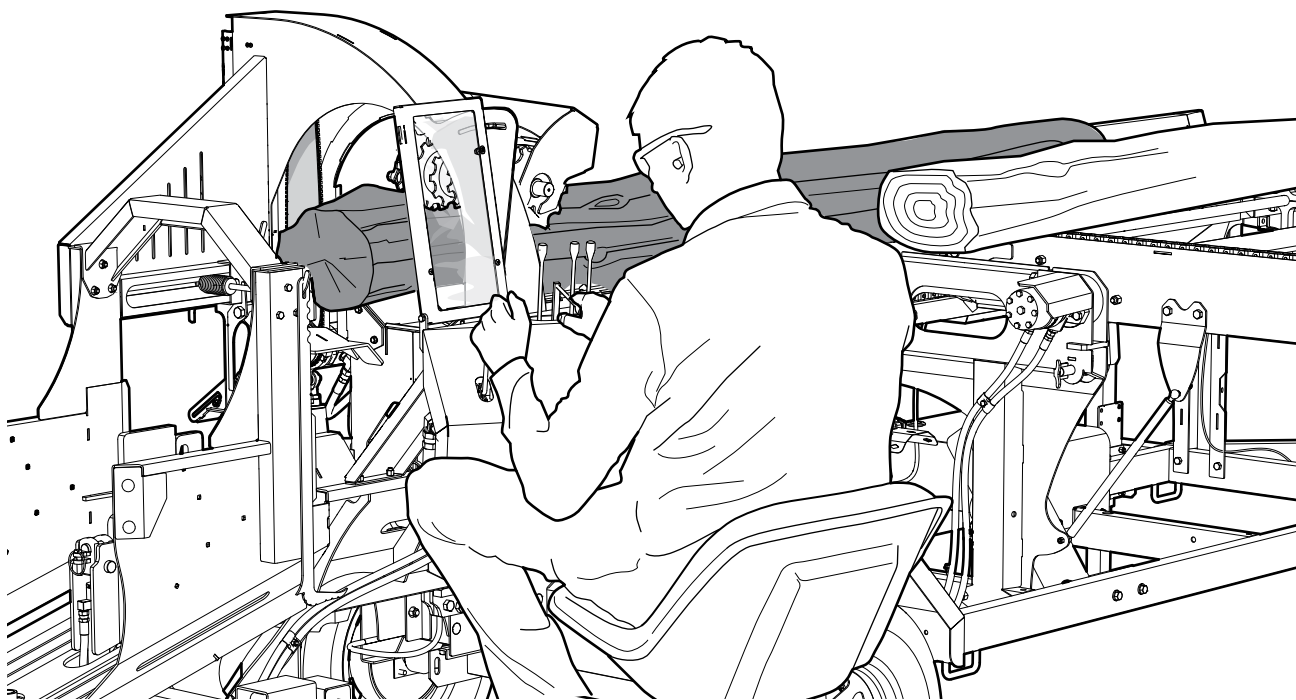


Fig. 59—Working Efficiently

## 8.11 Transporting

- Clear out all logs and clean all debris off the wood processor.
- Raise live deck so it is in the vertical transport position.
- Check that all lights and reflectors required are not damaged and cleaned.
- Remove or secure any loose objects. Place tools in the toolbox.
- Raise/fold-up the conveyor

### Transport Position 8 ft (2.4 m) conveyor:

- Use the hand winch to raise it up to vertical.
- Install the chute lock arm and lynch pin.

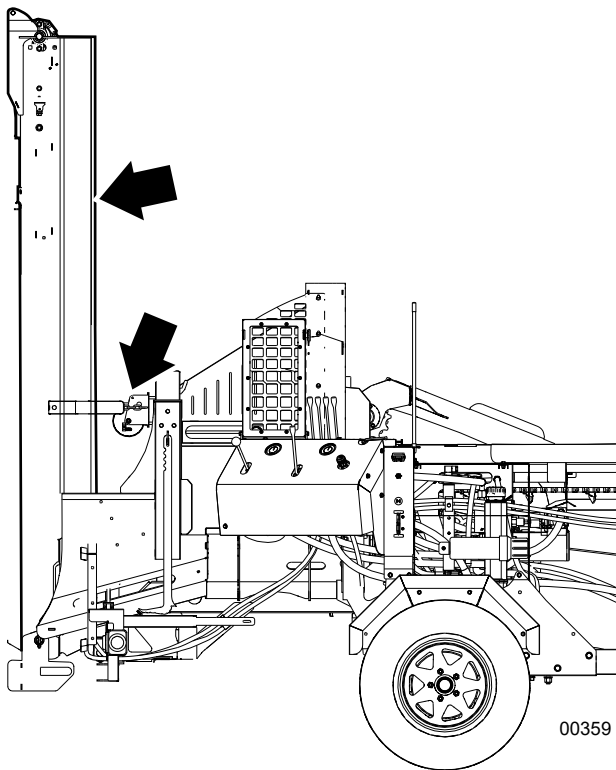


Fig. 60 – 8 ft (2.4 m) Conveyor in Transport Position

### Transport Position 12 ft (3.4 m) conveyor:

- Lower it fully to the ground.
- Disconnect the latch clamps at the hinge point.
- Raise the conveyor with the hand winch, allowing the conveyor to fold and wheels to roll along the ground.
- Raise the conveyor fully and install both chute lock arms—one binds the folding section to the base section of the conveyor, and another locks the base conveyor section to the splitter.

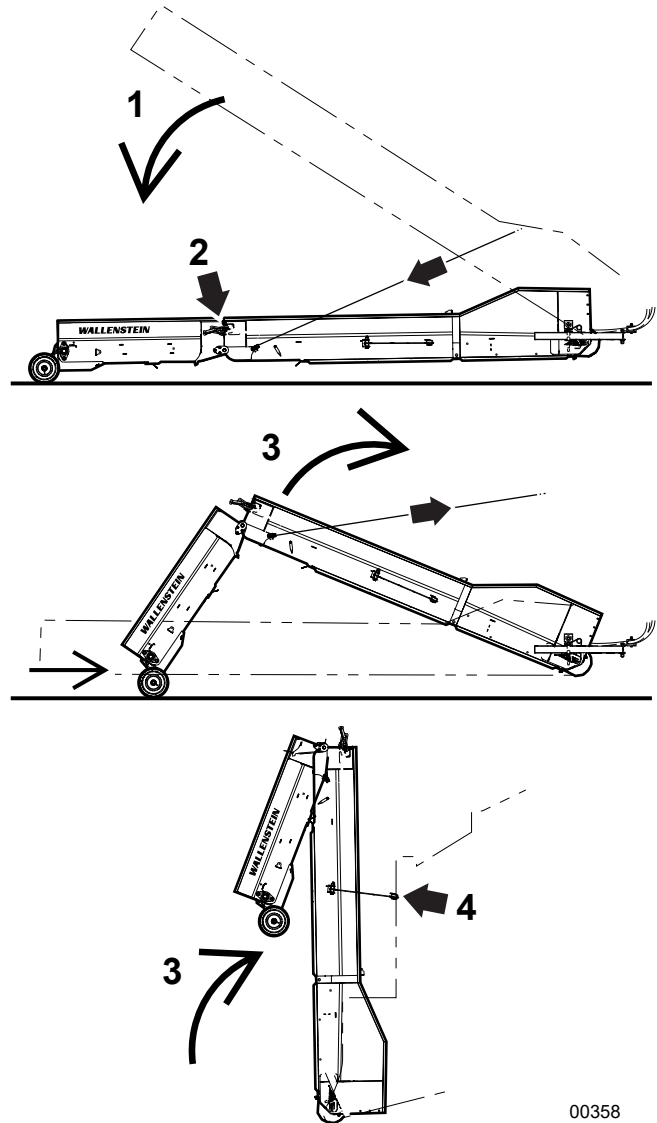


Fig. 61 – 12 ft (3.4 m) Conveyor in Transport Position

**IMPORTANT!** When unfolding the conveyor for use, make sure that the chain engages over the sprocket as it tightens by the action of unfolding and clamping.

## Live Deck, Raising

1. Remove the hitch pins and swing the support legs up. Reinsert the hitch pins.
2. Pull out the lock pins and push the live deck up fully vertical. (Approximately 50 lb [23 kg] force required.)
3. Reinstall the pins to lock it.

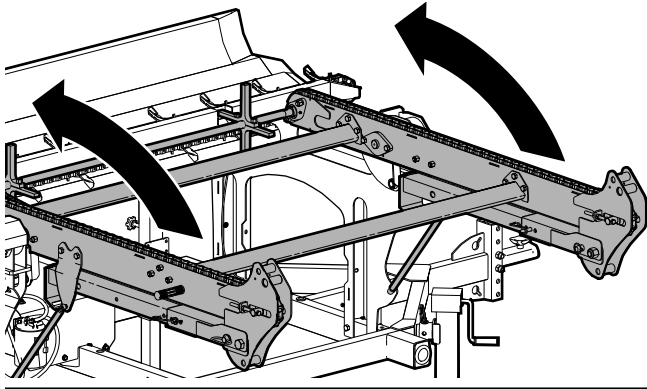
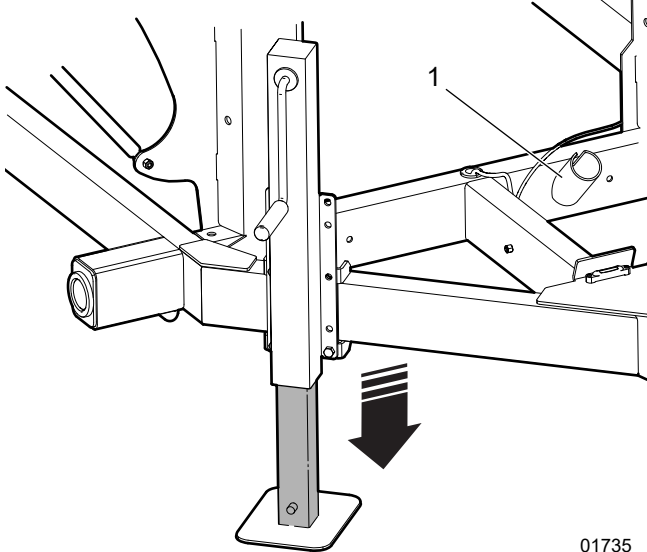


Fig. 62—Raise Live Deck

### 8.11.1 Attaching and Unhooking

Make sure the area in front of the machine is clear of debris and other equipment.

