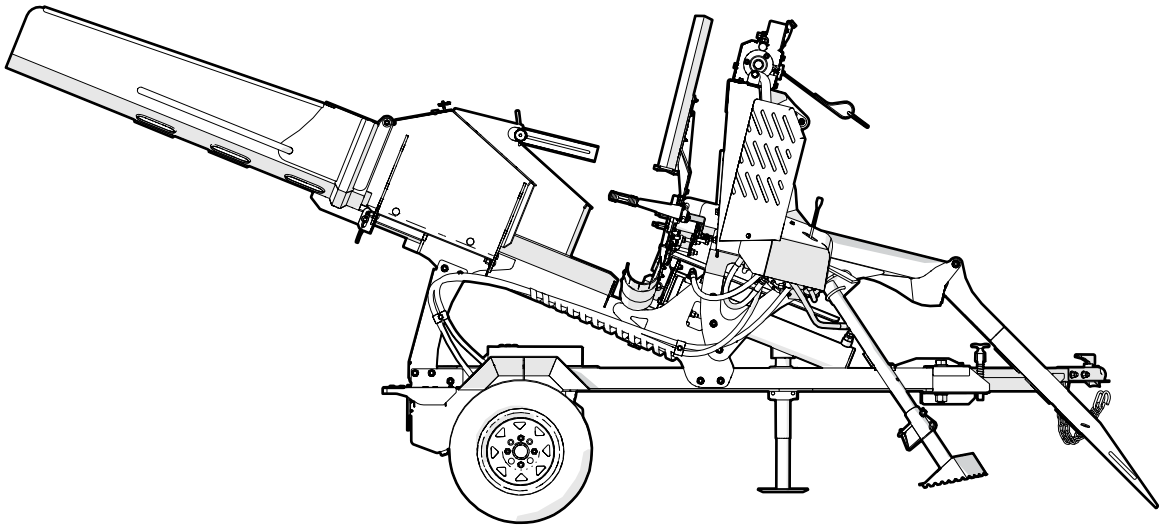
OPERATOR'S MANUAL

WP525
Firewood Processor



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Part Number: Z97159_En

WALLENSTEIN

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1. Foreword

⚠ WARNING!

Do not attempt to start or operate the machine before you read this manual thoroughly. Make sure that you understand how to operate the machine correctly and safely before you use it.

Keep this manual with the machine at all times.

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1.1 Introduction

Congratulations on your choice of a Wallenstein WP525 firewood processor!

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

The Wallenstein WP525 firewood processor includes a hydraulic power source, winch, and splitter. It is powered by a Vanguard© engine.

The hydraulic winch is mounted on top of the machine to pull logs up the entry chute and position them for cutting. After the operator cuts the log with a chain saw, the cut log falls into the splitter. The operator then activates the splitter to split the cut log into firewood and push it up the exit chute.

The Wallenstein WP525 firewood processor improves efficiency and minimizes handling, while reducing the risk of physical strain.

Safe, efficient, and trouble-free operation of this Wallenstein Equipment product requires that anyone using or maintaining the machine reads and understands the safety, operation, and maintenance information in this manual and the engine manufacturer's manual.

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

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

For support or service, contact your local Wallenstein Equipment dealer or distributor.

1.2 Delivery Inspection Report

Wallenstein WP525 Firewood Processor

To register your product and start the warranty, go to WallensteinEquipment.com.

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

I received the product manuals and was thoroughly instructed about the care, adjustments, safe operation, and applicable warranty policy.

I thoroughly instructed the customer about the equipment care, adjustments, safe operation, and applicable warranty policy, and reviewed the manuals with them.

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	

Dealer Inspection Checklist

_____ Engine starts and runs, and fluid levels are correct.

_____ The chutes fold up and latch securely.

_____ Log stabilizer moves freely.

_____ All fasteners are tightened to the correct torque.

_____ All grease points are lubricated.

_____ Hydraulic system and cylinders function correctly.

_____ Hydraulic controls move freely.

_____ Hydraulic connections are tight, and hoses and fittings are in good condition.

_____ There are no hydraulic leaks.

_____ Trailer-tongue pivot and chain-saw holder move freely.

_____ Tire pressure is correct (see the tire sidewall).

_____ Tires are in good condition.

_____ Operator's Manual is in the storage tube.

_____ Purchased accessories are included, if applicable.

Winch

_____ Motor and gear lever function correctly.

_____ Rope, hook, and fairlead are in good condition.

Safety Checks

_____ All safety sign decals are applied and legible.

_____ All guards, shields, and covers are installed and secure.

_____ Wheel lug nuts are tightened to the correct torque.

_____ Trailer jack and support stands function correctly.

_____ A retainer is installed through each hitch point.

_____ Safety chains are on the ball-mount hitch.

_____ Rear reflectors are present and not damaged.

_____ Operating and safety instructions were reviewed.

_____ If purchased, the light-bar lights operate correctly.

1.3 Serial Number Location

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

Record the serial number of your product here:

Model	**WP525**
Serial Number	

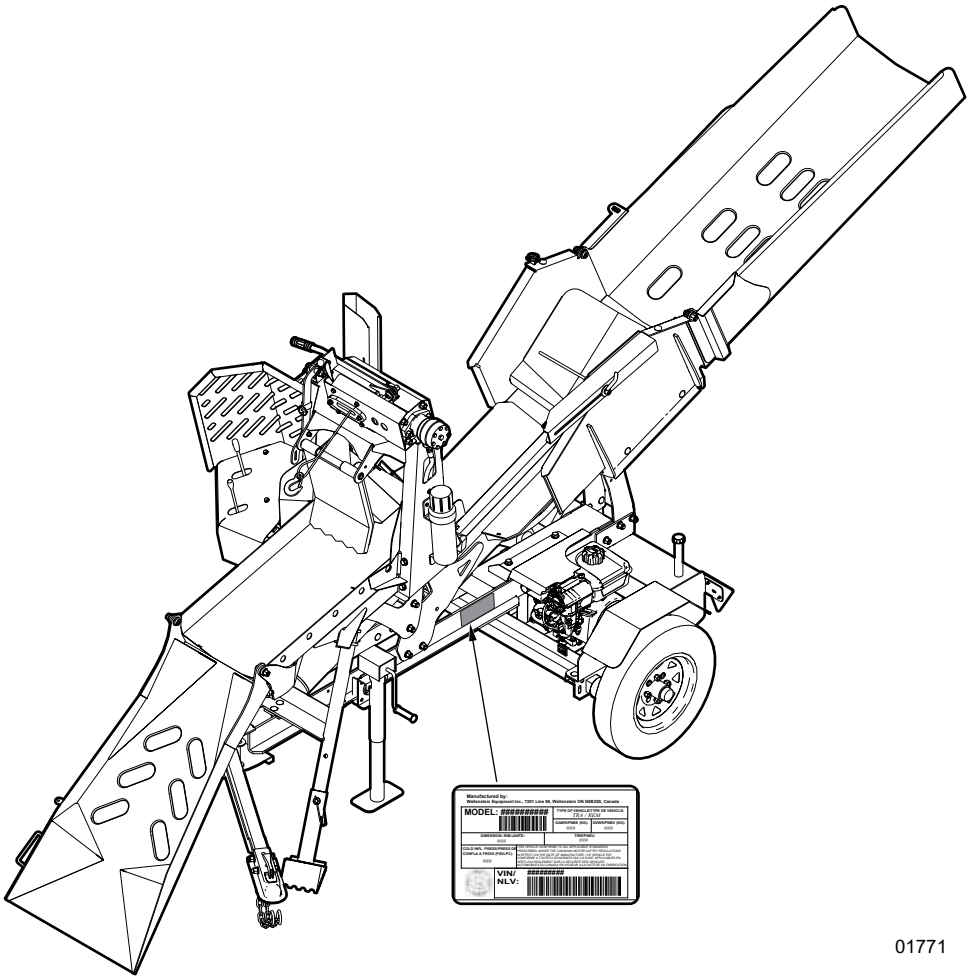
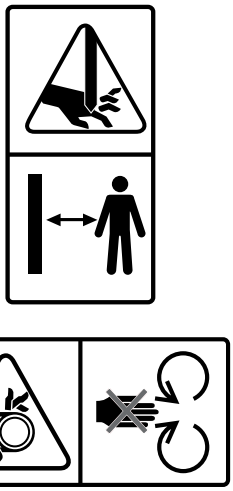


Figure 1–Product information plate location

1.4 Types of Decals on the Machine

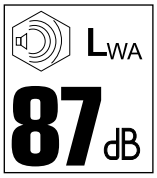
When getting familiar with the Wallenstein product, notice that there are numerous decals located on the machine. There are different types of decals for safety, information, and product identification. The following section explains what they are for and how to read them.

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

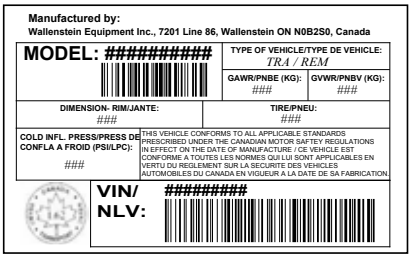


Safety Notice Decals are pictorial with a blue background and generally rectangular with single or multiple symbols. This decal informs what Personal Protective Equipment is required for safe operation.

Informative Decals are generally pictorial with a white background and can vary in the number of panels. This type of decal provides additional information for the operator or explains the operation of a control.



Product Decals indicate machine model and serial number, and other important information.



Maintenance Decals have a green background and can vary to the number of panels. This decal shows the type of maintenance required and frequency interval.

For an illustration that shows all the decals and decal locations, go to WallensteinEquipment.com and download the Parts Manual for your Wallenstein product..

2. Safety

Read and understand all safety information before operating the machine.

2.1 Safety Alert Symbol

This Safety Alert Symbol means:

ATTENTION! BE ALERT!

YOUR SAFETY IS INVOLVED!

The safety alert symbol identifies important safety messages on the machine 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.

Information

☞ Provides additional information that is helpful.

2.3 Why Safety is Important

- **Accidents disable and kill people.**
- **Accidents cost money.**
- **Accidents are preventable**

YOU are responsible for the SAFE operation and maintenance of your Wallenstein product. **YOU** must make sure that you and anyone else who is going to use, maintain, or work around the machine is 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. Make sure that **EVERYONE** who uses this machine is familiar with the recommended operating and maintenance procedures and complies with all the safety precautions. Most accidents can be prevented.

Do not risk injury or death by ignoring good safety practices.

2.4 Safety Rules

⚠ CAUTION!

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

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⚠ CAUTION!

A chain saw or other environmental factor may increase the noise level during machine operation. The 87 dB noise rating only applies to the machine when it is outdoors with the engine on.

Safety is a primary concern in the design and manufacture of Wallenstein products. Unfortunately, efforts to provide safe equipment can be wiped out by a single careless act.

For safety information that is specific to machine operation, service, or maintenance, see the applicable section in this manual.

- It is the operator's responsibility to read, understand, and follow ALL safety and operating instructions in this manual.
- If you do not understand any part of this manual or require assistance, contact your local dealer, the 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 how the machine works. Review the safety instructions with all users annually.
- Operators of this machine must be responsible, physically able people who are familiar with machinery and trained in the operation of this equipment. If an elderly person is assisting with the work, their physical limitations need to be recognized and accommodated.
- Make sure that all users understand the safety signs on the machine before operating, servicing, adjusting, or cleaning it. For safety sign explanations, see *Safety Signs on page 14*.
- Learn the controls and how to stop the machine quickly in the event of an emergency. For instructions, see *Emergency Stop on page 34*.

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

- Keep a fire extinguisher available for use, should the need arise, and know how to use it.
- Wear the appropriate PPE when operating, servicing, or maintaining the machine.
  This includes, but is not limited to:
  - A hard hat.
  - Heavy gloves.
  - Hearing protection.
  - Protective shoes with steel toes and slip resistant soles.
  - Protective glasses, goggles, or a face shield.

- Prolonged exposure to loud noise may cause permanent hearing loss. Power equipment with or without a vehicle attached can often be noisy enough to cause permanent, partial hearing loss.
- Wear hearing protection on a full-time basis if the noise in the operator's position exceeds 80 dB. Noise over 85 dB on a long-term basis can cause severe hearing loss. Noise over 90 dB adjacent to the operator on a long-term basis may cause permanent, total hearing loss.
- Avoid wearing loose fitting clothing, loose or uncovered long hair, jewelry, and loose personal articles. These can get caught in moving parts and cause injury. Jewelry may also ground a live electrical circuit causing injury and machine damage.
- Never consume alcohol or drugs before or during machine operation. Alertness or coordination can be affected. Consult your doctor about operating this machine while taking prescription medications.
- Only use the machine in daylight or good artificial light.
- Keep all guards, shields, and covers in place. If removal is necessary for repair, replace them before using the machine.
- Never allow anyone to ride on the machine during transport.
- Keep bystanders at least 20 ft (6 m) from the stacking zone. Mark the zone with safety cones.
- Before starting the engine, make sure that the machine is clear of debris.

- Do not touch hot engine parts, the muffler cover, hoses, engine body, or engine oil during operation or after the engine is turned off. Contact with hot surfaces may cause burns.
- Be aware of overhead hazards (for example, branches, cables, and electrical wires).
- Handle logs with respect and be aware of other people in the area.
- Never attempt to push a log through the stabilizer opening by hand. The log stabilizer could drop suddenly and cause serious injury. Always use the appropriate procedure and tools to push or pull a log through the opening.
- Before using the step, stop the machine, and then clean the step and the area below it. Unexpected machine movement, and cluttered or slippery conditions create slip and fall hazards.
- Always hold the exit-chute handle while using the step.

2.5 Equipment Safety Guidelines

Safety is one of the main concerns in designing and developing equipment. However, every year many accidents occur that could have been avoided by a few seconds of thought and a more careful approach to handling equipment.

Avoid hazards by observing the following precautions. Insist anyone working with you follow them as well.

- Replace safety or instruction signs (decals) that are not readable or missing. For locations and explanations, see *Safety Signs on page 14*.
- 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 the warranty.
- Make sure that the machine is correctly stationed, adjusted, and in operating condition.
- Keep the machine free of accumulated trash, grease, and debris to prevent fires.
- Replace the winch synthetic rope if it is kinked, badly frayed, has knots, cuts, or broken strands. If the rope fails under tension, it can snap back with great force causing injury or death. Avoid sudden jerks, quick starts or stops. Start slowly and smoothly.
- 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 Safe Condition

References are made to **safe condition** throughout this manual. Safe condition means putting the machine in a state that makes it safe to service or maintain.

Before starting any service or maintenance, complete the following:

SAFE CONDITION

1. Turn off the chain saw and remove it from the holder.
2. Remove the winch rope and strap from the log, and then wind the winch rope into the winch.
3. Pull back and hold the **splitter control** to retract the push block.
4. Move the hydraulic controls to neutral.
5. Stop the machine.
   For instructions, see *Stop the Machine on page 34*.
6. Operate each hydraulic control to relieve the pressure.
7. Remove all material from the entry chute, log chute, splitter, and exit chute.
   For more information, see *Remove Firewood from the Exit Chute on page 51*.
8. Disconnect the engine spark-plug wire. Keep the spark-plug wire away from the spark plug to prevent the engine from being started accidentally.

2.7 Safety Training

An untrained operator can cause serious injury or death to themselves or others. Review the safety instructions with all users annually. The *Sign-Off Form on page 11* can be used to keep a training record.

- An employer has the responsibility to train employees how to operate the equipment they are using. When someone does not understand the basic operation of a piece of equipment, they can create dangerous situations very quickly. Operators must completely understand the safety information in this manual and the safety decals on the machine
- Provide instruction to anyone else who is going to operate the machine. This equipment is dangerous to anyone who is unfamiliar with its operation.
- If the machine is loaned or rented, it is the owner's responsibility to make sure that, before using the machine, every operator:
  - Reads and understands this manual.
  - Is instructed in the safe and correct use of the machine and related equipment.
  - Understands and knows how to set the machine to a **Safe Condition**.
    For instructions, see *Safe Condition on page 9*.

2.8 Sign-Off Form

Everyone who uses this machine must read and thoroughly understand all safety, operation, and maintenance information in this manual. An untrained operator should never use this machine.

Make periodic review of machine safety and operation a standard practice for all operators. Operators should review these topics at the start of each season.

The following sign-off form can be used to record the completed training.

The design and manufacture of this product conforms to the applicable provisions in the following standards:

- ISO 4254-1:2013, Agricultural machinery - Safety - Part 1: General requirements.
- ISO 3600 Tractors, machinery for agriculture and forestry, powered lawn and garden equipment – Operator's manuals – Content and format.

Training Sign-Off Form

Date	Owner's signature	Operator or technician's signature

2.9 Work Site

⚠ CAUTION!

It is the responsibility of the operator to be thoroughly familiar with the work site before starting work. Avoid unsafe situations and make every effort to prevent accidents.

2.9.1 Select a Work Site

Select a safe work area and machine location:

- Avoid a close or cramped workspace. Make sure that there is enough space and clearance for the machine and winching.
- Avoid extremely wet or soft conditions where the trailer jack and support-stand bases will become buried. If necessary, place enough wood chips or gravel in this area to prevent the machine from becoming stuck.
- The ground should be firm and level, but not a smooth hard surface. The trailer jack and support stands will slip on a smooth surface.
- The 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, and electrical wires.
- Identify a safe firewood stack location. Stack the firewood on level ground. Make sure that the firewood stack does not interfere with safe operation of the machine.

2.9.2 Create a Safe Work Area

The WP525 firewood processor is designed for a person to winch, cut-to-length, and split logs for firewood. Review and follow the instructions for safe operation of the machine. Also, review the safety guidelines included with your chain saw.

To keep bystanders and workers safe from hazards, follow these important guidelines:

- Establish a Work Zone perimeter and mark it with safety cones. The perimeter should be a minimum of 20 ft (6 m) from any hazard within the Hazard Zone.
  The area outside the Work Zone perimeter is the Safe Zone.
- Never allow workers to approach the Hazard Zone during machine operation, without first signaling and making eye contact with the operator.
- Keep all bystanders in the Safe Zone. Never allow bystanders in the Work or Hazard Zones.
- Always operate the machine controls from the Operator Zone (typically, located at the control panel).
- Only the operator can authorize entry into the Hazard Zone. The operator must make sure that it is safe to enter first.
- Make eye contact with coworkers and have a hand-signal scheme worked out. Always be aware of the location of your coworkers.
- Use extreme caution around the material stacks. Stacked logs can roll in unpredictable ways.
- Be aware of split wood stacks. Split wood can tumble off the pile.

For more information, see *page 13*.

The following illustration is an example of a safe work area. Not all work areas are the same, but the principles presented here can be applied to any work area.

A safe work area is divided into four zones:

1. **Safe Zone** – The area outside the Work Zone perimeter. Bystanders or anyone not directly involved with the work is permitted to be in this area. There are minimal potential hazards in the Safe Zone.
2. **Work Zone** – The area between the Hazard Zone and the Safe Zone. People assisting with the work who are wearing the appropriate PPE are permitted to be in this area. Some limited hazards are present in the Work Zone.
3. **Hazard Zone** – The area between the Operator Zone and the Work Zone. Only people directly involved with the work who are wearing the appropriate PPE are permitted in this area. Workers must always make eye contact with the operator before entering the Hazard Zone. Serious safety hazards are present in the Hazard Zone.
4. **Operator Zone** – The area where an operator must be to operate the machine. Only the operator is permitted to be in this area. The operator must be aware of all the people in the Hazard Zone and make eye contact with workers before they enter the Hazard Zone.

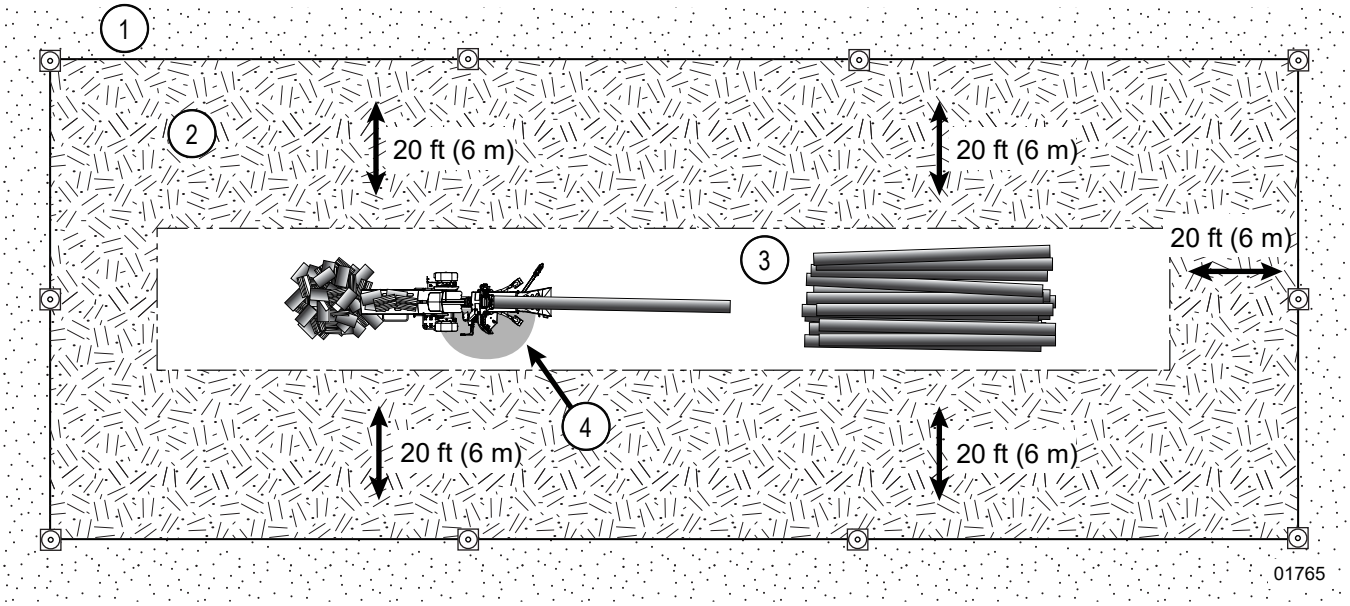

Figure 2– Example layout of a safe work area

3. Safety Signs

⚠ WARNING!

Risk of personal injury. Replace safety signs that are removed, damaged, or illegible. If a part with a safety sign on it is replaced, a new safety sign must be applied.

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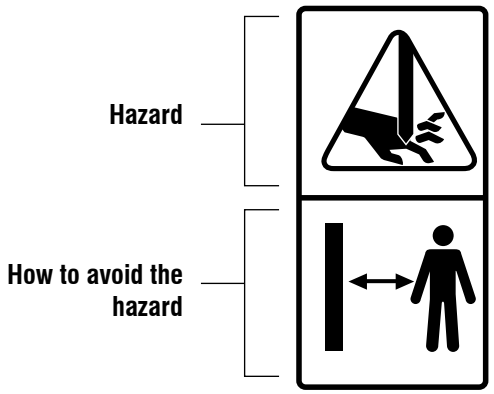
Practicing good safety means becoming familiar with safety signs (decals) and warnings and being aware of situations that require alertness.

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



Think SAFETY! Work SAFELY!

3.1 Safety Sign Locations

The numbers correspond with the *Safety Sign Explanations on page 17*.

