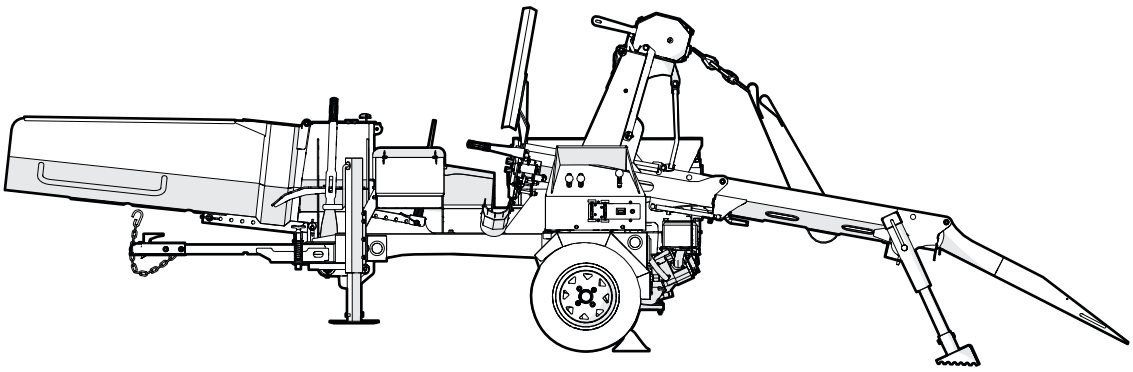
OPERATOR'S MANUAL

Serial number 1101348 and up

WP845 / WP875
Firewood Processor



Rev May-2024

Part Number: Z97153_En

WALLENSTEIN

Table of Contents

1. Introduction

⚠ WARNING!

Do not start or operate the machine before you read this manual. Make sure that you fully understand all the safety, operation, and maintenance information before you operate the machine.

Keep this manual with the machine at all times and available for frequent reference.

W034

Congratulations on your choice of a Wallenstein firewood processor!

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

WP800 Series firewood processors improve productivity while reducing handling and the risk of physical strain. The machine includes a hydraulic power source, a winch, and a log splitter. The machine is towable and powered by a gas engine.

The difference between the two models is the size of the log splitter:

Model	Log splitter length
WP845	24" (61 cm)
WP875	36" (91 cm)

The winch is attached to the top of the machine. Use the winch to pull a log to the lead-in chute and position it to be cut. After you cut the log with a chainsaw, the block rolls into the splitter cradle. Use the hydraulic controls to split the block into firewood. The firewood moves up the splitter chute and is pushed off the machine.

For available accessories, go to WallensteinEquipment.com.

For safe, efficient, and trouble-free operation of this Wallenstein Equipment product, it is necessary 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 available for frequent reference and to give 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.

This manual is subject to change without notice. For the most current information, go to WallensteinEquipment.com.

1.1 Delivery Inspection Report

Wallenstein WP845 or WP875 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.

_____ Chutes fold and latch correctly.

_____ Log stabilizer moves freely.

_____ All fasteners are torqued to the correct specification.

_____ 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.

_____ The splitting-wedge height adjustment functions correctly.

_____ 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 labels are applied and legible.

_____ All guards and shields are installed, and the covers are closed.

_____ Wheel lug nuts are torqued to the correct specification.

_____ Trailer and support jacks function correctly.

_____ A retainer is installed through each hitch point.

_____ Safety chains are on the ball-mount hitch.

_____ All lights operate correctly (for example; running, brake, turn signal, license plate).

_____ Operating and safety instructions were reviewed.

1.2 Serial Number Location

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

Record the serial number of your product here

Model	
Serial Number	

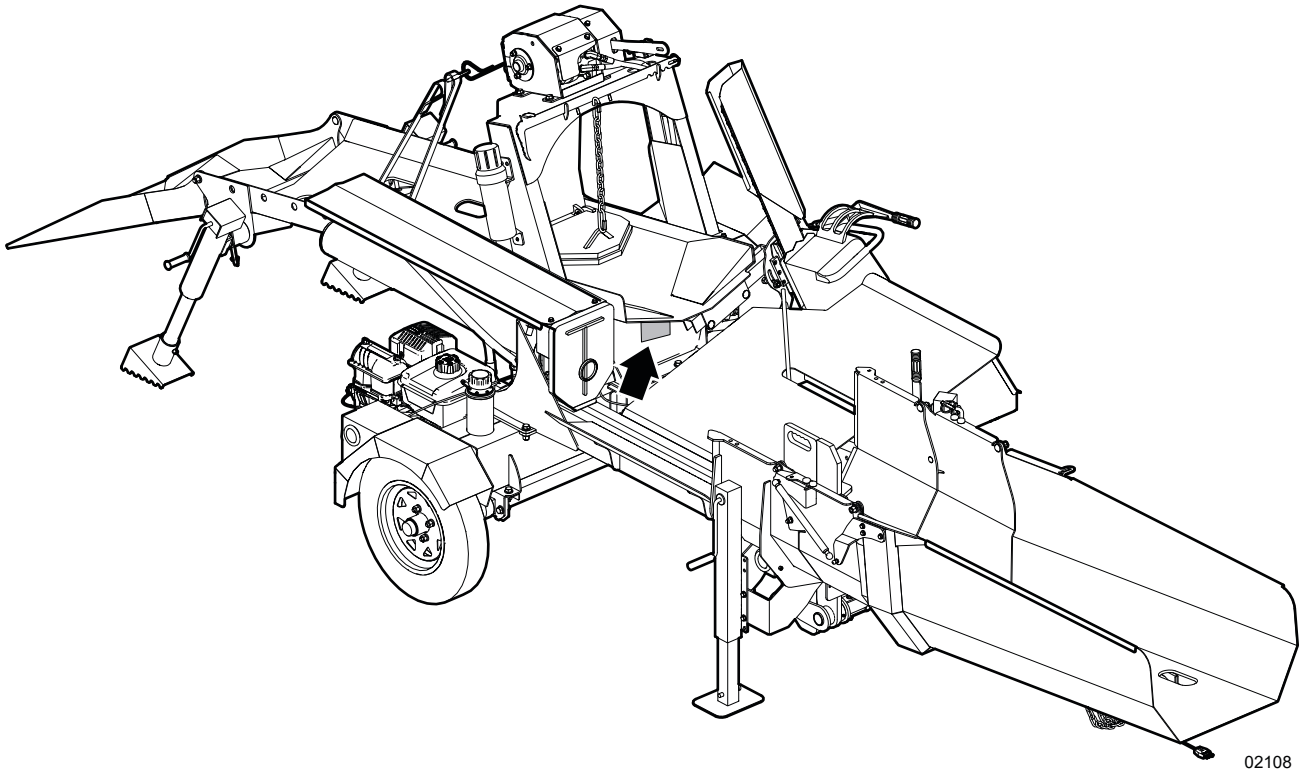


Figure 1 – Product information plate location (typical)

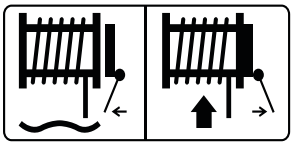
1.3 Types of Labels on the Machine

There are different types of labels on your Wallenstein product. The labels are for safety, information, and product identification. This section explains what the labels are for and how to read them.

Safety labels are pictorial with a yellow background and have two panels. They can be vertical or horizontal.

Mandatory action labels are pictorial with a blue background and usually rectangular with one or more symbols. This label shows the type of personal protective equipment (PPE) that is necessary for safe operation.

Information labels are usually pictorial with a white background and the number of panels can be different. This type of gives information to the operator or shows the operation of a control.



Product labels show the machine model and serial number. For more product information, scan the quick response (QR) code.

Maintenance labels have a green background and the number of panels can be different. This label shows the type of maintenance and how frequently it is necessary.

For safety label definitions, see *Safety Label Definitions on page 16*. For an illustration of labels and label locations, download the parts manual for your Wallenstein product at WallensteinEquipment.com.

2. Safety

Read and make sure that you fully understand all the safety information before you operate, service, or maintain a machine.

2.1 Safety Alert Symbol

Look for this safety alert symbol on the machine and in the machine information.

When you see this symbol, it means:

There is a hazard! Be careful!

Your safety is involved!

The safety alert symbol identifies important safety messages that you need to understand. Safety messages show or tell you about hazards that can or will make you ill, cause you serious injury, or kill you. **Always obey the instructions in a safety message.**

2.2 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 Equipment product. **You** must make sure that you and anyone who uses, maintains, or works around the machine is familiar with the operation and maintenance procedures and related **safety information** in this manual. Obey the safety best practices in this manual when you operate or maintain your machine.

You are responsible for your own safety and the safety of the people around you. Most accidents can be prevented. **Do not ignore safety instructions and best practices.**

2.3 Signal Words

The signal words **DANGER**, **WARNING** and **CAUTION** identify the severity of a hazard to anyone who uses the machine. The applicable signal word for each message is selected based on the following guidelines:

DANGER

Identifies a hazardous situation that, if not avoided, **will** result in serious injury or death. This signal word is used to tell anyone who uses the machine about the most hazardous situations and machine components that cannot be guarded against.

WARNING

Identifies a hazardous situation that, if not avoided, **can** result in serious injury or death. This signal word includes hazards that occur when guards are removed and can be used to tell anyone who uses the machine about unsafe practices.

CAUTION

Identifies a hazardous situation that, if not avoided, **can** result in minor or moderate injury. It can also be used to tell anyone who uses the machine about unsafe practices.

IMPORTANT – Identifies a situation that could result in damage to the machine or property, but is not a personal injury hazard.

☞ Provides additional information that is helpful.

2.4 Safety Rules

⚠ WARNING!

Do not bypass or remove a safety function. Do not operate the machine when a safety function does not work. Safety functions are intended to protect people from hazards that can cause serious injury or death. Keep safety components maintained and in working condition.

W111

⚠ WARNING!

Wear the necessary hearing protection when you operate this machine. Prolonged exposure to loud noise can cause permanent hearing loss.

W016

Wallenstein Equipment puts considerable effort into designing products that are safe to use; however, it is also the responsibility of the operator to use the equipment safely.

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, 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 need assistance, contact your local dealer, the distributor, or Wallenstein Equipment.
- Do not let anyone use this machine until they have read this manual. The operator must have a thorough understanding of the safety precautions and how the machine works. Review the safety instructions with all users annually.
- Operators must be responsible, familiar with, and physically able to use the machine. Each operator must be trained before they use the machine. Before operation, evaluate the physical and/or mental limitations of each operator to make sure that they can use the machine safely. Do not let a child operate the machine.
- Make sure that all users understand the safety labels on the machine before they operate, service, adjust, or clean it. For safety label definitions, see *Safety Label Definitions on page 16*.
- Learn the controls and how to stop the machine quickly in the event of an emergency. For instructions, see *Emergency Stop on page 33*.
- Keep a first-aid kit available and know how to use the contents of it.

- Keep a fire extinguisher available and know how to use it.

- Wear the appropriate PPE when you operate, service, or maintain 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 can 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 can cause permanent, total hearing loss.
- Do not wear loose clothing, jewelry, or loose personal articles. Keep long hair tied up and covered. Loose items can get caught in moving parts and cause injury. Jewelry can ground a live electrical circuit which can cause injury and machine damage.
- Do not consume alcohol or drugs before or during machine operation. Alertness or coordination can be affected. When you take prescription medications, consult your doctor before you operate the machine.
- Only use the machine in daylight or good artificial light.
- Make sure that all guards and shields are installed, and the covers are closed. If removal is necessary for repair, replace them before you use the machine.
- Do not let anyone ride on the machine during transport.
- Keep bystanders a minimum of 10 ft (3 m) from the logs, machine, and firewood piles. Mark the work zone with safety cones.
- Before you start the machine, make sure that the engine and machine are clear of all material.
- Do not touch hot engine parts, the muffler cover, hoses, the engine body, or engine oil during operation or after the engine stops. Contact with hot surfaces can cause burns.

- Be careful when you handle logs and make sure that you know where other people are located.
- Do not push a log through the stabilizer opening by hand. The stabilizer can fall suddenly and cause serious injury. Use the applicable procedure and tools to push or pull a log through the stabilizer opening.

2.5 Equipment Safety Guidelines

Safety is one of the primary concerns in equipment design and development. However, every year there are accidents that can be prevented. Handle equipment carefully and fully understand the hazards. Everyone who works with the equipment must obey the following precautions to avoid hazards.

- Replace safety or instruction labels that are not readable or are missing. For locations and explanations, see *Safety Labels on page 13*.
- Do not modify the equipment in any way. Unapproved modification can result in serious injury or death. In addition, unapproved modification can cause incorrect operation and decrease the life of the machine. Unapproved modification voids the warranty.
- Make sure that the machine is correctly stationed, adjusted, and in good condition.
- Keep the machine free of accumulated grease and debris to prevent fires and machine damage.
- Make sure that the discharged wood chips do not interfere with the safe operation of the machine.
- Look for and avoid overhead hazards (for example; branches, cables, and electrical wires).
- Do not exceed the limitations of the machine. If the machine does not operate normally or you feel unsafe, stop the machine!
- Replace a winch rope that is kinked, too frayed, or that has knots, cuts, or broken strands. Start or stop the winch slowly and smoothly. Sudden movements can damage the winch rope. A synthetic rope that breaks when it is under tension can move fast with dangerous force and cause serious injury or death.

2.6 Safe Condition

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

Before you start any service or maintenance, do the following:

SAFE CONDITION

1. If the machine is connected to a tow vehicle, set the tow vehicle's parking brake, stop the engine, and remove the ignition key.
2. Chock the machine wheels to prevent movement.
3. Remove the winch rope from the log and wind it into the winch.
4. Move the hydraulic controls to neutral and wait for all motion to stop.
5. Stop the chainsaw.
6. Stop the machine.
   For instructions, see *Stop the Machine on page 33*.
7. Disconnect the engine spark-plug wire and keep it away from the spark plug.
8. Move each hydraulic control to release the pressure.
9. Remove all material from the lead-in chute, log-loader chute, splitting cradle, and splitter chute.

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. Use the form on *page 10* to keep a record of the training.

- When someone does not understand the operation of a machine, they can create dangerous situations very quickly. Operators must understand the safety information in this manual and the safety labels that are on the machine.
- The owner has the responsibility to provide instruction to anyone who is going to operate the machine. This machine 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 anyone uses the machine, every operator does the following:
  - Reads and understands this manual.
  - Receives instruction in the safe and correct use of the machine.
  - Understands and knows how to set the machine to a **Safe Condition**. For instructions, see *Safe Condition*.

2.8 Training Record

Everyone who uses this machine must read and fully understand all safety, operation, and maintenance information in this manual. An untrained operator should not use this machine.

Schedule an annual review of machine safety and operation for all operators. The following 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 Record Form

Date	Owner's signature	Operator or technician's signature

2.9 Work Site

⚠ CAUTION!

The operator must be fully familiar with the work site before starting work. It is the operator's responsibility to prevent unsafe situations and make every effort to prevent accidents.

2.9.1 Select a Work Site

Select a safe work area and machine location:

- The ground should be firm and level.
- Make sure that there is a sufficient amount of space and clearance for the operator, the machine, the logs, and the firewood piles.
- Remove all stones, branches, or hidden obstacles that can create a hazard.
- Make sure that there are no overhead hazards such as branches, cables, or electrical wires.

2.9.2 Create a Safe Work Area

Read and obey the instructions for safe operation of the machine. Read and obey the chainsaw manufacturer's instructions and safety information.

Keep bystanders and workers safe from hazards. Obey the following guidelines:

- Use safety cones to identify the work zone perimeter. The work zone perimeter should be a minimum of 10 ft (3 m) away from any hazard in the work zone. The area outside the work zone perimeter is the safe zone.
  For more information, see *Figure 2 on page 12.*
- Do not let people approach the work zone during machine operation. Everyone must signal and make eye contact with the operator before they approach the work zone.
- Do not let workers approach the hazard zone during machine operation. Everyone must signal and make eye contact with the operator before they approach the hazard zone.
- Keep all bystanders in the safe zone. Do not let bystanders in the work zone.
- Only the operator can let people enter the work or hazard zone. The operator must make sure that it is safe for a person to enter the work zone or hazard zone.
- Always operate the machine controls from the operator zone (usually, the operator zone is located at the operator control panel).
- When there are two or more workers, they must agree on a system of hand-signals to use for communication.
- The operator must make eye contact with coworkers and use the agreed system of hand signals. The operator must always be aware of their coworkers and know where they are.
- Be very careful around the logs and firewood piles. Stacked logs and firewood can move without warning.
- Make sure that the firewood pile does not cause interference with the safe operation of the machine.
- The work zone in a forestry operation must be planned, located, constructed, maintained, and operated to make sure that the following are possible:
  - Logs can be moved safely in the work zone.
  - Log stacks and the equipment used to handle the logs do not become unstable or otherwise create a hazard.
  - Workers can work in locations that are clear of moving logs and equipment.
  - Workers are not exposed to incoming or runaway logs, or other debris.
  - The area is kept free from the buildup of bark and other debris to the extent that it would pose a risk to the workers.
  - An effective method of dust control is used and maintained.