1. Using the front crank jack, raise the wood processor so that the coupler is higher than the ball hitch on the tow vehicle.

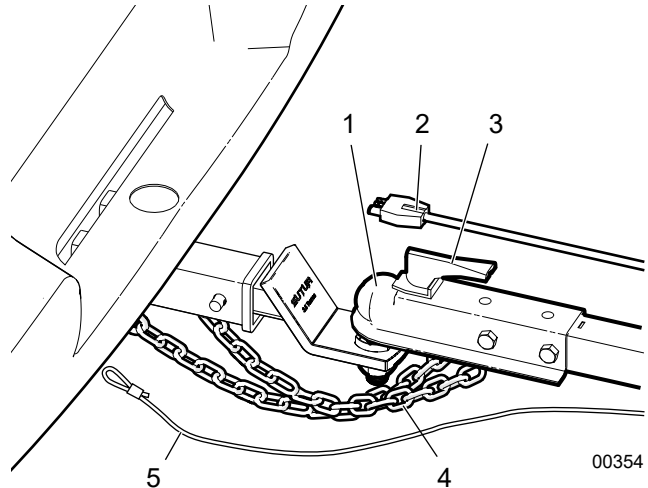


01735

Fig. 63—Front Crank Jack

2. Slowly back the tow vehicle until the hitch coupler and the ball are aligned.
3. Open the coupler latch.

4. Lower the crank jack so the hitch coupler slides over the ball.
5. Flip the coupler latch to lock the coupler around the ball.
6. Install the snapper pin through the coupler latch.
7. Attach the safety chains securely. Cross the chains under the hitch.
8. Connect the light harness and check the function of all lights.
9. Raise the front jack up all the way.



00354

Fig. 64—Attaching to a Tow Vehicle

1. Hitch Coupler
2. Trailer Light Harness
3. Coupler Latch
4. Safety Chains Crossed under Trailer Tongue
5. Trailer Breakaway System Cable

10. Reverse procedure when unhooking. Make sure there is enough space behind the machine to safely back up into position. Refer to *Machine Set-Up* on page 29.

### 8.11.2 Transporting on a Roadway

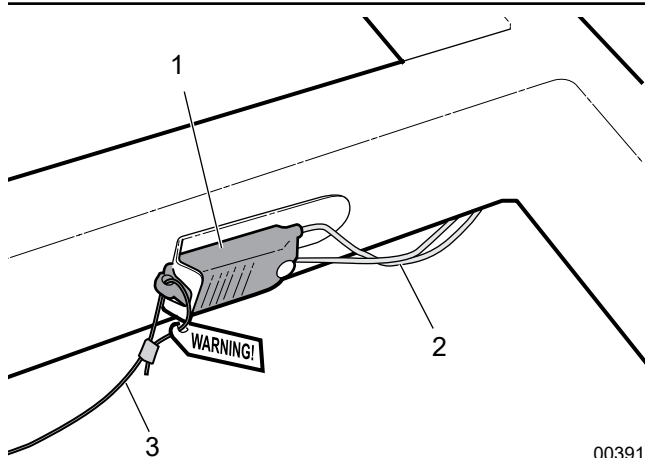
1. Make sure that the machine is securely attached to the tow unit with a retainer through the hitch latch.
2. Check that all components of the wood processor are secure for travel.
3. Check the function of all lights and electric brakes.
4. Do not allow riders. If the wood processor is equipped with an operator seat, fold it up out of the way.
5. Never exceed 50 mph (80 km/h). Slow down when cornering or encountering rough road conditions.

### 8.11.3 Trailer Breakaway System

The Trailer Breakaway System is designed to bring the wood processor trailer to a safe stop by activating the electric brakes should the trailer be accidentally disconnected from the tow vehicle while driving.

The switch is wired to the wood processor battery. It contains a pin attached to a wire cable connected to the tow vehicle. In the event the trailer becomes disconnected, the pin is pulled out of the switch applying the brakes and stopping the trailer.

For the system to function properly, the electric brakes on the wood processor trailer must be operational, the processor 12-volt battery must be charged, and the switch cable must be attached to the tow vehicle.



**Fig. 65** – Trailer Breakaway Switch

1. Trailer breakaway switch on processor frame
2. Wires connecting switch to wood processor battery
3. Wire cable connecting switch pin to tow vehicle

### **! WARNING!**

**Never use the Trailer Breakaway Switch as a parking brake. The switch is there to safely stop the trailer in the event it becomes accidentally disconnected from the tow vehicle.**

**Using it as a parking brake when un-hooked drains the machine's battery and would then cause it to be ineffective in an emergency. Once the battery charge depletes, the brakes release and the trailer could move unexpectedly.**

W042

### 8.11.4 Breakaway Cable, Attaching

- Connect the breakaway wire cable to the tow vehicle so it is independent of safety chains and wire harness. There should be a clear path for the cable from the switch to the tow vehicle. The cable must be able to pull the pin directly out of the switch in an emergency.
- Make sure the pin is installed in the switch.
- Never loop the cable through the safety chains or over the trailer tongue.

## 8.12 Storage

### Placing Wood Processor in Storage

After the season's use or when the machine will not be used for a period of time, completely inspect all major systems of the wood processor. Replace or repair any worn or damaged components to prevent any unnecessary down time at the beginning of the next season.

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**IMPORTANT!** For information on engine storage, refer to the engine manufacturer's manual in the manual storage tube.

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### Procedure

1. Clear out all wood material from the machine.
2. If storing for more than 1 month, add stabilizer to the fuel system. Run the engine for a few minutes to allow the stabilized fuel to cycle through. Refer to the engine manual for further information on engine storage.
3. Thoroughly wash the machine to remove all dirt, mud, and debris.
4. Inspect all moving parts and remove any entangled material.
5. Fold up the live deck. Park the machine away from human activity.
6. Block or chock the wheels.
7. Cover the machine with a waterproof tarp, if storing it inside is not possible.

### Removing from Storage

When removing this machine from storage, follow the Pre-operation checks. See 34.

## 9. 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

### 9.1 Recommended Fluids and Lubricants

#### 1. Grease

Use an SAE multi-purpose high temperature grease with extreme pressure (EP) performance. Also acceptable is an SAE multipurpose lithium-based grease.

#### 2. Engine Fuel

This engine is certified to operate on clean, unleaded gasoline with a pump octane rating of 87/87 AKI or higher, research Octane Number (RON) 91 octane minimum. Gasoline up to 10% ethyl alcohol, 90% unleaded is acceptable.

**IMPORTANT! Do not use unapproved gasoline, such as E15 and E85. Do not mix oil in gasoline or modify the engine to run on alternate fuels. Use of unapproved fuels will damage the engine components, which are not covered under warranty.**

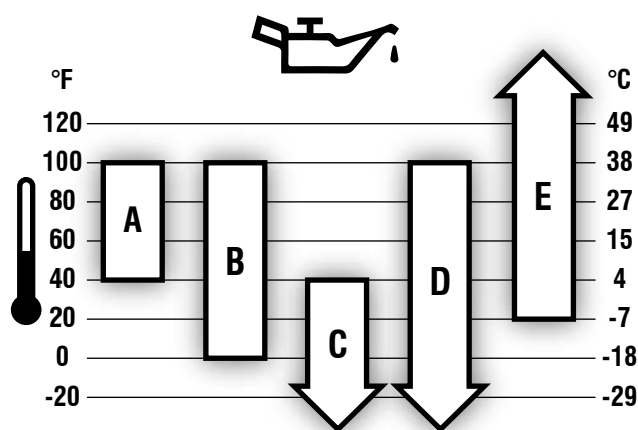
#### 3. Hydraulic Oil

Use Dexron® III ATF for all operating conditions. Dexron VI or Mercon® are acceptable substitutes.

#### 4. Engine Oil

Briggs & Stratton® Warranty Certified oils are recommended for best performance. Other high-quality detergent oils are permitted if classified for service SF, SG, SH, SJ or higher. Do not use special additives.

Outdoor temperatures determine the correct oil viscosity for the engine. Use the chart below to select the best viscosity for the outdoor temperature range expected. Engines on most outdoor power equipment operate well with 5W-30 Synthetic oil. For equipment operated in hot temperatures, Vanguard® 15W-50 Synthetic oil gives the best protection.



01802

Fig. 66—Engine Oil Recommendations

- A **SAE 30** – Below 40 °F (4 °C) the use of SAE 30 results in hard starting.
- 10W-30** – Above 80 °F (27 °C) the use of 10W-30 may cause increased oil consumption. Check the oil level frequently.
- B
- C **5W-30**
- D **Synthetic 5W-30**
- E **Vanguard® Synthetic 15W-50**

#### 5. Storing Lubricants

Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture, and other contaminants.

## 9.2 Maintenance Interval Schedule



### WARNING!

**Shut down the machine and allow it to cool before performing any service, maintenance, or inspection procedure. Engine components and oil may be hot enough to cause injury.**

**Make sure the machine is in a Safe Condition to work on. Review Maintenance Safety beforehand.**

W041

Perform maintenance procedures at time shown or hour interval, whichever occurs first.

Every 8 Hours or Daily	
Check hydraulic hoses, fittings, frame slide	
Check that all fasteners are secure	
Check engine oil level	Page 35
Check fuel level	Page 35
Check hydraulic oil level	Page 52
Perform Pre-operation checks	Page 34

Every 50 Hours or Annually	
Inspect hydraulic oil quality	Page 52
Inspect battery	Page 58
Grease entire machine	Page 53
Check drive chain tension	Page 61
Check conveyor chain tension	Page 57

Every 100 Hours or Annually	
Check engine air filter	Page 57
Change engine oil	See engine manual
Check tire pressure	See rating on tire sidewall
Change hydraulic oil and filter	Page 55
Clean air filter precleaner	See engine manual
Clean machine. Remove debris and entangled material.	