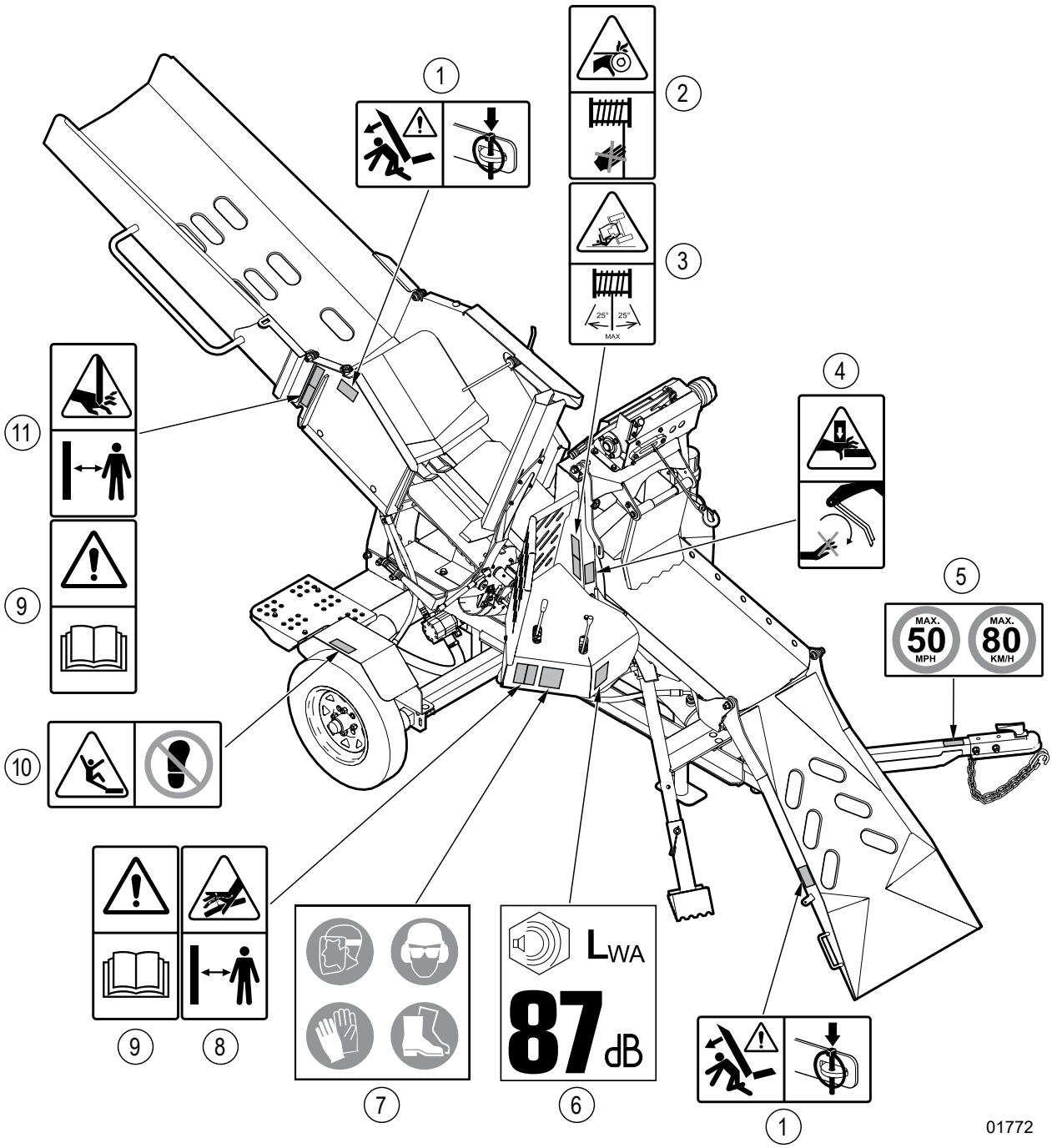


Figure 3– Safety sign locations – RH side

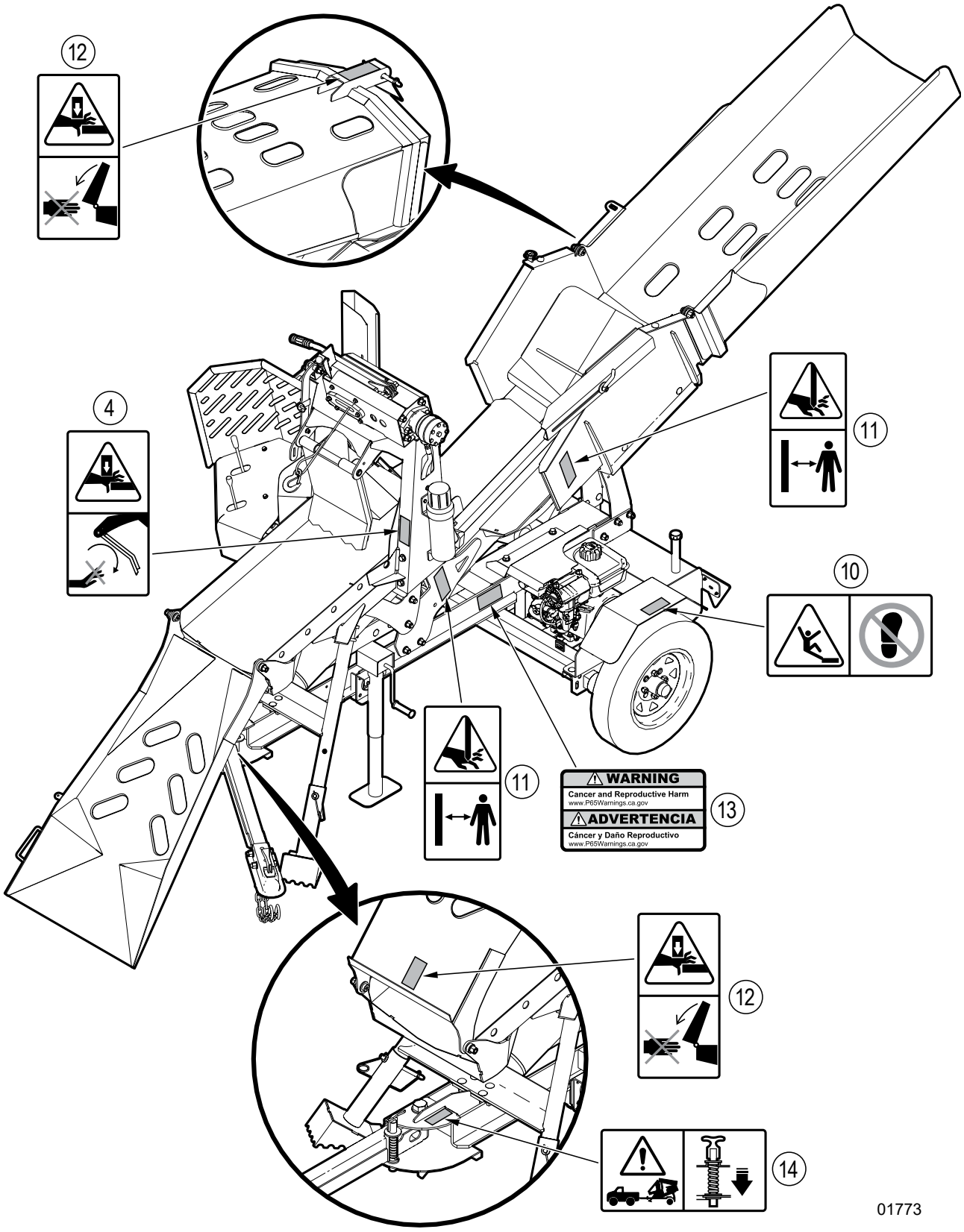
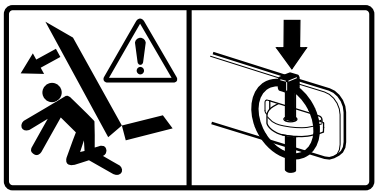


Figure 4–Safety sign locations – LH side

3.2 Safety Sign Explanations

1. Caution!

Impact hazard

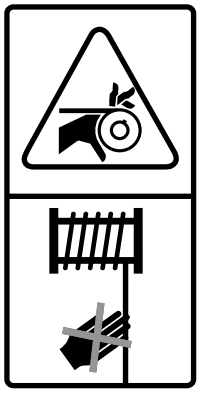


Make sure that the latch is secure during transport.

A chute that moves unexpectedly or during transport can cause personal injury or machine damage.

2. Warning!

Entanglement hazard

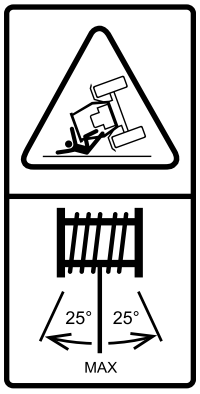


When using the winch, keep hands, long hair, loose clothing, and jewelry clear of the winch rope.

Body parts, hair, loose clothing, or jewelry that becomes entangled in the winch rope can cause serious injury or death.

3. Warning!

Tip over and crush hazard

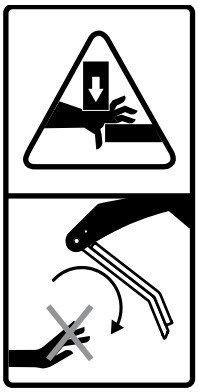


When using the winch, do not exceed a ±25° pull angle from the centerline of the machine. Use snatch blocks when winching at angles greater than 25°.

If the machine tips over on a person it can cause serious injury, death, and machine damage.

4. Warning!

Impact and crush hazards

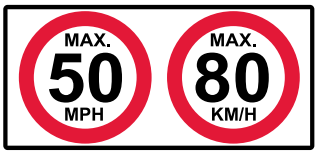


Never hold the log stabilizer by hand. Keeps hands and arms clear of this area.

The log stabilizer is heavy and gravity causes it move. Impact from the log stabilizer can result in serious injury.

5. Warning!

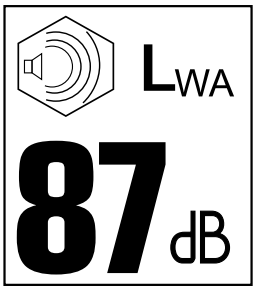
Recommended speed limit



This decal communicates that 50 mph (80 km/h) is the maximum speed of travel for the machine.

6. Caution!

Noise level hazard



The noise declaration decal indicates the sound power (L_{WA}) emitted by the machine when it is operating. For this machine, the noise level can be up to 87 decibels at close range.

Noise exposure over 85 dB on a long-term basis can cause severe hearing loss. Exposure over 90 dB on a long-term basis may cause permanent, total hearing loss.

7. Warning!

Wear the appropriate PPE

- A hard hat.
- Heavy gloves.
- Hearing protection.
- Protective footwear with steel toes and slip resistant soles.
- Protective goggles or a face shield.

8. Warning!

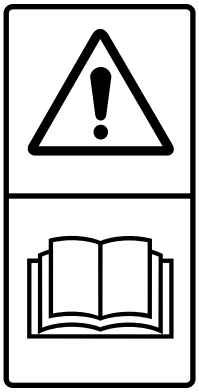
High-pressure injection hazard

Hydraulic fluid is under pressure. In the event of a leak, turn off the machine. Do not use your bare hands to check for leaks. Use a piece of cardboard, wood, or plastic to locate the leak. Wear the proper hand and eye protection when searching for a high-pressure hydraulic leak.

Injection of hydraulic fluid can cause serious illness, injury, and death.

9. Warning!

Read the Operator's Manual



Read ALL operating instructions and safety information in the manual. Learn the meaning of ALL safety signs on the machine.

The best safety feature is an informed operator.

10. Warning!

Fall hazard

Risk of falling off the machine and causing bodily injury.

Do not step or stand on this surface.

11. Warning!

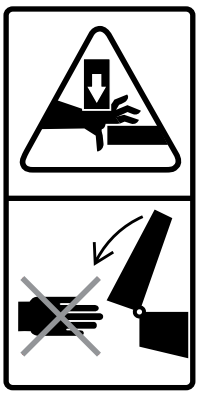
Crush, cut, or sever hazard

There is a risk of hands being crushed, cut, or fingers severed in this area.

Keep hands clear of all moving parts.

12. Caution!

Pinch point hazard



When folding or unfolding a chute, be aware of the pinch points. Use the handle on the side of the chute.

Keep hands clear to avoid injury.

13. Warning!

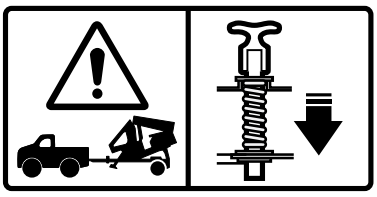
Risk of cancer and reproductive harm

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.

14. Warning!

Risk of unexpected movement



Make sure that the trailer-tongue pivot lock pin is fully engaged before transport.

Serious injury or machine damage can result.

3.3 Replace a Safety Sign

- Always replace safety signs that are missing or have become illegible. Replacement safety signs are available through your local Wallenstein Equipment dealer or distributor.
- Keep the safety signs clean and legible at all times.
- Parts replaced that had a safety sign (decal) on them must also have the safety sign replaced.

Requirements

- The installation area must be clean and dry.
- The application surface must be clean and free of grease or oil.
- The ambient temperature must be above 50 °F (10 °C).
- A squeegee, plastic bank card, or similar tool is required to smooth out the decal.

Procedure

☞ Determine the exact position for the decal before removing the backing paper. If possible, align the decal with an edge on the machine.

1. Peel the decal off the backing paper.
2. Position the decal above the location where it is being applied to the machine.
3. Starting at 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 an appropriate tool to smooth out the decal, working from one end to the other.

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

4. Familiarization

Your WP525 firewood processor is designed to process logs into firewood. Use the winch to pull a log up the entry chute, through the log chute, to the log-length guide. Use a chain saw to cut the log to the required length. The cut log falls into the splitter. Activate the splitter to move the cut log forward and split it. Split logs push the previously split logs (firewood) up the exit chute and out of the machine. Power to operate the machine is provided by a gas engine and hydraulic pump.

4.1 New Operator

⚠ WARNING!

Make sure that all operators understand how to place the machine in a safe condition before performing any service, maintenance, or storage preparation. For instructions, see *Safe Condition on page 9.*

It is the responsibility of the owner and the operator to read this manual, and to train all other operators before they work with the machine. Follow all safety instructions.

Untrained operators are not qualified to use the machine. They can endanger themselves and others or damage property.

4.2 Training

Each operator must be trained in the correct operating procedures before using the machine. The *Sign-Off Form on page 11* can be used to keep a training record.

1. Review control locations, functions, and movement directions.
2. Move the machine to a large open area and allow the new operator to become familiar with control functions and machine responses.
3. When the new operator is familiar and comfortable with the machine, they can proceed with the work.

4.3 Operator Orientation

IMPORTANT! Unless otherwise specified, the left hand (LH), right hand (RH), forward, and backward directions described in this manual are referenced from the operator control panel position when facing the direction of forward machine travel.

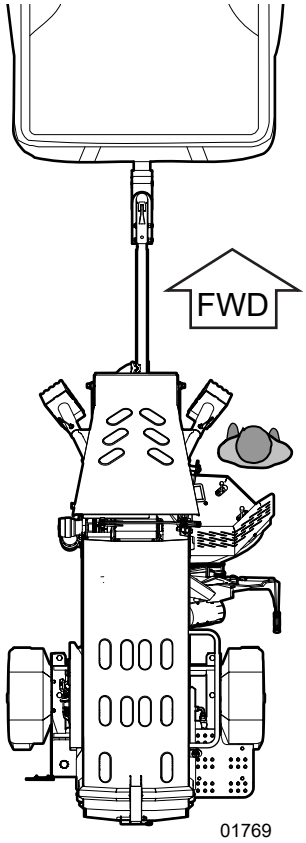


Figure 5–Direction of forward machine travel

4.4 Machine Components

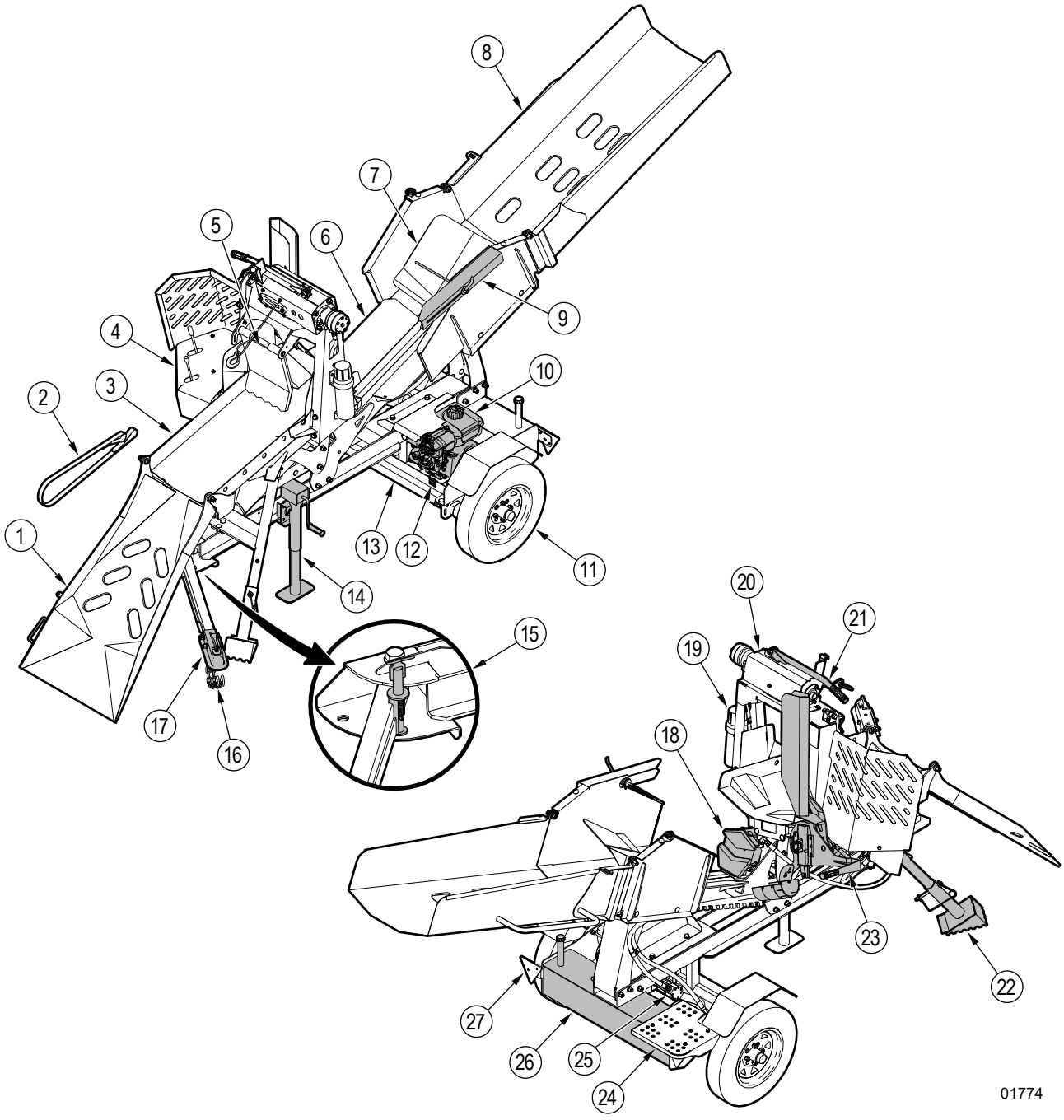


Figure 6–Machine components

1. Entry chute
2. Winch strap
3. Log chute
4. Operator control panel
5. Log stabilizer
6. Splitter
7. Splitting wedge
8. Exit chute
9. Log-length guide
10. Engine (includes a spark arrestor)
11. Wheel (1 of 2)
12. Tachometer and hour meter
13. Axle assembly
14. Trailer jack
15. Trailer-tongue pivot
16. Safety chains
17. Ball-mount hitch coupler
18. Push block (retracted position)
19. Operator's Manual container
20. Winch
21. Winch gear lever
22. Support stand (1 of 2)
23. Chain-saw holder
24. Step
25. Hydraulic motor
26. Hydraulic fluid reservoir
27. Rear reflector (1 of 2)

5. Controls

WARNING!

Do not operate the machine until you are thoroughly familiar with the position and function of the various controls. Read the operator's manual thoroughly. Your safety is involved!

W065

5.1 Engine Controls

WARNING!

Before starting the engine, read and understand the safety and operating information under *Engine Operation on page 27*.

IMPORTANT! For complete information about the engine controls, see the engine manufacturer's manual.

5.1.1 Throttle Control and Fuel Shutoff

The throttle control and fuel shutoff lever has the following functions:

Fast
Engine speed is fast.

Slow
Engine speed is slow.

Fuel shutoff closed

STOP
The engine is stopped.

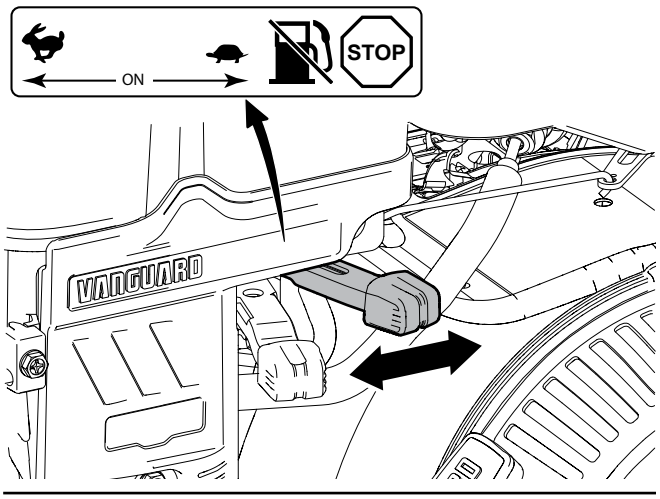
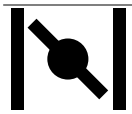


Figure 7–Engine throttle control and fuel shutoff

5.1.2 Choke Control

The choke control lever has the following functions:



Closed
Close the choke to start a cold engine.

Open
Open the choke when the engine is warm.

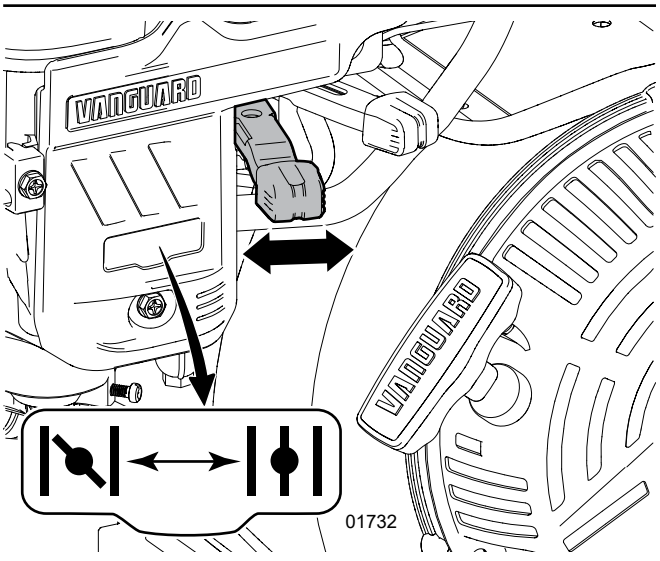


Figure 8–Engine choke control

5.1.3 Rewind Start

WARNING!

Fast retraction of the starter cord (called kickback) pulls your hand and arm toward the engine faster than you can let go of the handle. Serious bodily harm (for example; bruises, sprains, fractures, and broken bones) can result.