A safe work area is divided into four zones:

1. **Safe Zone**
   The safe zone is the area outside the work zone perimeter. All people who are not directly involved with the work can be in this area. There are minimal hazards in the safe zone.
2. **Work Zone**
   The work zone is the area between the hazard zone and the safe zone. People who are helping with the work and wearing the necessary PPE can be in this zone. The operator must know where all the people in the work zone are. The operator must make eye contact with people before they enter the work zone. There are possible hazards in the work zone.
3. **Hazard Zone**
   The hazard zone is the area between the operator zone and the work zone. Only people who are wearing the necessary PPE and are necessary to do the work can be in the hazard zone. Workers who are in the work zone must make eye contact with the operator before they approach or enter the hazard zone. It is possible that there are dangerous safety hazards in the hazard zone.
4. **Operator Zone**
   The operator zone is the area where the operator has to be to operate the machine. Only the operator is permitted to be in the operator zone. The operator must know the location of all the people who are in the hazard zone and the work zone. The operator and people in the work zone or hazard zone must make eye contact before they approach or enter the work or hazard zone.

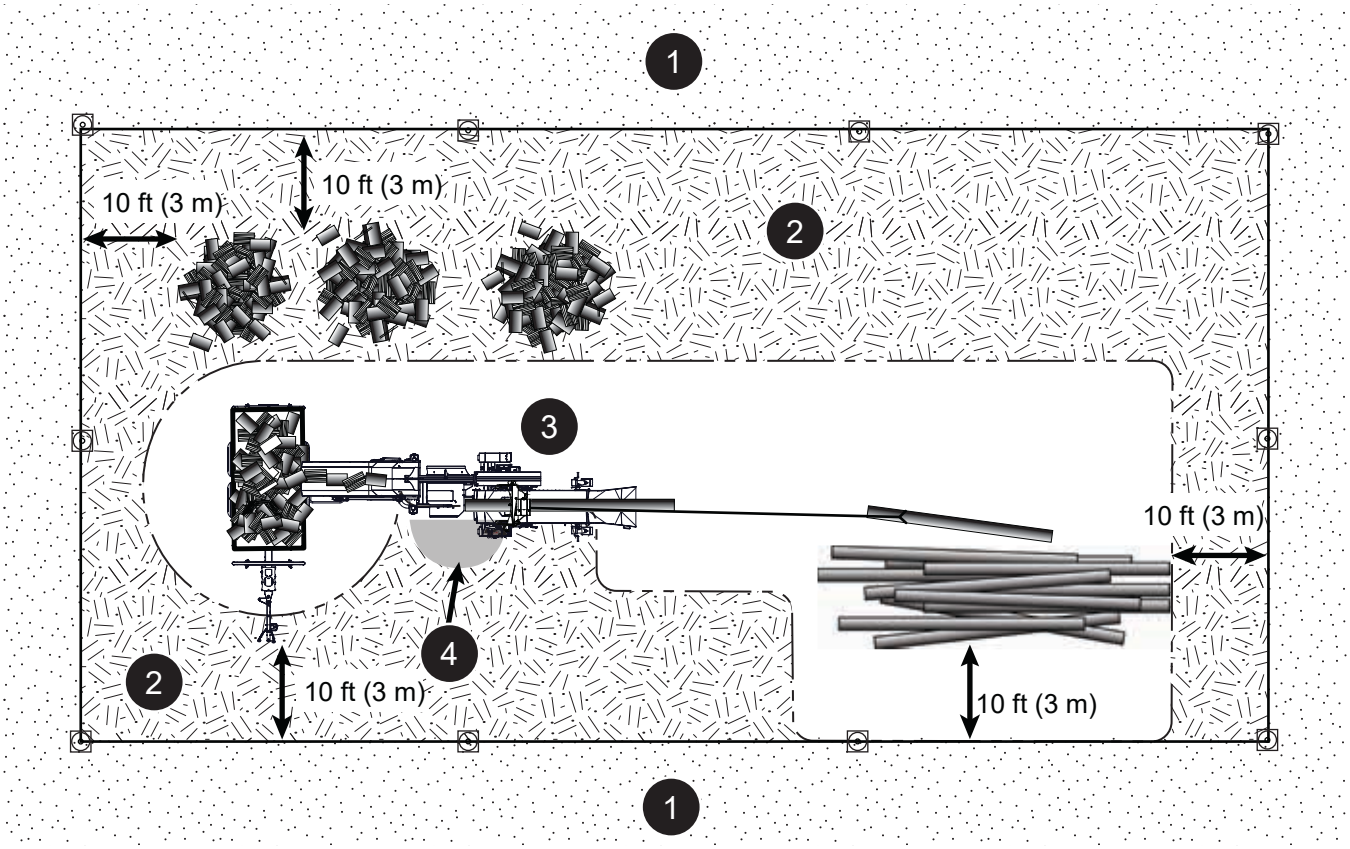


Figure 2–Example layout of a safe work area

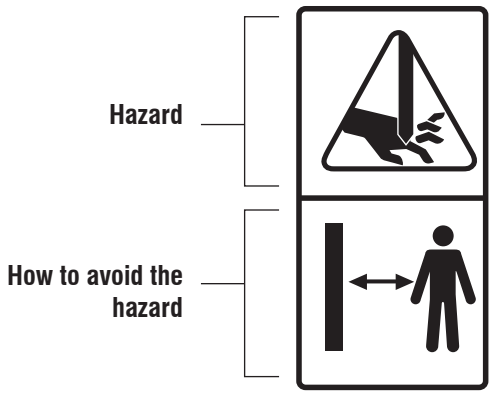
3. Safety Labels

⚠ WARNING!

Replace all safety labels that are missing, damaged, or illegible. If a component is replaced and it has a safety label on it, apply a safety label to the new component. If a person operates a machine with missing, damaged, or illegible safety labels it puts them at risk of serious injury or death.

W100

Learn what the safety labels mean and know the safety hazards. A safety label can be vertical or horizontal. Vertical safety labels have a top panel and a bottom panel. Horizontal safety labels have a left side panel and a right side panel.
The top or left side panel shows the safety alert (possible hazard), and the bottom or right side panel shows the action message (how to prevent illness, injury, or death).



Think SAFETY! Work SAFELY!

3.1 Replace a Safety Label

- Always replace safety labels that are missing or have become illegible. Replacement safety labels are available from your local Wallenstein Equipment dealer or distributor.
- Keep the safety labels clean and legible at all times.
- When a part that has a safety label on it is replaced, the correct safety label must be applied to the replacement part.

3.1.1 Conditions

- 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).

3.1.2 Tool

Use a squeegee, plastic card, or similar tool to smooth out the label.

3.1.3 Procedure

1. Identify the label location.
2. Peel the label off the backing paper.
3. Hold the label above the location where you are going to apply it.
   Align the edges of the label with an edge of the machine.
4. Start at one edge and carefully press the center of the adhesive side of the label onto the machine.
5. Use an appropriate tool to smooth the label. Work from one side to the other.
6. If there are small air pockets:
   a. Use a pin to pierce the air pocket.
   b. Use a piece of the label backing paper to smooth the air pocket.

3.2 Safety Label Locations

The numbers correspond with the *Safety Label Definitions on page 16*.

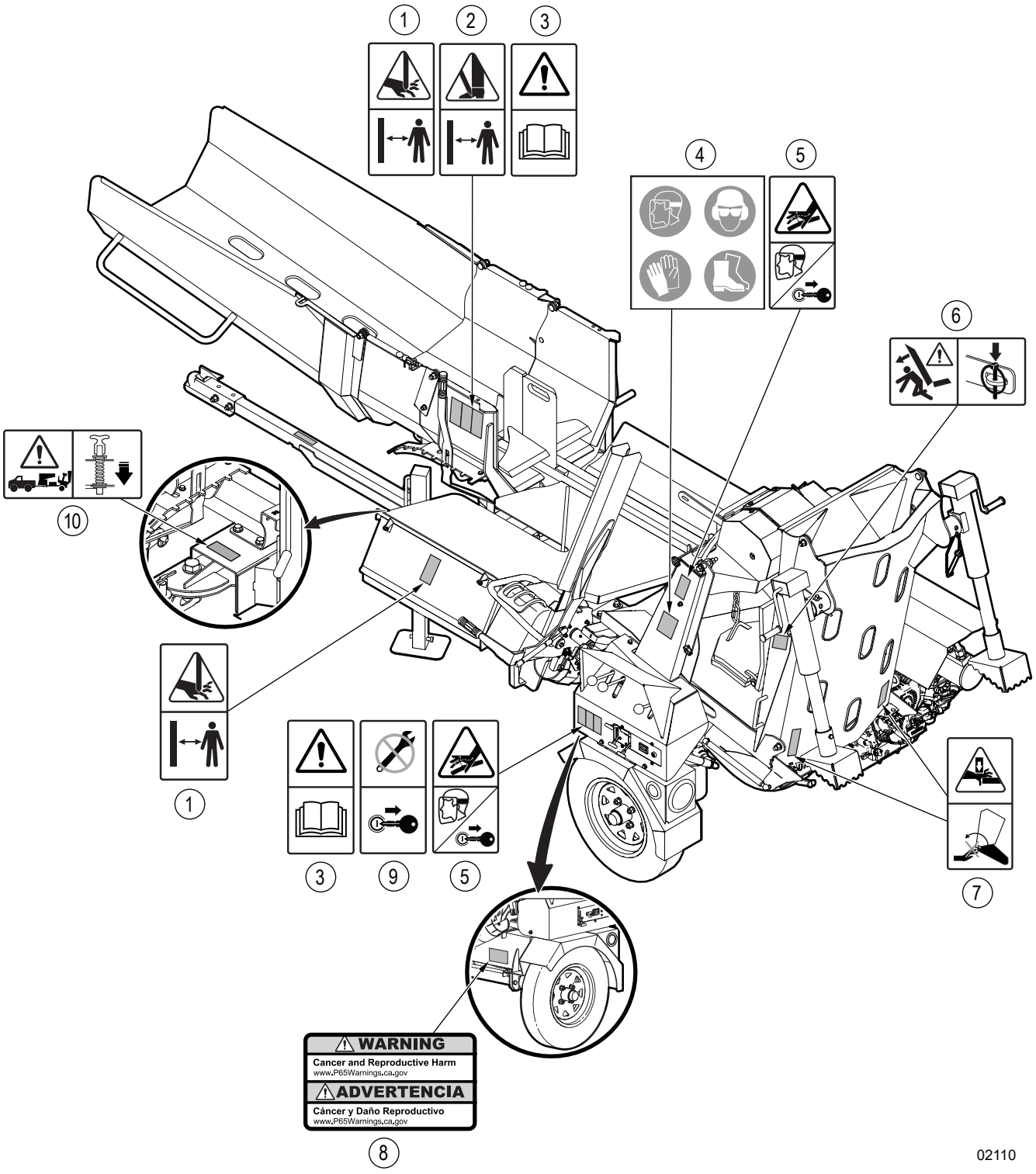


Figure 3– Safety label locations - left side

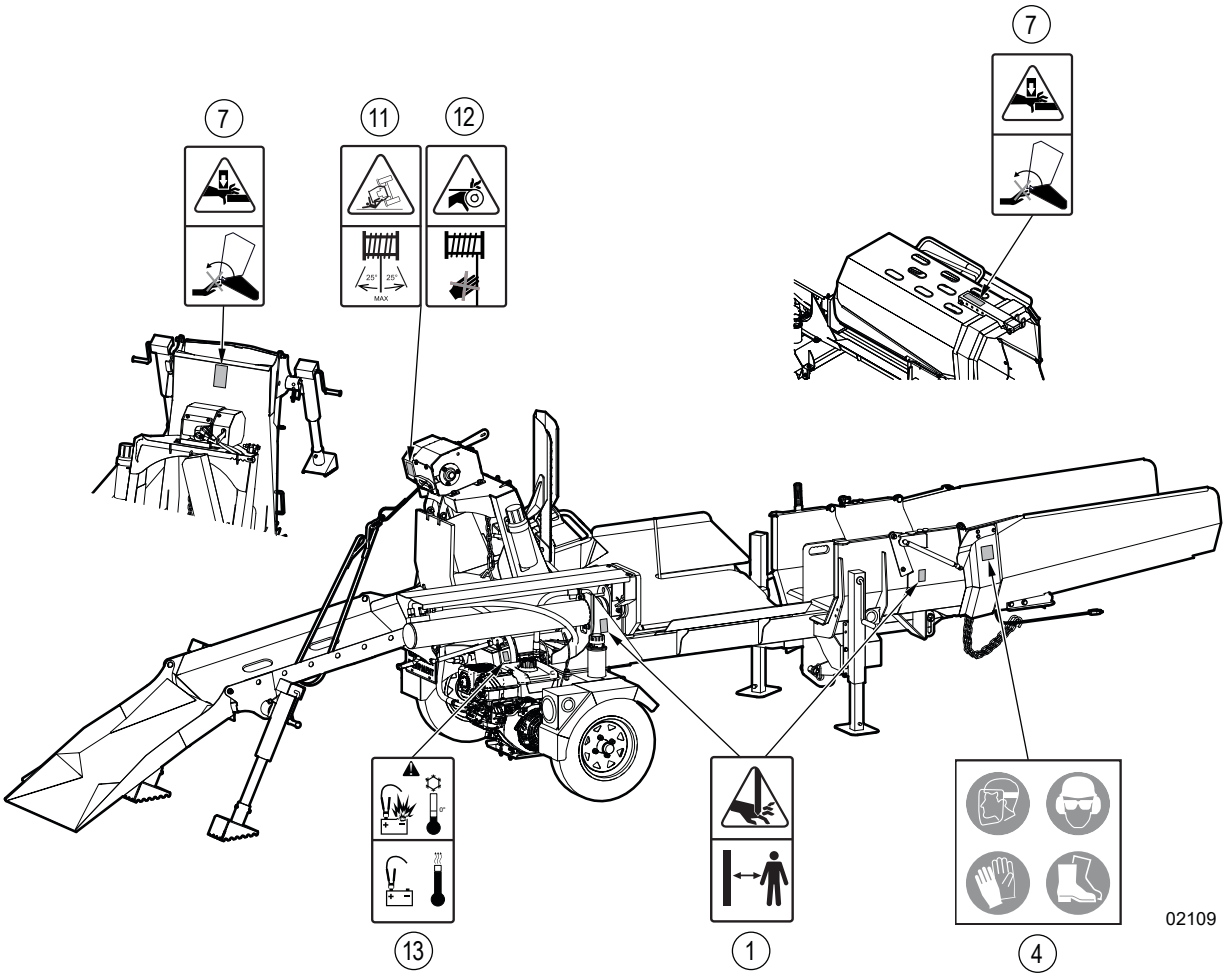


Figure 4–Safety label locations - right side

3.3 Safety Label Definitions

1. Warning!

Crush, cut, or sever hazard

Keep your hands and fingers away from all parts of the machine that move and the logs or firewood.

Wear the appropriate protective gloves. Machine parts and objects that move can cause serious personal injury.

2. Warning!

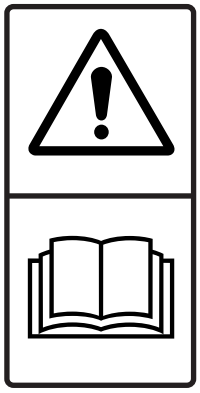
Crush, cut, or sever hazard

Keep your feet away from logs and firewood that can fall off the machine or move unexpectedly.

Always wear steel-toed footwear while the machine is in operation. Objects that move unexpectedly or fall off the machine can cause serious personal injury.

3. Warning!

Read the Operator's Manual



There is important safety information and instructions in the Operator's Manual.

Read all the safety information and instructions in the Operator's Manual. Know what all the safety labels mean.

4. Warning!

Wear the necessary PPE

For example:

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

5. Warning!

High-pressure injection hazard

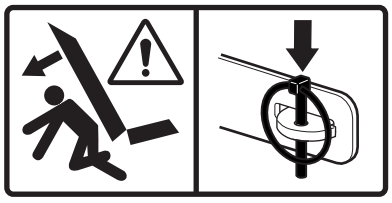
Injection of pressurized hydraulic fluid can cause serious illness, injury, or death.

If you think there is a hydraulic fluid leak, move away from the area. Do not use your hands to inspect for hydraulic fluid leaks. Wear the correct hand and eye protection, and always use a piece of cardboard, wood, or plastic to find a leak.