Every 400 Hours	
Replace outer air filter.	See engine manual
Replace fuel filter	See engine manual
Service cooling system	See engine manual
Clean engine oil cooler fins	See engine manual

### Every 600 Hours

Replace air filter (inner) safety element	See engine manual
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## 9.3 Lubrication

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

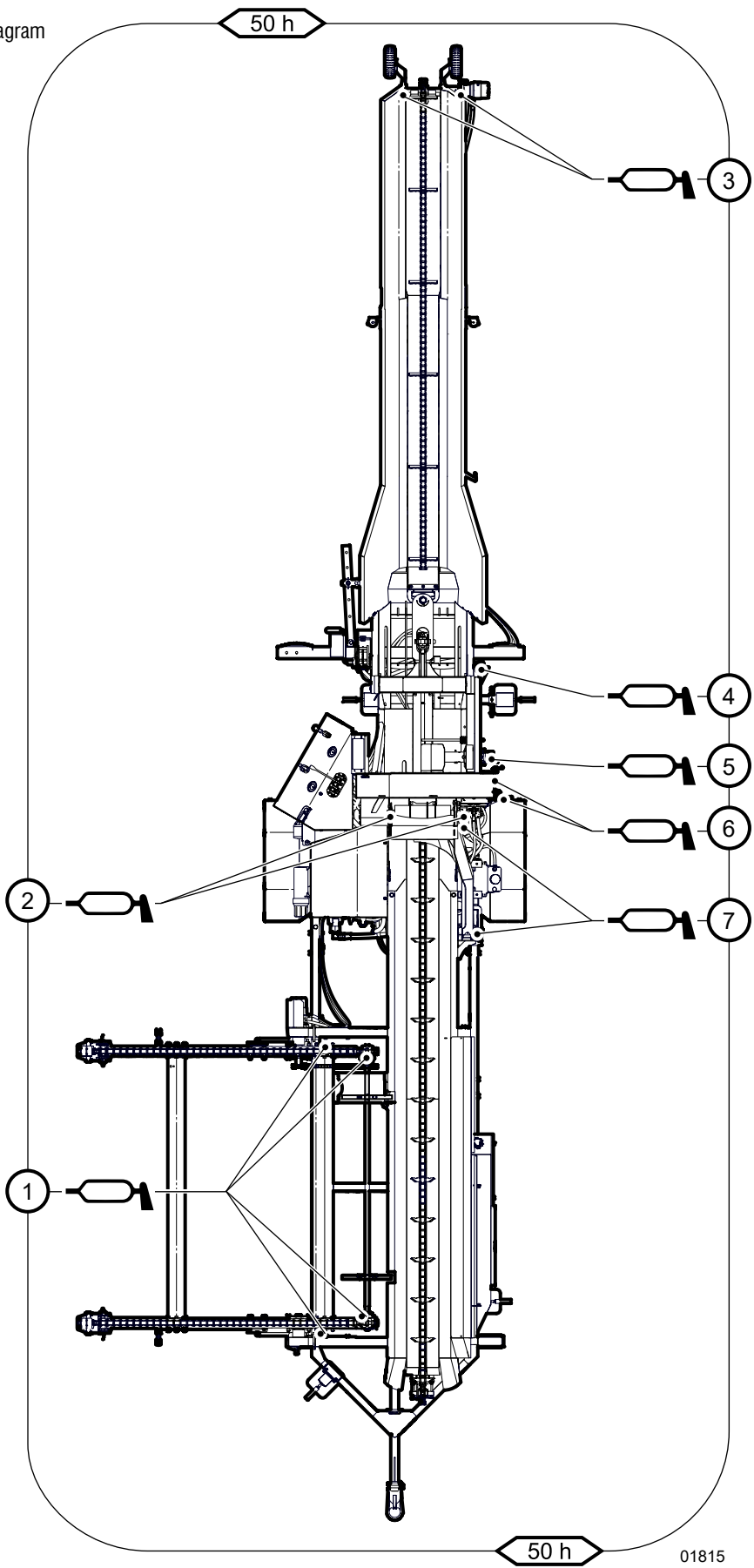


Greasing the splitter slide is not necessary. The slide rails are faced with a low friction plastic that is wear and abrasion resistant.

Refer to Lubrication Diagram on the following page.

Location	Grease Points – Every 50 hours or annually
<b>1</b>	Live deck drive and tilt – 4 points
<b>2</b>	Infeed conveyor drive – 2 points
<b>3</b>	Conveyor drive – 2 points
<b>4</b>	Log dropper – 1 point
<b>5</b>	Saw rotate cylinder – 1 point
<b>6</b>	Saw drive pivot – 2 points
<b>7</b>	Top Roller Clamp pivot – 4 points

Fig. 67 – Lubrication Diagram



01815

## 9.4 Hydraulic Oil – Changing

### CAUTION!



**Risk of burns to exposed skin. Hydraulic oil becomes hot during operation. Hoses, lines, and other parts become hot as well. Wait for the oil and components to cool before starting any maintenance or inspection work.**

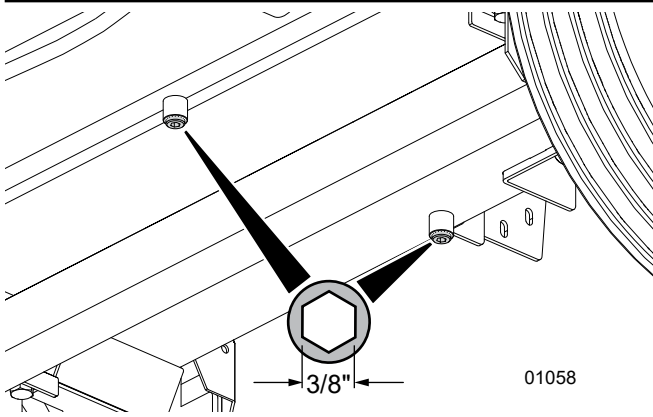
W028

Change the hydraulic oil in the reservoir at **100 hours** of operation or annually.

**IMPORTANT! Clean the suction strainers in the tank and change the return filter when the reservoir oil is changed.**

- Hydraulic oil type: **Dexron III ATF**.
- Hydraulic oil tank capacity: **26 US gal (102 L)**

The hydraulic tank drain plug is located under the machine. A 3/8" Allen wrench is required to remove it.



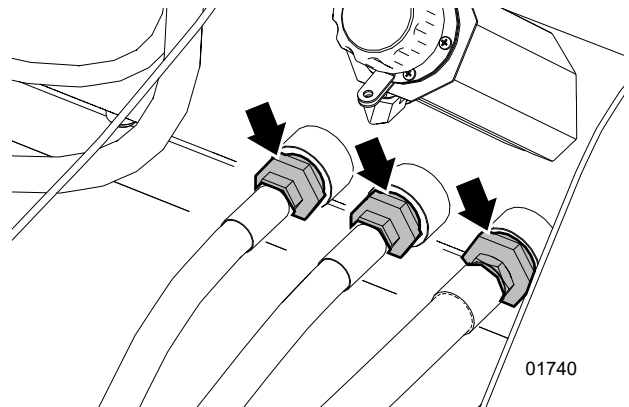
**Fig. 68—Hydraulic Tank Drain Plug**

### Procedure

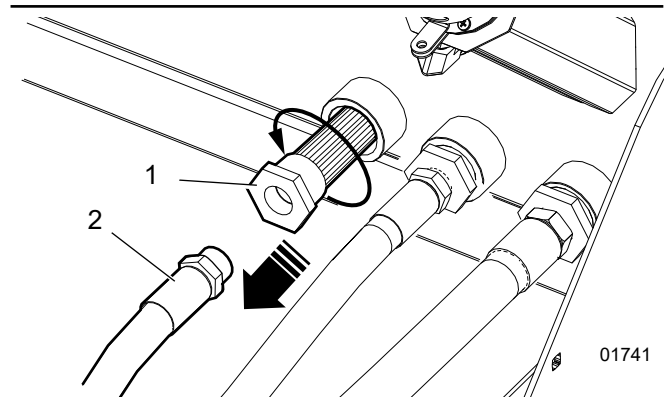
1. Have a drain pan ready of suitable capacity.
2. Clean the area around drain and remove the drain plug.
3. Allow the oil to fully drain, then flush the tank. Dispose of used oil in an environmentally acceptable fashion.
4. Install the drain plug.
5. Clean the suction strainer filters and change the return oil filter before filling the tank.

### 9.4.1 Suction Strainers, Cleaning

The three suction strainers are made of stainless-steel screen and are reused. The strainers are located on the bottom of the tank at the pump suction line connections.



**Fig. 69—Suction Strainers**



**Fig. 70—Suction Strainer Removal**

1. Suction Strainer
2. Hose

1. Disconnect the hose.
2. Remove the suction strainer and place it in a solvent tank. Use a small brush to clean it. Examine the strainer screen and replace it if there are holes or damage.
3. Dry the suction screen thoroughly, then re-install the strainer, valve and suction hose.

## 9.4.2 Hydraulic Return Oil Filter – Changing

The hydraulic return filter is located on top of the hydraulic oil tank.

A bypass indicator gauge is located above the engine controls on the side panel. If the gauge indicates the filter is bypassing, the filter is clogged and must be changed at the time the oil is changed.