When starting the engine, pull the starter cord slowly until you feel resistance, and then pull it rapidly to avoid kickback.

W102

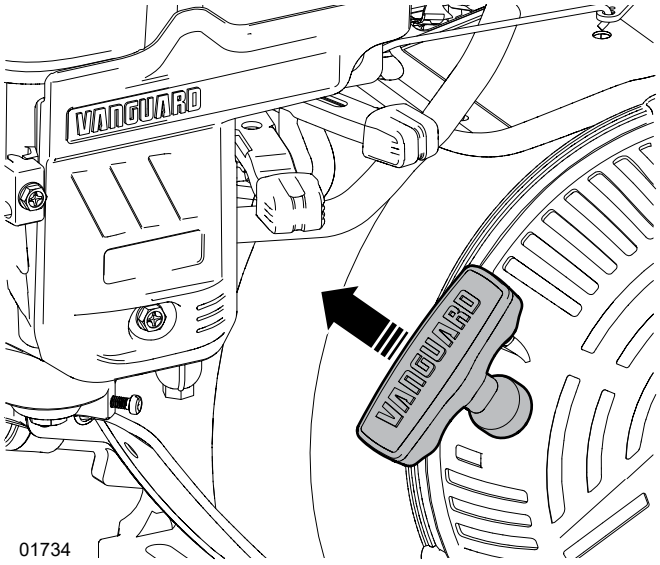


Figure 9 – Rewind-start handle

5.2 Tachometer and Hour Meter

While the engine is operating, the tachometer displays the engine revolutions per minute (rpm). When the engine is off, the hour meter displays the total number of hours the engine has operated since it was new. The tachometer hour meter has an internal battery.

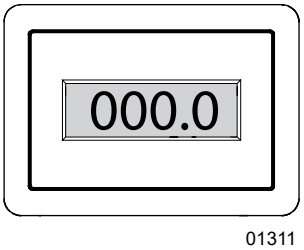


Figure 10 – Tach/hour meter display

5.3 Hydraulic Controls

The machine has two hydraulic control levers that are located on the operator control panel.

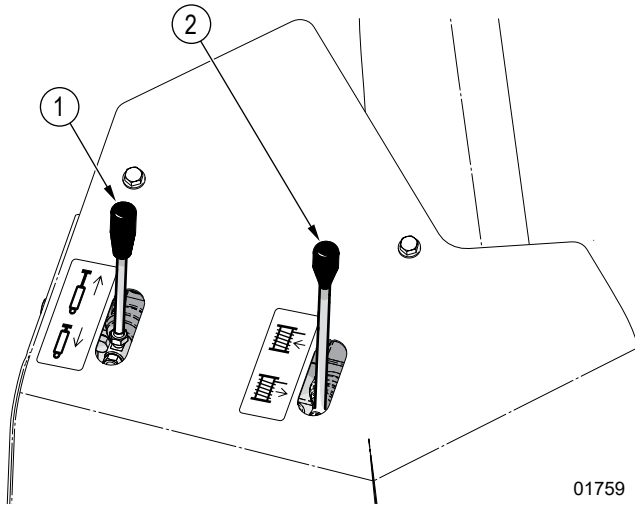


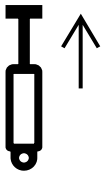
Figure 11 – Hydraulic controls

1. Splitter control
2. Winch control

5.3.1 Splitter Control

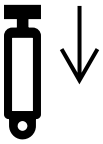
Move the splitter control to the center (neutral) position at any time to stop the push block.

The splitter control has the following functions:



Advance
Push and hold the lever forward to move the push block toward the log. The push block applies pressure to split the log.

When you release the lever, it automatically moves to the neutral position.

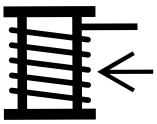


Retract
Pull the lever backward to move the push block away from the log. The valve holds the lever in the retract position (detent) for a hands-free retract cycle.

When the push block arrives in the retracted position, the lever automatically returns to the neutral position.

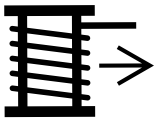
5.3.2 Winch Control

The winch control has the following functions:



Wind
Push and hold the lever forward to wind the winch rope into the winch.

Release the lever to stop. The lever moves to the neutral position.



Unwind
Pull and hold the lever backward to unwind the winch rope. Use this lever intermittently and pull the rope out by hand to prevent it from getting tangled inside the winch housing.

Release the lever to stop. The lever moves to the neutral position.

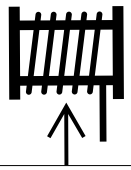
5.3.3 Winch Gear Lever

The winch gear lever is located on top of the winch. It controls the connection between the winch gear and the hydraulic motor.

The winch gear lever has the following functions:

Freewheel
Push the winch gear lever up to disengage the winch gear from the hydraulic motor.

Pull out the winch rope by hand. The winch spool turns freely, and the hydraulic winch control is disabled.



Powered
Pull the winch gear lever down to engage the winch gear with the hydraulic motor.

The hydraulic winch control is enabled and controls the winch operation.

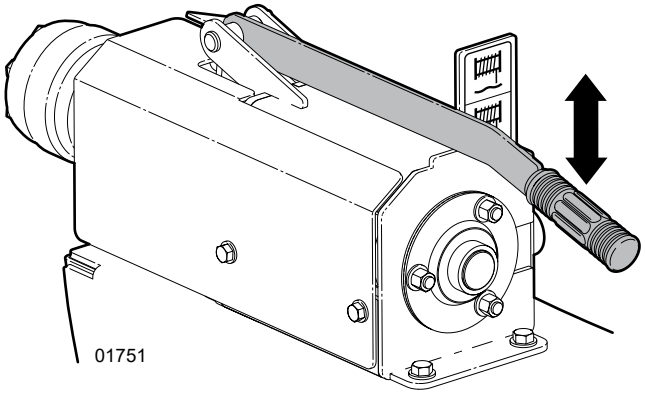


Figure 12 – Winch gear lever

5.4 Log-length Guide

The log-length guide is located on the LH side of the splitter. An operator can select the desired log length. For instructions, see *Set the Log-length Guide on page 39*.

The log-length guide can be set for a log length that is between 12 in (30 cm) and 22 in (56 cm).

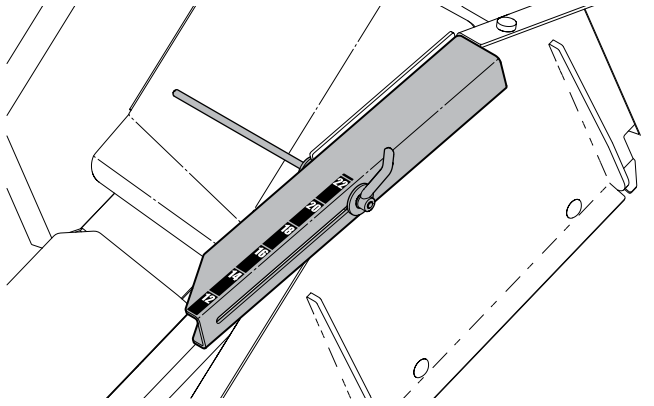


Figure 13 – Log-length guide

5.5 Step

WARNING!

Move slowly and always hold the exit-chute handle while using the step. Incorrect or careless use of the step may result in a slip or fall that can cause serious injury or death.

For more information, see *Remove Firewood from the Exit Chute on page 51*.

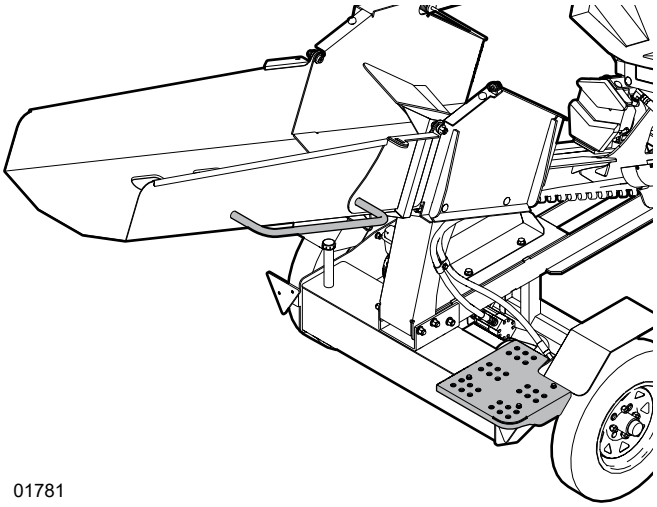


Figure 14 – Step and exit-chute handle

6. Operating Instructions

Read and understand all of the operating instructions before using the machine.

6.1 Operating Safety

⚠ WARNING!

Wear the personal protective equipment (PPE) that is required to complete the work safely.

This includes, but is not limited to a hard hat, hearing protection, a face shield, protective footwear, a respirator, and heavy gloves.

W101

⚠ WARNING!

Always use the machine outdoors and park the machine in a position where the prevailing winds blow the engine exhaust away from the operator. Exhaust from the engine contains carbon monoxide (CO) that can accumulate to a dangerous level, even in an area with good air flow.

W006

The operator is responsible to be familiar with and follow all operating and safety procedures. Read and understand all the safety information in this manual before operating the firewood processor.

- Read the chain saw and engine manufacturer's manuals and follow all safety instructions.
- Park the machine in a clear location on dry, level ground. Do not operate the machine on a hillside or in an area that is cluttered, wet, muddy, or icy to prevent slips and trips.
- Keep the work area clean and free of debris.
- Never operate an engine inside a closed building. The exhaust fumes may cause asphyxiation.
- Before starting the machine, close and secure all guards, shields, deflectors, and covers. If a guard, shield, or cover is removed, replace it.
- De-limb logs before loading them.
- Do not try to process more than one log at a time. The extra log can move unexpectedly and cause injury.
- Never reach into the splitting area with your hands while the machine is operating. Use a tool to reposition cut logs in the splitting area (for example, a hookaroon or peavey).
- Do not try to split logs across the grain. Logs can burst or splinter, and then fly out of the machine causing injury.
- Use care when pulling logs from a pile. The logs can roll when you attach a rope or while being pulled. Use a tool to position or handle logs (for example, a hookaroon or peavey).
- Do not move or transport the machine with the engine on.
- Never stand, sit, or climb on any part of the machine while the engine is on.
- **Never operate the machine alone!** Always have at least two fully trained people present:
  - It is recommended that there be one operator and one spotter present during machine operation. Both the operator and spotter must be completely familiar with all the machine safety, controls, and operating functions.
  - **The operator must be in control of the machine at all times. The spotter must remain outside of the hazard zone while the machine is in operation.**
- Keep bystanders at least 20 ft (6 m) from the stacking zone. Mark the safe zone with safety cones.
- Turn off the engine before leaving the machine unattended.
- Before operation, complete the tasks described in the *Pre-Start Checklist on page 26*.

6.2 Pre-Start Checklist

Complete the following before you start the machine the first time and every time thereafter:

Items to Complete	✓
Review and follow the *Operating Safety on page 25*.	
Check the engine oil, fuel, and hydraulic fluid levels. If required, add engine oil, fuel, or hydraulic fluid.	
Check that the engine spark plug, muffler, fuel cap, and air cleaner cover are in place and secure.	
Make sure that the winch is in working condition. Repair or replace the winch, as required.	
Make sure that the winch rope is in good condition. Replace the rope if it is cut, knotted, worn, or has any broken strands.	
Make sure that the winch strap (or choker chain) is in good condition. Replace the strap if it is torn or damaged.	
Make sure that the machine is lubricated, as specified in the *Maintenance Schedule on page 58*.	
Check the hydraulic system for leaks. Use a safe method to inspect for leaks. Tighten fittings or replace components, as required. For more information, see *Hydraulic Fitting Torque on page 66*.	
Check the machine for entangled material. Remove any twine, wire, or other material that has become entangled.	
Remove all material and debris from the splitter rails.	
Make sure that the wedge and push block are in working condition. Inspect them for damaged or broken components and excessive wear. Lubricate, repair, or replace components, as required.	
Check that all guards, shields, and covers are installed, secure, and in good condition. Replace and secure, as required.	
Check that all the fasteners are installed and tightened to the correct torque. For more information, see *Bolt Torque on page 65*.	
Make sure that the operator and spotter are wearing the required PPE (including hard hat, safety eye wear, safety footwear, safety vest, hearing protection, and work gloves). The PPE must be in good condition.	
Make sure that the operator and spotter are not wearing loose-fitting clothing or jewelry, and long hair is tied up.	
Make sure that there are no bystanders inside the work zone and the spotter is outside the hazard zone. For zone definitions, see *Create a Safe Work Area on page 12*.	

6.3 Machine Break-In

Although there are no operational restrictions on the machine when it is used for the first time, the following process is recommended:

Before Initial Startup

1. Read and understand all safety information in this manual, the engine manufacturer's manual, and the chain saw manufacturer's manual.
2. Review the *Machine Components on page 21*.
3. Review the operation and function of the *Controls on page 22*.
4. Complete the *Pre-Start Checklist*.

After Each Hour of Operation

Remove all wood chips and saw dust that are on the machine and on the ground below the machine.

After Five Hours of Operation

Complete each of the following:

- Check that all the fasteners are installed and tightened to the correct torque. For more information, see *Bolt Torque on page 65*.
- Check the hydraulic system for leaks. Use a safe method to inspect for leaks. Tighten fittings or replace components, as required. For more information, see *Hydraulic Fitting Torque on page 66*.
- Check the engine oil, fuel, and hydraulic fluid levels. If required, add engine oil, fuel, or hydraulic fluid.
- Change the engine oil.
  For instructions, see the engine manufacturer's manual.
- Check the condition of the winch rope. Replace the rope if it is cut, knotted, worn, or has any broken strands.
- Check the machine for entangled material. Remove any twine, wire, or other material that has become entangled.
- Lubricate all grease points. For more information, see *Grease Points on page 59.*

After 20 Hours of Operation

1. Complete the tasks listed under *After Five Hours of Operation*.
2. Continue with the regular *Maintenance Schedule on page 58*.

6.4 Engine Operation

CAUTION!

Before starting the engine, review the safety, operating, and maintenance instructions in the engine manual.

W019

6.4.1 Engine Safety

WARNING!

Never operate the engine indoors. Park the machine outdoors in a position where the prevailing winds blow the exhaust away from you.

Engine exhaust contains carbon monoxide (CO) that can quickly accumulate to a dangerous level. Carbon monoxide can cause illness, unconsciousness, or death.

W072

WARNING!

Never smoke or vape while working with fuel. Fuel vapors can explode causing injury or death. Keep sparks, flames, and hot components away.

W027

WARNING!

Fuel and vapors are extremely flammable and explosive. Fire or explosion can cause severe burns, bodily harm, or death. Keep fuel away from sparks, open flame, pilot lights, heat, and any other source of ignition.

CAUTION!

Fuel vapors are very toxic. Breathing fuel vapors can cause irritation, illness, or unconsciousness. Check the fuel level or add fuel to the engine outdoors or in an area that has good air flow.

- Remove the wire from the spark plug before servicing the engine or equipment to prevent the engine from being started accidentally.
- Keep cylinder fins and governor parts free of grass and other debris that can affect the engine speed.
- Examine the muffler periodically to make sure that it is functioning effectively. Repair or replace a worn or leaking muffler.
- Use fresh gasoline (less than three months old). Stale fuel creates insoluble solids (deposits) that clog the carburetor and cause leaks.
- Before storage, replace fuel that contains ethanol with an alkylate or appropriate engineered fuel to prevent the buildup of deposits.
- Check fuel lines and fittings frequently for cracks or leaks. Replace damaged fuel lines or fittings, as required.
- Store fuel well away from all wood material.
- Do not operate a gas engine in an enclosed area. Exhaust gases contain carbon monoxide (an odorless and deadly gas).
- Do not place hands or feet near moving or rotating parts.
- Do not choke the carburetor to stop the engine. Whenever possible, gradually reduce the engine speed before stopping.
- Do not tamper with governor springs, governor links or other parts that may increase the governed speed. Engine speed is selected by the original equipment manufacturer.
- Do not check for spark with the spark plug or spark plug wire removed.
- Do not attempt to start the engine with the spark plug removed. If the engine floods, set the choke control to **Open**, set the throttle control to **Fast**, and then try starting the engine again.
- Do not strike the flywheel with a hard object or metal tool. This may cause the flywheel to shatter during operation. Use the correct tools to service the engine.
- Do not touch a hot muffler, cylinder, or fins. Contact may cause burns.
- Do not operate the engine in any of the following situations:
  - With an accumulation of wood chips, dirt, or other combustible materials in the muffler area.
  - In an area where fuel is spilled. Move the machine away from the spill until the fuel evaporates. Do not create any sources of ignition in the spill area.
  - With the air cleaner or air cleaner cover removed. Doing this can damage the engine.
  - On any forest covered, brush covered, or grass covered unimproved land without a spark arrester installed on the muffler. The spark arrester must be maintained and in working order. In the state of California, the previous statement is required by law (Section 4442 of the California Public Resources Code). Other states or provinces may have similar laws. Federal laws apply on federal land.
  - Without a muffler or heat shield. Inspect the muffler and heat shield periodically. Replace a damaged muffler or heat shield.

6.4.2 Check the Engine Fuel Level

Check the engine fuel level before each use.

Starting work with a full tank helps to eliminate or reduce operating interruptions for refueling. Avoid letting the tank get dry.

1. Park the machine on level ground.
2. Stop the machine.
   For instructions, see *Stop the Machine on page 34*.
3. Wait a minimum of five minutes for the engine to cool.
4. Turn the fuel cap counterclockwise to remove it.
5. Check the fuel level. The fuel tank is full when the fuel level is visible 1/2 inch (12 mm) below the filler neck. There must be room for fuel expansion.
6. Complete one of the following:
   - If there is enough fuel in the tank, install and secure the fuel cap to prevent spillage.
   - If there is not enough fuel in the tank, add fuel. For instructions, see *Add Fuel to the Engine*.

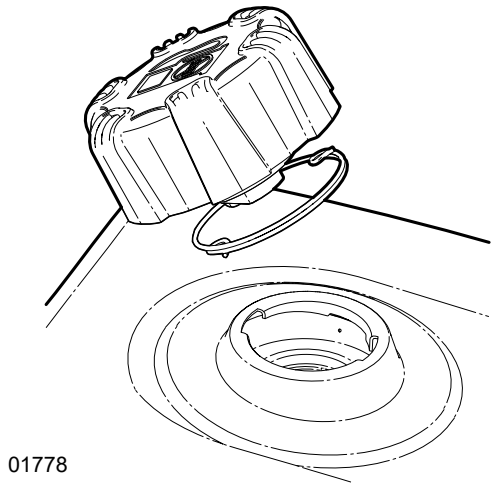


Figure 15–Fuel cap

6.4.3 Add Fuel to the Engine

The engine requires clean, fresh, unleaded gasoline with a pump octane rating of 87 or higher (research octane number [RON] of 91 or higher). Gasoline with up to 10% ethanol (gasohol) is acceptable. For more information, see *Engine Fuel on page 57*.

For information about use at high altitudes, see the engine manufacturer's manual.

Fuel tank capacity: **0.82 US gal (3.1 L).**

1. Stop the machine.
   For instructions, see *Stop the Machine on page 34*.
2. Wait a minimum of five minutes for the engine to cool.
3. Turn the fuel cap counterclockwise to remove it.
4. Add the correct type and amount of fuel to the tank until the fuel level is visible 1/2 inch (12 mm) below the filler neck. Leave room for expansion. **Do not overfill the tank.**
5. If fuel is spilled, carefully clean it up and wait until the fuel dries before starting the engine.
6. Install and secure the fuel cap to prevent spillage.

6.4.4 Check the Engine Oil Level

IMPORTANT! For more information about engine oil, see the engine manufacturer's manual and *Engine Oil on page 57*.

Operating the engine with a low oil level can cause engine damage that is not covered by the warranty.

The engine must be in a level position for the dipstick to show the oil level correctly.

Check the engine oil level before each use.

1. Park the machine on level ground.
2. Stop the machine.
   For instructions, see *Stop the Machine on page 34*.
3. Pull out the oil-level dipstick and wipe it clean.
4. Fully insert the oil-level dipstick.
5. Pull out the oil-level dipstick and check the oil level.
   The oil level is correct when oil is visible on the dipstick from the end to the full (upper) mark.
6. Do one of the following:
   - If the oil level is correct, continue with step 7.
   - If the oil level is low, add oil until the oil-level is at the full (upper) mark. For instructions, see *Add Oil to the Engine*.
7. Insert and secure the oil-level dipstick.

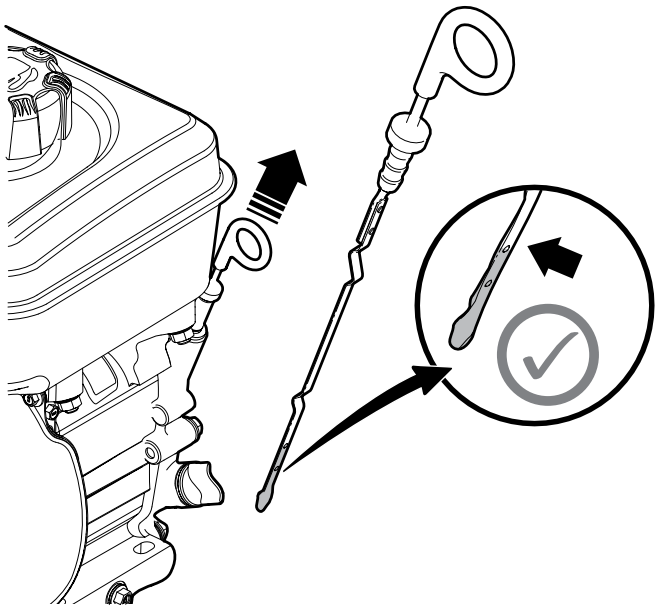


Figure 16–Check the engine oil level

6.4.5 Add Oil to the Engine

IMPORTANT! For more information about engine oil, see the engine manufacturer's manual and *Engine Oil on page 57*.

The engine has three oil-fill locations. The two most accessible locations are shown in the following image. The third location is on the opposite side of the engine, below the dipstick.

1. Check the engine oil level to make sure that the oil level is low. For instructions, see *Check the Engine Oil Level*.
2. Turn an oil-fill cap counterclockwise to remove it.
3. Use a clean funnel to slowly add the correct type and amount of oil. **Do not overfill.**
4. Wait a minimum of one minute.
5. Remove the funnel, and then check the engine oil level.
6. Install and secure the oil-fill cap to prevent spillage.

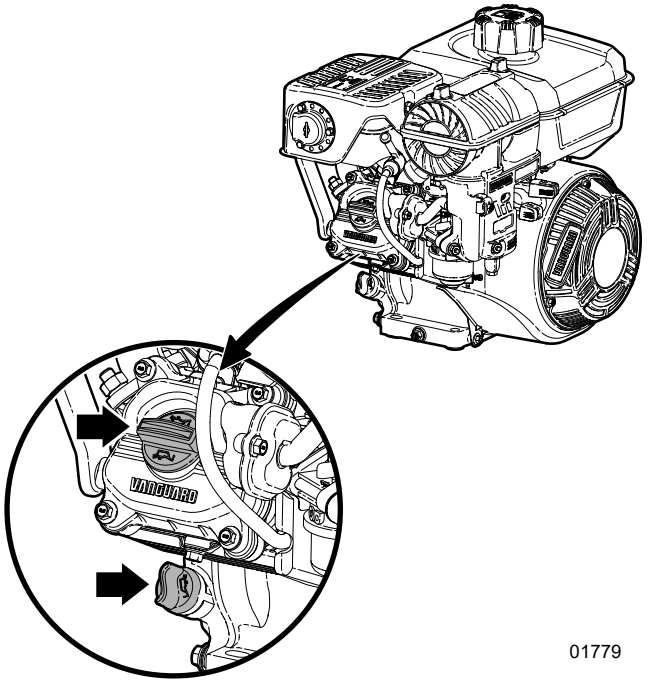


Figure 17–Engine oil-fill locations

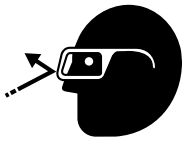
6.5 Hydraulic System Operation

A hydraulic system is a closed-loop system that uses pressurized automatic transmission fluid (ATF) to provide power to devices. For example, the winch motor and push-block cylinder.