If hydraulic fluid is injected into the skin, it must be surgically removed within a few hours by a doctor who is familiar with this type of injury, or gangrene can result.

6. Caution!

Impact hazard

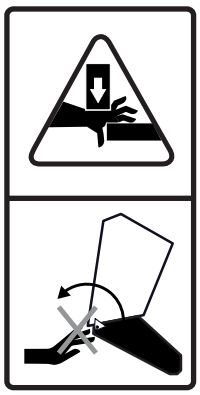


Before you move the machine, make sure that the latch pin is installed.

Unexpected movement can cause personal injury or machine damage.

7. Warning!

Pinch and severe hazard



Be very careful when you fold or unfold a chute. Keep your hands and fingers away from the hinges and space between the parts.

Wear protective gloves and use the handle on the side of the chute.

8. Warning!

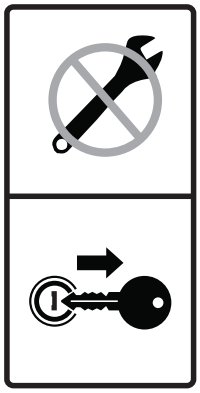
Risk of cancer and reproductive harm

The machine materials contain chemicals or machine operation can 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 a requirement of the state of California, USA to comply with Proposition 65: the Safe Drinking Water and Toxic Enforcement Act of 1986.

9. Warning!

Stop the machine before service or maintenance

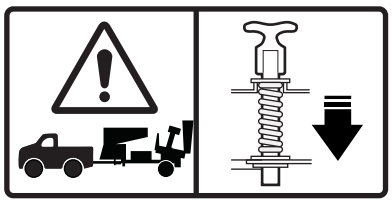


If you do maintenance or service when the machine is not in a safe condition, it can result in serious injury or death.

Stop the engine, remove the key, and disconnect the spark-plug wire before you start service or maintenance procedures.

10. Caution!

Unexpected machine movement



Before you tow the machine, make sure that the pivot-tongue lock pin is fully engaged.

Unexpected machine movement can cause personal injury or machine damage.

11. Warning!

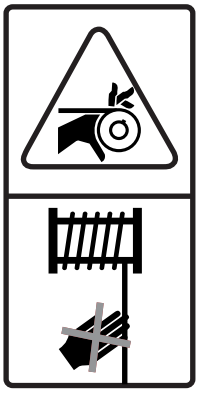
Tip-over hazard

Do not use the winch to pull an object that is at an angle of more than ±25° from the centre of the machine. If the winch is used at an angle greater than 25°, the machine can tip over and cause serious injury or death.

Use a snatch block to pull an object that is at an angle greater than 25° from the centre of the machine.

12. Caution!

Entanglement hazard



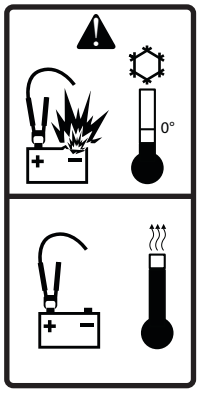
Keep your hands and fingers away from the winch rope when you operate the winch. Your hand or fingers can become entangled in the rope. Entanglement in the rope can cause personal injury.

13. Warning!

Explosion hazard

Trying to charge a frozen battery can cause the battery to explode. An explosion can cause serious injury or death from projectiles, extreme heat, chemicals, and loud noise.

Warm the battery to a minimum temperature of 60 °F (16 °C) before you charge it.



4. Familiarization

The Wallenstein WP800 Series firewood processors are designed to process logs into firewood. To start, pull a log up the lead-in chute, through the log-loader chute, to the log-length guide. Use a chainsaw to cut the log to the set length. The block moves into the splitting cradle. Operate the splitter cylinder control to split the block into firewood. The firewood pushes the previously split firewood up the splitter chute and off the machine. A Vanguard® engine and a hydraulic pump provide power to the machine.

4.1 New Operator

⚠ WARNING!

All operators must understand how to put the machine in a safe condition before they service, maintain, or store the machine. 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 operators before they work with the machine. Obey all safety instructions.

Only a fully trained operator is approved to use the machine. A person who operates the machine without the correct training is a danger to themselves and others, and can cause property damage.

4.2 Training

Each operator must be trained in the correct operating procedures before using the machine. The *Training Record on page 10* can be used to keep a training record.

1. Teach the new operator the control locations, functions, and movement directions.
2. Put the machine in a large open area and let the new operator learn the control functions and machine responses.
3. After the new operator knows and is comfortable with the machine, they can start work.

4.3 Operator Orientation

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

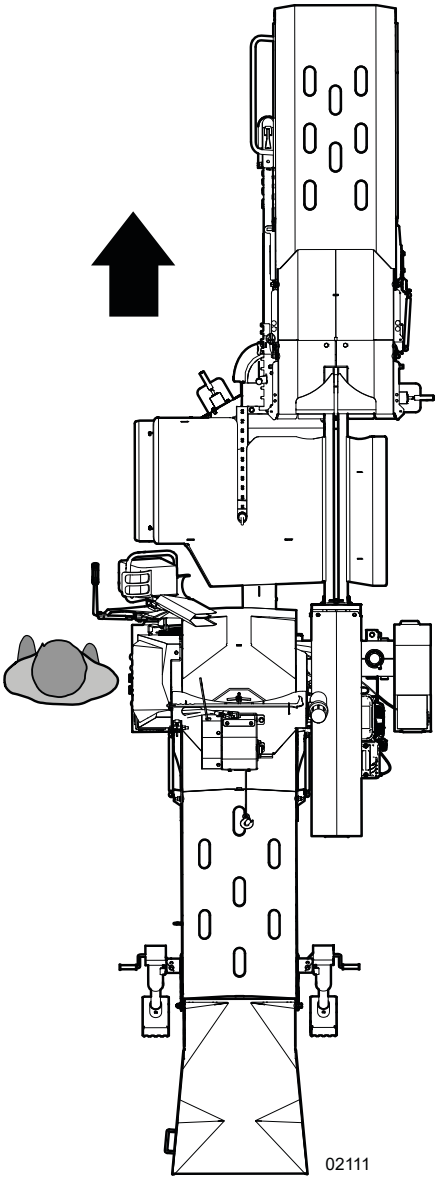


Figure 5–Direction of forward machine travel

4.4 Machine Components

The following illustration shows the WP845. The WP875 has the same components.

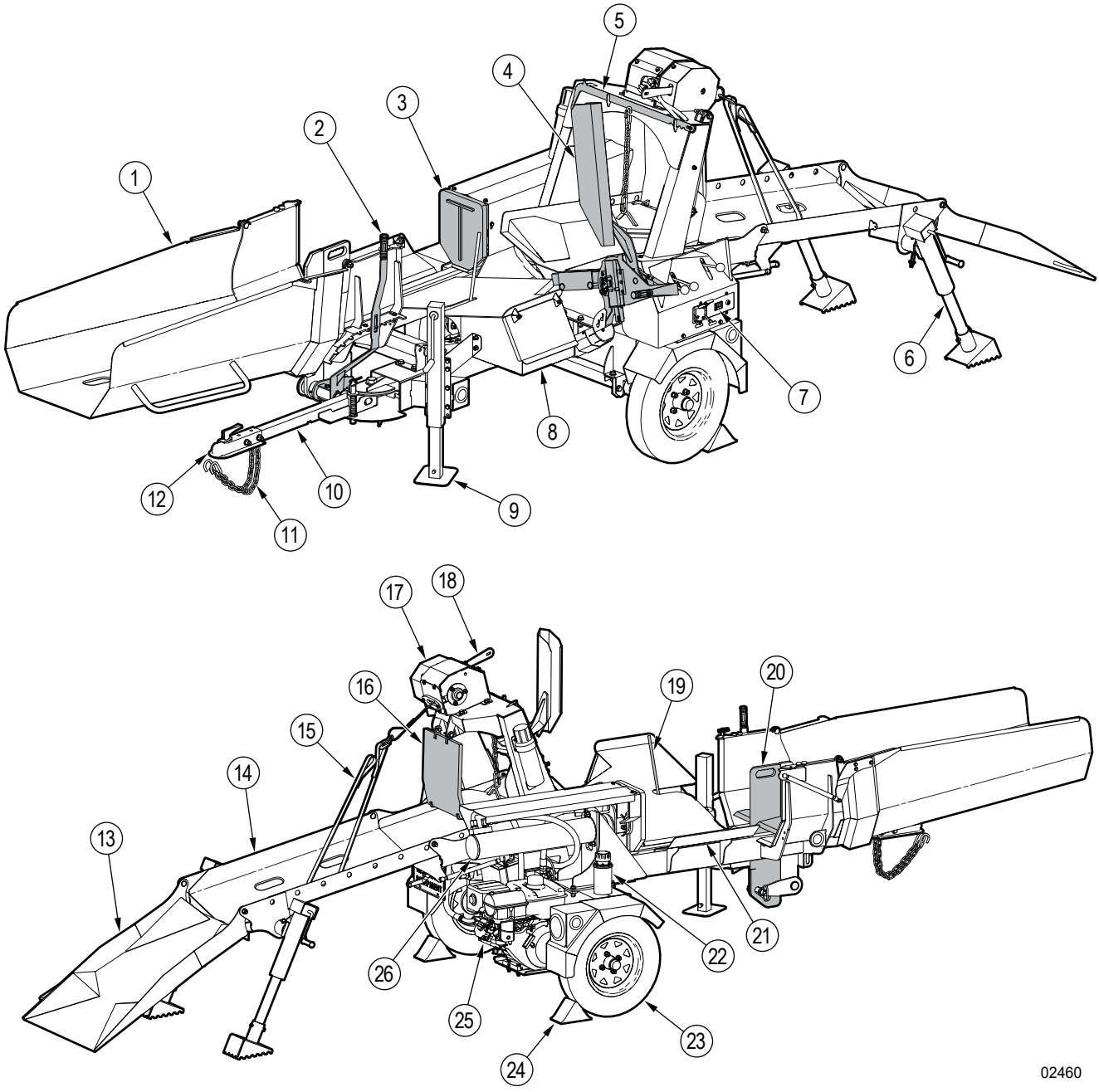


Figure 6–Machine components

1. Splitter chute
2. Wedge-height adjustment lever
3. Push block
4. Chainsaw holder
5. Hookaroon
6. Support jack (1 of 2)
7. Operator control panel
8. Toolbox
9. Trailer jack
10. Pivot trailer tongue
11. Safety chains
12. Ball-mount hitch coupler
13. Lead-in chute
14. Log-loader chute
15. Winch strap
16. Log stabilizer
17. Winch
18. Winch-gear lever
19. Log-length guide
20. Splitting wedge
21. Splitting cradle
22. Hydraulic fluid reservoir
23. Wheel (1 of 2)
24. Wheel chock (1 of 2)
25. Engine
26. Hydraulic splitter cylinder

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

5.1.1 Engine Control Panel

WARNING!

The engine can cause serious bodily harm or death to a person who is not trained in the correct operation. Always remove the key and keep it in a safe location to prevent an unauthorized person from starting the engine.

IMPORTANT! Long start cycles can reduce the life of the starter. Use short start cycles (five seconds maximum) and wait one minute between cycles.

The engine key only starts the engine, it does not stop it.

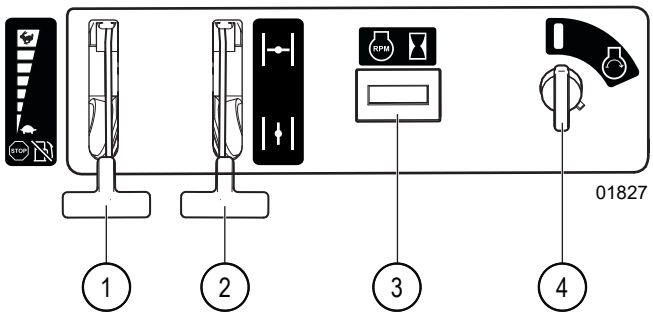


Figure 7–Engine controls

1. Throttle control and fuel shutoff
2. Choke control
3. Hour and rpm meter
4. Ignition switch

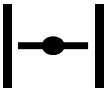
Fast
Engine speed is fast.

Slow
Engine speed is slow.

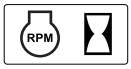
STOP
The engine is stopped.

Fuel shutoff
The fuel-shutoff valve is closed

Open
Open the choke when the engine is warm.



Closed
Close the choke to start a cold engine.



RPM and hours
The display shows the engine rpm or hours of operation. For more information, see *Hour Meter and RPM Display*.

Run
The ignition switch is not in use. The engine can be on or off when the ignition switch is in the **Run** position.

Start
Use the key to turn the ignition switch clockwise to the **Start** position, and start the engine. When the engine starts, immediately release the key. The ignition switch turns counterclockwise to the **Run** position.

5.1.2 Hour Meter and RPM Display

While the engine is on, the hour meter shows the engine revolutions per minute (rpm). When the engine is off, the hour meter shows the total number of hours the engine was on from the time that the engine was new.

The hour meter and rpm display has an internal battery.

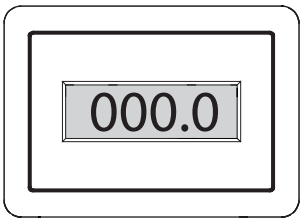


Figure 8–Hour meter and rpm display

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

W102

☞ The rewind-start is the secondary method to start the engine. The primary method to start the engine is to use the ignition switch.

Grip the starter-cord handle, and then pull the starter cord toward you quickly to start the engine.

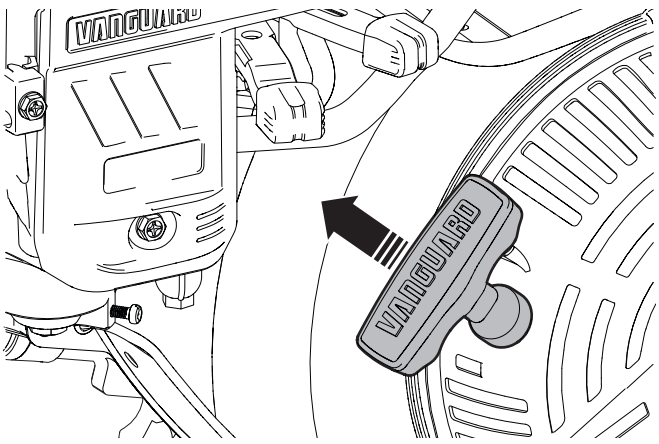


Figure 9–Rewind start

5.2 Hydraulic Controls

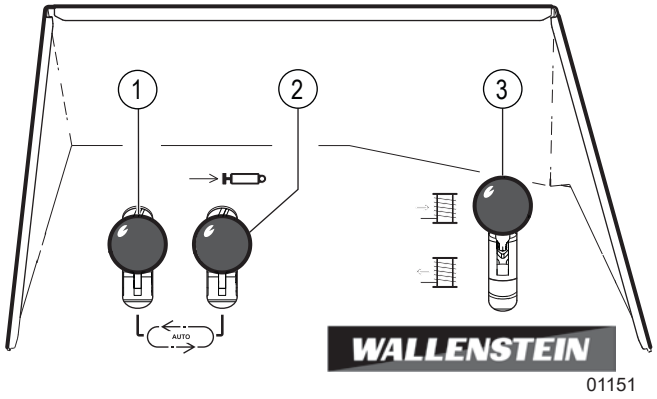


Figure 10–Hydraulic controls

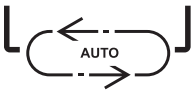
1. Splitter cylinder retract
2. Splitter cylinder extend
3. Winch control

5.2.1 Splitter Cylinder Controls

For more information, see *Figure 10*.

Splitter cylinder extend	Push the lever down (into detent) to extend the push block (this is the first half of the **Auto Cycle** function). When the push block is fully extended, the lever automatically moves to the neutral position and stops the push block. You can pull up and hold the lever to retract the push block.
Splitter cylinder retract	Push the lever down (into detent) to retract the push block (this is the second half of the **Auto Cycle** function). When the push block is fully retracted, the lever automatically moves to the neutral position and stops the push block. The lever has no function in the up position.

5.2.2 Auto Cycle



Push the two splitter cylinder levers down (into detent) to operate the push block automatically. For more information, see *Split Logs on page 48*.

When the machine is in **Auto Cycle**, it does the following:

1. The splitter cylinder extends the push block to split the log.
2. When the push block is fully extended, the **Splitter cylinder extend** lever moves to the neutral position (out of detent).
3. The splitter cylinder starts to retract the push block.
4. When the push block is fully retracted, the **Splitter cylinder retract** lever moves to the neutral position (out of detent) and the push block stops.

5.2.3 Winch Control

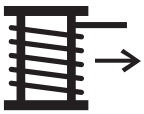
CAUTION!