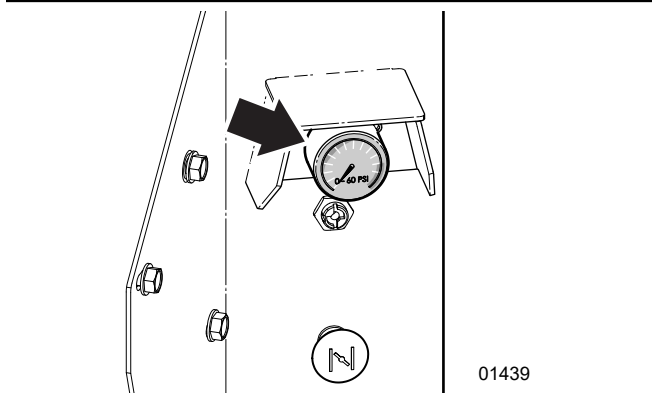


Fig. 71 – Return Filter Bypass Indicator Gauge

### Procedure

1. Remove the hydraulic cover.

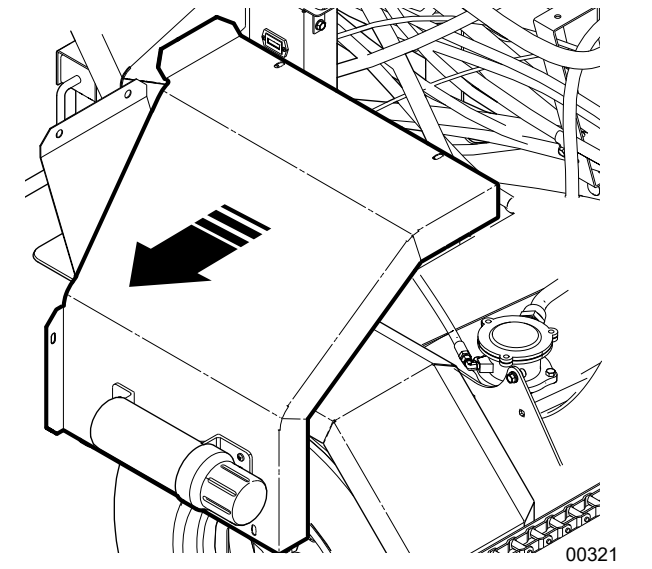


Fig. 72 – Hydraulic Oil Reservoir Cover

2. Have a drain pan ready to catch any dripping oil.

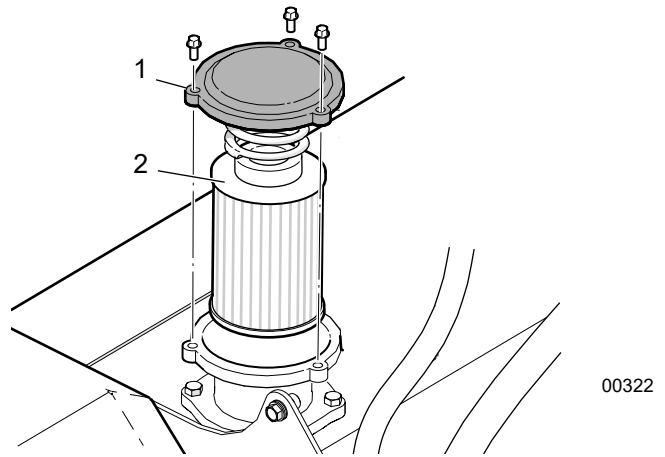


Fig. 73 – Hydraulic Oil Filter Element

1. Oil Filter Cover
2. Hydraulic Oil Return Filter Element
3. Remove the three screws on the filter cover and pull the cover off.
4. Remove the filter element and clean the bottom of the bowl.
5. Check the O-rings for damage. If damaged, replace them.
6. Install the new filter element.
7. Install the cover and tighten the screws to **44 lbf•in (5 N•m)**.
8. Fill the tank with clean oil. The oil is at the proper level is when it fills the top half of the glass window.

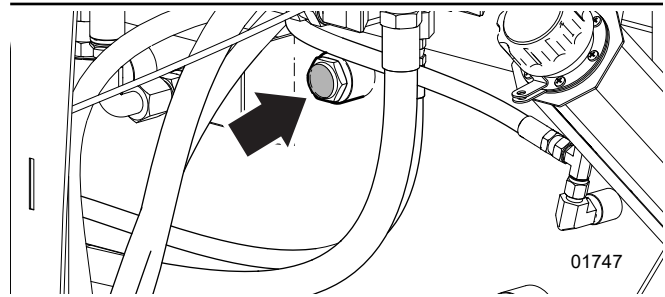


Fig. 74 – Oil Level Sight Glass

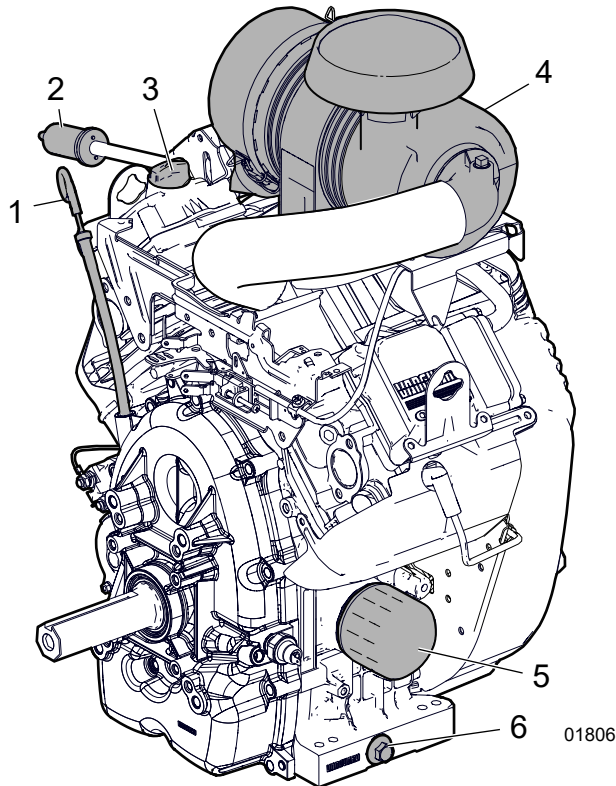
9. Reinstall the tank filler cap.



Remove air from the hydraulic circuit by powering the machine up and holding the saw control valve lever forward in the *RAISE* position to cycle oil back to the reservoir.

## 9.5 Engine

For further information on the engine, components and service intervals, refer to the Vanguard® engine manual provided in the manual tube.



**Fig. 75—Engine Components**

1. Oil Level Dipstick
2. Fuel Filter
3. Oil Filler Cap
4. Air Cleaner
5. Oil Filter
6. Oil Drain Plug

## 9.6 Engine Air Cleaner

**Check air cleaner element every 100 hours of operation. Check more frequently during dusty, dirty conditions.**

**Replace air filter element and check inner safety element at 400 hours of operation or annually.**

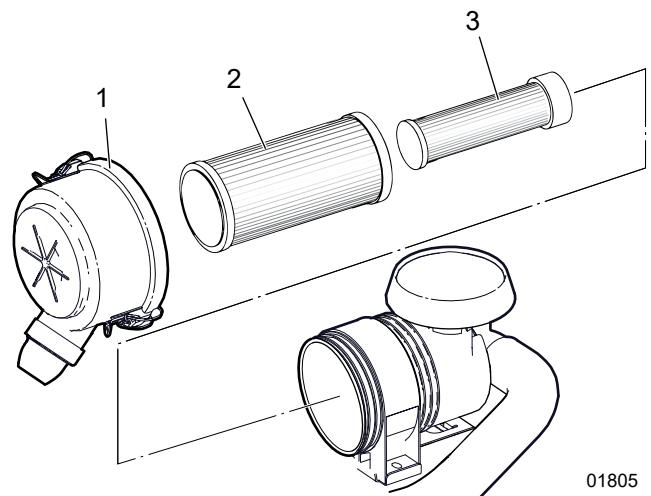
**Replace inner safety element at every third change of the outer filter element.**

A dirty air filter can restrict air flow to the carburetor, reducing engine performance. If the engine is operated in very dusty areas, clean the air filter more often than specified.

**IMPORTANT! Operating the engine without an air filter, or with a damaged air filter, can allow dirt to enter the engine, causing rapid engine wear. This type of damage is not covered by warranty.**

### Inspection

Remove the air cleaner cover and inspect the filter elements. Clean or replace dirty filter elements. Always replace damaged filter elements.



**Fig. 76—Cyclonic Engine Air Cleaner**

1. Cover
2. Air Filter Element
3. Safety Filter Element



Refer to the engine manual for further information on servicing the air cleaner.

## 9.7 Battery

Review *Battery Safety* on page 12.

### CAUTION!

**Risk of explosion or fire! Do not let metal objects come in contact with the battery terminals. Arcing can cause a fire or explosion. Cover terminals if working near batteries.**

W021

### CAUTION!

**Risk of burns! Battery electrolyte is extremely corrosive and poisonous. Contact with the eyes, skin or clothing can result in severe burns or other serious personal injury. If contact occurs seek medical attention immediately. Handle batteries carefully.**

W029

### CAUTION!

**Battery posts, terminals and related accessories contain lead and lead compounds. These chemicals are known to cause cancer and birth defects or other reproductive harm. Wash hands after handling.**

W031

### 9.7.1 Removing

1. Disconnect negative (–) cable first, then positive (+) cable.
2. Remove battery hold-down bracket and battery from machine.

### 9.7.2 Installing

1. Install battery hold-down bracket.
2. Coat terminals with dielectric grease or petroleum jelly.
3. Connect positive (+) cable first, then negative (–) cable.

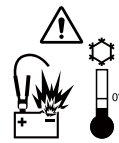
### 9.7.3 Cleaning

1. Disconnect negative (–) cable first, then positive (+) cable.
2. Clean battery cable ends and terminals with wire brush. Rinse with a weak baking soda solution.
3. Coat terminals with dielectric grease or petroleum jelly.
4. Connect positive (+) cable first, then negative (–) cable.

### 9.7.4 Charging

Be familiar with procedures for charging and testing a battery. Read and follow the manufacturer's instructions for the battery charger.

### WARNING!



**Charging a frozen battery can cause it to explode. Warm the battery to 60 °F (16 °C) before charging.**

W030

Remove the battery from the machine to recharge it.

1. Use a battery carrier to lift the battery or place hands at opposite corners to avoid spilling electrolyte.
2. Place battery in a well-ventilated area.
3. Connect positive (+) lead of charger to positive (+) terminal, and negative (–) lead to negative (–) terminal.
4. Charge battery according to the instructions from battery charger manufacturer and battery manufacturer.

### 9.7.5 Jump Starting

Booster battery must be 12-volt or installed in a system that is 12-volt, negatively grounded.

1. Connect positive (+) jumper cable to positive terminal of discharged battery.
2. Connect the other end of the same jumper cable to positive (+) terminal of booster battery.
3. Connect one end of the second jumper cable to negative (–) terminal of booster battery.
4. Make the final jumper cable connection to engine block or the furthest ground point, away from the discharged battery and fuel tank.
5. Start engine.
6. After engine starts leave cables connected for one to two minutes.
7. Disconnect jumper cables in reverse order of installation.
8. Operate unit as normal to charge battery.

## 9.8 Axles and Suspension

Except for periodic inspection of the fasteners used to attach the axle to the frame, no other suspension maintenance is required.

For further information on maintenance and inspection procedures regarding brakes, hubs, bearings and seals, refer to the Dexter® axle service manual at [www.dexteraxle.com](http://www.dexteraxle.com).