6.5.1 Hydraulic System Safety

- Make sure that all hydraulic system components are kept clean and in good condition.
- Relieve pressure on the hydraulic system before working with it. The hydraulic system operates under extremely high pressure.
- Before applying pressure to the hydraulic system, make sure that all the connections are tight, and the hoses and fittings are not damaged.
- Immediately replace any hydraulic hose that shows signs of swelling, wear, leaks, or damage. A swollen, worn, damaged, or leaking hose can burst and cause a hazardous and unsafe condition.
  For more information, see *Hydraulic Hose Specifications on page 64*.
- High-pressure hydraulic oil leaks:
  - Do not use your hand to check for hydraulic oil leaks. Hydraulic fluid escaping under pressure can penetrate the skin causing serious injury or death. Use a piece of cardboard or wood to check for leaks.

    
  - Wear the correct 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 after hydraulic fluid pierces the skin's surface.
- Do not attempt any makeshift repairs to the hydraulic hoses or fittings. Do not use tape, clamps, or cements to attempt a repair. Doing so can cause sudden failure and create a hazardous and unsafe condition.
- Do not bend or strike high-pressure hoses or reinstall them in a bent or damaged condition.
- Make sure that hydraulic hoses are routed correctly to avoid chafing.
- Never adjust a pressure relief valve or other pressure-limiting device to a pressure that is higher than the specified rating.

6.5.2 Check the Hydraulic Fluid Level

IMPORTANT! Do not operate the machine if the hydraulic fluid level is low. Damage to the pump and other components can occur.

Do not fill the hydraulic-fluid reservoir higher than the fill level indicated on the dipstick.

IMPORTANT! Inspect the hydraulic fluid quality every 50 hours. If the fluid is dirty or smells burnt, replace it.

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

Check the hydraulic fluid level daily, after changing the filter, and after servicing hydraulic components. The fluid-level dipstick is on the bottom of the fill cap. For more information, see *Figure 18 on page 31*.

1. Park the machine on level ground.
2. Set the machine to a safe condition.
   For instructions, see *Safe Condition on page 9*.
3. Turn the hydraulic-fluid fill cap counterclockwise to remove it.
4. Wipe the dipstick clean.
5. Fully reinsert the dipstick in the reservoir.
6. Remove the dipstick and check the fluid level. The fluid level is correct when fluid is visible on the dipstick from the end to the full (upper) mark.
7. Do one of the following:
   - If the fluid level is correct, install and secure the fill cap.
   - If the fluid level is low, add fluid until the fluid-level is at the full (upper) mark. For instructions, see *Add Hydraulic Fluid to the Reservoir on page 31*.

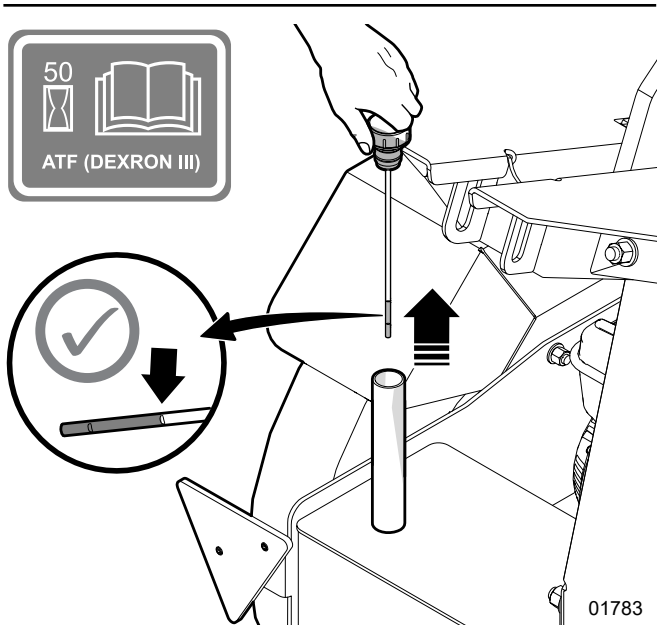


Figure 18– Check the hydraulic fluid level

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6.5.3 Add Hydraulic Fluid to the Reservoir

IMPORTANT! Do not fill the hydraulic-fluid reservoir higher than the top mark on the dipstick.

The hydraulic system uses **Dexron® III ATF**. Dexron VI or Mercon® are acceptable substitutes.

1. Check the hydraulic fluid level to make sure that the fluid level is low. For instructions, see *Check the Hydraulic Fluid Level on page 30*.
2. Use a clean funnel to add hydraulic fluid to the reservoir. **Do not overfill.**
3. Check the hydraulic fluid level.
4. Remove the funnel.
5. Install and secure the fill cap to prevent spillage.
6. Clean the area around the fill cap and wipe off any spilled fluid.

6.6 Chain Saw Operation

A chain saw (not included with the machine) is required to process logs into firewood. Before a chain saw can be installed in the holder, a universal adapter plate must be installed.

6.6.1 Chain Saw Safety

⚠ WARNING!

Read and understand the chain saw manufacturer's manual and follow all safety instructions.

Wear the appropriate PPE when using a chain saw.

⚠ CAUTION!

Always apply the brake before you leave a chain saw in idle.

Chain saws are inherently dangerous. Review the safety guidelines in the chain saw manufacturer's manual. The following list provides some general guidelines when using a chain saw:

- Only use a chain saw that you have been trained to use correctly and safely.
- Make sure that you understand the instructions before attempting to use any chain saw.
- Operate, adjust, and maintain chain saw according to the manufacturer directions
- Wear the PPE and clothing recommended by the chain saw manufacturer.
- If you have any doubts about doing the work safely, ask questions.
- Only operate a chain saw when you are well rested. Fatigue can cause carelessness.
- Never use a saw chain that:
  - Has broken twice.
  - Is severely damaged.
  - Has excessive saw chain stretch.
  - Has broken or cracked components.
- Have all the required supplies and equipment with you before you start the work.
- Be aware of your surroundings, weather conditions, terrain, buildings, power lines, vehicles, and other people.
- The correct chain tension provides good cutting action and increases the chain life. If the chain is too loose, it can derail; if it is too tight the chain can bind.

- Chain lubrication prolongs the life of the saw and increases safety.
- Sharpen the saw chain if you see any of the following conditions:
  - The saw chain tends to track sideways while cutting.
  - The cut shows fine powder instead of chips.
  - There is a burnt wood smell.
  - It has loose rivet joints. If you can rotate the rivets with your fingers, they are too loose.
- Make sure that the chain saw is sharp and in working condition.

6.6.2 Insert a Chain Saw in the Holder

⚠ WARNING!

Do not attach a chain saw with a bar length longer than 30 inches (75 cm) to the holder. The cutting chain could contact the push block or cylinder rod and cause a hazardous situation. Injury or machine damage could result from flying debris.

IMPORTANT! The chain saw must have dual bar-mounting studs to mount to the universal chain saw adapter. Chain saws with captive guide bar nuts require them to be replaced with bushing spacers.

A chain saw with a bar length between 22–24 inch (56–61 cm) is recommended for this machine.

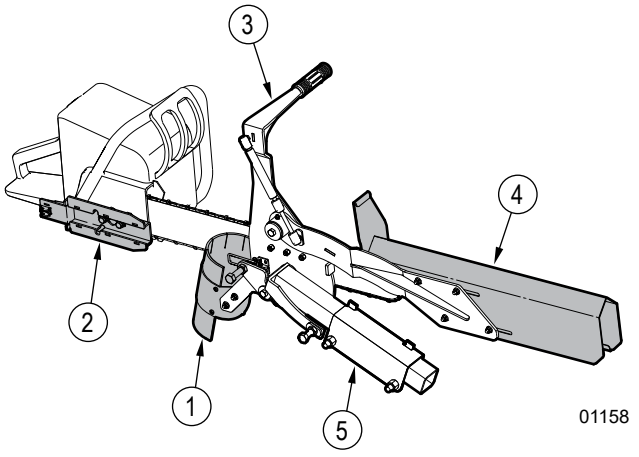

Figure 19–Pivoting chain-saw holder

1. Debris chute
2. Universal chain saw adapter
3. Pivot handle
4. Chain guard
5. Pivot base

Procedure:

1. Remove the chain-sprocket cover nuts from your chain saw. Some chain saws feature captive guide bar nuts in the chain-sprocket cover. For this type of saw, replace the guide bar nuts with bushing spacers (2).

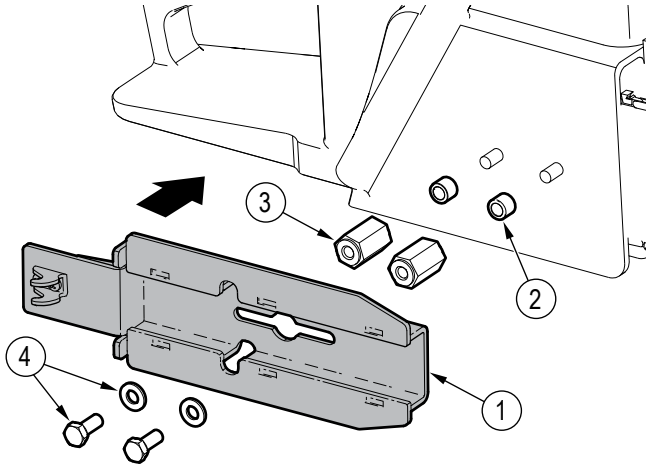

Figure 20–Install a universal chain saw adapter

1. Universal chain saw adapter
2. Bushing spacers
3. Bar-mounting studs
4. Hex bolts and washers

2. Thread the two bar-mounting studs (3) onto the chain saw guide bar studs.
3. Install the adapter (1) over the bar-mounting studs.
4. Fasten everything together with the two bolts and washers (4).
5. Open the holder draw latch.
   For more information, see *Figure 22 on page 33*.
6. Slide the adapter into the guides on the holder.

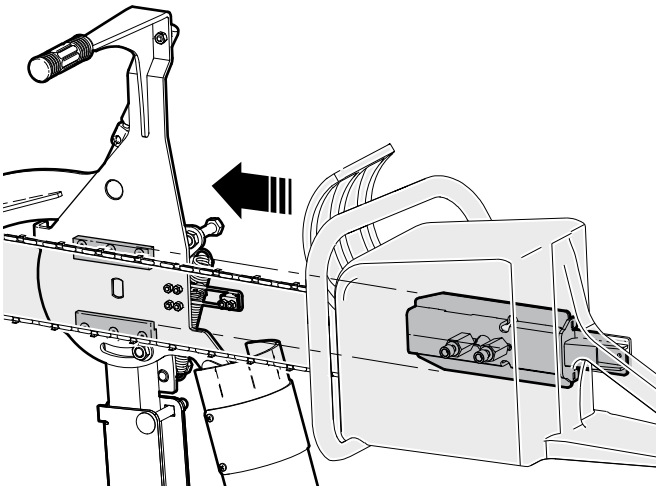

Figure 21–Slide the adapter into the holder

7. Close the draw latch over the catch on the adapter. This secures the chain saw to the holder.

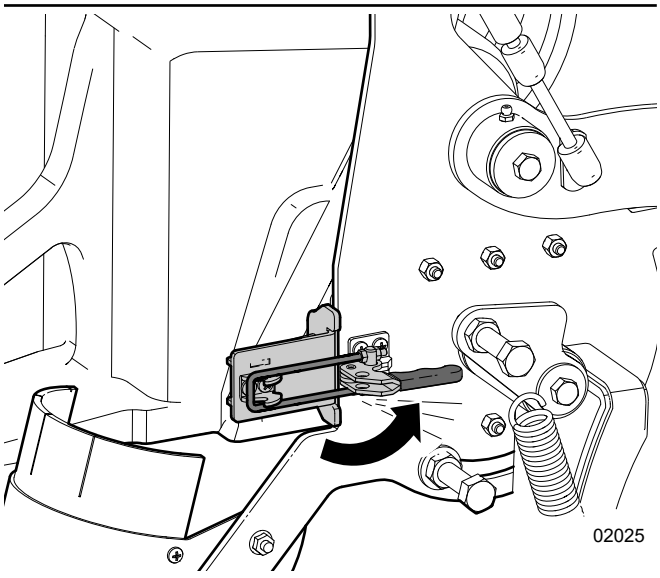

Figure 22–Holder draw latch

8. Rotate the holder and move the chain saw through the full range of motion. Make adjustments to the pivot base, as required (based on the saw length).
9. Check the chain saw range of motion. Make sure that the chain-saw bar cannot contact any part of the machine. If required, remove the chain saw from the holder and adjust the adapter position.

6.6.3 Start the Chain Saw

1. Open the holder draw latch.
2. Slide the chain saw out of the holder.
3. Start the chain saw.
   For instructions, see the chain saw manufacturer's manual.
4. Carefully, slide the adapter into the holder guides.
   For more information, see *Figure 21 on page 32*.
5. Close the draw latch over the adapter catch to secure the chain saw to the holder. See *Figure 22*.

6.7 Start the Machine

⚠ WARNING!

Fast retraction of the starter cord (called kickback) pulls your hand and arm toward the engine faster than you can let go of the handle. Serious bodily harm (for example; bruises, sprains, fractures, and broken bones) can result.

When starting the engine, pull the starter cord slowly until you feel resistance, and then pull it rapidly to avoid kickback.

W102

⚠ WARNING!

Before you start the machine, read and understand all of the safety information in this manual, the engine manufacturer's manual, and the chain saw manufacture's manual.

IMPORTANT! If the engine does not start after repeated attempts, contact your local dealer or go to VanguardPower.com.

Before you start the machine, see the information under *Controls on page 22*.

1. Complete the tasks described in the *Pre-Start Checklist on page 26.*
2. Make sure that the machine is set up correctly, level, and in a stable position.
3. Move the hydraulic controls to the neutral position (out of detent).
4. Move the choke control to the **Closed** position.
5. Move the throttle control to the **Fast** position.
6. Firmly grip the starter-cord handle.
7. Pull the starter cord out slowly until you feel resistance, and then pull it rapidly.
8. When the engine warms up, move the choke control to the **Open** position.
9. Start the chain saw, and then slide it into the holder.
   For more information, see *Chain Saw Safety on page 31* and *Start the Chain Saw*.

6.8 Stop the Machine

IMPORTANT! Do not choke the carburetor to stop the engine.

1. Stop all machine operations (winching, cutting, and splitting).
2. Move the hydraulic controls to neutral.
3. Move the engine throttle control to the **STOP** position to turn off the engine and close the fuel shutoff valve.
4. Activate each hydraulic control two or three times to relieve the hydraulic system pressure.
5. Remove the chain saw from the holder and turn it off.

6.9 Emergency Stop

In the event of an emergency:

1. Move the hydraulic controls to neutral.
2. Move the engine throttle control to the **STOP** position to turn off the engine and close the fuel shutoff valve.
3. Remove the chain saw from the holder and turn it off.
4. Remove the cause of the emergency before starting the engine and resuming work.

6.10 Process Logs into Firewood

IMPORTANT! Once every hour of operation, remove all wood chips and saw dust that are on the machine and on the ground below the machine. Wood chips and saw dust that accumulate on and below the machine may damage the machine during continuous operation.

The following procedure describes how to efficiently process logs into firewood:

1. Set up the machine.
   For instructions, see *Set Up the Machine on page 35*.
2. Use the winch to pull a log into position at the log-length guide.
   For instructions, see the following:
   - *Winch Operation on page 42.*
   - *Position the First Log on page 45.*
   - *Position the Next Log on page 47.*
   - *Position the Last Log on page 47.*
3. Use the chain saw to cut the log. Let the cut section fall into the splitter.
   For instructions, see *Cut a Log on page 48*.
4. Split the cut log.
   For instructions, see *Split a Log on page 48*.
5. While the push block automatically returns to the retracted position, repeat step 2.
6. When the push block is in the retracted position, repeat steps 3 through 5.
   Continue this process until you produce the desired amount of firewood.

6.11 Set Up the Machine

WARNING!

Always use the machine outdoors and park the machine in a position where the prevailing winds blow the engine exhaust away from the operator. Exhaust from the engine contains carbon monoxide (CO) that can accumulate to a dangerous level, even in an area with good air flow.

W006

For more information, see *Figure 24 on page 36*.

1. Select a work site.
   For more information, see *Work Site on page 12*.
2. Position the firewood processor at the work site.
   For more information, see *Create a Safe Work Area on page 12*.
3. Disconnect the tow vehicle.
   Make sure that the trailer jack and support-stand bases are lowered and the machine is level.
   For instructions, see *Disconnect from a Ball-Mount Hitch on page 53*.
4. Pivot the trailer tongue.
   For instructions, see *Pivot the Trailer Tongue*.
5. Lower the two support-stand bases.
   For instructions, see *Adjust a Support Stand on page 39*.
6. Unfold the entry chute.
   For instructions, see *Unfold the Entry Chute on page 37*.
7. Unfold the exit chute.
   For instructions, see *Unfold the Exit Chute on page 38*.
8. Set the wedge height.
   For instructions, see *Set the Wedge Height on page 40*.
9. Set the log-length guide.
   For instructions, see *Set the Log-length Guide on page 39*.
10. Complete one of the following:
    - If your chain saw has an adapter installed, insert the chain saw in the holder.
    - If your chain saw does not have an adapter installed, install the adapter, and then insert the chain saw in the holder.
      For instructions, see *Insert a Chain Saw in the Holder on page 32*.
11. **Optional**: position a wagon, trailer, or conveyor below the exit chute.

6.12 Trailer-Tongue Pivot

The trailer tongue pivots to move the ball-mount hitch coupler away from the entry chute.

6.12.1 Pivot the Trailer Tongue

1. Lift the pivot lock pin.
   Make sure that the trailer-tongue pivot and the area around it are clear of debris.
2. Rotate the trailer tongue to the side as far as possible.

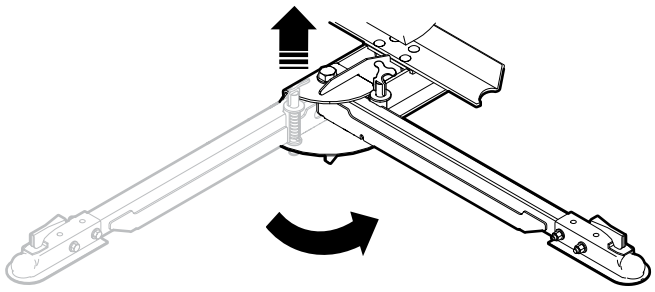

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Figure 23– Trailer tongue pivot

6.12.2 Straighten the Trailer Tongue

Rotate the trailer tongue to the front until the pivot lock pin engages with the trailer tongue.

The numbers correspond with the step numbers under *Set Up the Machine on page 35*.

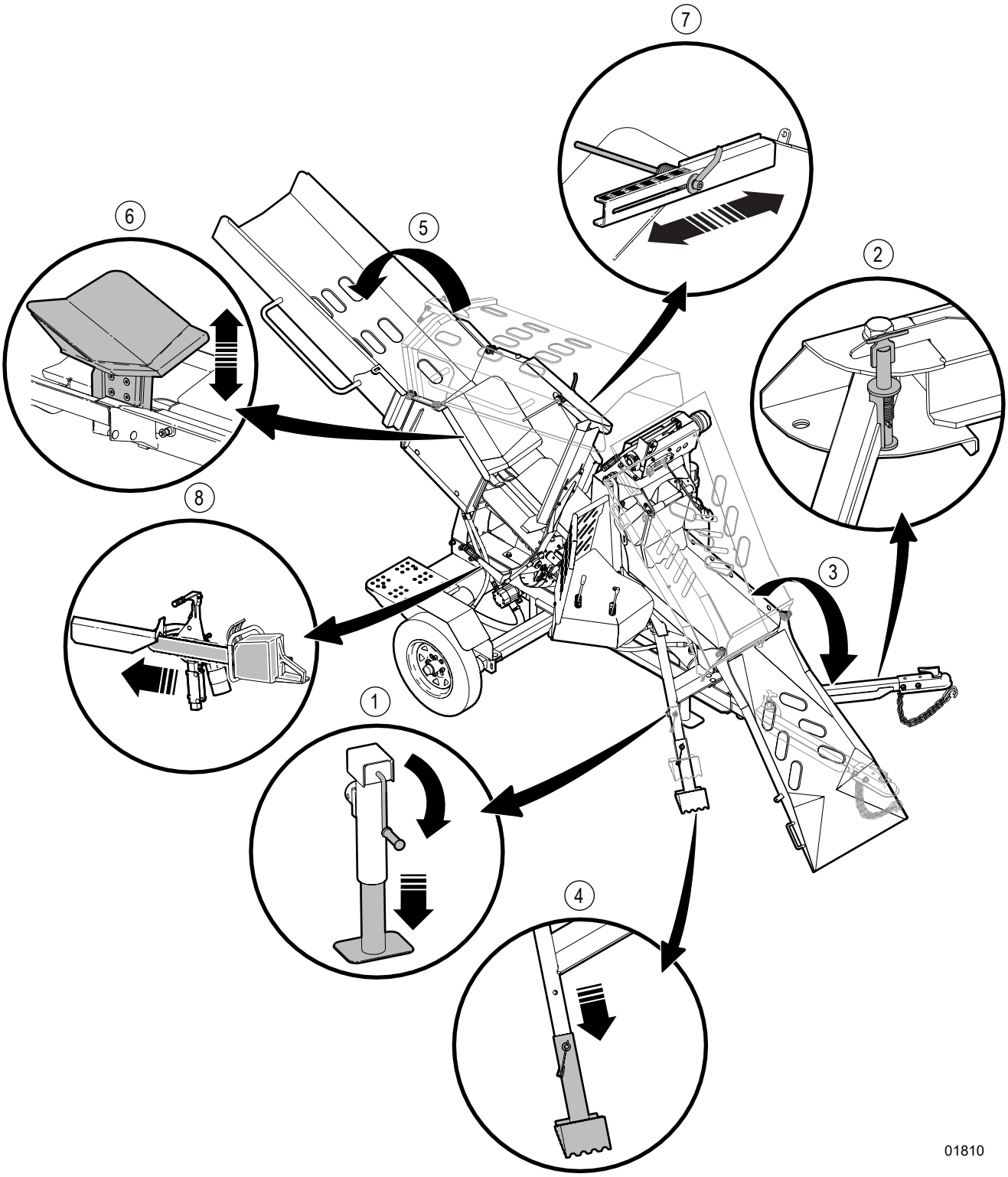


Figure 24–Set up the machine

6.13 Entry Chute

Use the winch to pull logs up the entry chute and into the machine.