Stay away from the winch rope when you operate the winch. The winch rope can cause personal injury from entanglement or burns.

W056

The **winch-gear lever** must be in the **Powered** position for the winch control to operate.

For more information, see *Figure 11*.



Unwind
Pull and hold the lever up to unwind the winch rope.
Use the **Unwind** control intermittently and pull the winch rope out of the winch by hand to prevent the rope from getting tangled inside the winch.

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

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

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

5.3 Winch-Gear Lever

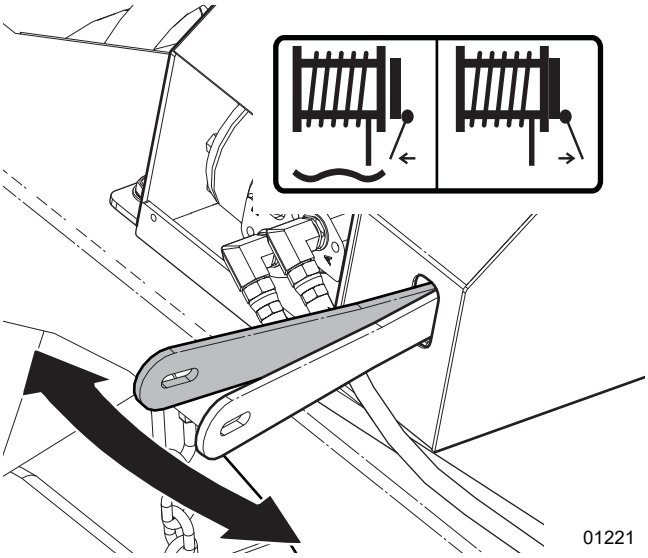
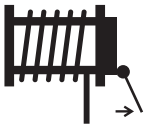


Figure 11 – Winch-gear lever



Powered
Pull the lever to the left side (toward the operator) to engage the winch gear with the hydraulic motor.

The winch control is enabled and can control the winch operation.

Freewheel
Push the lever to the right side (away from the operator) to disengage the winch gear from the hydraulic motor.

Pull out the winch rope by hand. The winch spool turns freely. The winch control is disabled and does not control the winch operation.

5.4 Splitting-Wedge Height Adjustment

The splitting-wedge height adjustment lever moves the splitting wedge up or down. Align the horizontal part of the splitting wedge with the centre of the log.

For instructions, see *Set the Splitting-Wedge Height on page 38.*

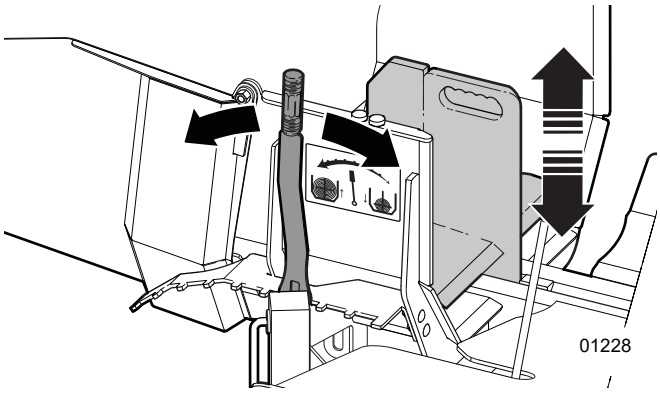
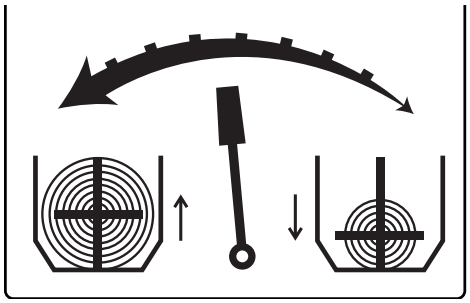
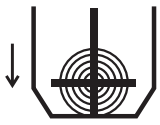


Figure 12–Splitting-wedge height adjustment



High
Move the lever toward the **High** position to lift the splitting wedge.



Low
Move the lever toward the **Low** setting to lower the splitting wedge.

5.5 Log-length Guide

The log-length guide is located on the left side of the splitting cradle. The operator can select the necessary log length.

The log-length guide can be set to one of the following lengths:

- **14** in (37 cm)
- **16** in (41 cm)
- **18** in (46 cm)
- **20** in (51 cm)
- **22** in (56 cm)
- **24** in (61 cm)

For instructions, see *Set the Log-length Guide on page 39*.

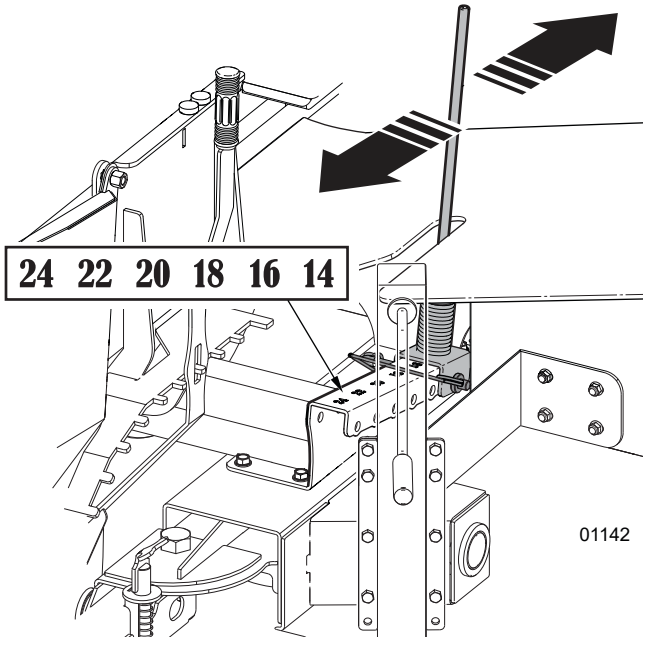


Figure 13–Log-length guide

6. Operating Instructions

The operator is responsible to be familiar with and obey all operating and safety procedures. Read and understand all the safety information in this manual before you operate the machine.

6.1 Operating Safety

WARNING!

Wear the personal protective equipment (PPE) that is necessary to do 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

- Read and understand this manual before you start the machine. Review all safety information annually.
- Read the chainsaw and engine manufacturer's manuals and obey all safety instructions.
- Park the machine in a clear location on dry, level ground. Do not operate the machine on a hillside or area that is cluttered, wet, muddy, or icy to prevent slips, trips, and falls.
  For more information, see *Work Site on page 11*.
- Keep the work area clean and free of debris.
- Only operate the engine in a location that has good air flow. Engine exhaust gases contain carbon monoxide (an odorless gas) that can cause asphyxiation.
- Attach all guards and shields, and close all covers before you start the machine.
- Do not move or transport the machine when the engine is on.
- Stop the engine before you leave the machine unattended.
- Do not stand, sit, or climb on any part of the machine, especially while the engine is on.
- Do not operate the machine alone. Always have a minimum of two trained people:
  - There should be one operator and one spotter present during machine operation. The operator and spotter must know all the machine safety, controls, and operating functions.
  - The operator must be in control of the machine at all times. The spotter must stay outside of the hazard zone while the machine operates.
- Keep bystanders a minimum of 10 ft (3 m) from the machine, log pile, winch path, and firewood pile. Mark the safe zone with safety cones.
- Remove branches from the logs before you put them into the machine.
- Do not put more than one log into the machine at one time. A second log can move unexpectedly and cause personal injury.
- Do not put your hand into the splitting area while the machine is operating. Use a hookaroon or peavey to move a log or firewood that is in the splitting cradle.
- Do not split logs across the grain. Logs can break into small pieces that become projectiles and cause personal injury.
- Be careful when you pull logs from a pile. The logs can move when you attach a winch rope or while you winch them. Use a hookaroon or peavey to move logs.
- Keep your hands, feet, clothing, and long hair away from the machine, winch rope, and logs during operation.

6.2 Pre-Start Checklist

Do the following before you start the machine the first time and every time after that:

Task	✓
Read and obey the *Operating Safety on page 25, Engine Operation Safety on page 27,* and *Fuel Safety on page 28*.	
Check the engine fuel level. If necessary, add fuel. For instructions, see *Check the Engine Fuel Level on page 29*.	
Check the engine oil level. If necessary, add oil. For instructions, see *Check the Engine Oil Level on page 30*.	
Check the hydraulic fluid level. If necessary, add hydraulic fluid. For instructions, *Check the Hydraulic Fluid Level on page 31*.	
Check the engine air filter. For instructions, see *Clean the Engine Air Filter on page 63*. If necessary, clean or replace the filter.	
Check the condition of the battery and electrical components. Make sure that all of the electrical components are in good condition and the connectors are connected. Replace damaged or corroded electrical components.	
Make sure that the winch operates correctly. If necessary, repair or replace the winch.	
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 log chain) is in good condition. Replace the winch strap if it is torn or damaged.	
Make sure that the machine is lubricated, as specified in the *Maintenance Schedule on page 59*.	
Use a safe method to check the hydraulic hoses and fittings for leaks. If necessary, tighten the fittings or replace the components. Move a hose if it is pinched or rubs on something. For more information, see *Hydraulic Fitting Torque on page 69*.	
Remove anything that is entangled on the machine. For example, branches or vines.	
Make sure that the splitting wedge and push block are in good condition. Examine them for damage, broken components, and too much wear. If necessary, lubricate, repair, or replace the components.	
Make sure that all guards and shields are installed, and the covers are closed. If necessary, replace the guards, shields, or covers.	
Make sure that all the fasteners are installed and torqued to the correct specifications. For more information, see *Bolt Torque on page 68*.	
Check the tire air pressure, and the wheels, hubs, and axle. See the side of the tire for the correct air pressure.	
Make sure that the operator and spotter are wearing the necessary PPE. 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 *Work Site on page 11*.	

6.3 Machine Break-In

Before, during, and after the first 20 hours of operation, do the following tasks.

Before First Use

1. Read and understand all the safety information in this manual, the engine manufacturer's manual, and the chainsaw manufacturer's manual.
2. Review the *Machine Components on page 20*.
3. Review the operation and function of the *Controls on page 21*.
4. Do the tasks in the *Pre-Start Checklist*.

After Five Hours of Operation

- Make sure that all the fasteners are installed and torqued to the correct specifications. For more information, see *Bolt Torque on page 68*.
- Check the hydraulic system for leaks. Use a safe method to examine the hydraulic system for leaks. If necessary, tighten fittings or replace components. For more information, see *Hydraulic Fitting Torque on page 69*.
- Check the engine fuel level. If necessary, add fuel. For instructions, see *Check the Engine Fuel Level on page 29*.
- Change the engine oil. For instructions, see the engine manufacturer's manual.
- Check the hydraulic fluid level. If necessary, add hydraulic fluid. For instructions, see *Check the Hydraulic Fluid Level on page 31*.
- Make sure that all the electrical components are in good condition and the connectors are connected.
- Check the condition of the winch. If necessary, repair the winch.
- Check the condition of the winch rope. Replace the rope if it is cut, knotted, worn, or has any broken strands.
- Remove anything that is entangled on the machine. For example, branches or vines.
- Lubricate all the grease fittings. For more information, see *Grease Points on page 60*.

After 20 Hours of Operation

1. Do each of the following:
   - Make sure that all the fasteners are installed and torqued to the correct specifications. For more information, see *Bolt Torque on page 68*.
   - Check the hydraulic system for leaks. Use a safe method to examine the hydraulic system for leaks. If necessary, tighten fittings or replace components. For more information, see *Hydraulic Fitting Torque on page 69*.
   - Check the engine fuel level. If necessary, add fuel. For instructions, see *Check the Engine Fuel Level on page 29*.
   - Check the engine oil level. For instructions, see *Check the Engine Oil Level on page 30*.
   - Check the hydraulic fluid level. If necessary, add hydraulic fluid. For instructions, see *Check the Hydraulic Fluid Level on page 31*.
   - Check the condition of the winch. If necessary, repair the winch.
   - Check the condition of the winch rope. Replace the rope if it is cut, knotted, worn, or has any broken strands.
   - Remove anything that is entangled on the machine. For example, branches or vines.
   - Lubricate all the grease fittings. For more information, see *Grease Points on page 60.*
2. Continue with the regular *Maintenance Schedule on page 59*.

6.4 Engine Operation

CAUTION!

Before you start the engine, read the safety, operating, and maintenance instructions in the engine manual.

W019

6.4.1 Engine Operation Safety

WARNING!

Do not 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!

Keep the end of a disconnected battery cable away from the battery. Electricity can arc from the battery to the end of a battery cable and cause the battery to explode. An explosion can cause serious injury or death from heat, impact, and chemical hazards.

W115

CAUTION!

Use a spark arrestor in areas where the forest, brush, or grass is dry to prevent forest fires. Check your local forest fire regulations and forest fire danger rating before you start the machine.

W114

IMPORTANT! In some regions, when an engine is used on any forest covered, brush covered, or grass covered unimproved land it is necessary by law to have a spark arrestor installed on the muffler. A spark arrestor traps exhaust particles that are expelled from the engine. It is the responsibility of the operator to comply with the local laws and regulations. To purchase a spark arrestor, contact your local Wallenstein dealer or distributor.

- Keep the cylinder fins and engine shrouds free of debris to prevent the engine from overheating.
- Keep the engine free of wood chips and other debris that can affect the engine speed.
- Use fresh fuel (less than three months old). Stale fuel creates deposits that cause the carburetor to be blocked and leak.
- Check the fuel lines and fittings on a regular basis for cracks or leaks. Replace damaged fuel lines or fittings if necessary.
- Store fuel away from all wood material.
- Only operate the engine in a location that has good air flow. Engine exhaust gases contain carbon monoxide (an odorless gas) that can cause asphyxiation.
- Do not put your hands or feet near moving parts.
- Do not check for a spark with the spark plug or spark plug wire removed.
- Do not close the choke to stop the engine. When it is possible, gradually reduce the engine speed before you stop the engine.
- Do not try 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 to start the engine again.
- Do not hit the flywheel with a hard object or metal tool. This can 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 can cause burns. Wait for the machine to cool. Use a no-touch thermometer to measure the temperature.
- 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 operate the engine in the following situations:
  - When there is an accumulation of wood chips, dirt, or other combustible materials in the muffler area.
  - In an area where there is a fuel spill. Move the machine away from the spill until the fuel evaporates. Make sure that are no sources of ignition in the area of the fuel spill.
  - With the air filter or air filter cover removed. This can damage the engine.
  - Without a muffler or heat shield. Examine the muffler and heat shield on a regular basis. Replace a muffler or heat shield that is damaged.

6.4.2 Fuel Safety

⚠ WARNING!

Do not smoke or vape when you handle fuel. Fuel vapours can explode causing serious injury or death. Keep sparks, flames, or hot components away from fuel.

W027

⚠ WARNING!

Fuel and vapors are very 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.

W116

⚠ CAUTION!

Fuel vapors are very toxic. If you breathe fuel vapors, it 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.

W117

- Engine fuel is highly flammable. Handle it carefully.
- Stop the engine and let it cool before you add fuel to the tank.
- Do not overfill the fuel tank.
- Carefully remove any spilled fuel, and then wait until any remaining fuel dries before you start the engine.
- After you add fuel to the tank, make sure that the fuel cap is tight.

6.4.3 Check the Engine Fuel Level

Check the engine fuel level before each use.

Start work with a full fuel tank to decrease interruptions during operation. Do not let the fuel tank become empty.

1. Park the machine on level ground.
2. Stop the machine.
   For instructions, see *Stop the Machine on page 33*.
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. Do one of the following:
   - If the fuel level is sufficient, install the fuel cap and make sure that it is tight.
   - If the fuel level is not sufficient, add fuel to the tank.
     For instructions, see *Add Fuel to the Engine*.

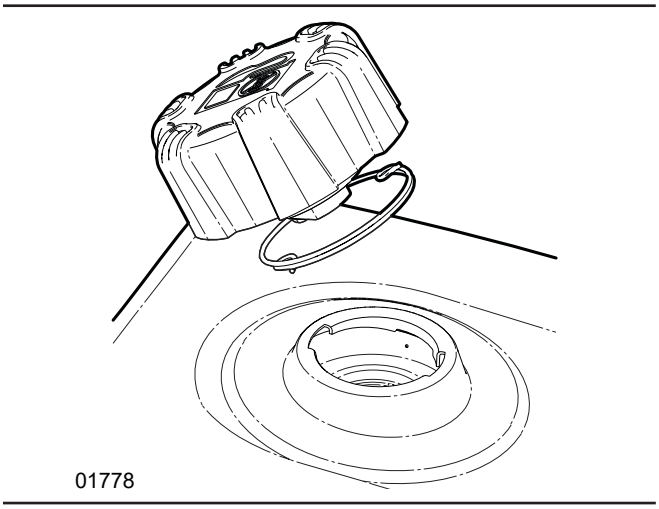


Figure 14–Fuel cap

6.4.4 Add Fuel to the Engine

The engine needs 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 58*.