The Dexter Torflex® axle suspension system is a torsion arm type suspension completely self-contained within an axle tube.

The Torflex axle provides suspension through a steel torsion bar surrounded by four rubber cords, encased in the main structural member of the axle beam.

The wheel/hub spindle is attached to the torsion arm, fastened to the rubber encased bar. As load is applied, the bar rotates causing a rolling / compressive resistance in the rubber cords.

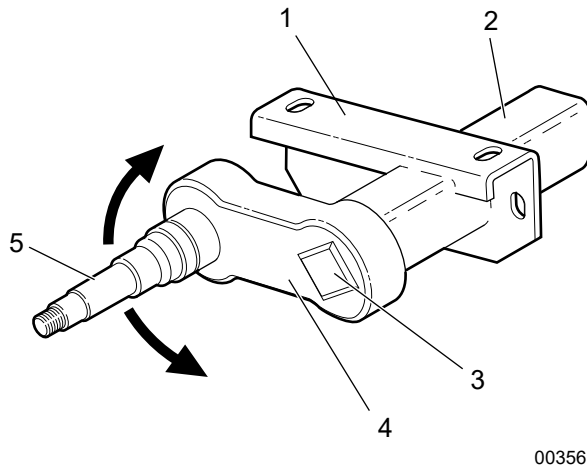


Fig. 77 – Axle

1. Spindle
2. Mounting Bracket
3. Axle Tube
4. Torsion Bar
5. Torsion Arm

**IMPORTANT!** Do not weld on the axle beam. Heat generated from welding could damage the rubber suspension cords.

## 9.9 Saw Chain Maintenance

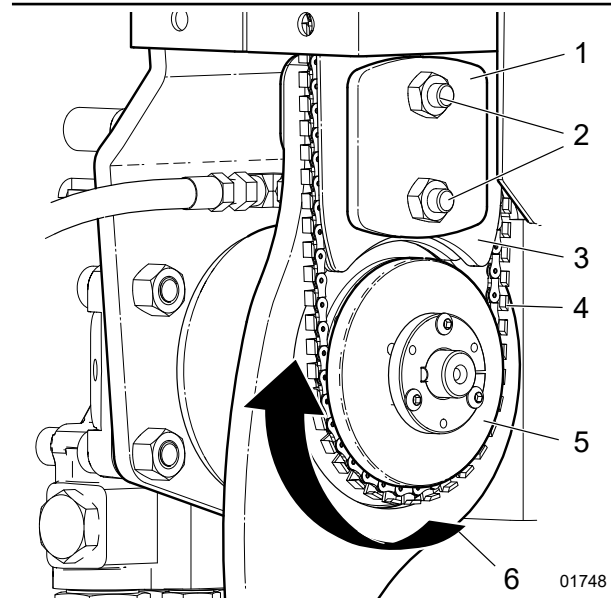


Fig. 78 – Saw Parts

1. Bar Nuts
2. Drive Sprocket
3. Direction of Chain Travel
4. Clamp plate
5. Cutting Chain
6. Guide Bar

### 9.9.1 Sharpening

Use chain and bar in sets to equalize wear. Keep chain sharp to make faster cuts and reduce energy required to make the cuts.

**IMPORTANT!** Refer to the Oregon® Mechanical Timber Handbook for instructions on sharpening the saw chain. This manual is available on the Wallenstein website under Support > Manuals.

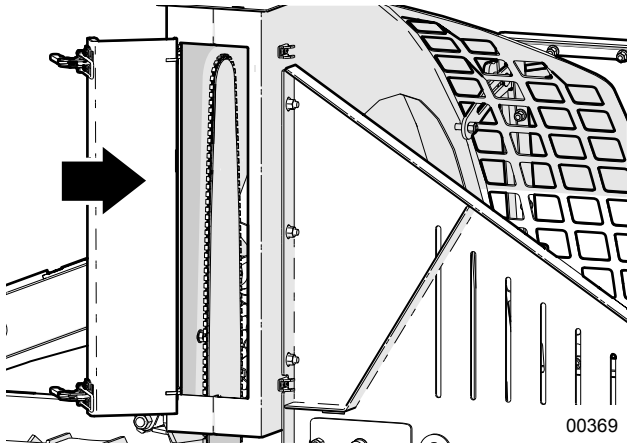
- Before sharpening, clean the saw chain to remove dirt, debris and bar oil so it can be inspected thoroughly.
- Inspect for broken, cracked, damaged or missing chain parts.
- Look for signs of excessive chain stretch. Stretch indicates wear occurring to the flange of the rivet and holes in the drive links.
- Inspect the chain chassis for abnormal wear patterns, which are indicators of issues with the guide bar and drive socket.
- Discard the chain if it has broken, parts are missing, there is excessive stretch, or it has loose rivets.

## 9.9.2 Saw Chain, Remove / Replace



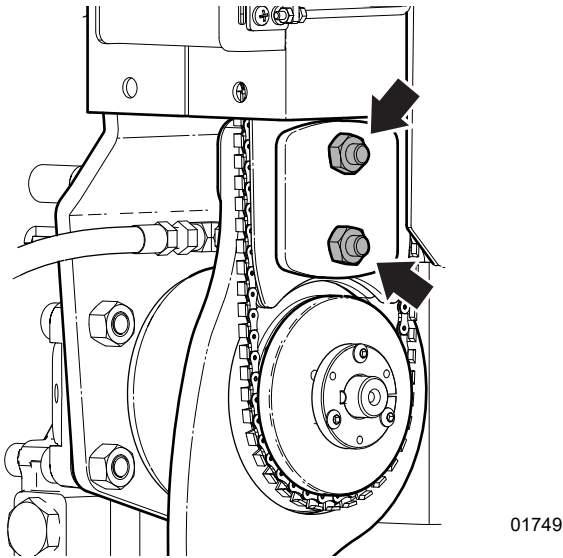
A tool is provided in the toolbox for the bar nuts and bar chain tensioner.

1. Open the saw access door.



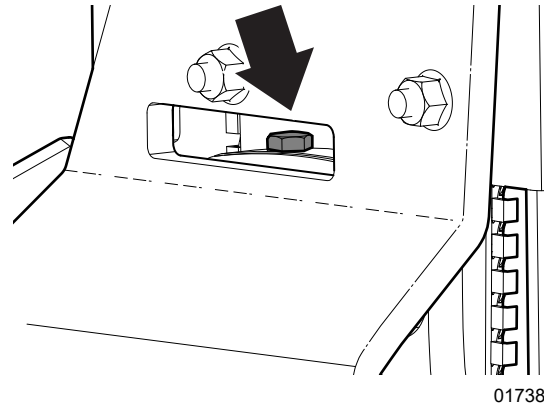
**Fig. 79**—Saw Access Door

2. Loosen off bar nuts.



**Fig. 80**—Bar Nuts

3. Turn adjusting screw counterclockwise to loosen chain so it can then be removed.

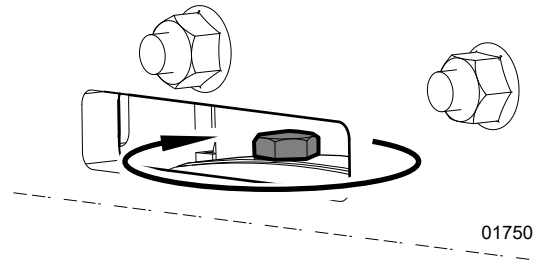


**Fig. 81**—Adjusting Screw

To reinstall the bar chain, reverse the procedure. Tension bar chain as described.

## 9.9.3 Saw Chain, Tensioning

1. Turn the adjusting screw clockwise to tighten the chain. Turn it counterclockwise to loosen.



**Fig. 82**—Turn Adjusting Screw Clockwise to Increase Chain Tension

2. Grasp the chain at the midpoint of the guide bar and pull the saw chain away from the bar rails. For hard nose guide bars, the drive link tangs should nearly come out of the bar groove.

## 9.10 Saw Lubrication

Your cutting system (saw chain and guide bar) must receive sufficient lubrication to prevent excessive chassis wear. The saw is equipped with an automatic bar oiler that starts when the saw is activated.

As a guide, the minimum amount of lubrication recommended for a .404"-pitch cutting system is 1 oz (33 cc) for every minute of saw use.

**IMPORTANT! Never use hydraulic fluid in place of bar oil. Hydraulic fluid is not an adequate cutting system lubricant.**

At startup, adequate time must be allowed for lubrication to reach the cutting system. In cold weather, or with the addition of a new guide bar or saw chain, the system will require additional time. Run the saw chain until lubrication can be observed leaving the tip of the guide bar.

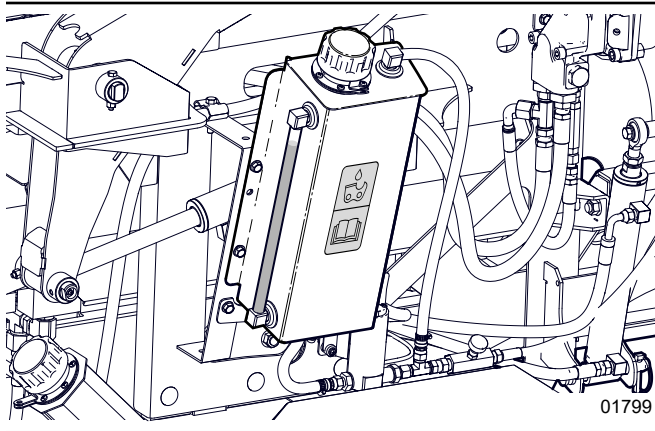


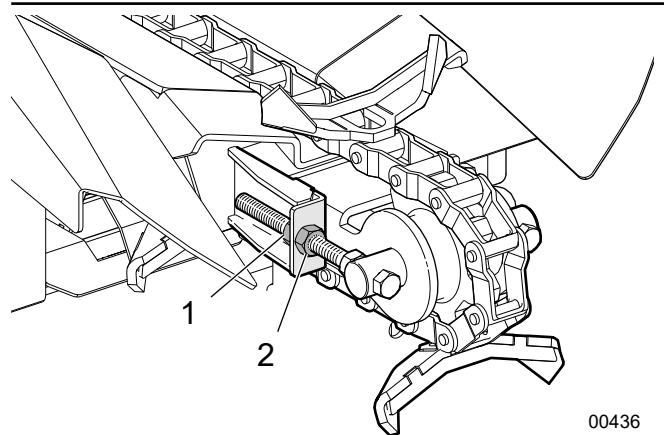
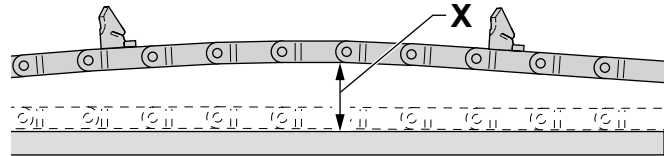
Fig. 83—Bar Oil Reservoir

## 9.11 Infeed Conveyor Chain Tension, Adjusting

Check conveyor chain tension after the first 50 hours of operation. Chains can stretch during this period. This is normal wear in.