6.13.1 Unfold the Entry Chute

1. Pivot the trailer tongue to the side.
   For instructions, see *Pivot the Trailer Tongue on page 35*.
2. On the RH side of the entry chute, remove the linchpin from the latch-bar tab.
3. Pull the latch bar off of the tab, and then lower the latch bar to the machine frame.
4. Install the linchpin (removed in step 2) through the latch bar and the tab on the frame.
5. Use the handle to carefully unfold the entry chute.

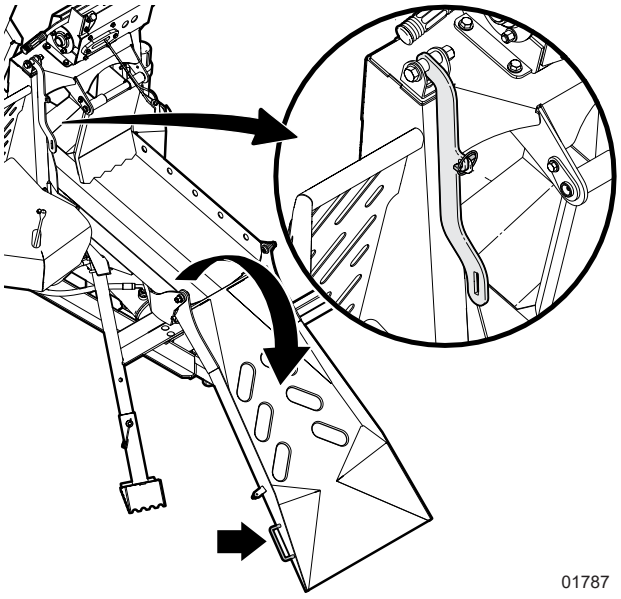


Figure 25–Unfold the entry chute

6.13.2 Fold Up the Entry Chute

IMPORTANT! Before lifting the bottom of the entry chute, make sure that it is not stuck in the ground. If you lift the bottom of the entry chute when it is stuck in the ground it can damage the chute.

1. Remove all dirt and debris from the bottom of the entry chute.
2. Use the handle to fold up the entry chute.
3. Remove the linchpin from the latch bar and tab.
4. Lift the latch bar and slide it over the tab on the entry chute.
5. Install the linchpin (removed in step 3) through the tab to secure the entry chute in position.

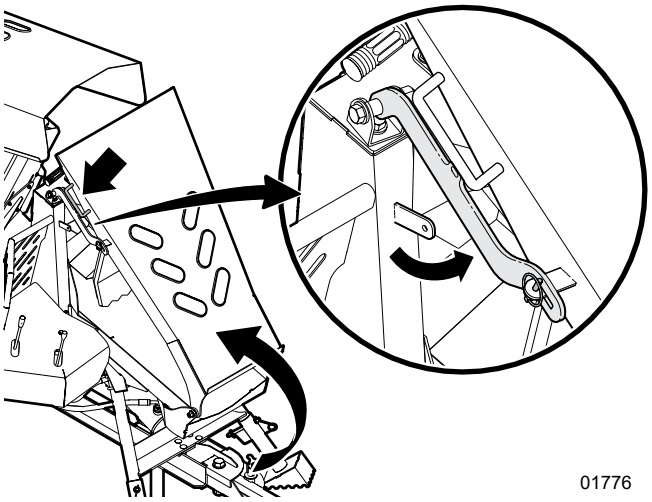


Figure 26–Fold up the entry chute

6.14 Exit Chute

The splitter pushes the firewood up the exit chute and out of the machine.

6.14.1 Unfold the Exit Chute

1. Remove the snap-lock pin from the bracket on the end of the splitter.
2. Remove the linchpin from the tab on the RH side of the exit chute and wedge guard.
3. Use the exit-chute handle to carefully unfold the exit chute. Make sure that the square tube on the bottom of the exit chute goes between the brackets on the end of the splitter.
4. Insert the snap-lock pin through the splitter bracket and exit chute.
5. Insert the linchpin (removed in step 1) through the tab on the wedge guard for safekeeping.

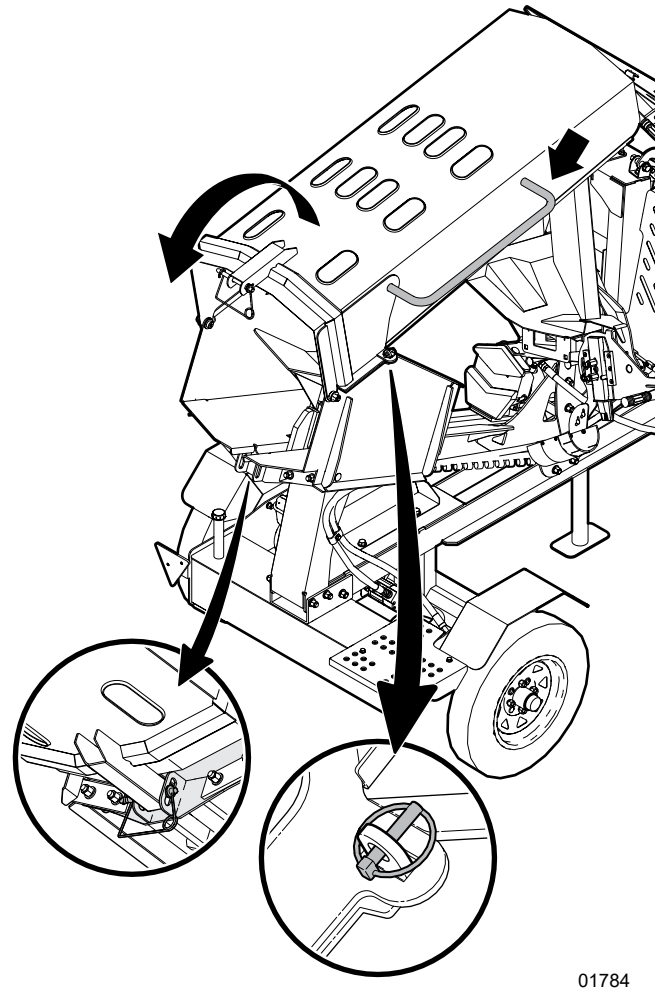


Figure 27–Unfold the exit chute

6.14.2 Fold Up the Exit Chute

1. Remove the linchpin from the tab on the RH side of the wedge guard.
2. Remove the snap-lock pin that secures the exit chute to the splitter.
3. Use the exit-chute handle to carefully fold up the exit chute.
4. Insert the linchpin (removed in step 1) through the tab on the exit chute and the wedge guard to secure the exit chute in position.
5. Insert the snap-lock pin through the bracket on the exit chute for safekeeping.

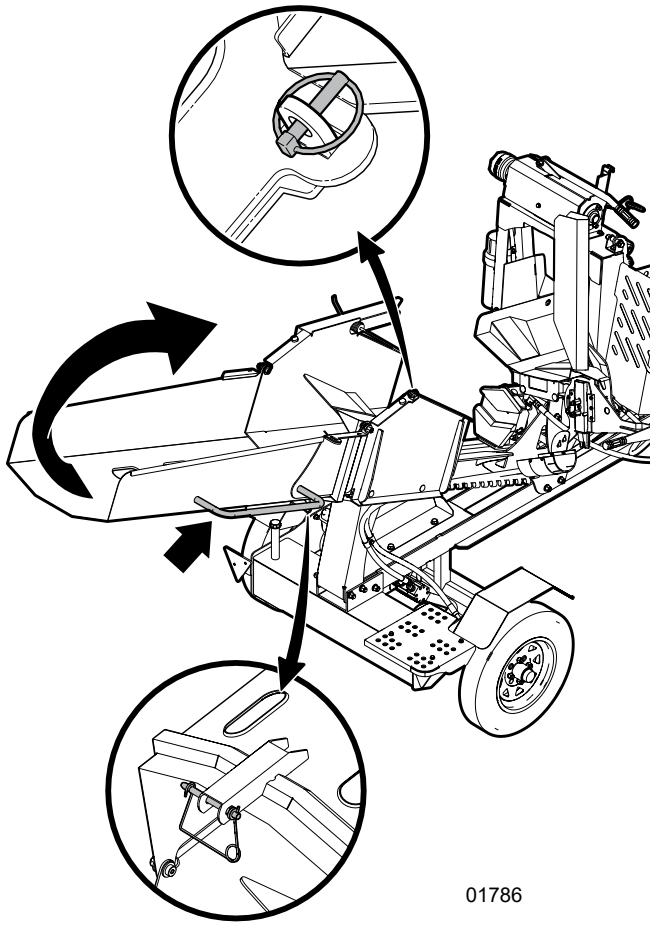


Figure 28–Fold up the exit chute

6.15 Adjust a Support Stand

Two support stands provide stability during machine operation. Each support stand has a base that can be set to the raised or lowered position.

1. Hold the base to prevent it from falling.
2. Remove the snap-lock pin.
3. Raise or lower the base to the required position on the support leg.
4. Insert the snap-lock pin through the base and support leg to secure the base in position.

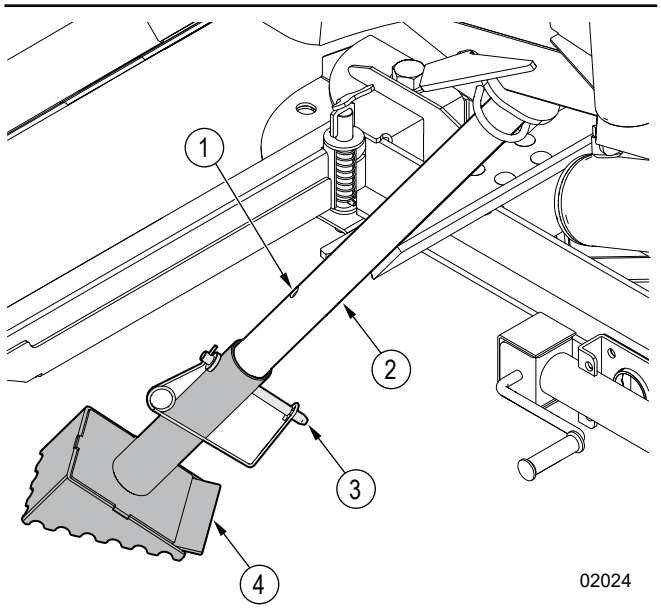


Figure 29–Adjust a support stand

1. Raised position
2. Support tube
3. Snap-lock pin
4. Base (in the lowered position)

6.16 Set the Log-length Guide

Set the log-length guide to the desired log length for consistent saw cuts. The log-length guide can be set to cut logs to any length between 12 and 22 inches (30 and 56 cm). The measurements are shown on top of the guide rail.

1. Turn the handle counterclockwise to loosen it.
2. Slide the handle sideways and align the log-length guide with the desired setting.
3. Turn the handle clockwise to tighten it.

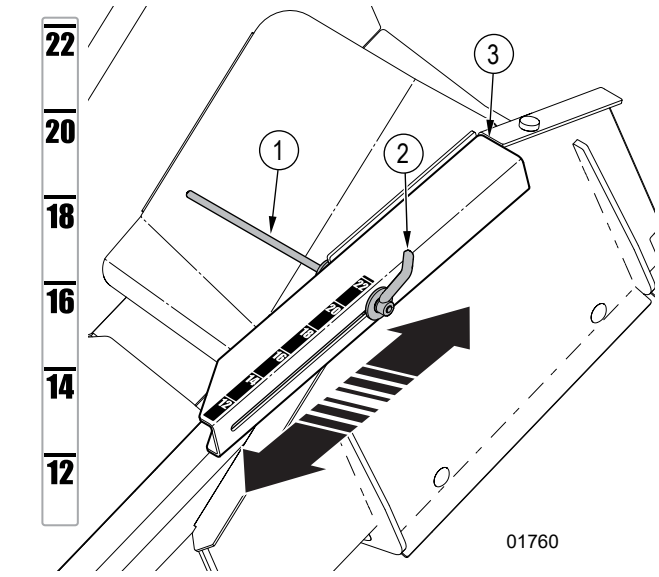


Figure 30–Set the log-length guide

1. Log-length guide
2. Handle
3. Guide rail

6.17 Set the Wedge Height

⚠ WARNING!

Use extreme care when handling the wedge. Two people are required to lift the wedge. The sharp blades and weight of the wedge create cut, crush, impact, and ergonomic hazards. Incorrect handling of the wedge can result in serious injury or death. Wear heavy work gloves when working with or near the wedge. Always maintain a firm grip away from sharp edges.

The three-way wedge splits logs into three sections:

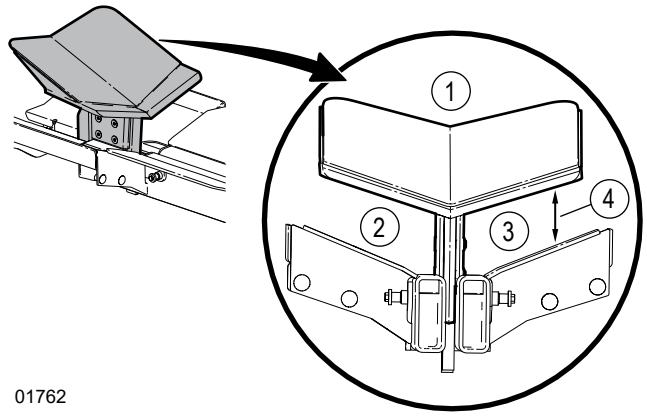


Figure 31–Wedge sections

1. Top
2. Bottom RH side
3. Bottom LH side
4. Height

After a log is split, the top section (1) falls back into the splitter to be split during the next splitter cycle.

Set the wedge height for the desired height of the two-way split (2 and 3). The wedge height is measured from the top of the splitter shelf to the bottom of the wedge blade (4).

The wedge has two height settings:

- 4½ in (11 cm)
- 3½ in (9 cm)

For more information about the wedge height settings and screw locations, see *Figure 33 on page 41*.

Procedure:

1. Unfold the exit chute.
   For instructions, see *Unfold the Exit Chute on page 38*.
2. Place the machine in a safe condition.
   For instructions, see *Safe Condition on page 9*.
3. **Optional**: Remove the wedge guards to improve access.
   For each wedge guard (LH and RH side):
   a. Remove the four bolts, washers, and nuts.
      Two on each side of the wedge guard (at the bottom).
      See *Figure 32*.
   b. Remove the wedge guard.
4. Remove the four flat-head cap screws (FHCSs) and nuts from the wedge.
5. Raise or lower the wedge to align the four holes with the desired height setting.
6. Install the four FHCSs and nuts to secure the wedge.
7. Use a calibrated torque wrench to tighten the four wedge FHCS nuts to **115 lbf•ft (155 N•m)**.
   For more information, see *Bolt Torque on page 65*.
8. If the wedge guards were removed (step 3), install the wedge guards.
   For each wedge guard (LH and RH side):
   a. Place the wedge guard in position.
   b. Install the four bolts, washers, and nuts.
      Install two on each side of the wedge guard (at the bottom).
   c. Use a calibrated torque wrench to tighten the four fasteners to **80 lbf•ft (110 N•m)**.

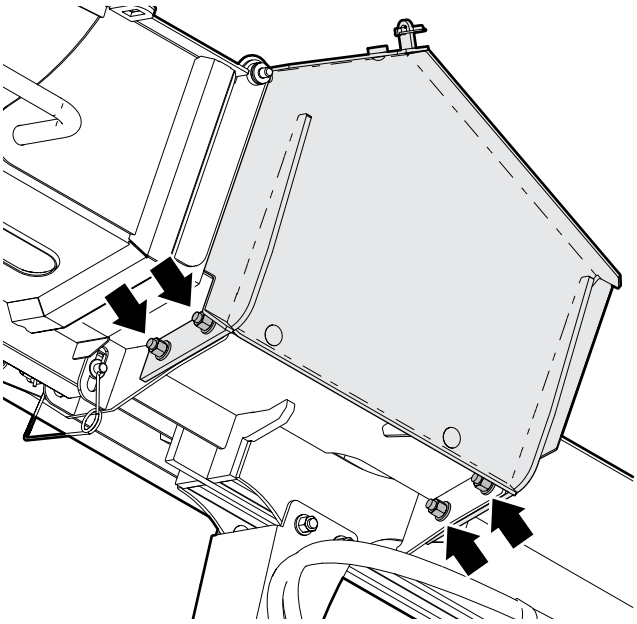


Figure 32–Wedge guard bolt locations (RH side)

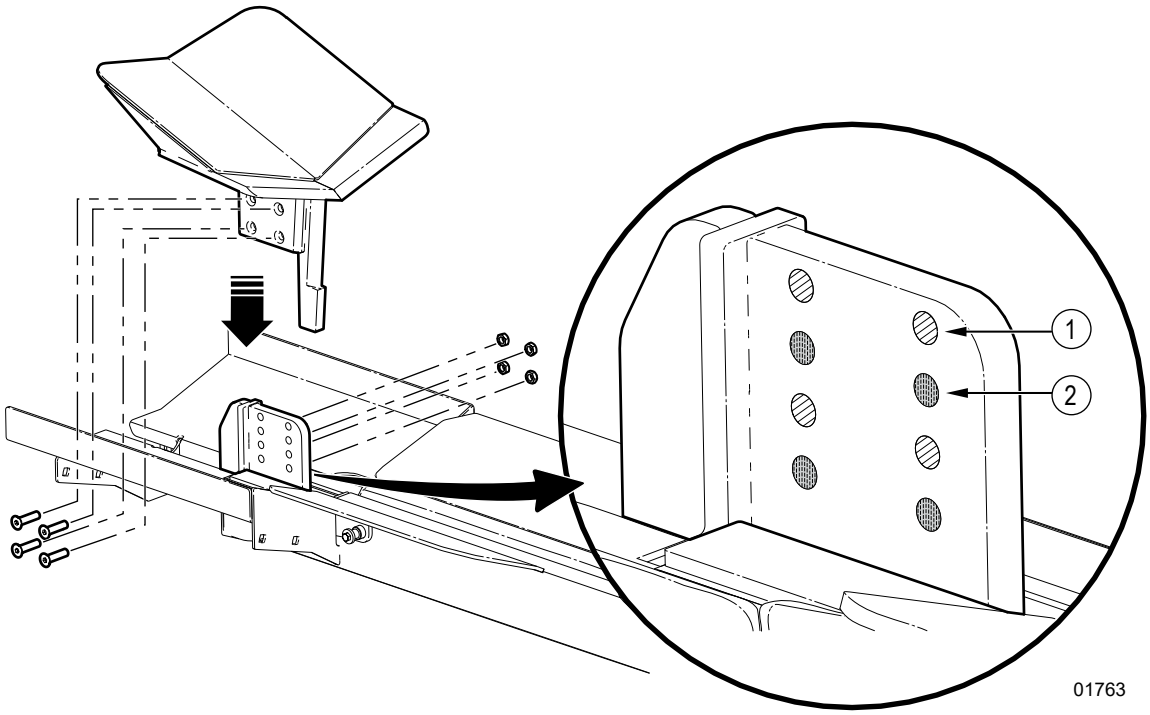


Figure 33–Wedge height settings

1. 4½ in (11 cm) wedge-height holes
2. 3½ in (9 cm) wedge-height holes

6.18 Winch Operation

Use the winch to pull logs into the machine.

6.18.1 Winch Safety

⚠ WARNING!

Risk of machine roll over. Rope pull angle must not exceed 25° from the center axis of the machine. Exceeding that angle can subject the machine to a tipping load and cause the machine to roll over.

W074

⚠ WARNING!

Synthetic rope that fails under tension can snap back with great force causing injury or death. Avoid sudden jerks, quick starts or stops. Start slowly and smoothly. Replace if kinked, badly frayed, has knots, cuts, or broken strands.

W095

⚠ CAUTION!

Always make sure the area is clear of bystanders when operating the winch. Never use the winch to hold or secure loads.

W055

⚠ CAUTION!

Stay clear of the winch rope while winching. Injury from entanglement or rope burn could occur!

W056

IMPORTANT! Always use a winch strap or a choker chain to attach to a log. Never wrap the synthetic rope around a log or attach the hook end onto the synthetic rope. Incorrect use of the synthetic rope causes damage that is not covered by warranty.

- Never stand near the path of a winch rope that is under tension. If the winch rope breaks under tension, it can snap back in an unpredictable direction with great force. The recoil may cause injury or death to a person in its path.
- Always keep hands clear of the winch rope, hook loop, hook, and fairlead opening during installation, operation, and when spooling in or out. Never touch the winch rope or hook while it is under tension or under load.
- Always make sure that the anchor you select can withstand the load and the strap or chain cannot slip.
- Never engage or disengage the winch gear if the winch is under load, winch rope is under tension, or the drum is moving.
- For stability, make sure that the trailer jack and support stands are secure, and the machine is supported in a level position before winching.
- Do not winch across or down a slope; always winch up a slope. Winching across or down a slope could cause the log to roll resulting in crushing injuries.
- Before using the winch, check the winch rope condition. If the winch rope is knotted, has broken strands, or sharp kinks, it may break during operation. Replace the winch rope if it is damaged. Do not touch the winch rope during operation.
- Do not allow anyone within 20 ft (6 m) of logs during winching. Logs can roll in unpredictable ways.
- Wind in the winch rope under load. The winch rope does not wind in correctly without a load.
- Always be aware of hazards when winching and moving logs. Inspect the work zone for the following hazards:
  - Objects along the winch route.
  - Structures close to or in the work zone.
  - Slopes or hills along the winch route.

- Never exceed a winch angle of ±25° from the centerline of the machine. If you are unsure of the winch angle, reposition the machine or use a snatch block (self-releasing pulley). Whenever possible, winch in line with the machine.

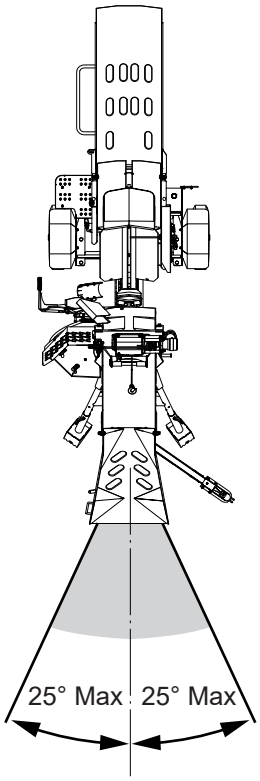


Figure 34–Safe winch angle

- When using a snatch block (self-releasing pulley), be aware of the danger zone that is created between the log, snatch block, and machine.

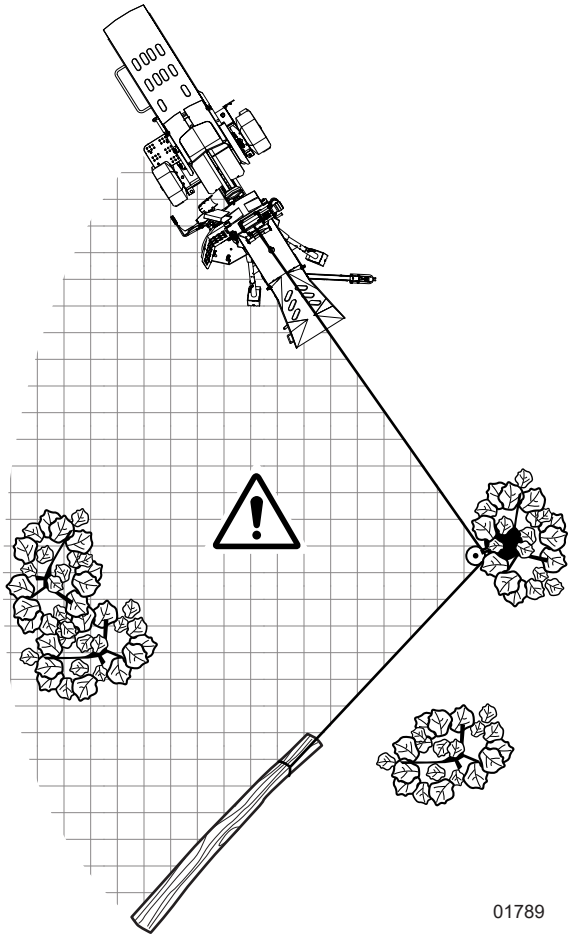


Figure 35–Using a snatch block

6.18.2 Winch a Log

⚠ WARNING!