For information about the fuel that is necessary for engine use at high altitudes, see the engine manufacturer's manual.

Fuel tank capacity: **1.59 US gal (6 L).**

1. Stop the machine.
   For instructions, see *Stop the Machine on page 33*.
2. Wait a minimum of five minutes for the engine to cool.
3. Clean the area around the fuel cap.
4. Turn the fuel cap counterclockwise to remove it.
5. Use a clean funnel to add the correct type and amount of fuel to the tank. Add fuel until the fuel level is visible 1/2 inch (12 mm) below the filler neck. Leave room for expansion. **Do not overfill the tank.**
6. Carefully remove any spilled fuel, and then wait until any remaining fuel dries before you start the engine.
7. Install the fuel cap and make sure that it is tight.

6.4.5 Check the Engine Oil Level

IMPORTANT! For more information about engine oil, see the engine manufacturer's manual and *Engine Oil on page 58*.

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 33*.
3. Remove the oil-level dipstick and clean it.
4. Fully insert the oil-level dipstick.
5. Remove the oil-level dipstick and check the oil level.
   The oil level is correct when the 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, *Add Oil to the Engine*.
7. Install the oil-level dipstick and make sure that it is tight.

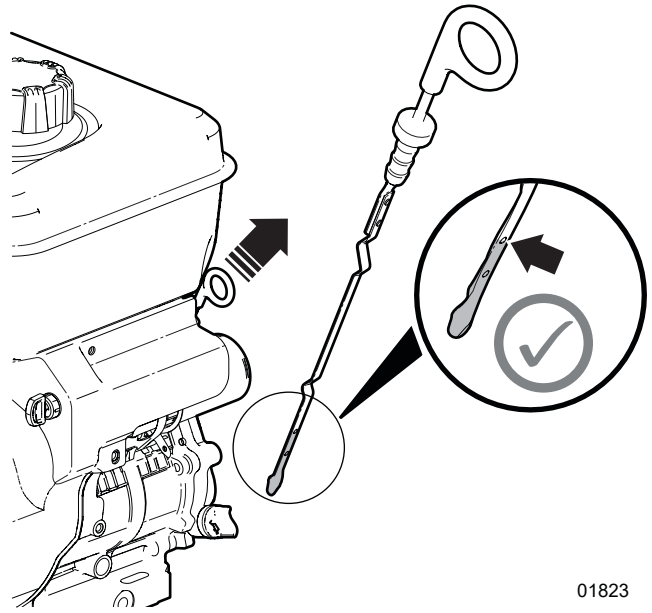


Figure 15– Check the engine oil level

6.4.6 Add Oil to the Engine

IMPORTANT! For more information about engine oil, see the engine manufacturer's manual and *Engine Oil on page 58*.

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 the 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 the oil-fill cap and make sure that it is tight.

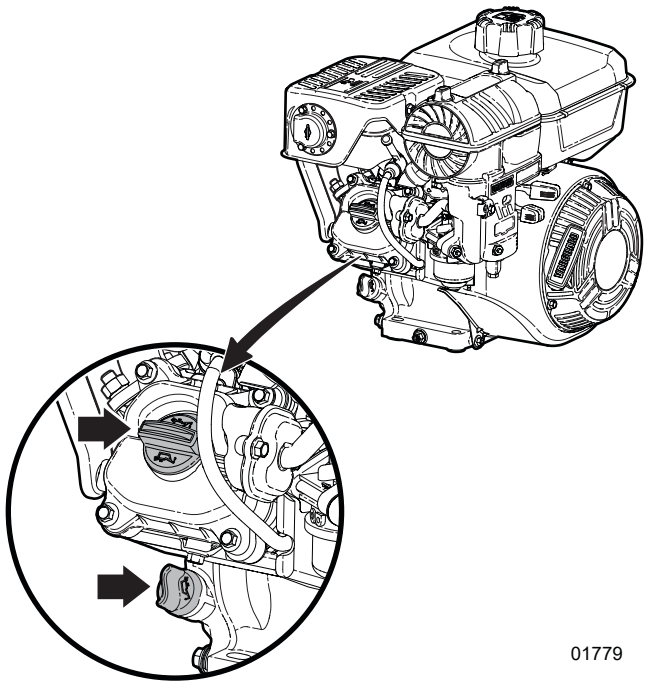


Figure 16– Engine oil-fill locations

6.5 Hydraulic System Operation

IMPORTANT! Check 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.

A hydraulic system is a closed-loop system that uses pressurized hydraulic fluid to control the winch and the push block.

For more information, see *Hydraulic System Maintenance Safety on page 62*.

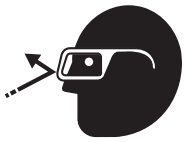
6.5.1 Hydraulic System Operation Safety

IMPORTANT! Optimal hydraulic fluid temperatures are between 120° F and 140° F (50° C and 60° C). If the hydraulic fluid temperature is higher than 180° F (82° C), it can cause seal damage and degrade the hydraulic fluid. High hydraulic fluid temperatures often indicate that there is a problem.

For more information, see *Hydraulic System Maintenance Safety on page 62*.

- Keep all hydraulic system components clean and in good condition.
- Immediately replace a hydraulic hose or tube that shows signs of swelling, wear, leaks, or damage. A swollen, worn, damaged, or leaking hose or tube can burst and cause a hazardous and unsafe condition.
  For more information, see *Hydraulic Hose Specifications on page 67*.
- High-pressure hydraulic fluid leaks:
  - Do not use your hand to check for hydraulic fluid leaks. Injection of pressurized hydraulic fluid can cause serious illness, injury, or death. Put on heavy gloves and use a piece of cardboard, wood, or plastic to check for leaks.

  - Put on the correct eye protection when doing an inspection for a high-pressure hydraulic leak.



  - Get medical attention immediately if you are injured by a concentrated high-pressure stream of hydraulic fluid. Serious infection or a toxic reaction can occur after hydraulic fluid pierces the skin.
- Do not bend or hit high-pressure hydraulic hoses.
- Do not adjust a pressure relief valve or other pressure-limiting device to a pressure that is greater 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 motor and other components can occur.

Do not fill the hydraulic-fluid reservoir higher than the top of the hydraulic-fluid level sight glass.

Check the hydraulic fluid level before each use, after changing the filter, and after servicing hydraulic components.

The hydraulic-fluid level sight glass is on the hydraulic-fluid reservoir.

1. Park the machine on level ground.
2. Look at the hydraulic fluid sight glass.
   The hydraulic fluid reservoir is full when the hydraulic fluid fills the bottom half of the sight glass.
3. If the hydraulic fluid level is low, add hydraulic fluid to the reservoir.
   For instructions, see *Add Hydraulic Fluid to the Reservoir*.

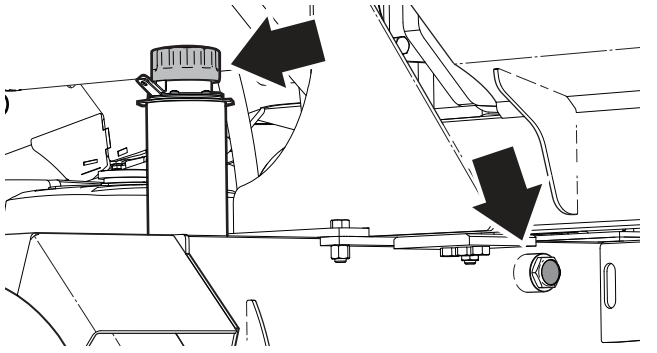


Figure 17–Hydraulic fluid reservoir sight glass and fill cap

6.5.3 Add Hydraulic Fluid to the Reservoir

IMPORTANT! Do not fill the hydraulic-fluid reservoir higher than the top of the hydraulic-fluid level sight glass.

For more information, see *Hydraulic Fluid on page 58*.

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 31*.
2. Set the machine to a safe condition.
   For instructions, see *Safe Condition on page 9*.
3. Clean the area around the fill cap.
4. Remove the fill cap.
5. Use a clean funnel to add hydraulic fluid to the reservoir until the fluid fills the bottom half of the sight glass.
   Do not overfill the reservoir.
6. Remove the funnel.
7. Install the fill cap and make sure that it is tight.
8. Clean the area around the fill cap and remove any spilled fluid.

6.6 Start the Machine

⚠ WARNING!

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

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

W102

IMPORTANT! Do not hold the ignition switch key in the start position for more than five seconds. Wait a minimum of one minute before you try to start the engine again.

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 21* and *Engine Operation Safety on page 27*.

1. Do the tasks in the *Pre-Start Checklist on page 26.*
2. Set up the machine.
   For instructions, see *Set Up the Machine on page 34*.
   Make sure that the machine is 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.
   If the engine is warm, the choke can be moved to the **Open** position.
5. Move the throttle control to the **Fast** position.
6. Start the engine. Do one of the following:
   - **Electric start** – insert the key, and then turn the ignition switch to the **Start** position until the engine starts or for a maximum of five seconds.
     If the engine does not start, release the key. Wait for a minimum of one minute before you try again.
   - **Rewind start** – firmly grip the starter-cord handle, pull the starter cord slowly until you feel resistance, and then pull it rapidly.
7. Do one of the following:
   - If the engine starts, continue with Step 8.
   - If the engine does not start, wait a minimum of one minute, and then do step 6 again.
8. As the engine warms up, move the choke control to the **Open** position.

6.7 Stop the Machine

IMPORTANT! Do not use the choke to stop the engine. Using the choke to stop the engine can damage the engine.

The ignition switch does not stop the engine, it only starts the engine.

1. Stop all machine operation.
   Stop the winch and do not cut or split logs.
2. Move the hydraulic controls to the neutral position (out of detent).
3. Move the throttle control to the **Stop** position to stop the engine and close the fuel shut-off valve.
4. Move each hydraulic control two or three times to release the hydraulic system pressure.

6.8 Emergency Stop

In an emergency:

1. Move the hydraulic controls to the neutral position (out of detent).
2. Move the throttle control to the **Stop** position to stop the engine and close the fuel shut-off valve.
3. Remove the key and keep it with you.
   Do not let anyone start the machine until the emergency is resolved.

6.9 Process Logs into Firewood

IMPORTANT! At regular intervals during operation, check the support jacks to make sure that the bases are set in the ground. The support jacks must support the weight of the log-loader chute to prevent machine damage.

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 34*.
2. Start the machine.
   For instructions, see *Start the Machine on page 32*.
3. Use the winch to move a log into the machine and position it at the log-length guide.
   For instructions, see the following:
   - *Operate the Winch on page 41.*
   - *Position the First Log on page 44.*
   - *Position the Next Log on page 49.*
   - *Position the Last Log on page 49.*
4. Use the chainsaw to cut the log. The cut section of the log falls into the splitting cradle.
   For instructions, see *Cut a Log on page 47*.
5. Split the cut log.
   For instructions, see *Split Logs on page 48*.
6. While the push block automatically returns to the start position, do step 3 again.
7. After the push block is in the start position, do steps 4 to 6 again.
   Continue this process until you make the necessary quantity of firewood.

6.10 Set Up the Machine

⚠ WARNING!

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

For more information, see *Figure 32 on page 35*.

1. Select a work site and set up a safe work area.
   For more information, see *Work Site on page 11*.
2. Disconnect the machine from the tow vehicle.
   For instructions, see *Disconnect from a Ball-Mount Hitch on page 53*.
   Make sure that the wheel chocks are behind the machine wheels to prevent movement.
3. Adjust the trailer jack to make the machine level.
   For instructions, see *Lower the Trailer Jack on page 54*.
4. Unfold the lead-in and log-loader chutes.
   For instructions, see *Unfold the Lead-In and Log-Loader Chutes on page 36*.
5. Unfold the splitter chute.
   For instructions, see *Unfold the Splitter Chute on page 37*.
6. Set the splitter chute to the correct height.
   For instructions, see *Set the Splitter-Chute Height on page 37*.
7. Adjust the support jacks until the bases are set firmly in the ground and they support the log-loader chute.
   Make sure that the bottom edge of the lead-in chute is level with and touches the ground to prevent logs from getting caught on the bottom of the chute.
8. Check the log stabilizer and chain to make sure that the log stabilizer moves freely.
   The log stabilizer keeps the log in position.
9. Do one of the following:
   For trailer tongue instructions, see *Turn the Trailer Tongue on page 38*.
   - Put a wagon, trailer, or conveyor under the end of the splitter chute to collect the firewood. If necessary, move the trailer tongue.
   - Move the trailer tongue to the side and prevent it from being buried in the firewood pile.
10. Attach a chainsaw to the chainsaw holder.
    For instructions, see *Attach a Chainsaw to the Holder on page 39*.

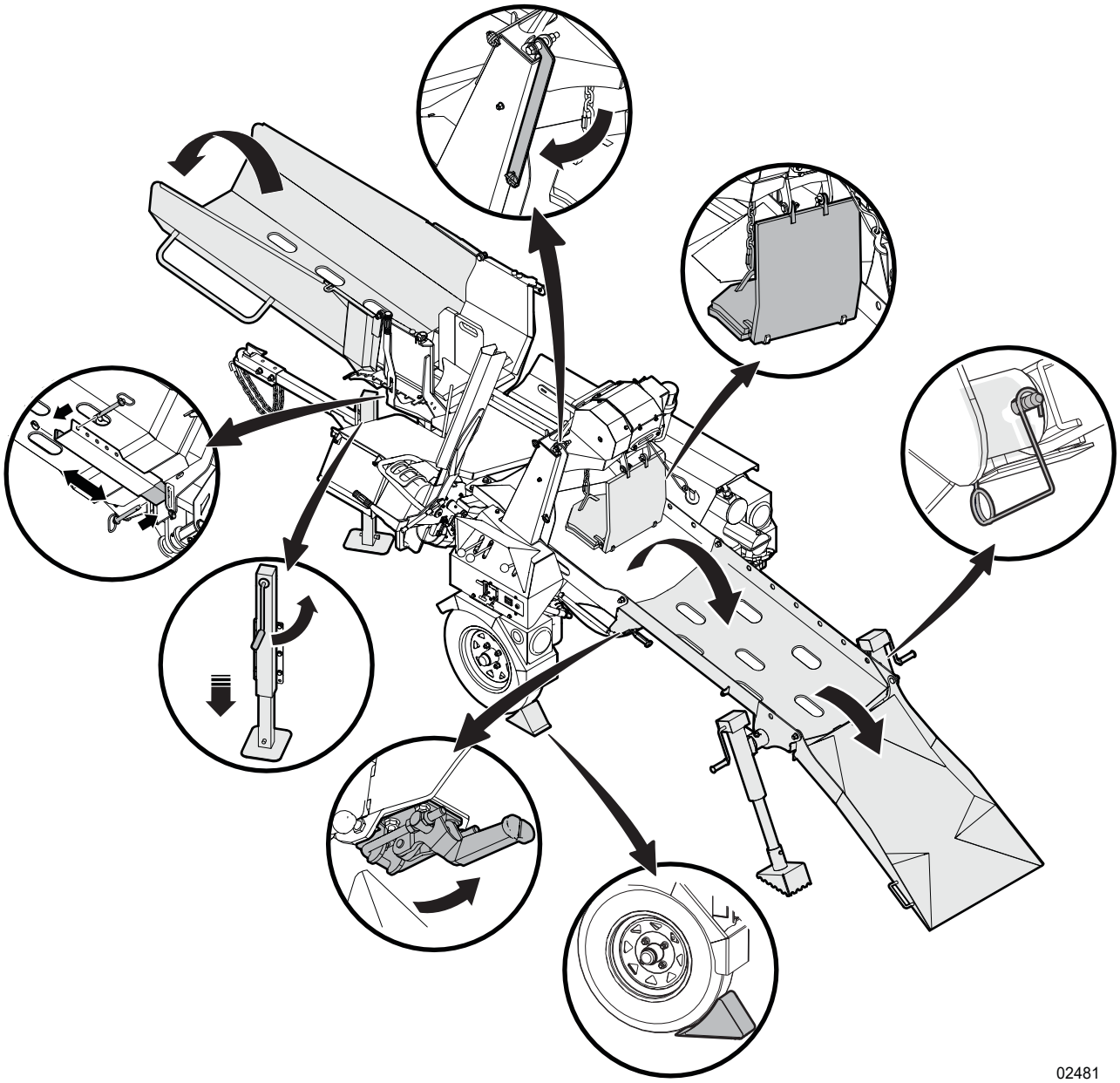


Figure 32– Machine setup (WP845 shown)

6.10.1 Unfold the Lead-In and Log-Loader Chutes

1. Extend the support jacks. See *Figure 18*.
   On each support jack:
   a. Remove the snapper pin.
   b. Lift the support jack to the extended position.
   c. Install the snapper pin to keep the support jack in position.
2. Hold the log-loader chute to keep it from falling, while you disconnect the latch bar (see *Figure 19*):
   a. On the left side of the log-loader chute, remove the linchpin from the log-loader chute latch tab.
   b. Remove the latch bar from the log-loader chute latch tab.
   c. Move the latch bar to the machine frame and put the latch tab through the slot in the latch bar.
   d. Install the linchpin through the machine frame latch tab to keep the latch bar in position.
3. Carefully, unfold the log-loader and lead-in chutes. Make sure that the support jacks are on the ground.