**IMPORTANT! The main requirement of chain adjustment is to remove slack from the chain (take up the clearances in each link). It is easy to over tighten the chain, so great care is needed!**

Measure conveyor chain slack from the topside. Pull the chain up by hand at the middle and measure distance 'X'. Measurement should be 3" (7.6 cm). Adjust accordingly.



00436

Fig. 84—Infeed Conveyor Chain

1. Jam Nuts
2. Tension Adjuster Nut

1. Loosen jam nuts (1) on both sides.
2. Turn the tension adjuster nuts (2) on both sides to tighten the chain.
3. Tighten the jam nuts.

**IMPORTANT! Adjust both sides equally.**

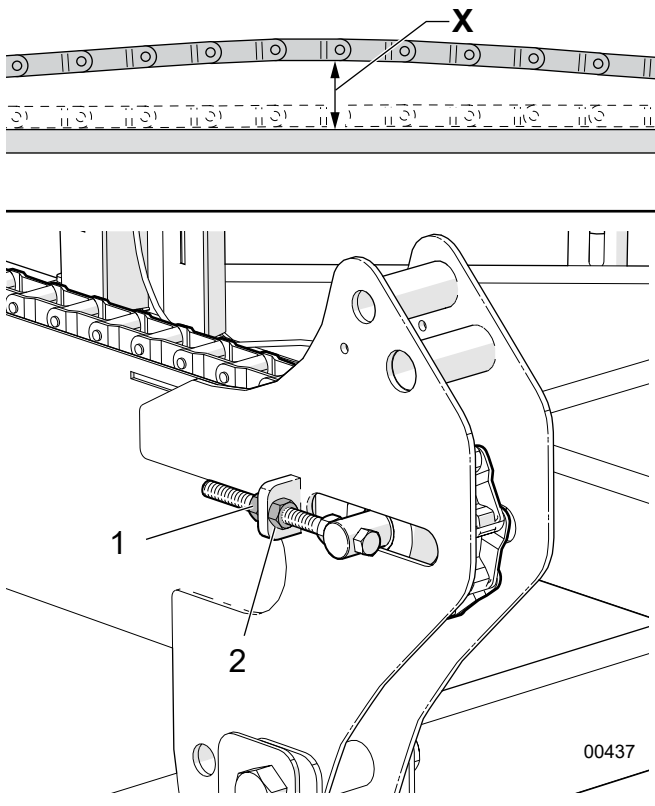
The infeed conveyor chain can stretch a slight amount and can require occasional adjustment. If excessive slack is observed, snug up the tension adjusters. Care must be taken the chain is not over adjusted, as this adds pretension into the chain and reduces chain life.

## 9.12 Live Deck Chain Tension, Adjusting

Check conveyor chain tension after the first 50 hours of operation. Chains can stretch during this period. This is normal wear in.

**IMPORTANT! The main requirement of chain adjustment is to remove slack from the chain (take up the clearances in each link). It is easy to over tighten the chain, so great care is needed!**

Measure conveyor chain slack from the topside. Pull the chain up by hand at the middle and measure distance 'X'. Measurement should be **1-1/2" (4 cm)**. Adjust accordingly.



**Fig. 85—Live Deck Chains**

1. Jam Nut
2. Tension Adjuster Nut

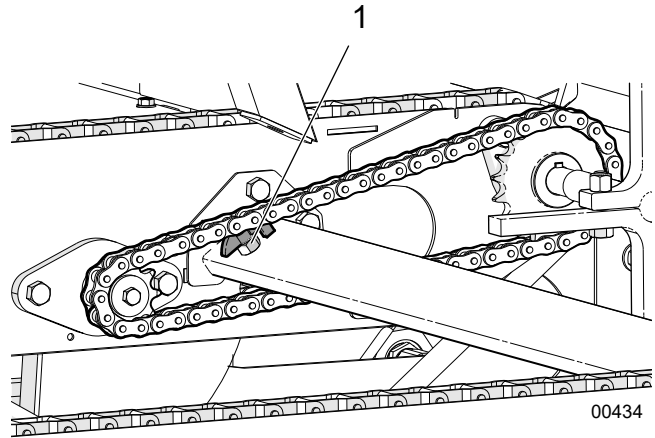
**IMPORTANT! Adjust both sides equally.**

1. Loosen jam nuts (1) on both sides.
2. Turn the tension adjuster nuts (2) on *both sides* to tighten the chain.
3. Tighten the jam nuts once proper tension is achieved.

The live deck chain can stretch a slight amount and can require occasional adjustment. If excessive slack is observed, snug up the tension adjusters. Care must be taken the chain is not over adjusted, as this adds pretension into the chain and reduces chain life.

## 9.13 Live Deck Drive Chain Tension, Adjusting

- Turn chain tension adjuster nut (1) clockwise to tighten the chain. Chain sag should be 3/4"-1" (20–30 mm) .



**Fig. 86—Live Deck Drive Chain**

### 9.13.1 Live Deck Drive Chain Lubrication

The infeed conveyor drive chain requires periodic lubrication. Use a brush to apply SAE 20 oil to the slack side of the chain on the roller links.

Reapply oil every 50 hours of operation or as necessary to prevent the chain from becoming dry.

## 9.14 Conveyor Chain Tension, Adjusting

### (If equipped)

Check conveyor chain tension after the first 50 hours of operation. Chains can stretch during this period. This is normal wear in.

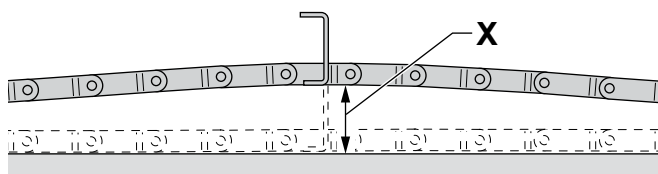
**Recheck chain tension every 50 hours of operation.** Adjust as required.

If excessive slack is observed, snug up the tension adjusters. Care must be taken the chain is not over adjusted, as this adds pretension into the chain and reduces chain life.

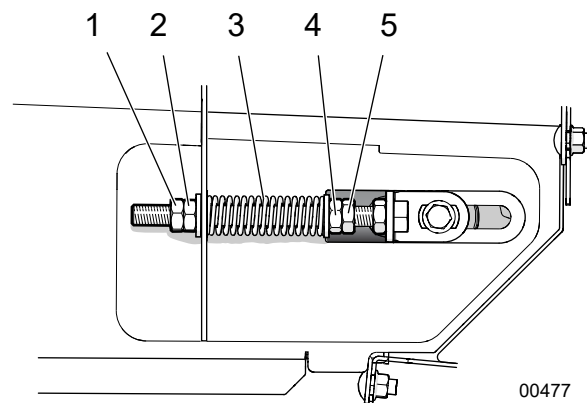
**IMPORTANT! The main requirement of chain adjustment is to remove slack from the chain (take up the clearances in each link). It is easy to over tighten the chain, so great care is needed!**

Measure conveyor chain slack from the topside, inside the conveyor trough. The 12 ft (3.6 m) conveyor must be unfolded with side latches secured.

Pull the chain up by hand at the middle and measure distance 'X'. Compare to the values in the table below. Adjust accordingly.



Conveyor Size	Ideal Chain Slack (X)
8 ft (2.4 m)	2" (5 cm)
12 ft (3.6 m)	3" (7.6 cm)



**Fig. 87 – Chain Tensioner**

1. Jam Nut
2. Adjuster Nut
3. Tension Spring
4. Spring Tensioner Nut
5. Tensioner Jam Nut

**IMPORTANT! The tension spring (3) must be kept at the same compressed length after adjustments are made. Adjust both sides equally.**

1. Loosen jam nuts (1 and 5). Loosen off adjuster nut (2).
2. Turn spring tensioner nut (4) clockwise so the spring compresses enough to increase chain tension. **Make sure both sides of the conveyor are adjusted equally.**



It may be necessary to tap the bolt lightly to get the spring to re-adjust the tension to the new setting.

3. Tighten adjuster nut (2).
4. Tighten jam nuts (1 and 5).

## 9.15 Electrical System – General

**IMPORTANT!** When assembling or replacing wire harnesses, apply a thin coating of silicone dielectric grease to the harness connectors.

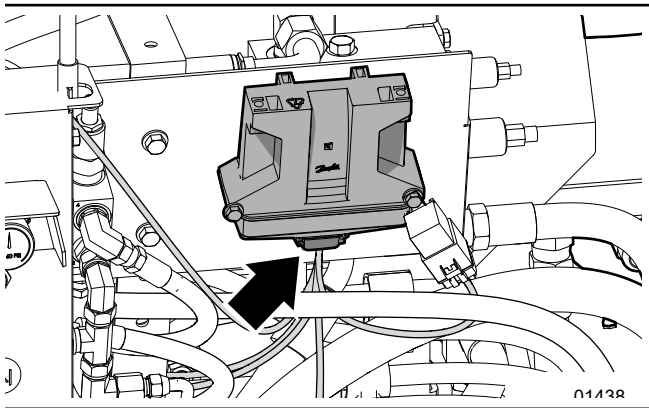
Clean off any corrosion or loose particles, then apply a small amount to the surfaces of the connectors where they meet. The grease helps to stop any possibility of future corrosion.

Reassemble the connection. If grease squeezes out, wipe off.

## 9.16 Welding

**IMPORTANT!** If welding on the machine becomes necessary, sensitive electronic components must be removed from the machine beforehand. Welding can produce stray voltage spikes that can damage these items.