Before using the winch, read and understand the information under *Winch Safety on page 42*.

☞ If a 48 inch (1.2 m) winch strap does not fit around the log, the log diameter is too big to fit through the machine.

1. Raise the **winch gear lever** to release the winch gear. For more information, see *Winch Gear Lever on page 24*.
2. Grip the winch-rope hook and pull the rope out to the log. See *Figure 37*.
3. Attach the 48–inch (1.2 m) winch strap to the log, and then attach the winch-rope hook to the strap. Do not attach the winch rope directly to the log. A logging choker chain can be used in place of the winch strap.

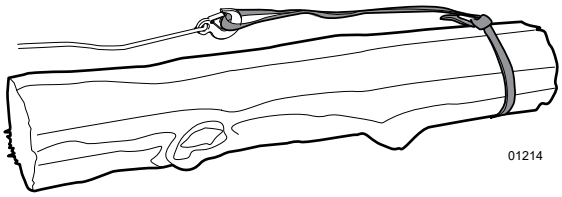


Figure 36–Winch strap

4. Lower the **winch gear lever** to engage the winch gear.
5. Push and hold the **winch control lever** forward to pull the log onto the entry chute. Make sure that the log does not catch on the bottom edge of the entry chute. For more information, see *Winch Control on page 24*.

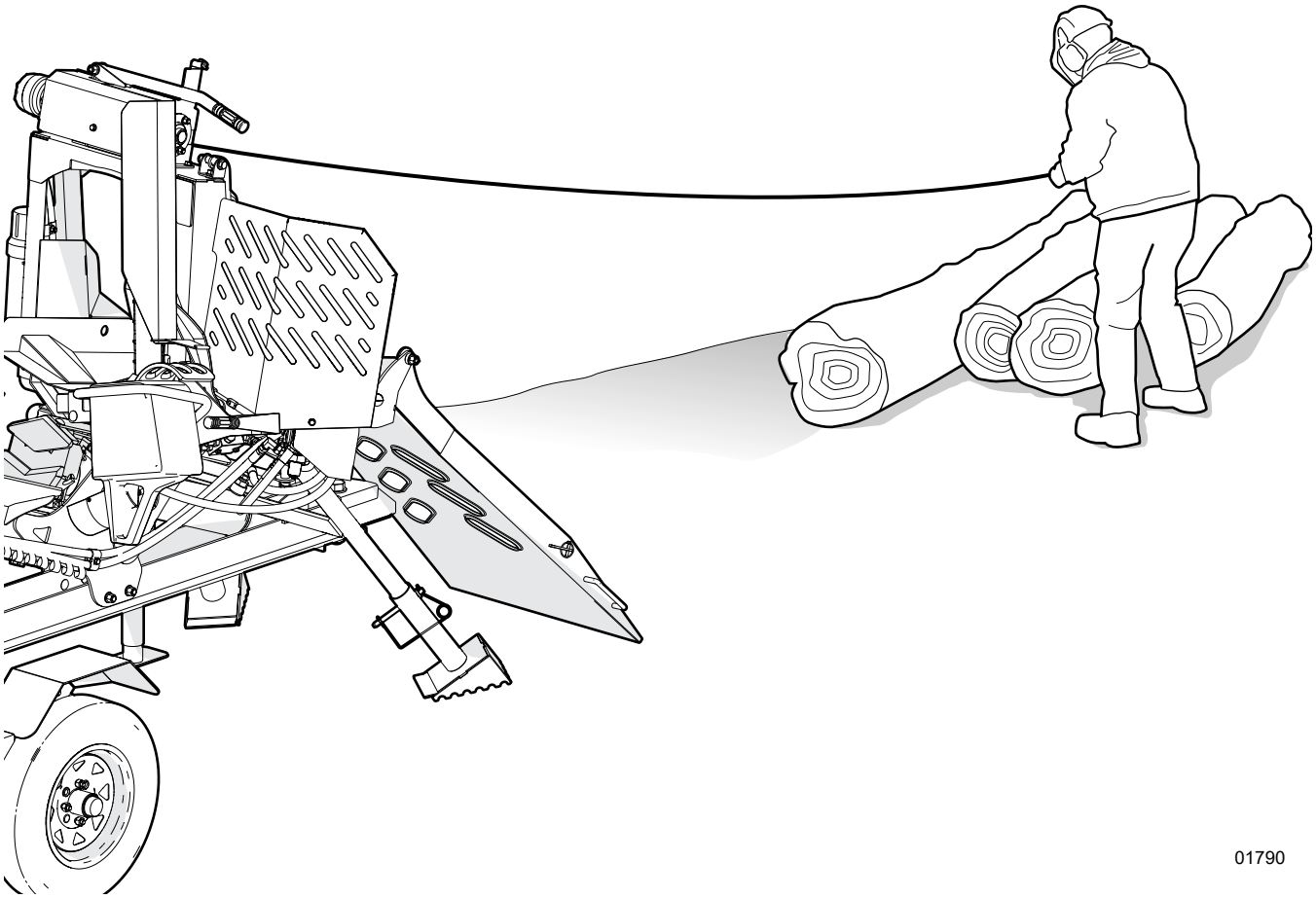


Figure 37–Pull the winch rope out to the log

6.18.3 Position the First Log

⚠ WARNING!

The log stabilizer is heavy! Never attempt to push a log through the log stabilizer opening by hand. The log stabilizer could drop suddenly and cause serious injury. Always use the appropriate procedure and tools to push or pull a log through the opening.

IMPORTANT! Stop winching when the hook reaches the winch. If the operator is winching and the log is not moving, it is possible that the rope is fully retracted. If the operator continues winching, the end of the rope may pull off the hook.

1. Winch the first log to the machine. Make sure that the log does not catch on the front edge of the entry chute.
   See *Figure 38*.
2. Winch the log up the entry chute to the log stabilizer.
3. Stop the winch and make sure that the log is stable.
4. Push the **winch gear lever** up to disengage the winch gear.
5. Slightly, pull the rope out of the winch by hand.
6. Detach the hook from the winch strap.
7. Move the winch strap to the far end of the log.
   See *Figure 39*.
8. Pull out the winch rope and reattach the hook to the winch strap.
9. Pull the **winch gear lever** down to engage the winch gear.
10. Winch the log through the log stabilizer to the log-length guide.
    For more information, see *Figure 40 on page 46*.

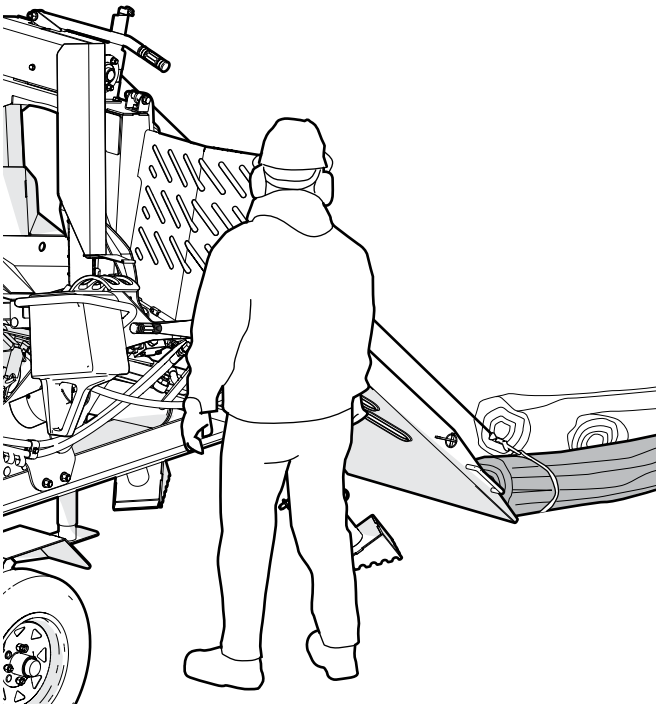


Figure 38–Winch the first log to the machine

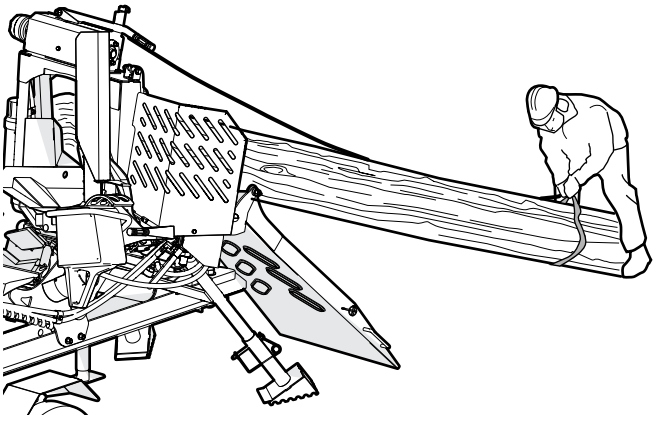


Figure 39–Move the winch strap

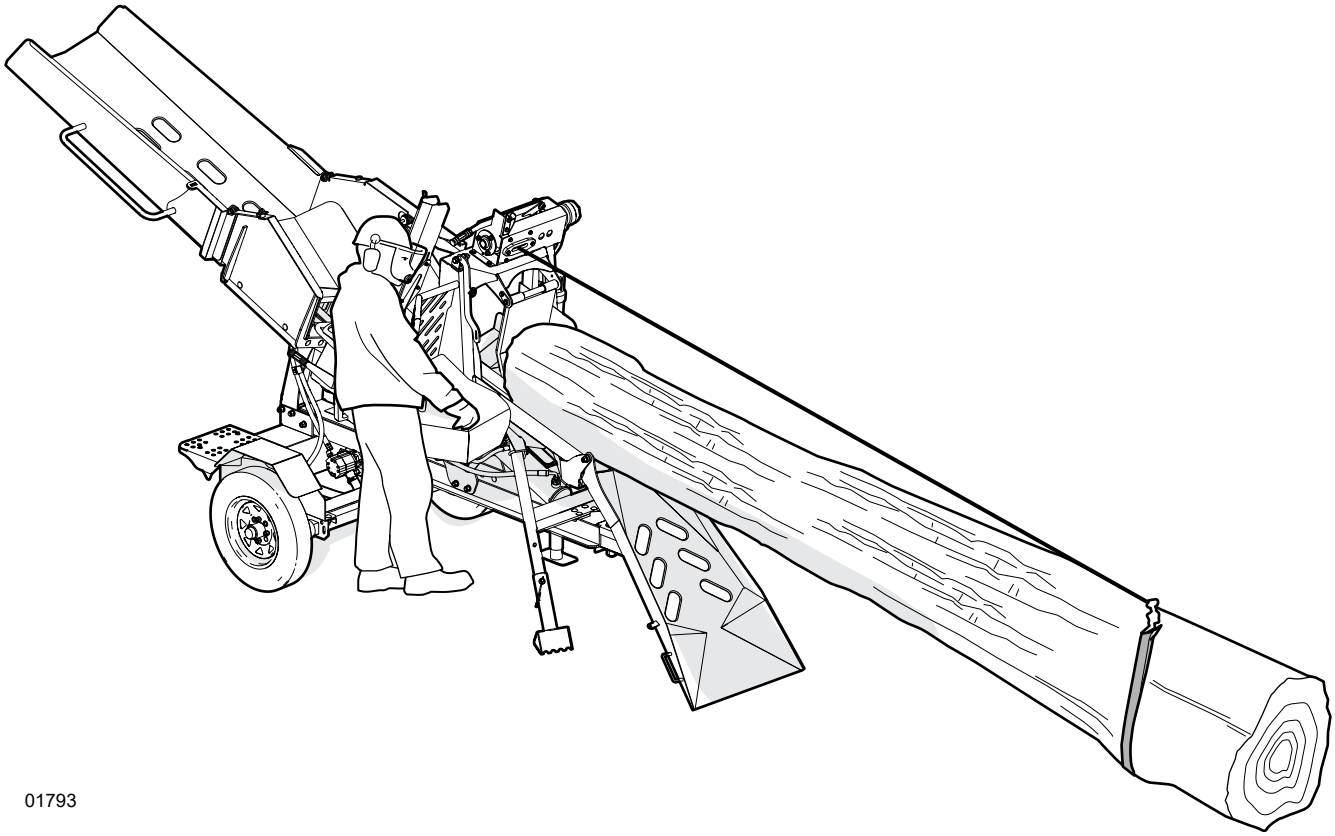


Figure 40 – Position the log in the machine

6.18.4 Position the Next Log

The log in the machine is repeatedly cut and becomes too short to pull forward with the winch. At this point, use the winch to pull another log into the machine. Locate the log behind the current log, and then use it to push the current log into the cutting area.

1. Make sure that the log in the machine is stable.
2. Push up the **winch gear lever** to disengage the winch gear.
3. Slightly pull the rope out of the winch by hand.
4. Detach the hook from the winch strap.
5. Pull the rope out to the next log.
6. Wrap the winch strap around the log. You may need to roll the log onto the strap using a log peavey.
7. Attach the hook to the winch strap. See *Figure 41*.
8. Pull down the **winch gear lever** to engage the winch gear.
9. Push and hold the **winch control lever** forward to pull the log onto the entry chute. Position the log against the current log. Use the next log to push the current log to the log-length guide.
10. After a few log cuts, complete the following:
    a. Repeat steps 1 through 4.
    b. Move the winch strap to the far end of the log.
    c. Repeat steps 6 through 8.
    d. Push and hold the **winch control lever** forward to pull the log to the log-length guide.

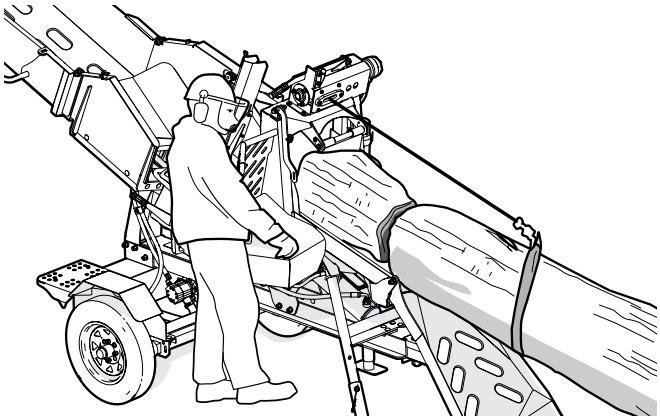


Figure 41 – Use the next log to push the current log

6.18.5 Position the Last Log

⚠ CAUTION!

Risk of serious injury. Never attempt to push a log through the stabilizer opening by hand. The log stabilizer could drop suddenly and cause serious injury. Always use the appropriate procedure and tools to push or pull a log through the opening.

☞ Whenever possible, identify or set aside a log that is smaller in diameter to process last.

When the last log becomes too short to pull forward with the winch, use an appropriate tool (for example, a hookaroon or peavey) to push the last log forward to the log-length guide.

Be aware of the heavy log stabilizer and use extreme caution when processing the last log.

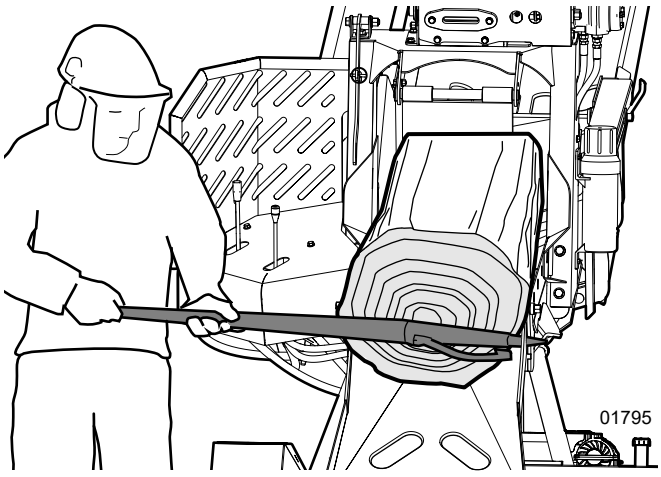


Figure 42 – Use an appropriate tool to push the last log into the machine

6.19 Cut a Log

⚠ WARNING!

Read and understand the chain saw manufacturer's manual and follow all safety instructions.

Wear the appropriate PPE when using a chain saw.

⚠ CAUTION!

Always apply the brake before you leave a chain saw in idle.

Position a log in the machine with the end touching the log-length guide. Use the chain saw to cut the log to the set length.

1. Make sure that the log-length guide is set to the desired cut length and the end of the log is touching it. For instructions, see *Set the Log-length Guide on page 39*.
2. If required, start the chain saw. For instructions, see *Start the Chain Saw on page 33*.
3. Operate the saw as you normally would to cut a log. You can also use the holder pivot handle. The guard rests on top of the log, while the chain saw cuts through it.
4. Decrease the cutting pressure as you finish the cut. The cut log falls into the splitter.
5. Rotate the chain saw back to the idle position.

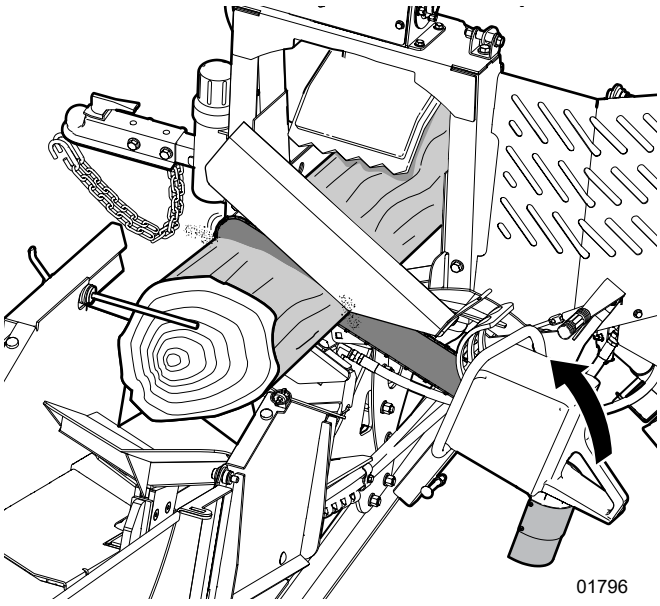


Figure 43–Cut a log

6.20 Split a Log

⚠ 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

The chain-saw holder was removed from the images in this section for clarity.

After a log is cut, the cut section falls onto the splitter.

For more information, see the *Splitter Control on page 23*.

1. Push and hold the **splitter control lever** forward to **Advance**.
   The push block extends to split the wood. For more information, see *Figure 44 on page 49*.
2. After the log is split, pull the **splitter control lever** backward to **Retract**.
   When the push-block cylinder is fully retracted, the lever automatically returns to the neutral position. The push block is ready for the next cycle.
   For more information, see *Figure 45 on page 49*.
3. Make sure that the top section of the split log falls back into the splitter. If required, use a log peavey or hookaroon to pull the top section of split log back into the splitter.
4. Repeat steps 1 and 2 to split the top section of the log.

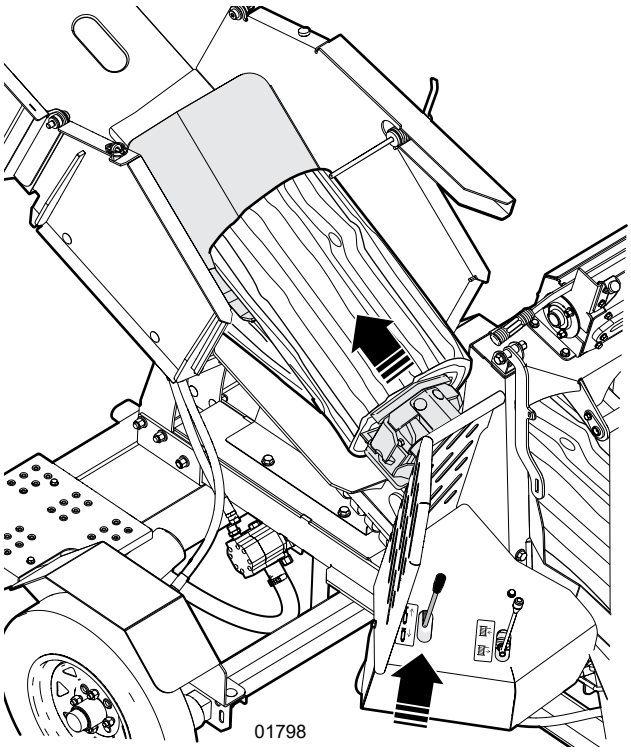


Figure 44– Split a log

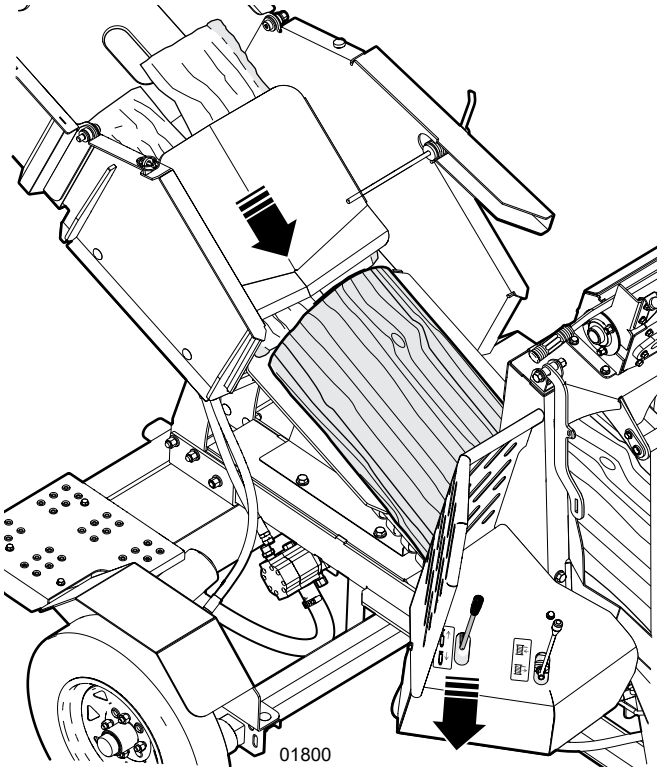


Figure 45– Split the top section of the log

6.21 Firewood Discharge

Firewood is pushed off the end of the exit chute during machine operation. Each time the splitter splits a log, the split wood pushes the previously split wood up the exit chute.

7. Transport

IMPORTANT! Equipment that is transported on a public roadway must comply with the local laws that govern the safety and transport of machinery.

Before taking the machine on a public roadway, make sure that it has the required lighting, reflectors, and markings, and that they are in working condition.

This machine does not include the required lights, reflectors, and markings. For specific requirements, contact your local transportation authority.

A rear light kit accessory is available. For more information, contact your local Wallenstein Equipment dealer or distributor.