   Close the two toggle-clamp latches to connect the log-loader chute to the machine frame.
   The toggle-clamp latches are located on the bottom of the log-loader chute. See *Figure 20*.
   On each side of the log-loader chute:
   a. Pull the toggle-clamp handle to open the latch.
   b. Put the latch bar over the catch plate on the machine frame.
   c. Push the toggle-clamp handle to close the latch.
4. Use the handle to unfold the lead-in chute. See *Figure 21 on page 36*.
5. Adjust the support jacks until the bases are set in the ground and they fully support the log-loader chute. Make sure that the bottom edge of the lead-in chute is level with and touches the ground to prevent logs from getting caught.

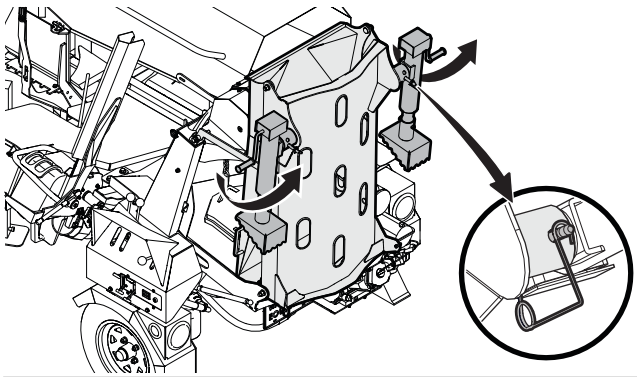


Figure 18 – Extend the support jacks

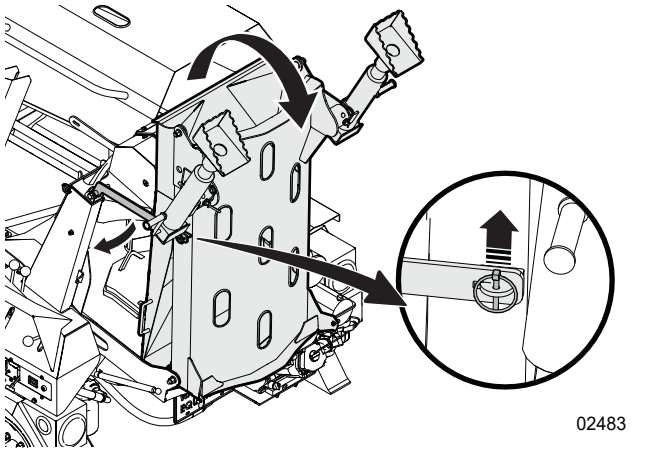


Figure 19 – Disconnect the bar latch and unfold the log-loader and lead-in chutes

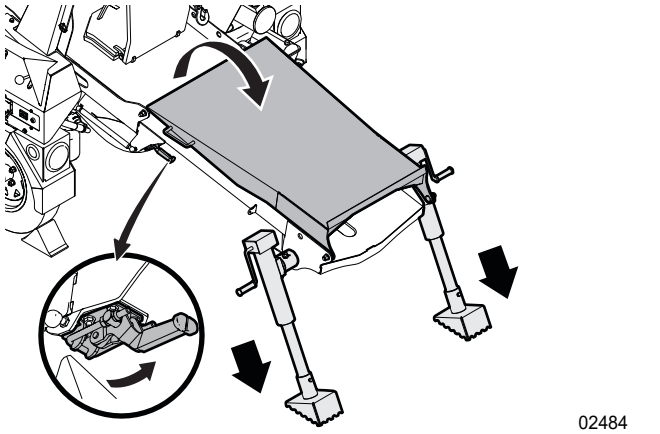


Figure 20 – Close the toggle-clamp latches and unfold the lead-in chute

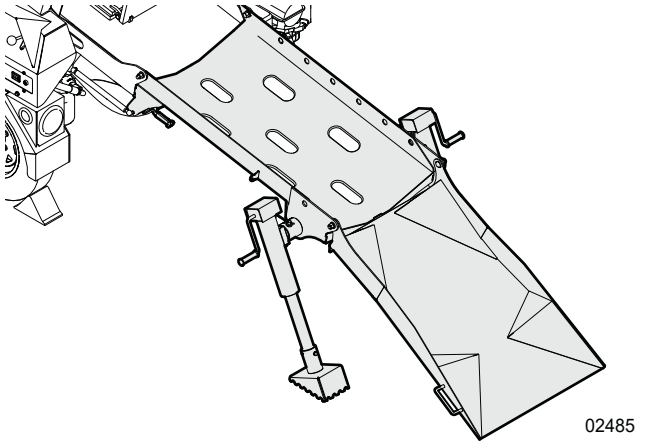


Figure 21 – The log-loader and lead-in chutes unfolded

6.10.2 Unfold the Splitter Chute

1. On the bottom of the splitting cradle, remove the hitch pin and linchpin from the bracket.
2. On the left side of the splitter chute, remove the linchpin from the latch tab. See *Figure 22 on page 37*.
3. Carefully, use the handle to unfold the splitter chute. Make sure that the square tube on the bottom of the splitter chute goes into the splitting-cradle bracket.
4. Put the linchpin from step 2 through the tab you removed it from.
5. Install the hitch pin from step 1 through the splitter chute and splitting cradle bracket. Put the linchpin through the hitch pin. See *Figure 23*.
6. Set the splitter-chute height. For instructions, see *Set the Splitter-Chute Height on page 37*.

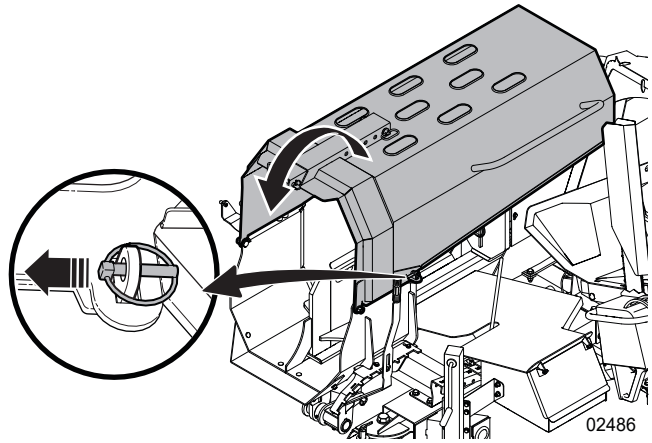


Figure 22 – Splitter chute linchpin and latch tab

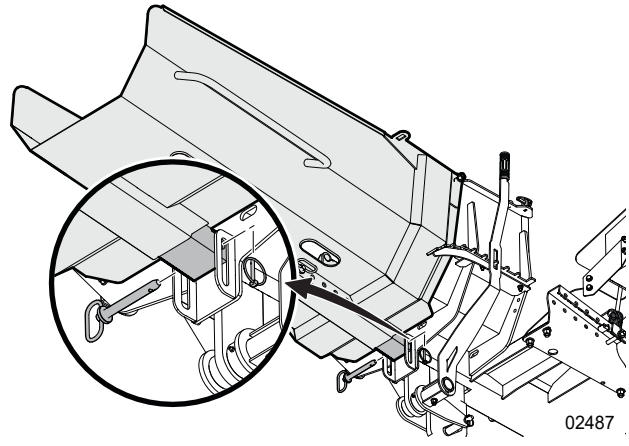


Figure 23 – Install the hitch pin through the splitter chute and splitting cradle bracket

6.10.3 Set the Splitter-Chute Height

The front of the splitter chute can be set to a maximum height of 54" (1.37 m).

Adjust the splitter-chute height to put the firewood where you want it to go. For example, onto a conveyor or into a trailer with high sides.

1. Slightly lift the splitter chute to take the pressure off the splitting-cradle bracket.
2. Remove the linchpin from the hitch pin, and then remove the hitch pin from the splitting-cradle bracket and splitter chute.
3. Use the handle to move the splitter chute to the necessary height. Align the holes in the splitter chute with the holes in the splitting-cradle bracket.
4. Put the hitch pin through the splitting-cradle bracket and the splitter chute.
5. Put the linchpin through the hitch pin to make the splitter chute safe. Make sure that the splitter chute cannot move.

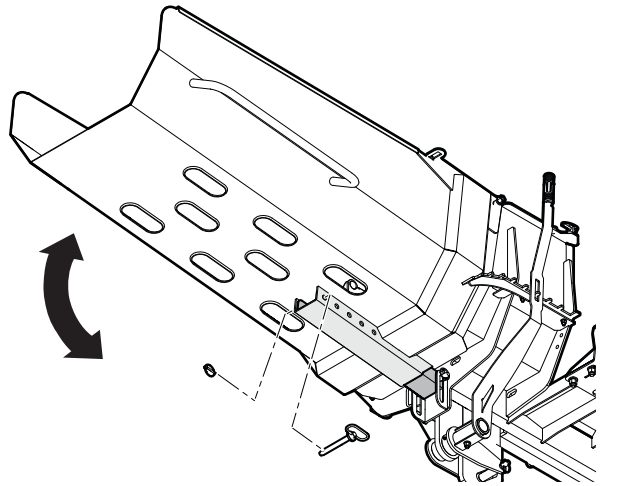


Figure 24 – Set the splitter-chute height

6.11 Turn the Trailer Tongue

The trailer tongue has a two-inch ball-mount hitch coupler and can turn to the left side.

When the firewood pile is on the ground in front of the machine, it can block access to the hitch coupler. When it is necessary, move the trailer tongue to the side to connect the machine to a tow vehicle.

1. Lift the trailer tongue latch pin.
   Make sure that the latch and the area around the latch are clear.
2. Turn the trailer tongue to the necessary position.

When you move the tow vehicle forward, the machine turns to align with the trailer tongue. When the machine frame and trailer tongue align, the pivot-latch pin engages with the hole in the latch. For transport safety and instructions, see *Transport on page 50*.

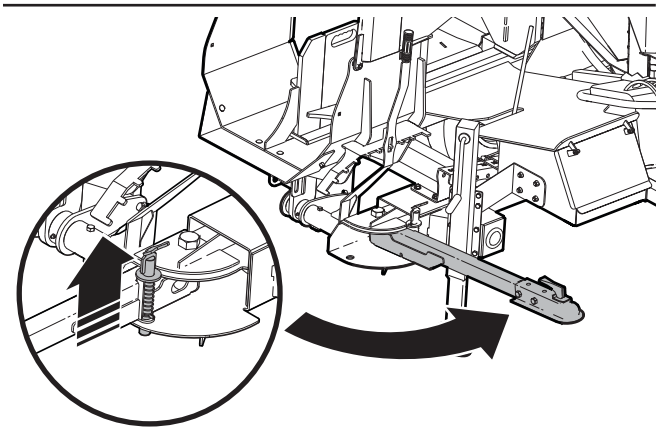


Figure 25– Turn the trailer tongue

6.11.1 Set the Splitting-Wedge Height

Set the splitting wedge to the height that is necessary to split the log into even pieces.

The maximum log diameter is 22" (56 cm).

Log size	Type of split	Splitting wedge position
Large	Four-way	Align the splitting wedge with the centre of the log.
Small	Two-way	Move the splitting wedge to the lowest position.

For more information, see *Splitting-Wedge Height Adjustment on page 24*.

1. Carefully, use the handle to pull the bar off the cog and hold it.
2. Move the bar to set the splitting wedge to the necessary height.
3. Carefully, release the handle and engage the hole in the bar with the nearest cog.

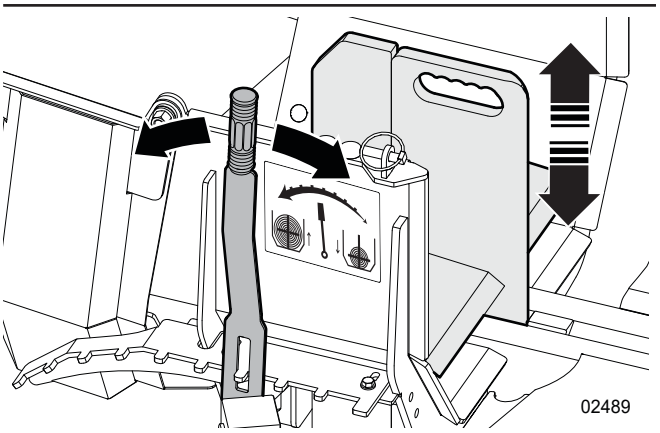


Figure 26– Set the splitting-wedge height

6.11.2 Set the Log-length Guide

Set the log-length guide to cut logs that are the same length each time. The log-length guide can be set to one of the following lengths:

- 14" (36 cm)
- 16" (41 cm)
- 18" (46 cm)
- 20" (51 cm)
- 22" (56 cm)
- 24" (61 cm)

Each length is shown on top of the guide rail.

1. Remove the snap-lock pin.
2. Move the guide to the necessary position on the guide rail.
3. Insert the snap-lock pin to keep the guide in position.

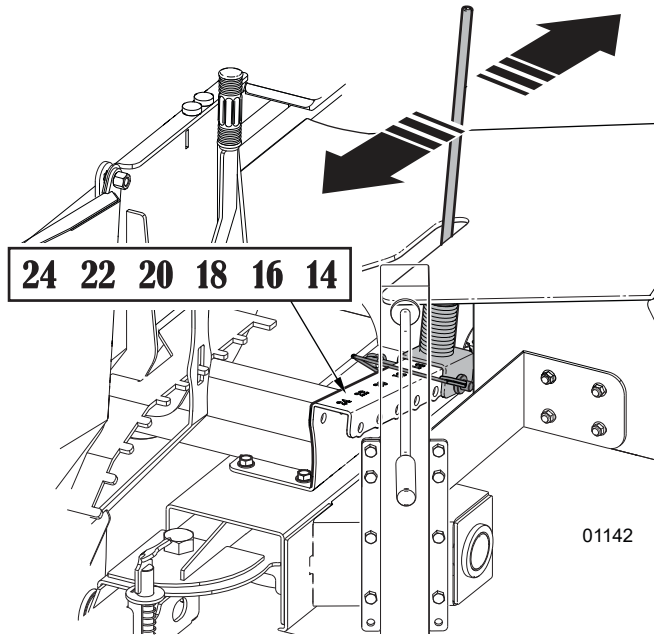


Figure 27 – Set the log-length guide

6.11.3 Attach a Chainsaw to the Holder

⚠ WARNING!

Before you start this procedure, read the safety information and operating procedures in the chainsaw manufacturer's manual.

⚠ WARNING!

Do not attach a chainsaw that has a bar longer than 30 inches (75 cm) to the chainsaw holder. If you use a chainsaw with a bar that is too long, the chain can touch the push block or splitter-cylinder rod and cause a projectile hazard. Projectiles can cause serious personal injury or machine damage.

IMPORTANT! The chainsaw must have two bar studs to install a chainsaw adapter. If the chainsaw sprocket cover has captive bar nuts, remove the captive bar nuts. If necessary, install the bushing spacers.

☞ A chainsaw with a bar that is between 22 and 24 inch (56 and 61 cm) in length is the recommended size for this machine.