- Disconnect and remove the P3 Controller from the machine. Remove the cover over the hydraulic tank to access it.
- Disconnect/unhook the machine from the tow unit, tractor, or carrier machine.
- Disconnect the machine's battery. Disconnect the negative battery cable first before disconnecting the positive battery cable.
- Place the welder ground clamp as close to the work area as possible. Keep the welder cables away from the control system electrical harnesses.



**Fig. 88—P3 Controller**

## 10. Troubleshooting Guide

The Wallenstein Trailer wood processor is a simple and reliable system that requires minimal maintenance.

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

If a problem remains unsolved after reading through this section, contact the local dealer, distributor or Wallenstein Equipment Inc. Before calling, have the serial number for the wood processor handy.

For engine-specific problems, refer to the engine manual that came with this machine.

Problem	Cause	Solution
<b>Splitter cylinder rod moves slowly or does not move.</b>	Wood jammed around wedge.	Shut machine off and safely remove wood.
	Low hydraulic oil pressure.	Oil filter plugged. Change filter.
	Low hydraulic oil pressure.	Low hydraulic oil level. Add oil.
	Not enough pressure.	Call technician. System relief setting may be low.
	Low engine speed.	Check that choke is off. Check throttle is set to maximum.
<b>Control handle does not go to neutral after splitter rod is fully retracted.</b>	Detent set too tight.	Call technician. Adjustment required to detent on valve.
	Hydraulic fluid too cold.	Allow machine to warm up.
	Hydraulic fluid is contaminated.	Change hydraulic oil and filter.
<b>Control handle goes to neutral before splitter rod is fully retracted.</b>	Detent set too loose.	Call technician. Adjustment required to detent on valve.
<b>Control handle does not go to neutral when released.</b>	Valve may be damaged.	Valve may need to be serviced or replaced. Call technician.
<b>Cylinder stops on contact with wood.</b>	Hi-low valve not functioning.	Hi-low valve may need to be serviced or replaced. Call technician.
<b>Wedge jumps.</b>	Wood jammed sideways or at an angle.	Clear jammed wood.
<b>Leaking hydraulic hose.</b>	Hose worn or damaged.	Replace hose.
<b>Leaking cylinder.</b>	Seals worn.	Call technician. Seal replacement may be required.
<b>Infeed conveyor or live deck does not operate.</b>	Low hydraulic oil pressure.	Oil filter plugged. Change filter.
		Low hydraulic oil level. Add oil.
		Pump may need to be serviced or replaced. Call technician.
	Wood debris caught between the scrapers and conveyor trough.	Clear out debris.
	Scrapers frozen in the conveyor trough.	Free the infeed chain from the trough.
	Chain skipping, too loose	Tighten chain.
	Log is crooked or untrimmed branches are catching on the infeed conveyor.	Rotate log with peavy or trim branches off.
	Hydraulic conveyor is jammed resulting in no oil flow available.	
<b>Saw overheating; harder to cut.</b>	Saw chain is dull.	Sharpen or replace chain.
	Bar oil is low	Add oil.
	Chain tension too loose.	Adjust chain tension.
	Bar oiler not working.	Move oil reservoir to gravity feed mounting position on chain saw guard.
		No power to pump because of pump failure, or pressure switch failure, harness issue. Call technician.
	Saw is cutting at an angle due wear on bar.	Flip bar or replace.
		Have bar surfaces reground.

Problem	Cause	Solution
<b>Log falls lengthwise into splitting chamber too often.</b>	Dull chain is finishing the cut too slowly.	Sharpen or replace chain.
	Log dropper set too light.	Set one or both gas struts to active on the log dropper.
	Log dropper not centered under block.	Move log dropper to halfway point between saw and log length indicator.
<b>Wedge adjust cylinder does not lower.</b>	Wood left under wedge prevents it from moving down.	Clear wood away from under wedge.
<b>Engine related issues.</b>	Refer to your engine instruction manual for specific trouble shooting instructions / requirements.	

# 11. Specifications

## 11.1 Machine Specifications<sup>1</sup>

Item	WP1624 Trailer Wood Processor
Engine	Vanguard® 5424770005J1, 29 hp @ 3600 rpm (21.6 kW) electric start
Hydraulic Pump	14 US gpm (53 Lpm) / Stage 1 7.75 US gpm (29.3 Lpm) / Stage 2 4.15 US gpm (15.7 Lpm) / Stage 3
Hydraulic Reservoir Capacity	26 US gal (102 L)
Fuel Tank Capacity	10 US gal (38 L)
Cylinder Diameter / Stroke	4" / 26" (10 cm / 66 cm)
Splitter Control Valve	Single spool with auto return
Splitting Force	20 ton
Maximum Split Length	24" (60 cm)
Splitter Opening	26" (66 cm)
Maximum Log Diameter	18" (46 cm), 16" (41 cm) recommended
Maximum Log Length	16' (4.9 m)
Minimum Log Diameter	5" (12 cm)
Log Trough Length	12'-6" (3.8 m)
Wedge Configuration	4-way split (2-way possible); 6-way accessory available
Tire Size / Type	ST205/75R15 LRD / Radial Trail Highway tire
Ball Hitch Size	2" (ladder style) ball coupler and safety chains
Tongue Weight	480 lb (218 kg) estimated
Suspension	4000 lb (1814 kg) Torflex® Suspension axle with electric brakes
Trailer Light Package	LED lights
Weight	3,700 lb (1 450 kg) estimated
Dimensions — Live Deck Lowered (L x W x H)	19'-4" x 9'-6" x 6'-4" (5.89 m x 2.89 m x 1.93 m)
Dimensions — Live Deck Raised (L x W x H)	19'-4" x 5'-6" x 8'-9" (5.89 m x 1.67 m x 2.66 m)
Fuel Tank Capacity and Type	10 US gal (38 L) Gasoline
Hydraulic Tank Capacity and Fluid Type	26 US gal (102 L) Dexron III ATF
Saw Bar Oil Reservoir Capacity	6-1/2 US qt (6.2 L) (Biodegradable recommended)
Tool Box — Fits medium-sized chain saw (L x W x H)	38" x 10" x 15" (97 cm x 25 cm x 38 cm)
Infeed Trough	Heavy Duty 12 ft (3.6 m) Continuous chain drive Valve operated hydraulic motor
Live Deck	Folding Two-strand with Adjustable Height. Valve-operated hydraulic motor, continuous chain drive
Live Deck Height	4'-5" (135 cm)
Live Deck Length	5'-10" (178 cm)
Live Deck Width	6'-0" (182 cm)

<sup>1</sup> Specifications subject to change without notice.

Item	WP1624 Trailer Wood Processor
Saw Bar and Chain	Oregon® 25" (64 cm) harvester bar 18HX.404 chain, electric bar oiler
Saw Drive	Hi-speed (5500 rpm) hydraulic gear motor Valve operated with adjustable feed P3 Electronic Controller
Through-put	1 ½ – 2 ¾ cords an hour
Full Stroke Splitting Cycle Time	6½ seconds
Average Cycle Time (cut and split)	12 seconds
Accessories	48" (1.2 m) Log peavey
	Firewood net
	Firewood net frame
	Hydraulic 8' (2.4 m) off-loading conveyor Winch-adjustable height; Maximum 50° swing.
	Hydraulic 12' (3.6 m) off-loading conveyor Winch-adjustable height; Maximum 50° swing
	6-way splitting wedge

## 11.2 Machine Dimensions

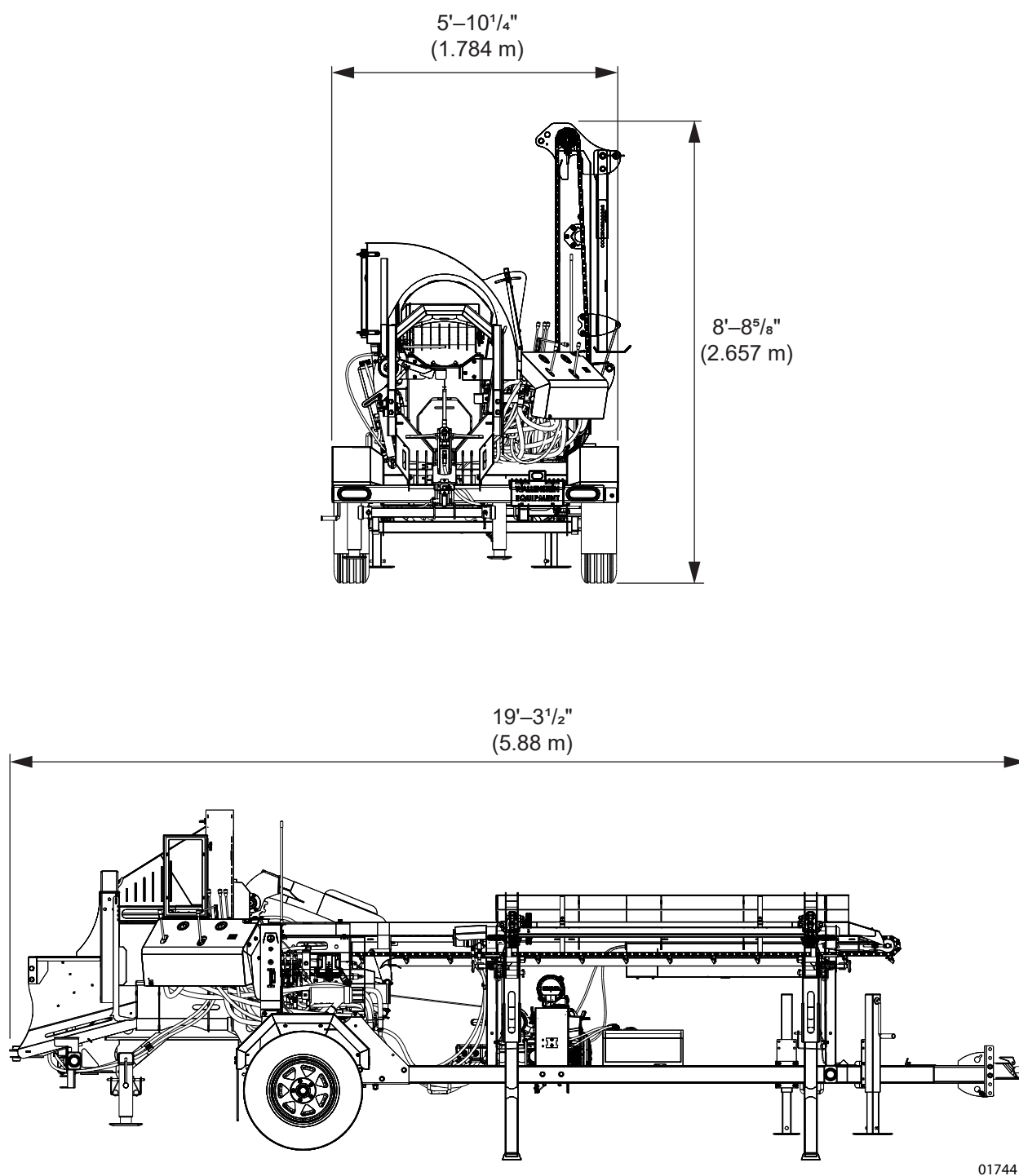


Fig. 89—WP1624 Overall Dimensions

## 11.3 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%.



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

## 11.5 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.

## 11.4 Wheel Lug Nut Torque



**Loose wheel lug nuts can result in broken studs, risking the wheel coming off the axle hub. Keep lug nuts torqued to proper specification.**