7.1 Transport Safety

- Make sure that the machine is securely attached to the tow vehicle with a retainer through the hitch.
- Always attach the safety chains between the machine and the tow vehicle.
- Never allow riders on the machine.
- Do not exceed a safe travel speed. Slow down for rough terrain and cornering.
- Plan your route to avoid heavy traffic.
- Do not transport or move the machine with the engine on.
- Inspect the wheel rims for dents or damage and tighten the wheel lug nuts to the specified torque.
  For more information, see *Lug Nut Torque on page 66*.
- Inspect the tires for cuts or damage.
- Make sure that the tires are filled to the specified pressure. For correct tire pressure, see the tire sidewall.
- Make sure that the tow vehicle is fitted with the correct size ball-mount hitch (2 inches).
- Secure all the machine guards, shields, and covers.
- Make sure that the fuel tank, oil tank, and hydraulic reservoir caps are installed and secure (to prevent spills during transport).
- Remove all debris from the machine.

7.2 Prepare the Machine for Transport

1. Turn off the chain saw and remove it from the holder.
2. Remove the winch rope and strap from the log.
3. Wind the winch rope into the winch, and then .
4. Insert the winch hook through a hole on the side of the log chute to secure it.
5. Pull back and hold the **splitter control** to retract the push block.
6. Move the hydraulic controls to neutral.
7. Stop the machine.
   For instructions, see *Stop the Machine on page 34*.
8. Operate each hydraulic control to relieve the pressure.
9. Remove all material from the entry chute, log chute, splitter, and exit chute.
   For more information, see *Remove Firewood from the Exit Chute*.
10. Fold up the exit chute.
    For instructions, see *Fold Up the Exit Chute on page 38*.
11. Fold up the entry chute.
    For instructions, see *Fold Up the Entry Chute on page 37*.
12. Raise the two support-stand bases.
    For instructions, see *Adjust a Support Stand on page 39*.
13. Straighten the trailer tongue.
    For instructions, see *Straighten the Trailer Tongue on page 35*.
14. Attach the machine to a tow vehicle.
    For instructions, see *Attach to a Tow Vehicle on page 53*.
15. Complete a circle check to make sure that the machine is safe and everything is secure.

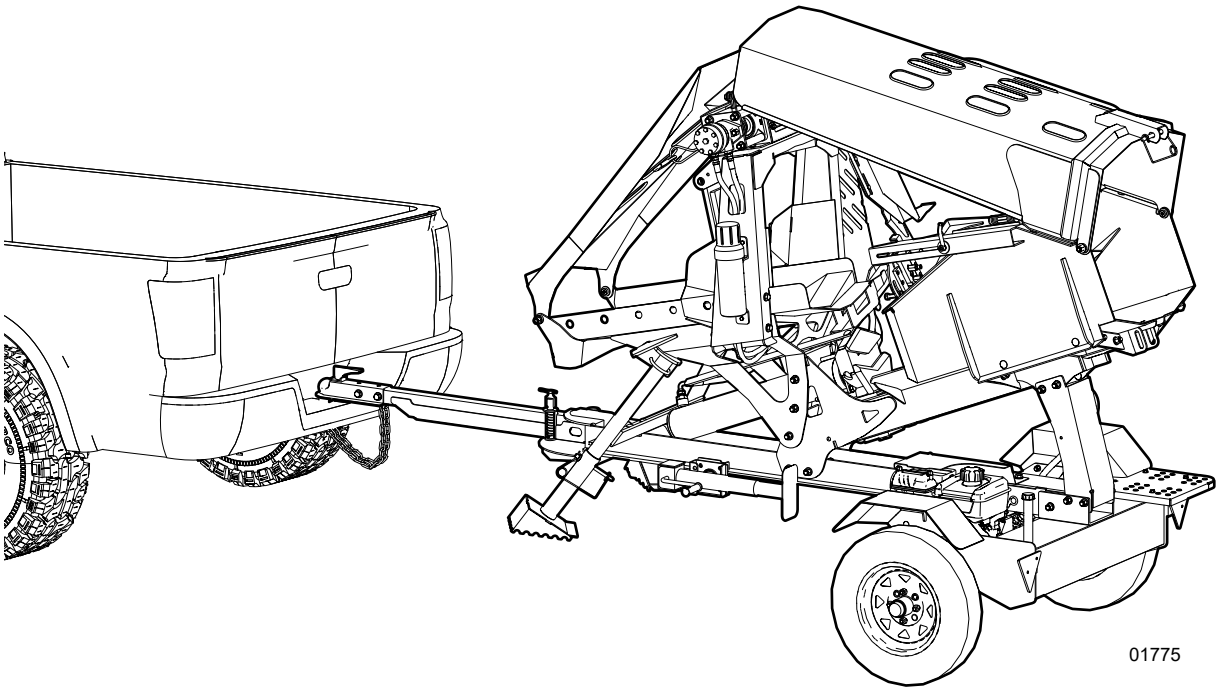


Figure 46 – Transport position

7.3 Remove Firewood from the Exit Chute

⚠ WARNING!

Before using the step, stop the machine, and then clean the step and the area below it. Unexpected machine movement, and cluttered or slippery conditions create slip and fall hazards. A slip or fall can result in serious injury or death. Remove all debris, mud, wet grass, wet leaves, ice, or other material that is on or below the step.

⚠ WARNING!

Always hold the exit-chute handle while using the step. Incorrect or careless use of the step can result in a slip or fall that causes serious injury or death. Move slowly and always hold the exit-chute handle when using the step.

For more information, see *Step on page 24.*

1. Stop the machine.
   For instructions, see *Stop the Machine on page 34*.
2. Remove all debris, mud, wet grass, wet leaves, ice, or other material from the step and the area below it.
3. Hold the exit-chute handle.
4. Step up onto the step.
   Continue to hold the exit-chute handle while on the step.
5. Push the firewood up and out of the exit chute by hand.
6. Carefully, step down off the step, and then release the exit-chute handle.

7.4 Trailer Jack

The trailer jack supports the machine when it is not attached to a tow vehicle.

⚠ WARNING!

Do not pull the pin out of the bracket when there is weight on the trailer jack. The machine could move unexpectedly and cause a minor to severe injury. Attach the machine to a tow vehicle or place blocks under the trailer tongue to hold the weight before you remove the pin.

7.4.1 Lower the Trailer Jack

1. Pull the pin out of the bracket.
2. Rotate the jack to the vertical position.
3. Insert the pin through the bracket to secure the jack in the vertical position.
4. Turn the handle clockwise to lower the jack leg.

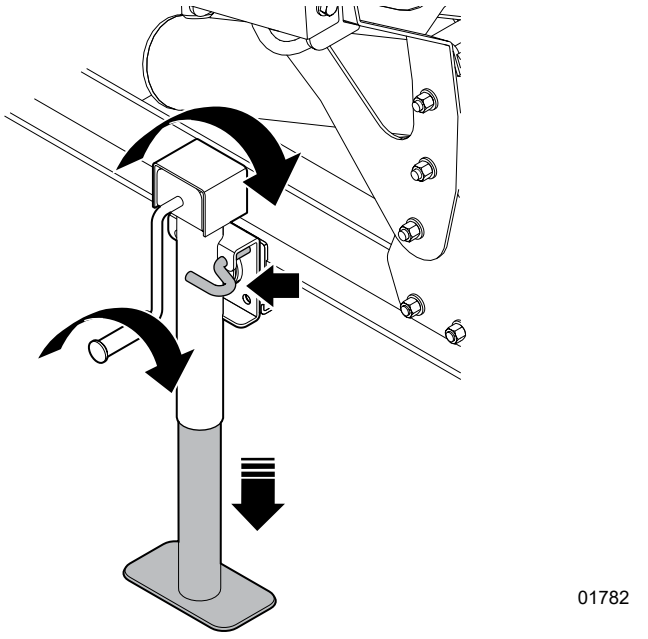


Figure 47 – Trailer jack in the lowered position

7.4.2 Stow the Trailer Jack

1. Support the machine to remove weight from the jack.
2. Turn the handle counterclockwise to raise the jack leg.
3. Pull the pin out of the bracket.
4. Rotate the jack to the horizontal position.
5. Insert the pin through the bracket to secure the jack in the horizontal position.

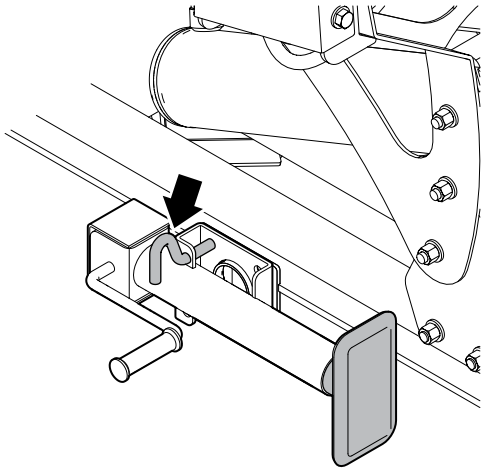


Figure 48 – Trailer jack in the stowed position

7.5 Attach to a Tow Vehicle

⚠ WARNING!

Before moving the tow vehicle, make sure the safety chains are securely attached.

W103

Always park the machine on level, dry ground that is free of debris and other foreign objects before connecting or disconnecting a hitch.

The machine has a trailer tongue with a two-inch ball-mount hitch coupler and a pivot that is required for operation. For more information, see *Trailer-Tongue Pivot on page 35*.

7.5.1 Connect to a Ball-Mount Hitch

Make sure that there is enough room and clearance to safely reverse the tow vehicle to the machine.

1. Reverse the tow vehicle to the machine. Stop about 1 ft (30 cm) away from the hitch coupler. If a back-up camera is not available, have another person guide you.
2. Use the trailer jack to raise the trailer tongue until the hitch coupler is higher than the ball-mount hitch.
3. Remove the pin from the hitch-coupler latch. Raise the latch to the upright (unlocked) position.
4. Slowly, reverse the tow vehicle until the ball-mount hitch is below the hitch coupler. Stop the tow vehicle and apply the parking brake.
5. Make sure that the trailer tongue is straight and the pivot lock pin is engaged.
   For more information, see *Pivot the Trailer Tongue on page 35*.
6. Use the trailer jack to lower the machine and install the hitch coupler over the ball-mount hitch.
   For instructions, see *Lower the Trailer Jack on page 52*.
7. Lower the hitch-coupler latch to the locked position. Install a pin through the latch to secure the hitch coupler to the ball-mount hitch.
8. Raise and stow the trailer jack.
   For instructions, see *Stow the Trailer Jack on page 52*.
9. Cross the two safety chains below the trailer tongue, and then attach them to the tow vehicle (one on each side of the ball-mount hitch).
10. If the machine has a light kit installed, complete the following:
    a. Connect the light-bar cable harness to the tow vehicle. Make sure that the cables are long enough to make turns without tension and do not drag on the ground.
    b. Activate each light and have another person call out to confirm that it functions correctly.

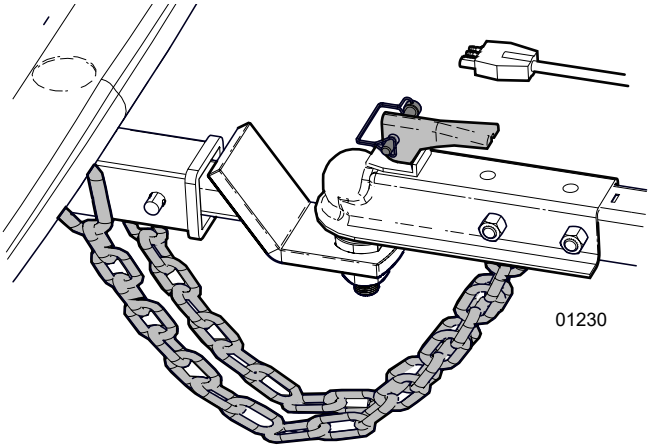


Figure 49– Ball-mount hitch connection

7.5.2 Disconnect from a Ball-Mount Hitch

Make sure that there is enough room and clearance to safely drive the tow vehicle forward, away from the machine.

1. Stop the tow vehicle in a location where it and the machine are on level ground. Turn off the engine and apply the parking brake.
2. Rotate and lower the trailer jack to support the machine.
   For instructions, see *Lower the Trailer Jack on page 52*.
3. If the machine has a light kit installed, disconnect the light-bar cable harness from the tow vehicle. Stow the cable harness on the machine in a location that protects it from damage.
4. Remove the two safety chains from the tow vehicle and stow them securely on the machine.
5. Remove the pin from the hitch-coupler latch. Raise the latch to the upright (unlocked) position.
6. Use the trailer jack to raise the trailer tongue until the hitch coupler is higher than the ball-mount hitch.
7. Slowly, drive the tow vehicle forward until the ball-mount hitch is clear of the hitch coupler. Stop the tow vehicle and apply the parking brake.
8. Use the trailer jack to lower the machine until it is level with the ground.
9. Lower the hitch-coupler latch to the locked position. Install a pin through the latch.

8. Storage

At the end of the season or when the machine is not going to be used for an extended period of time, completely inspect all of the major systems. Replace or repair any worn or damaged components to prevent unnecessary down time at the beginning of the next season. Touch up scratches or dents.

For reference, see *Figure 50 on page 55*.

8.1 Storage Safety

WARNING!

Do not permit children to play on or around stored machinery or equipment. Sharp edges, unexpected movement, trips, falls, and other hazards can cause serious injury or death.

W105

IMPORTANT! A pressure washer can damage the machine's product identification plate and make it unreadable. Do not direct the spray from a pressure washer onto the product identification plate. Use a clean, soft cloth that is dampened with water to remove dirt.

- Store the machine in a dry, level location away from human activity.
- Store the machine indoors, where possible.
- Support the frame with planks, if required.

8.2 Place the Machine in Storage

For information about engine storage, see the engine manufacturer's manual.

1. Wash the machine.
   For instructions, see *Wash the Machine on page 62*.
2. Check all moving parts for entangled material. Remove all entangled material.
3. Check the condition of the winch rope. Replace or adjust the rope, as required.
4. Do one of the following:
   - If the machine will be in storage for one to three months, add stabilizer to the engine fuel and drain the carburetor.
   - If the machine will be in storage for longer than three months, replace the engine fuel with an alkylate or appropriate engineered fuel. These fuel types prevent the buildup of insoluble solids (deposits) in the engine. For more information, see *Engine Fuel on page 57*. For instructions, see *Replace the Engine Fuel*.
5. Set the machine to the transport position.
   For instructions, see *Prepare the Machine for Transport on page 50*.
6. Park the machine in the storage location.
7. Disconnect the tow vehicle.
   For instructions, see *Disconnect from a Ball-Mount Hitch on page 53*.
8. Adjust the trailer jack until the machine is level. If soft ground is unavoidable, place boards or plates under the trailer jack and support stands to increase the surface area.
9. Block the machine wheels to prevent accidental movement and increase the wheel bearing life.
10. If indoor storage is not possible, cover the machine with a waterproof tarp. It is recommended that the machine be stored indoors.

8.2.1 Replace the Engine Fuel

WARNING!

Before you replace the fuel, read and understand the information under *Engine Safety on page 27*.

1. Remove the current fuel from the engine.
   Operate the machine until the fuel tank is empty or drain the fuel tank and properly dispose of the fuel.
2. Add new fuel to the engine.
   For instructions, see *Add Fuel to the Engine on page 28*.
3. Start the machine.
   For instructions, see *Start the Machine on page 33*.
4. Wait five to 10 minutes for the fuel to flush the carburetor.
5. Stop the machine.
   For instructions, see *Stop the Machine on page 34*.

8.3 Remove the Machine from Storage

1. Complete the *Pre-Start Checklist on page 26*.
2. Complete the required maintenance.
   For maintenance requirements, see the *Maintenance Schedule on page 58*.

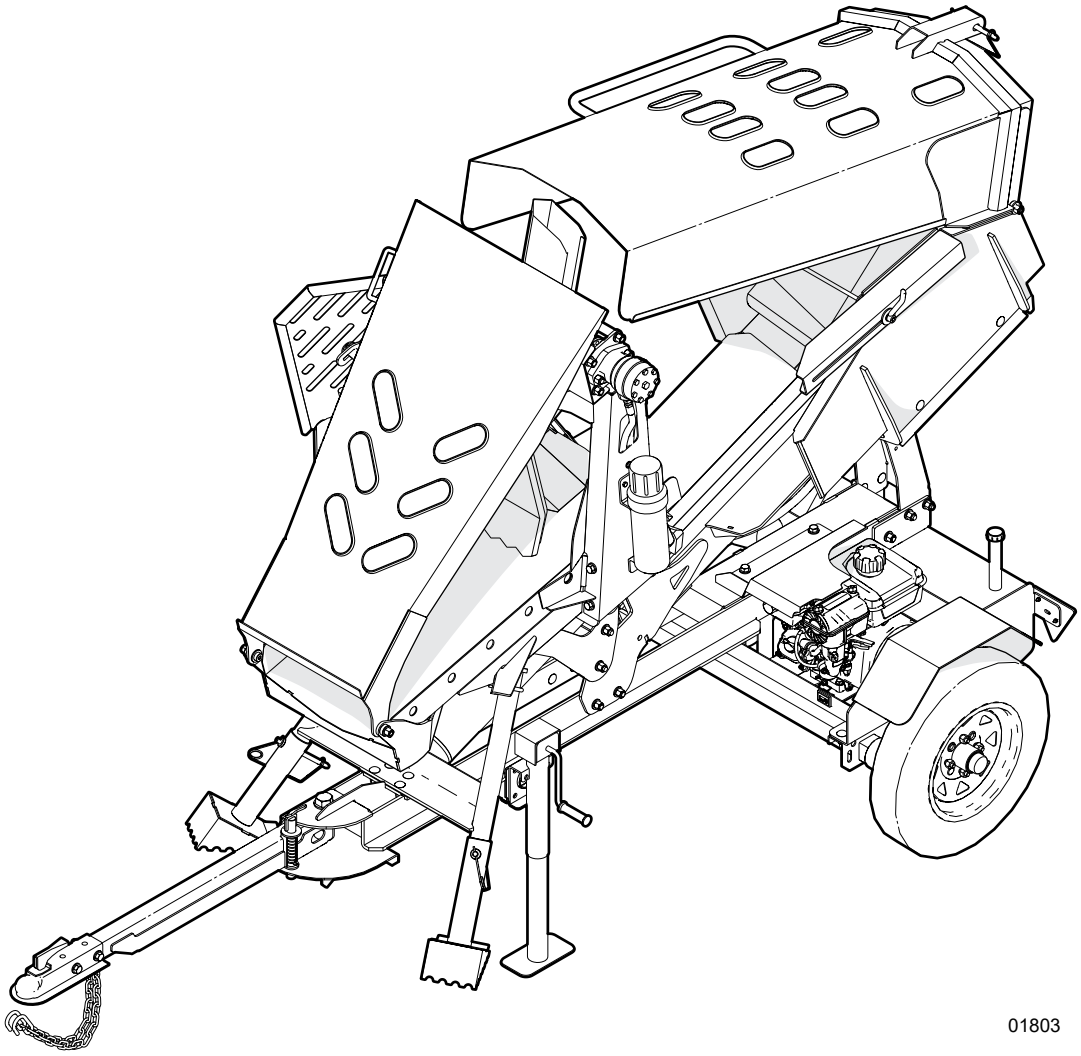


Figure 50 – Storage position

9. Service and Maintenance

Regular preventive maintenance can improve performance and prolong the life of the machine. Machine maintenance is your responsibility.

9.1 Service and Maintenance Safety

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

WARNING!

Before you start service or maintenance work:

- **Set the machine to a safe condition.**
- **Wait for the machine to cool down. Engine components and fluids may be hot enough to cause burns.**
- **Read and understand all of the service and maintenance safety information.**

W041

WARNING!

Wear the personal protective equipment (PPE) that is required to complete the work safely.

This includes, but is not limited to a hard hat, hearing protection, a face shield, protective footwear, a respirator, and heavy gloves.

W101

Place the machine in a safe condition before you start any service or maintenance:

SAFE CONDITION

1. Turn off the chain saw and remove it from the holder.
2. Remove the winch rope and strap from the log, and then wind the winch rope into the winch.
3. Pull back and hold the **splitter control** to retract the push block.
4. Move the hydraulic controls to neutral.
5. Stop the machine.
   For instructions, see *Stop the Machine on page 34*.
6. Operate each hydraulic control to relieve the pressure.
7. Remove all material from the entry chute, log chute, splitter, and exit chute.
   For more information, see *Remove Firewood from the Exit Chute on page 51*.
8. Disconnect the engine spark-plug wire. Keep the spark-plug wire away from the spark plug to prevent the engine from being started accidentally.

- Follow good shop practices:
  - Keep the work area clean and dry.
  - Ground electrical outlets and tools.
  - Have adequate light for good visibility.
- Use tools that are in good condition and correct for the task. Make sure that you understand how to use the tools before performing any service work.
- Never operate an engine inside a closed building. The exhaust fumes may cause asphyxiation.
- Never work under equipment unless it is securely supported with blocks.
- Always have a minimum of two people present during maintenance or service. Do not work alone in case an emergency situation occurs.
- When replacement parts are necessary, use genuine factory replacement parts to restore your equipment to original specifications. The manufacturer cannot be responsible for injuries or damages caused by use of unapproved parts or accessories.
- Keep a fire extinguisher and first aid kit readily accessible at all times.
- Do not use gasoline or diesel fuel to clean parts. Use a regular cleanser.

- Check all of the fasteners after the work is complete. Tighten any loose bolts, nuts, or screws.
- Check all electrical and fuel connections to make sure that they are secure and the machine is in a safe working condition.

9.2 Fluids and Lubricants

The machine requires various fluids and lubricants for operation and maintenance.

9.2.1 Lubricant Handling and Storage

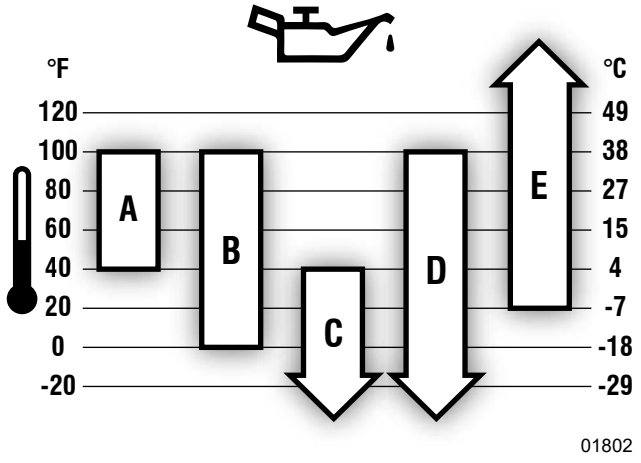
For optimum machine efficiency, use clean lubricants and clean containers to handle all lubricants. Store lubricants in an area that is protected from dust, moisture, and other contaminants.

9.2.2 Engine Oil

For engine maintenance and service information, see the engine manufacturer's manual.

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

Outdoor temperatures determine the required engine oil viscosity. Select the best oil viscosity for the expected outdoor temperature range. Use the following chart as a guide:



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

9.2.3 Engine Fuel

For complete fuel information and use at high altitudes, see the engine manufacturer's manual.

Fuel must meet the following specifications:

- Clean, fresh, unleaded gasoline.
- Minimum of 87 octane / 87 AKI (91 RON).
- Gasoline with up to 10% ethanol (gasohol) is acceptable if the fuel is fresh (less than three months old).

If the machine will be in storage for longer than three months, replace the fuel with one of the following fuel types:

- An alkylate fuel
- An engineered fuel that is high octane, ethanol-free, and formulated with power detergent to prevent the buildup of insoluble solids (deposits).

For instructions, see *Replace the Engine Fuel on page 54*.