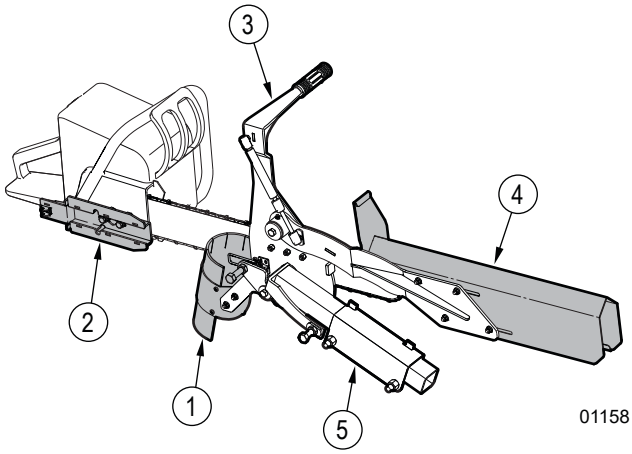


Figure 28 – Chainsaw holder

1. Debris chute
2. Universal chainsaw adapter
3. Handle
4. Chain guard
5. Pivot base

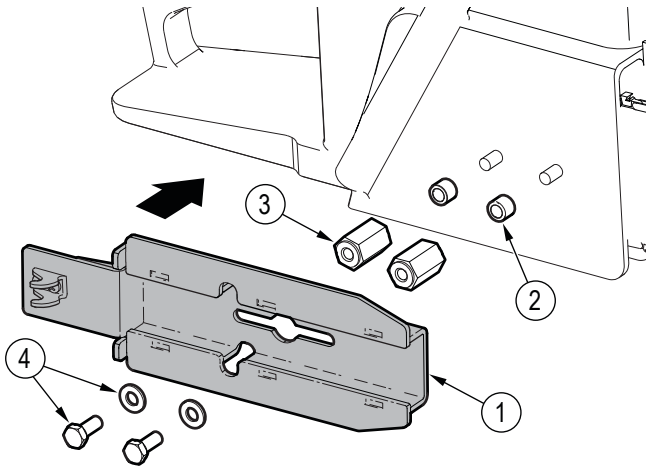


Figure 29–Install a chainsaw adapter

1. Chainsaw adapter
2. Bushing spacers
3. Bar-stud mount
4. Bolt and washer

Make sure that the chainsaw is **off** during this procedure.

1. Remove the bar-stud nuts from your chainsaw.
2. Do one of the following:
   - If your chainsaw does not have captive guide-bar nuts that hold the chain-sprocket cover, go to step 5.
   - If your chainsaw has captive guide-bar nuts that hold the chain-sprocket cover, continue with the following steps.
3. Remove the captive guide-bar nuts.
4. Do one of the following:
   - If there is space between the holes in the cover and the bar studs, install a bushing spacer on each bar stud.
   - If there is no space between the holes in the cover and the bar studs, do not install the bushing spacers. They are not necessary.
5. Install a bar-stud mount on each bar stud.
6. Install the chainsaw adapter over the bar-stud mounts.
7. Install a bolt with a washer in each bar-stud mount.
8. Open the chainsaw holder latch.
   For more information, see *Figure 31*.
9. Put the chainsaw in the holder.
   Make sure that the chainsaw adapter is in the chainsaw holder guides.
   For more information, see *Figure 30*.
10. Close the chainsaw holder latch to keep the chainsaw attached to the holder.
    Make sure that the latch bar is over the catch on the chainsaw adapter.
    For more information, see *Figure 31*.
11. Lift the chainsaw holder handle and move the chainsaw through the full range of motion.
    If necessary, adjust the pivot base (based on the chainsaw bar length).
12. Examine the chainsaw range of motion.
    Make sure that the chainsaw chain and bar cannot touch any part of the machine. If necessary, remove the chainsaw from the holder, and then adjust the chainsaw adapter position.

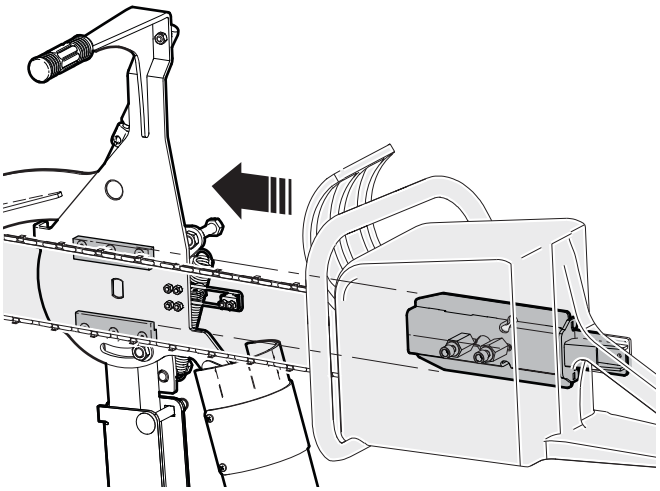


Figure 30–Put the chainsaw into the chainsaw holder

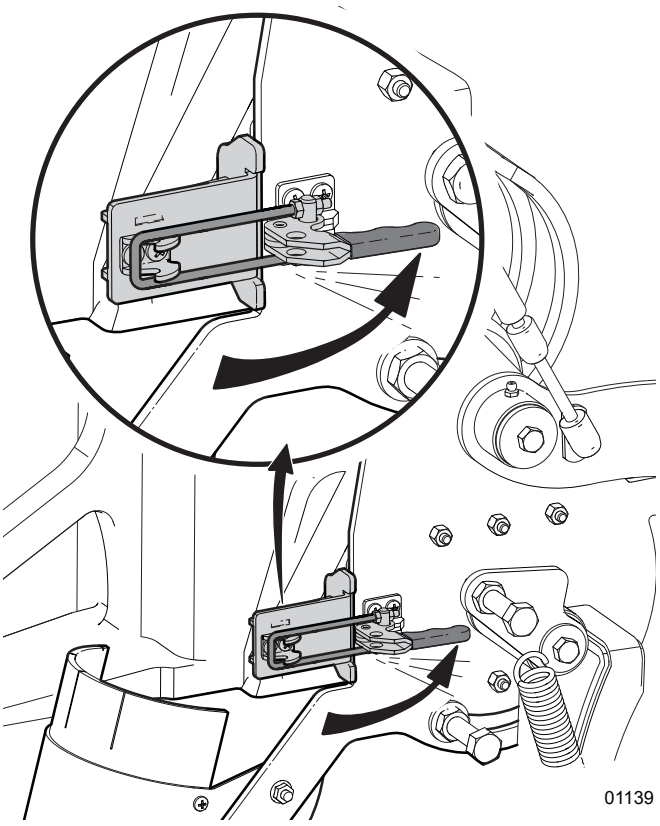


Figure 31–Holder draw latch

6.12 Operate the Winch

Use the winch to pull logs into the machine for processing.

6.12.1 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!

Start or stop the winch slowly and smoothly. Sudden movements can damage the winch rope. A synthetic rope that breaks when it is under tension can move fast with dangerous force and cause serious injury or death. Replace a winch rope that is kinked, too frayed, or that has knots, cuts, or broken strands.

W095

⚠ WARNING!

Only use a synthetic winch rope that complies with the Wallenstein Equipment specifications. If you use a winch rope that does not comply with the specifications, the winch rope can break and cause serious injury or death. Use of a winch rope that is not approved immediately voids the machine warranty.

⚠ WARNING!

Keep all bystanders in the safe zone during winch operation. The logs and winch rope create hazards that can cause serious injury or death.

W055

⚠ CAUTION!

Stay away from the winch rope when you operate the winch. The winch rope can cause personal injury from entanglement or burns.

W056

- Do not stand in line with the path of a winch rope that is under tension. If the rope breaks under tension, it can snap back in an unpredictable direction with great force. The recoil can cause injury or death to a person who is in its path.
- Keep your hands away from the winch rope, hook loop, hook, and fairlead opening during operation and when you wind or unwind the winch rope. Do not touch the winch rope or hook while the winch rope is under tension or has a load attached to it.
- Always use the winch strap or a log chain to attach the winch rope to a log. The winch rope can be damaged if it is dragged under a log when a winch strap or log chain is not used.
- Always make sure that the anchor you select can hold the load and the winch strap or log chain cannot slip.
- Do not engage or disengage the winch gear if the winch rope is under load, the winch rope is under tension, or the winch drum is moving.
- Before you use the winch, make sure that the jack stands are stable and the machine is supported in a level position.
- Do not pull a log across or down a slope; always pull the log up a slope. If you pull a log across or down a slope, it can roll and create an impact or crush hazard.
- Before you start the machine, examine the winch rope. If the winch rope is knotted, has broken strands, or has kinks, it can break during operation. If the winch rope is damaged, replace it.
- Do not let anyone within 10 ft (3 m) of the logs that are being pulled. Logs can roll in unpredictable ways.
- Apply tension to the winch rope when you wind it onto the winch drum. Without tension, the winch rope does not wind correctly.
- Always be aware of hazards when you pull and move logs. Examine the work zone for the following hazards:
  - Objects that are in the path of the pulled logs.
  - Structures that are close to or in the work zone.
  - Slopes or hills that are in the path of the pulled logs.

- Do not pull logs at an angle greater than ±25° from the centre of the machine. If you are not sure what the angle between the log and the centre of the machine is, move the machine or use a snatch block (self-releasing pulley). Always try to align the log with the center of the machine.

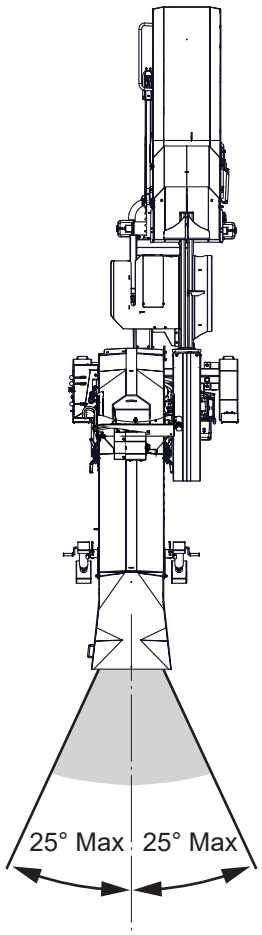


Figure 33–Safe pull angle

- When you use a snatch block (self-releasing pulley), you create a hazardous zone between the log, the snatch block, and the machine. Keep people out of the hazardous zone. People in the hazardous zone can be seriously injured or killed.

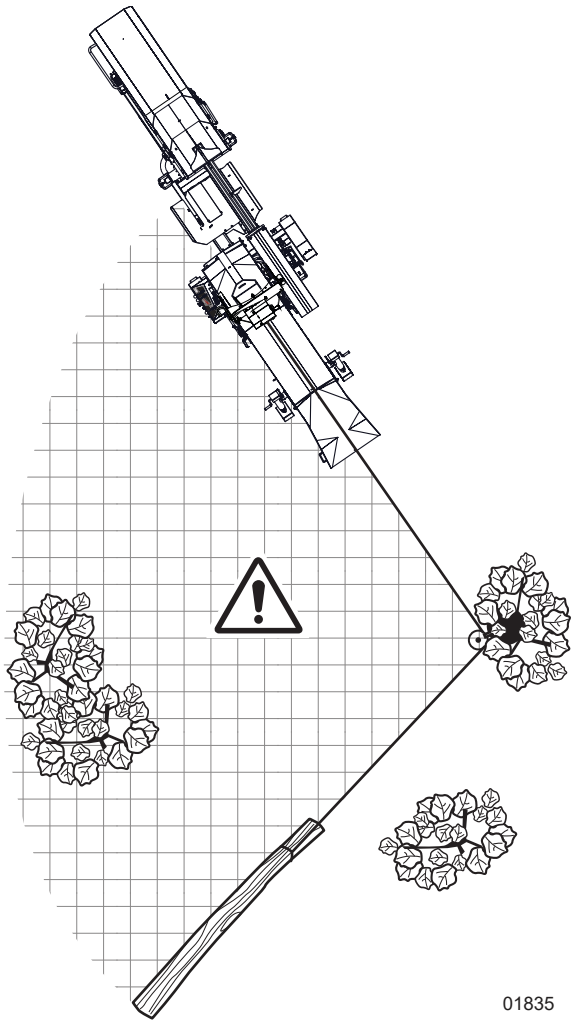


Figure 34–Example of how to use a snatch block

6.12.2 Pull a Log

⚠ WARNING!

Before you use the winch, read and understand the information under *Winch Safety on page 41*.

1. Push the **winch-gear lever** to the right side (away from the operator) to disengage the winch gear.
   For more information, see *Winch-Gear Lever on page 23*.
2. Hold the winch-rope hook and pull the winch rope to the logs.
3. Put the winch strap around the log.
   A standard log chain can be used as an alternative to the winch strap.
4. Attach the winch-rope hook to the winch strap.
   Do not attach the winch rope directly to the log.
5. Pull the **winch-gear lever** to the left side (toward the operator) to engage the winch gear.
6. Push down and hold the **winch control lever** to pull the log onto the lead-in chute.
   Make sure that the log does not catch on the bottom edge of the lead-in chute. For more information, see *Winch Control on page 23*.
7. When the log is on the lead-in chute, release the **winch control lever**.

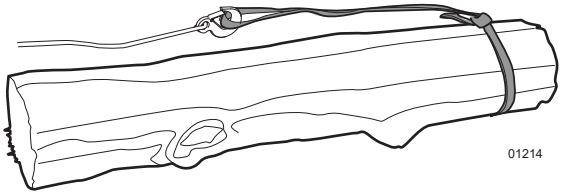


Figure 35–Winch strap

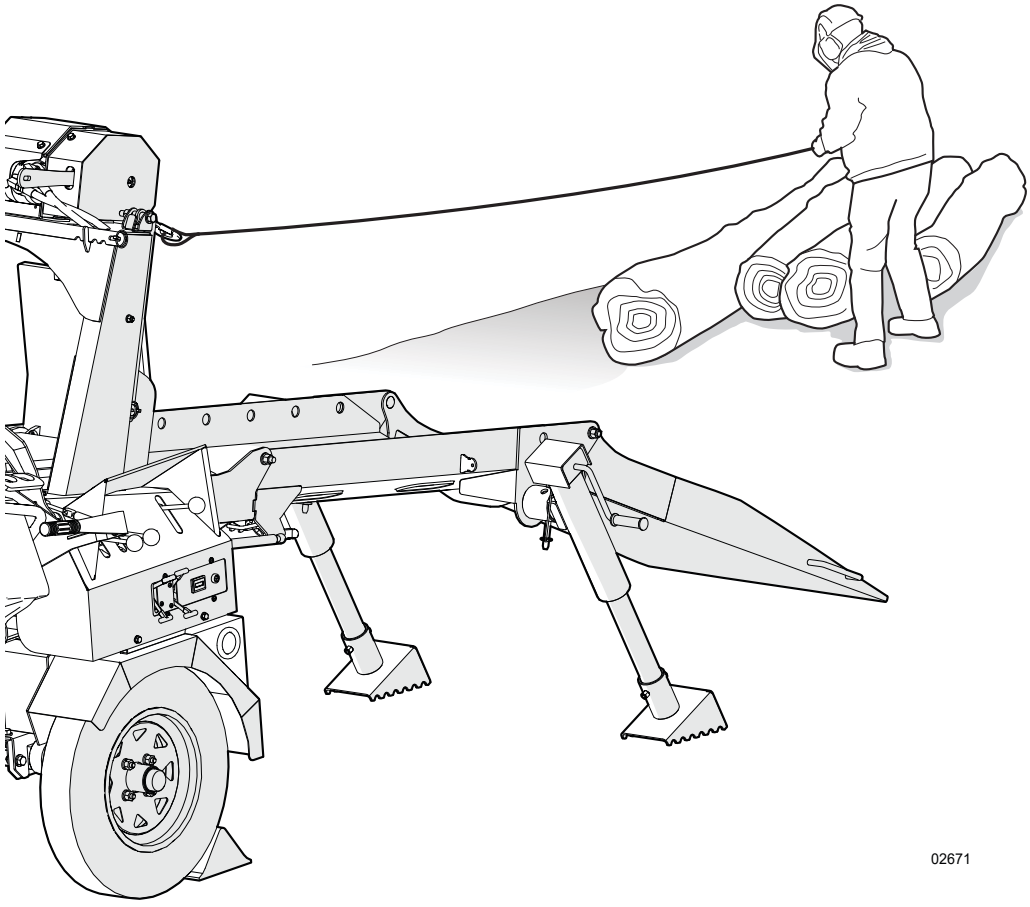


Figure 46–Pull the winch rope out to the log

6.13 Position the First Log

⚠ WARNING!

The log stabilizer is heavy! Never attempt to push a log through the stabilizer opening by hand. The 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 the winch when the winch-rope hook is at the winch. If the winch is on and the log does not move, it is possible that the winch rope is fully retracted. If you continue to operate the winch, the end of the rope can pull off the hook.

1. Use the winch to pull the first log to the machine. Make sure that the log does not catch on the front edge of the lead-in chute. See *Figure 36*.
2. Pull the log up the lead-in chute to the log stabilizer.
3. Stop the winch. Make sure that the log is stable.
4. Push the **winch-gear lever** to the right side (away from the operator) to disengage the winch gear.
5. Slightly, pull the winch rope out of the winch by hand.
6. Remove the hook from the winch strap.
7. Move the winch strap to the far end of the log. See *Figure 37*.
8. Pull out the winch rope and attach the hook to the winch strap.
9. Pull the **winch-gear lever** to the right side (toward the operator) to engage the winch gear.
10. Use the winch to pull the log through the log stabilizer to the log-length guide.