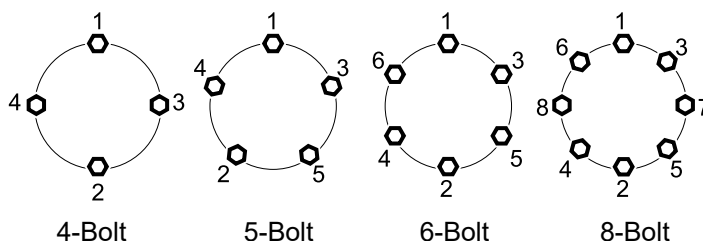
Maintaining proper wheel lug torque on your trailer axle is an extremely important safety measure. Always use a properly calibrated torque wrench.

Torque wheel lug nuts before first road use and after each wheel removal. Check and re-torque after the first 10 mi (16 km), 25 mi (40 km), and again at 50 mi (80 km). Check periodically thereafter.

- Start all lugs by hand to prevent cross threading.
- Tighten lug nuts following the Wheel Lug Torque Pattern. Tighten each set of lug nuts in stages, as shown.

Wheel Lug Nut Torque				
Wheel Size	Units	1st Stage	2nd Stage	3rd Stage
8"	lbf•ft N•m	12–20 16–26	30–35 39–45.5	45–55 58.5–71.5
12"	lbf•ft N•m	20–25 26–32.5	35–40 45.5–52	50–60 65–78
13"	lbf•ft N•m	20–25 26–32.5	35–40 45.5–52	50–60 65–78
14"	lbf•ft N•m	20–25 26–32.5	50–60 65–78	90–120 117–156
15"	lbf•ft N•m	20–25 26–32.5	50–60 65–78	90–120 117–156
16"	lbf•ft N•m	20–25 26–32.5	50–60 65–78	90–120 117–156

Wheel Lug Torque Pattern



## 12. 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](http://www.wallensteinequipment.com)

# 13. Alphabetical Index

## A

Adjust Block Dropper .....	31
Adjust Wedge Height .....	44
Air Cleaner Inspection .....	57
Attaching and Unhooking .....	49

## B

Bar oil .....	44
Bar Oil Flow Rate .....	44
Battery Safety .....	12
Before Starting the Engine .....	34
Block Dropper .....	31
Breakaway Cable .....	50
Break-in .....	37
Bubble Level on Frame .....	29

## C

Chain Saw Bar Oil .....	36
Chain Saw Safety .....	12
Checking Bolt Torque .....	70
Choke .....	25, 27
Choke, operating .....	25
Cold Weather Start-up .....	38
Chain Saw .....	39
Engine .....	38
Hydraulic System .....	38
Common Bolt Torque Values .....	70
Controls	
Choke .....	25
Engine Controls .....	25
Hour Meter .....	27
Hydraulic Controls .....	26
Infeed Conveyor Control .....	27
Live Deck Feed Control .....	27
Splitter Cylinder Control Valve .....	26
Splitting Wedge Height Control .....	27
Top Roller Clamping .....	27
Ignition Switch .....	25
Conveyor Angle, Changing .....	33
Conveyor Chain Slack .....	63
Conveyor Controls .....	28
Conveyor Height, Changing .....	32
Cutting .....	42
Cycling logs through quickly .....	47

## E

Emergency Stopping .....	38
Engine .....	52, 57
Engine Air Cleaner .....	57
Engine Controls .....	25
Engine Throttle .....	25
Engine Fuel .....	52
Engine Oil .....	52
Engine Oil Level Check .....	35
Engine throttle, operating .....	25
Equipment Safety Guidelines .....	9

## F

Familiarization .....	22
Job Site Familiarization .....	22
Operator Orientation .....	22
To the New Operator .....	22

Fluids .....	52
Foreword	
Delivery Inspection Report .....	4
Fuel Level – Checking .....	35

## G

Gas Motor Safety .....	12
Grease .....	52

## H

Hookaroon .....	44
Hydraulic Controls .....	26
Hydraulic Fitting Torque .....	71
Hydraulic Oil .....	52
Hydraulic Oil Level Check .....	36
Hydraulic Oil Tank Capacity .....	55
Hydraulic System Safety .....	10

## I

Ignition Switch .....	25
Infeed Conveyor .....	40
Infeed Conveyor Chain Tension, Adjusting .....	61
Infeed Conveyor Control .....	27
Integrated Conveyor .....	28

## J

Jump Starting .....	58
---------------------	----

## L

Live Deck .....	39
Live Deck Feed Control .....	27
Lowering Live Deck .....	30
Lubricants .....	52
Lubrication .....	53

## M

Machine Components .....	23
Machine Dimensions .....	69
Machine Set-up .....	29
Adjust Block Dropper .....	31
Block Dropper .....	31
Log Stop Guide .....	32
Lowering Live Deck .....	30
Making the Work Area Safe .....	14
Positioning Machine at Site .....	29
Saw Shield .....	32
Maintenance Schedule .....	53
Making the Work Area Safe .....	14
Measure conveyor chain slack .....	61, 62, 63

## O

Operating Instructions	
Cold Weather Start-up .....	38
Cutting .....	42
Cycling logs through quickly .....	47
End of the Log .....	45
Infeed Conveyor .....	40
Splitting .....	44
Adjust Wedge Height .....	44
Starting the Engine .....	38
Stopping in an Emergency .....	38
Stopping Procedure .....	38

Operating Safety .....	8
Operator Orientation .....	22

## P

Pre-start Checks	
Before Starting the Engine .....	34
Chain Saw Bar Oil .....	36
Engine Oil Level Check .....	35
Fuel Level Check .....	35
Hydraulic Oil Level Check .....	36
Pre-Operation Checklist .....	34
Saw Chain .....	36

## R

Raise Top Roller .....	40
Refueling .....	35
Refueling Safety .....	11
Replace Damaged Safety Signs .....	21
Return Filter Bypass Indicator Gauge .....	56

## S

Safe Condition .....	9
Safety .....	7
Battery Safety .....	12
Chain Saw Safety .....	12
Equipment Safety Guidelines .....	9
Gas Motor Safety .....	12
How to Install Safety Signs .....	21
Hydraulic System Safety .....	10
Operating Safety .....	8
Refueling Safety .....	11
Safe Condition .....	9
Safety Alert Symbol .....	7
Safety Training .....	10
Signal Words .....	7
Storage Safety .....	10
Tire Safety .....	11
Transport Safety .....	11
Welding Safety .....	13
Safety Alert Symbol .....	7
Safety Notice Decals .....	6
Safety Signs	
Safety Sign Locations .....	16
Safety signs, installing .....	21
Safety Training .....	10
Saw Chain, Loosening .....	43
Saw Chain Maintenance .....	59
Saw Chain, Remove / Replace .....	60
Saw Chain, Tensioning .....	60
Saw Lubrication .....	61
Seat Height Adjust .....	28
Serial number .....	5
Service and Maintenance .....	52
Axles .....	59
Conveyor Chain Tension, Adjusting .....	63
Electrical System .....	64
Engine .....	57
Hydraulic Oil – Changing .....	55
Clean Suction Strainer .....	55
Hydraulic Oil Filter - Changing .....	56
Infeed Conveyor Chain, Tensioning .....	61
Live Deck Drive Chain Lubrication .....	62
Lubrication .....	53
Saw Chain Maintenance .....	59
Bar Chain, Remove / Replace .....	60
Bar Chain, Tensioning .....	60

Sharpening .....	59
Saw Lubrication .....	61
Servicing the Battery .....	58
Charging the Battery .....	58
Cleaning the Battery .....	58
Installing the Battery .....	58
Jump Starting .....	58
Removing the Battery .....	58
Splitting Wedge – Changing .....	46
Storing Lubricants .....	52
Welding .....	64
Set Log Stop Guide .....	32
Sharpening Saw Chain .....	59
Sign-off form .....	15
Specifications .....	67
Common Bolt Torque Values .....	70
Hydraulic Fitting Torque .....	71
Machine Specifications .....	67
Splitter Circuit Hydraulic Pressure Gauge .....	26
Splitter Cylinder Control Valve .....	26
Splitting .....	44
Splitting Wedge – Changing .....	46
Splitting Wedge Height Control .....	27
Starting Procedure .....	38
Stopping .....	38
Stopping in an Emergency .....	38
Storage .....	51
Removing From Storage .....	51
Storage Safety .....	10

## T

Tightening Drive chains	
Live Deck .....	61
Live Deck Drive .....	62
Top Roller Clamp Handle .....	27
Trailer Breakaway System .....	50
Transporting .....	48
Attaching and Unhooking .....	49
Breakaway Cable, Attaching .....	50
Machine Dimensions .....	69
Raising Live Deck .....	49
Trailer Breakaway System .....	50
Transporting on a Roadway .....	50
Troubleshooting Guide .....	65
Types of Decals on the Machine .....	6

## U

Understanding Safety Decals .....	16
Unhooking .....	49

## W

Warranty .....	72
Welding .....	64
Welding Safety .....	13
Wheel Lug Nut Torque .....	71
Working Efficiently .....	47

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