9.2.4 Grease

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

9.2.5 Hydraulic Fluid

Use Dexron® III automatic transmission fluid (ATF) for all operating conditions.

The following ATFs are acceptable substitutes:

- Dexron VI
- Mercon®

9.3 Maintenance Schedule

IMPORTANT! For more information, see the engine manufacturer's manual.

Complete maintenance tasks at the specified time or hour interval, whichever comes first.

Once every hour during operation, remove all wood chips and saw dust from the machine and below the machine.

Task	8 hours or daily	50 hours or annually	100 hours or annually	200 hours or annually	Annually	600 hours or every three years	Reference
Check the winch rope condition.	●						See *page 61*
Check the hydraulic hoses, fittings, and frame slide.	●						N/A[1]
Check the hydraulic fluid level.	●						See *page 30*
Check the engine oil level and quality.	●						See *page 29*
Check the engine fuel level.	●						See *page 28*
Clean around the muffler and controls.	●						See the engine manual
Clean the engine air-intake grille.	●						N/A
Check that all fasteners and the wheel lug nuts are tightened to the specified torque.	●						See *page 66*
Grease the machine.		●					See *page 59*
Check the hydraulic fluid quality.		●					See *page 30*
Check the tire pressure.			●				See the tire sidewall.
Change the hydraulic fluid and filter.			●				See *page 60*
Clean the machine. Remove debris and entangled material.			●				See *page 62*
Service the engine exhaust system.			●				See the engine manual
Clean the engine air filter.[2]				●			See *page 61*
Change the engine oil.				●			See the engine manual
Replace the engine spark plug.					●		See the engine manual
Service the engine cooling system.					●		See the engine manual
Service the engine fuel system.					●		See the engine manual
Replace the engine air filter.						●	See the engine manual

1 N/A indicates that a reference is not applicable.
2 In dusty conditions or when airborne debris is present, clean more often.

9.4 Grease Points

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

Location	Grease points – every 50 hours or annually
1	Chain-saw holder
2	Winch
3	Log stabilizer
4	Wheel hubs

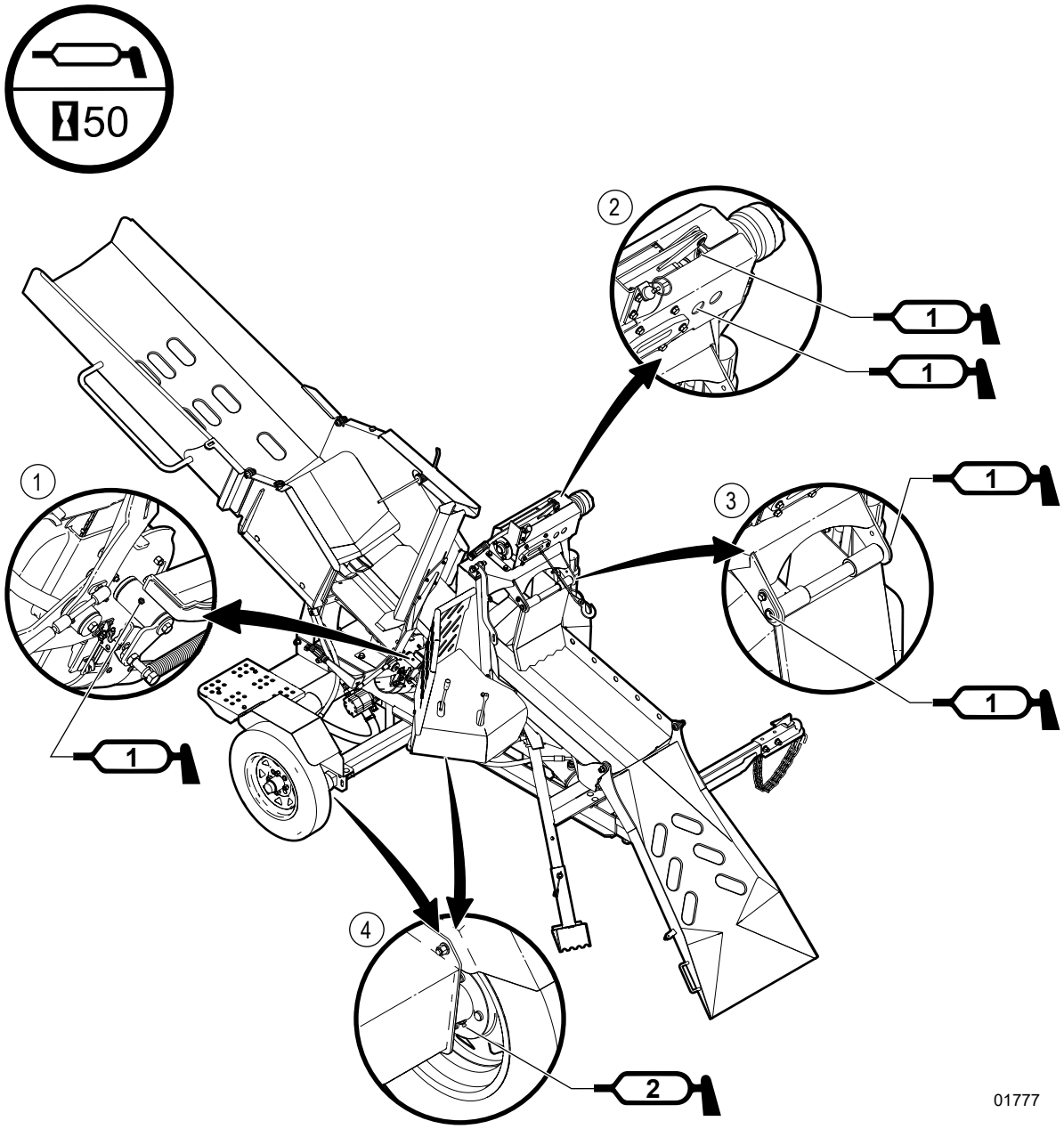


Figure 51 – Grease points

9.5 Change the Hydraulic Fluid and Filter

WARNING!

Read and understand *Hydraulic System Safety on page 30*.

CAUTION!

Risk of burns to exposed skin. Hydraulic fluid gets hot during operation, which makes hoses, lines, and other parts hot as well. Wait for the fluid and components to cool before starting maintenance or service.

Change the hydraulic fluid and filter every 100 hours of operation or annually.

Wait for the machine to cool down before changing the hydraulic fluid. However, it is best to change the fluid while the machine is warm to keep any contaminants in suspension.

The filter is located on the back, RH side of the hydraulic-fluid reservoir, below the step.

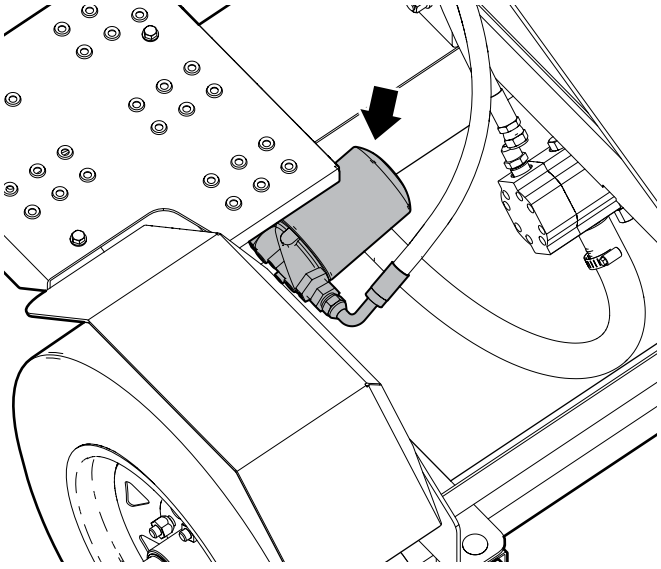


Figure 52–Hydraulic fluid filter location

The drain plug is located on the bottom of the machine, on the RH side of the hydraulic fluid reservoir, below the filter. The drain plug must be removed to fully drain the fluid.

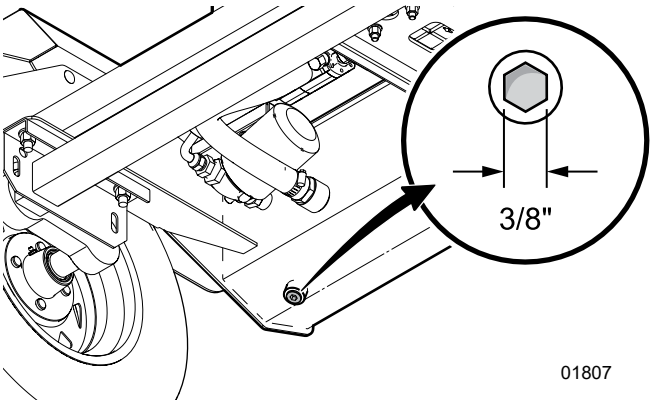


Figure 53–Hydraulic-fluid reservoir drain-plug location

1. Set the machine to a safe condition.
   For instructions, see *Safe Condition on page 9*.
2. Place a drain pan under the drain plug and filter. Make sure that the drain pan is large enough to collect and contain the hydraulic fluid that will drain from the filter and reservoir.
3. Clean the area around drain and remove the drain plug.
4. Remove the filter. A filter wrench may be required.
5. Wait for the hydraulic fluid to fully drain from the reservoir and filter connection.
6. Apply a light coat of clean lubricant to the seal, and then install the new filter. Only tighten it by hand.
7. Install the drain plug.
8. Fill the reservoir to the top mark on the dipstick with Dexron III ATF or an acceptable substitute. **The reservoir capacity is 8 US gal (30 L)**.
   For more information, see *Add Hydraulic Fluid to the Reservoir on page 31*.
9. Start the machine.
   For instructions, see *Start the Machine on page 33*.
10. Advance and retract the splitter push block for 1–2 minutes to remove air from the hydraulic system.
11. Check the filter head for leaks.
12. Stop the machine.
    For instructions, see *Stop the Machine on page 34*.
13. Check the hydraulic fluid level. Add fluid, as required.
14. Dispose of the used hydraulic fluid in an environmentally safe manner.

9.6 Clean the Engine Air Filter

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.

Clean the air filter every 200 hours of operation or annually.

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

1. Turn the two air-filter cover fasteners to loosen them.
2. Remove the cover.
3. Remove the air filter.
4. Gently tap the air filter on a hard surface to loosen and remove dust and debris.
5. If the air filter is excessively dirty or damaged, replace it with a new air filter.
6. Install the air filter in the engine.
7. Install the cover.
8. Tighten the two air-filter cover fasteners.

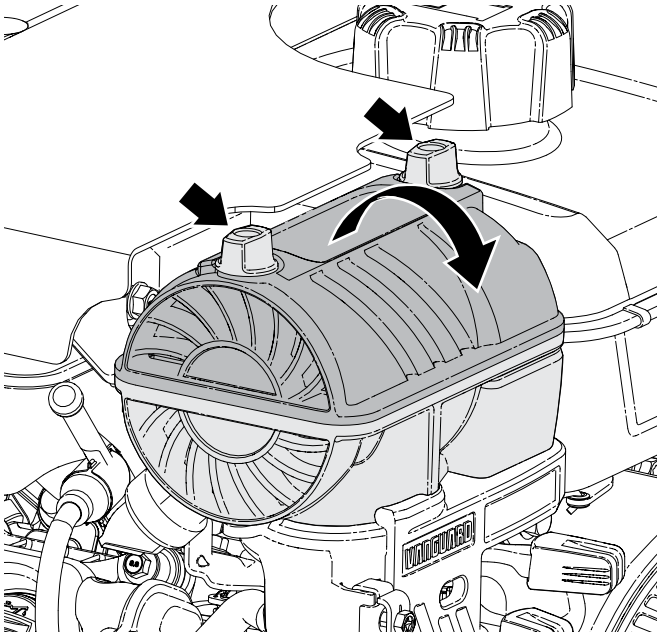


Figure 54–Engine air filter

9.7 Winch Rope Maintenance

CAUTION!

The wood processor winch is designed to use synthetic rope. Use synthetic rope as replacement only. Failure to do so creates an unsafe work environment and voids warranty.

W079

CAUTION!

Replace a synthetic winch rope with the correct type of synthetic rope. Use of an incorrect type of synthetic rope can result in the rope breaking and causing personal injury. For information about the correct replacement synthetic winch rope, see the Wallenstein Equipment Parts Manual.

W094

9.7.1 Inspect the Winch Rope

IMPORTANT! Heat and exposure to ultra-violet (UV) light break down the fibers of synthetic rope, which weakens the rope and makes it brittle over time. Frequent use in mud, dirt, and sandy conditions can also damage a synthetic rope if it is not thoroughly cleaned and cared for.

Check the entire winch rope for wear and re-spool it neatly (under tension) after every use. Check the winch rope for any cut strands, fraying parts, abrasion, or heat damage from the winch. After some use, all winch ropes get a little fuzzy from abrasion. This is normal. However, **if an entire strand is cut, the winch rope must be replaced or repaired**. All strands must be intact for the winch rope to work properly and maintain its strength.

9.7.2 Clean the Winch Rope

When dirt and grit become lodged between the strands of the winch rope, they cause abrasion to the fibers when the winch rope operates under load. Over time, this can cause the winch rope to lose integrity and strength.

1. Unspool and remove the entire rope from the winch.
2. Lay the rope on a clean surface.
3. Use a water hose to rinse the rope.
4. To remove dirt and grit from the strands:
   a. Fill a bucket with water and mild soap.
   b. Place the rope in the bucket.
   c. Lay a clean towel beside the bucket to place the clean portion of the rope on.

d. Starting at one end of the rope, push the rope strands together to open them up and rinse between them.

e. Work your way through the entire rope until the clean rope is laying on the towel.

f. Inspect the winch spool and fairlead for sharp or rough surfaces that could damage the rope. If required, remove or repair sharp or rough surfaces.

5. Dry the rope.

6. Wind the rope neatly (under tension) onto the winch.

9.8 Tire Maintenance and Safety

WARNING!

Failure to follow the 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 correct equipment and experience. Have a qualified tire dealer or repair service perform tire maintenance.

IMPORTANT! Replace worn tires with tires that meet the original tire specifications. Never undersize tires.

Check the tire pressure every 100 hours of operation or annually.

- Tighten the wheel lug nuts to the correct torque daily. For torque specifications, see *Lug Nut Torque on page 66*.
- Check the tire pressure before towing the machine on a roadway. See the tire sidewall for the correct pressure.

9.9 Wash the Machine

IMPORTANT! Using harsh chemicals can damage the machine finish. Do not use gasoline, diesel fuel, or thinners for cleaning.

IMPORTANT! A pressure washer can damage the machine's product identification plate and make it unreadable. Do not direct the spray from a pressure washer onto the product identification plate.

IMPORTANT! A pressure washer can damage the bearings. Do not direct the spray from a pressure washer directly onto the bearings.

1. Use a hose or pressure washer and mild detergent to remove dust, dirt, and debris.
2. Use a clean, soft cloth, that is dampened with water to remove dirt from the product identification plate.
3. Start the machine.
   For instructions, see *Start the Machine on page 33*.
4. Let the engine run for a few minutes to dry.
5. Stop the machine.
   For instructions, see *Stop the Machine on page 34*.
6. Apply grease to the areas where the pressure washer may have removed it.
   For instructions, see *Grease Points on page 59*.

10. Troubleshooting

⚠ WARNING!

Before troubleshooting, read and understand the *Service and Maintenance Safety on page 56*. Set the machine to a safe condition.

The following table lists some of the problems that you may encounter, and provides possible causes and solutions.

If you encounter a problem that is difficult to solve, even after reading this information, please contact your local dealer, the distributor, or Wallenstein Equipment. Before you call, please have the serial number for your product handy.

To find the serial number on your machine, see *Serial Number Location on page 5*.

For engine troubleshooting, see the engine manufacturer's manual.

Problem	Possible cause	Solution
Engine is difficult to start or performance is reduced.	Engine fuel. Not all fuel is the same.	Change the fuel provider or brand.
Winch motor does not move.	Rope is jammed.	Disengage the winch gear, pull the rope out, and then carefully guide the rope, while it retracts onto the spool under tension.
Winch rope does not pull out.	Winch gear is engaged.	Disengage the winch gear.
Winch rope does not retract.	Winch gear is disengaged.	Engage the winch gear.
Cylinder rod moves slowly or does not move.	Wood is jammed around the wedge.	Set the machine to a safe condition, and then remove the wood. For instructions, see *Safe Condition on page 9*.
Cylinder rod or winch motor moves slowly or does not move.	No hydraulic fluid pressure because the fluid filter is plugged.	Change the hydraulic fluid filter. For instructions, see *Change the Hydraulic Fluid and Filter on page 60*.
	No hydraulic fluid pressure because the hydraulic fluid is low.	Add hydraulic fluid. For instructions, see *Add Hydraulic Fluid to the Reservoir on page 31*.
	Low hydraulic pressure. The relief setting may be low.	Contact a technician.
	Low engine speed.	Make sure that the choke is off and the throttle is set to fast. For information, see *Engine Controls on page 22*.
Control lever does not go to neutral after the cylinder rod is fully retracted.	The valve that holds the control lever in place (detent) is set too tight.	Contact a technician. The hydraulic valve requires adjustment.
	Hydraulic fluid is too cold.	Wait for the machine to warm up.
	Hydraulic fluid is old or contaminated.	Change the hydraulic fluid and filter. For instructions, see *Change the Hydraulic Fluid and Filter on page 60*.
Control lever goes to neutral before the cylinder rod is fully retracted.	The valve that holds the control lever in place (detent) is set too loose.	Contact a technician. The hydraulic valve requires adjustment.
Control lever does not go to neutral when released.	Control is damaged.	Call a technician. The control requires service or replacement.
Cylinder stops on contact with wood.	Second pump stage is not functioning.	Call a technician. The pump requires service or replacement.
Hydraulic hose leak.	Hose is worn or damaged or a fitting is not secure.	Replace the hose or secure the fitting. If required, replace the fitting.
Cylinder is leaking.	Seals are worn.	Call a technician. The cylinder requires service or replacement.
The exit chute is full.	Firewood can accumulate in the exit chute. This is more common with shorter lengths.	Remove excess firewood from the exit chute. For instructions, see *Remove Firewood from the Exit Chute on page 51*.

11. Specifications

For engine specifications, see the engine manufacturer's manual. For

available accessories, go to WallensteinEquipment.com.

11.1 Machine Specifications[1]

Parameter	Specification
Engine make / model / displacement / horsepower	Vanguard®/ 203 cc / 6.5 hp
Fuel tank capacity	0.82 US g (3.1 L)
Hydraulic pump flow / type	11 gpm (47 Lpm) / two stage, gear
Cylinder diameter	4" (10 cm)
Split opening	23" (58 cm)
Full stroke splitting cycle time	13.2 seconds
Split force	20 ton
Maximum split length	22" (56 cm)
Maximum log diameter	16" (41 cm)
Wedge configuration	Three-way
Tire size / type	5.3 x 12 / highway
Ball-mount hitch size	2" (50 mm) ball coupler and safety chains
Weight	1,525 lb (692 kg)
Dimensions: unfolded (L x W x H)	175" x 54" x 85" (445 cm x 137 cm x 208 cm)
Dimensions: folded (L x W x H)	122" x 54" x 83" (310 cm x 137 cm x 211 cm)
Trailer tongue weight	240 lb (109 kg)
Winch type	Hydraulic, valve operated
Winch rope length / diameter	50 ft (15 m) / 1/4" (6 mm)
Winch pulling capacity	1,200 lb (544 kg)
Maximum winching angle	25 degrees (15 degrees recommended)
Maximum throughput	One cord per hour
Maximum exit chute height	76" (193 cm)
Hydraulic reservoir capacity	8 US gal (30 L)
Winch strap length	48" (1.2 m)
Minimum saw bar length	22" (55.9 cm)

11.2 Hydraulic Hose Specifications[1]

Hose	Type	Working pressure
High-pressure	SAE 100R17 braided 1/2" (12.5 mm) inside diameter (SAE -8) 3/8" (10 mm) inside diameter (SAE -6)	3,000 psi
Suction line (pump to reservoir)	Tank truck hose 1" (25 mm) inside diameter (SAE -16)	150 psi

1 Specifications are subject to change without notice.

11.3 Bolt Torque

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

IMPORTANT! The torque specifications in these tables are for non-greased or non-oiled threads. Do not grease or oil fastener threads unless otherwise indicated. When using a thread lock, increase the specified torque 5%.

Bolt grades are identified by the marks on the bolt head.

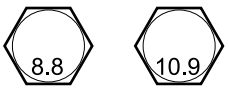
The bolt torque specification tables provide the correct torque settings for common bolts and capscrews. Tighten all bolts to the torque that is specified in the table, unless otherwise indicated. Check the bolt tightness periodically.

Imperial Bolt Torque Specifications

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

Metric Bolt Torque Specifications

Bolt Diameter	Torque			
	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



11.4 Hydraulic Fitting Torque

Tighten flare-type tube fittings:

1. Check the flare and flare seat for defects that might cause leaks.
2. Align the tube with the fitting before tightening.
3. Hand-tighten the swivel nut until it is snug.
4. To prevent the tube from twisting, use two wrenches. Place one wrench on the connector body and tighten the swivel nut with the second wrench. Torque the fitting to the correct specification.

If a torque wrench is not available, use the flats from finger tight (FFFT) method.

Hydraulic Fitting Torque Specifications

Tube size OD	Hex size across flats	Torque		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

Specifications are for non-lubricated connections.

11.5 Lug Nut Torque

WARNING!

Wheel lug nuts must be installed and kept at the correct torque to prevent loose wheels, broken studs, or possible separation of a wheel from the axle.

It is an extremely important safety procedure to apply and maintain the correct torque on lug nuts that secure the wheel to the trailer axle. A calibrated torque wrench is the best tool to make sure that the correct amount of torque is applied to a fastener.

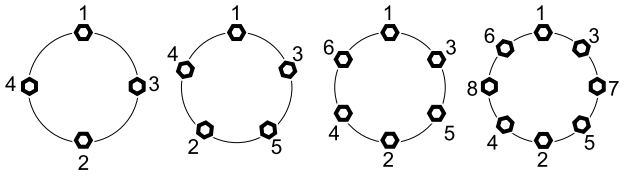
Tighten wheel lug nuts to the correct torque before the first use and after each wheel removal. After a wheel is installed, check and torque the lug nuts after the first 10 miles (16 km), 25 miles (40 km), and 50 miles (80 km). Check the lug nut torque periodically thereafter.

- Start all lug nuts onto the threads by hand.
- Tighten lug nuts in stages, following the pattern shown below the Lug Nut Torque Specifications table.

Lug Nut Torque Specifications

Wheel size	Units	First stage	Second stage	Third stage
8 inch	lbf•ft N•m	12–20 16–26	30–35 39–45.5	45–55 58.5–71.5
12 inch	lbf•ft N•m	20–25 26–32.5	35–40 45.5–52	50–60 65–78
13 inch	lbf•ft N•m	20–25 26–32.5	35–40 45.5–52	50–60 65–78
14 inch	lbf•ft N•m	20–25 26–32.5	50–60 65–78	90–120 117–156
15 inch	lbf•ft N•m	20–25 26–32.5	50–60 65–78	90–120 117–156
16 inch	lbf•ft N•m	20–25 26–32.5	50–60 65–78	90–120 117–156

Lug nut torque pattern:



4 bolts 5 bolts 6 bolts 8 bolts

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

rev. Nov-2018

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