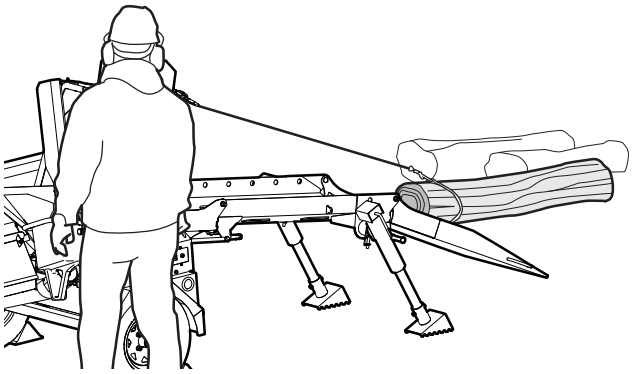


Figure 36– Pull the first log to the machine

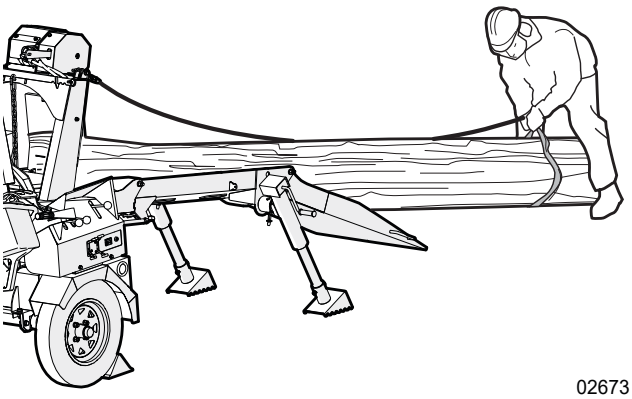


Figure 37– Move the winch strap

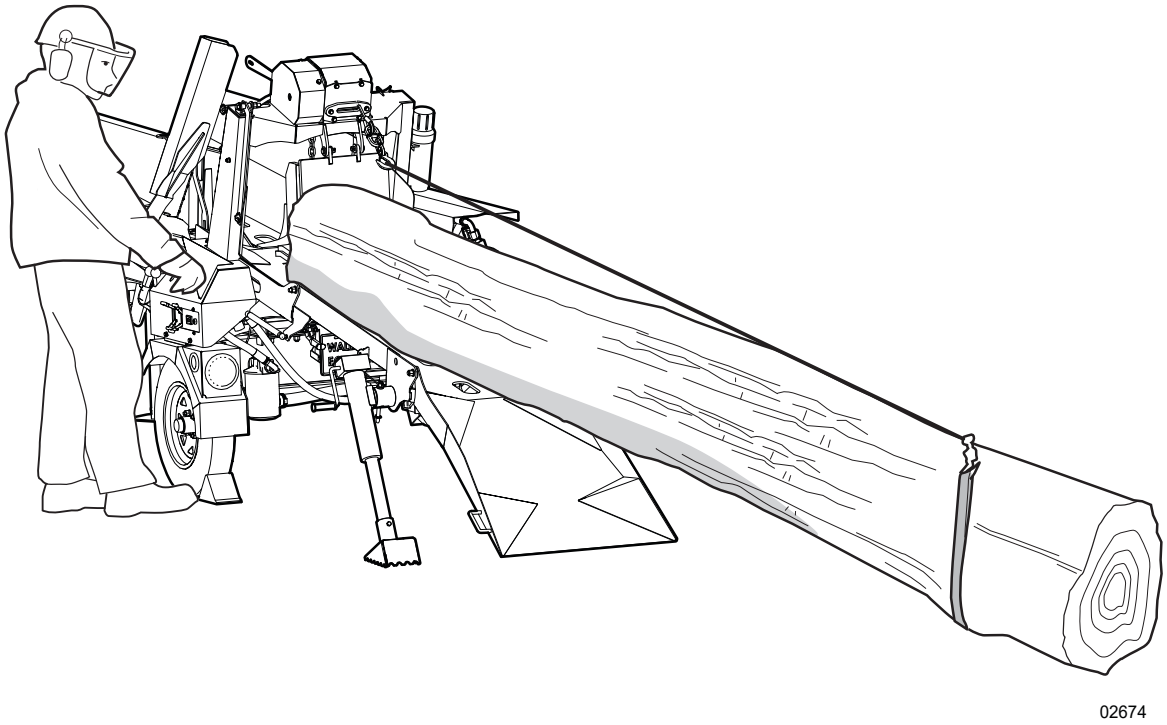


Figure 47 – Position the log in the machine

6.14 Cut Logs

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

6.14.1 Chainsaw Safety

⚠ WARNING!

Read and understand the chainsaw manufacturer's manual and obey all safety instructions.

Put on the appropriate PPE before you use a chainsaw.

⚠ CAUTION!

Always apply the brake before you leave a chainsaw in idle.

Chainsaws are dangerous. Read the safety information in the chainsaw manufacturer's manual. The following list provides some general chainsaw guidelines:

- Only use a chainsaw that you have been trained to use correctly and safely.
- Make sure that you understand the instructions before attempting to use any chainsaw.
- Operate, adjust, and maintain chainsaw according to the manufacturer directions
- Wear the PPE and clothing that is recommended by the chainsaw manufacturer.
- If you have any doubts about doing the work safely, ask questions.
- Only operate a chainsaw 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 necessary 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 and increases the chain life. If the chain tension is too loose, it can come off the bar. If the chain tension is too tight the chain does not move freely.
- Chain lubrication can increase the life of the chainsaw and increases safety.
- Sharpen the chain if you see any of the following conditions:
  - The chain moves sideways while cutting.
  - The cut wood produces fine powder and not chips.
  - There is a burnt wood smell.
  - The chainsaw has loose rivet joints.
    If you can rotate the rivets with your fingers, they are too loose.
- Make sure that the chainsaw chain is sharp and in good condition.

6.14.2 Start the Chainsaw

1. Open the holder draw latch.
2. Remove the chainsaw from the holder.
3. Start the chainsaw.
   For instructions, see the chainsaw manufacturer's manual.
4. Carefully, put the chainsaw into the holder. See *Figure 38*.
   The chainsaw adapter must go in the holder guides.
5. Close the draw latch over the adapter catch to keep the chainsaw in the holder. See *Figure 39 on page 47*.
   Make sure that the chainsaw is installed correctly and cannot fall out of the holder.

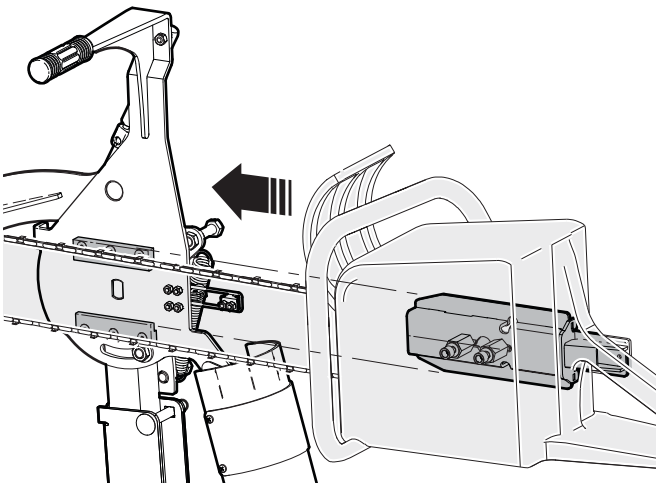


Figure 38– Put the chainsaw in the chainsaw holder

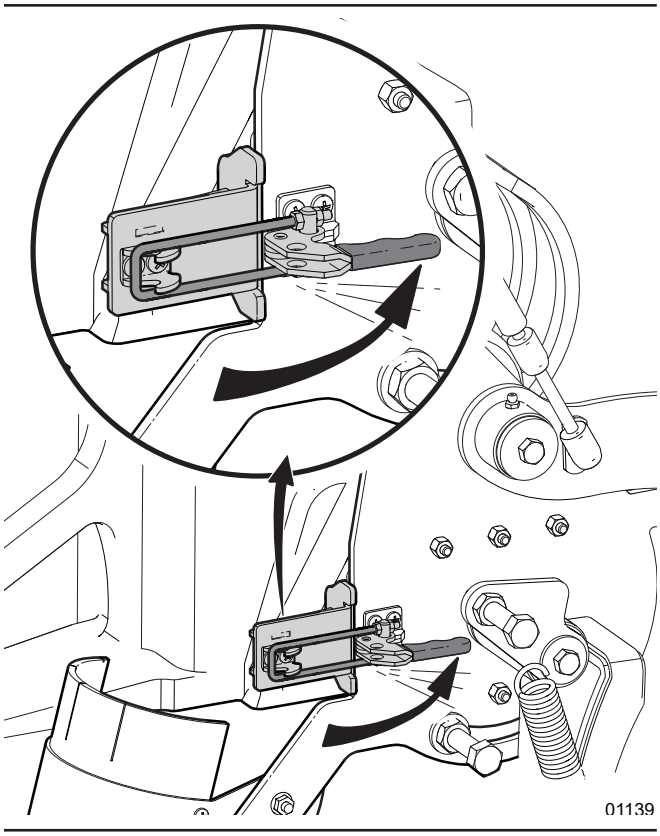


Figure 39–Close the holder draw latch

6.14.3 Cut a Log

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 necessary, start the chainsaw.
   For instructions, see *Start the Chainsaw on page 46*.
3. Operate the chainsaw to cut a log. Also, you can use the holder handle. See *Figure 40*.
   The holder chain guard stops on top of the log, while the chainsaw continues to cut the log.
4. Decrease your pressure on the chainsaw when you finish the cut. The cut log falls into the splitter cradle.
5. Move the chainsaw to the vertical position.

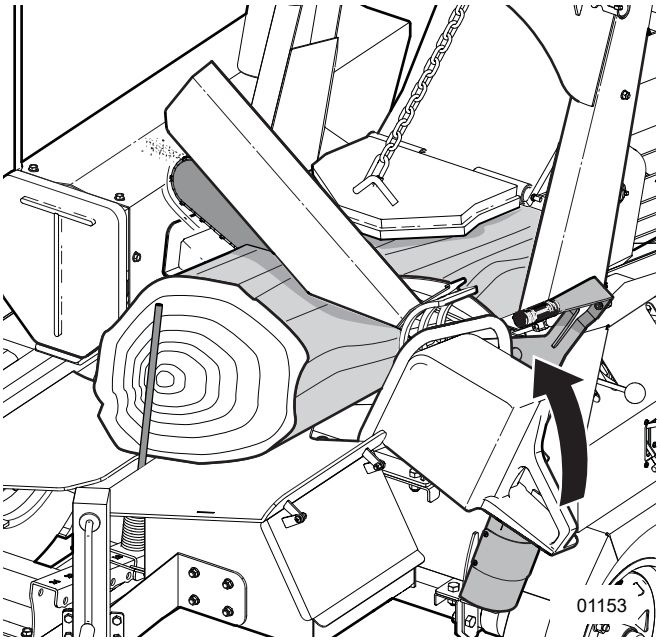


Figure 40–Cut a log

6.15 Split Logs

⚠ WARNING!

Use a log peavey, hookaroon, or other applicable tool to move wood in the splitting cradle. There are pinch, crush, and sever hazards in the splitting cradle. If you put your hand or any part of your body in the splitting cradle when the machine is not in a safe condition, you can be seriously injured.

☞ A six-way splitting wedge accessory is available for purchase.

After a log is cut, the block rolls into the splitting cradle.

For more information, see *Hydraulic Controls on page 22*.

1. Set the splitting-wedge height.
   For instructions, see *Set the Splitting-Wedge Height on page 38*.
2. Simultaneously, push the **splitter cylinder extend** and **splitter cylinder retract** control levers down (into detent; see *Figure 41*) to start **Auto Cycle**:
   a. The push block extends to split the wood.
   b. When the push block is fully extended, the **splitter cylinder extend** control lever moves to the neutral position (out of detent; see *Figure 42*) automatically.
   c. The push block retracts.
   d. When the push block is fully retracted, the **splitter cylinder retract** control lever moves to the neutral position (out of detent; *Figure 43*) automatically. The push block is ready for the next cycle.

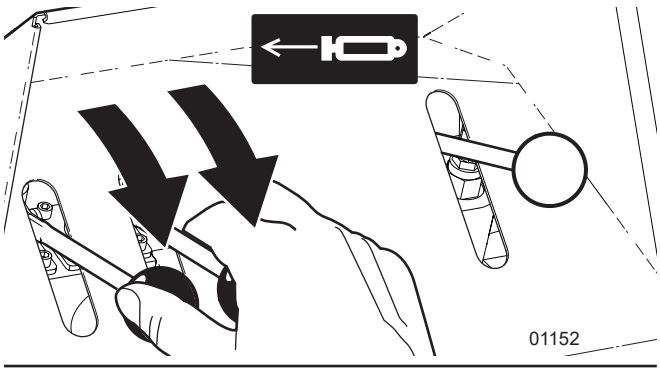


Figure 41 – Push the two splitter-cylinder control levers down

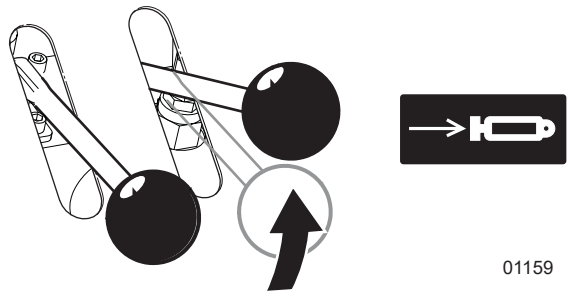


Figure 42 – The push block retracts automatically

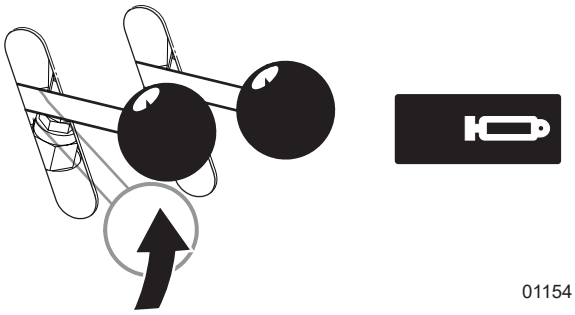


Figure 43 – The push block is ready for the next cycle

6.16 Firewood Discharge

Each time a block of wood is split, the firewood is pushed up the splitter chute. When the firewood gets to the end of the splitter chute, it falls off the chute. Set the splitter chute height to pile firewood on the ground, on a conveyor, or in a trailer or wagon. For more information, see *Set the Splitter-Chute Height on page 37*.

6.17 Position the Next Log

The log in the machine is repeatedly cut and after some time, it becomes too short to pull forward with the winch. When this happens, pull one more log into the machine. Use the second log to push the current log into the cutting area.

1. Make sure that the log in the machine is stable.
2. Push the **winch-gear lever** to the right side (away from the operator) to disengage the winch gear.
3. Slightly pull the winch rope out of the winch by hand.
4. Remove the hook from the winch strap.
5. Pull the winch rope out to the next log.
6. Wrap the winch strap around the log.
   If necessary, use a log peavey to roll the log onto the strap.
7. Attach the hook to the winch strap.
8. Pull the **winch-gear lever** to the left side (toward the operator) to engage the winch gear.
9. Push and hold the **winch control lever** down to pull the log onto the lead-in chute. Position the log against the current log. Use the new log to push the current log forward to the log-length guide.
10. After a few log cuts, do the following:
    a. Do steps 1 to 4 again.
    b. Move the winch strap to the far end of the log.
    c. Do steps 6 to 8 again.
    d. Push and hold the **winch control lever** down to pull the log forward and push the current log to the log-length guide.

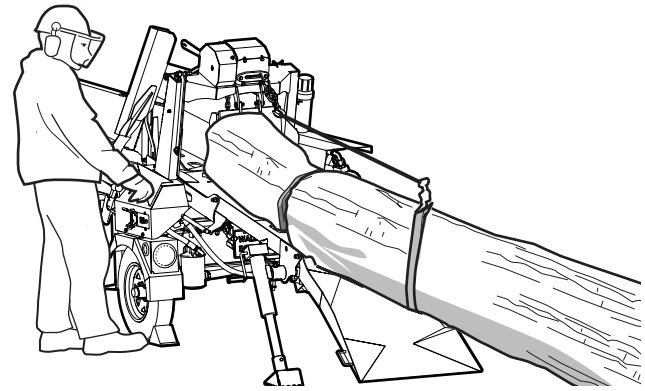


Figure 44–Use the next log to push the current log

6.18 Position the Last Log

⚠ WARNING!

Do not try to push a log through the log stabilizer opening by hand. The log stabilizer can fall suddenly and cause serious injury. Always use a safe procedure and tool to push or pull a log through the log stabilizer opening.

Be very careful when you process the last log. The log stabalizer is heavy. When the last log becomes too short to pull into the machine, use a hookaroon or peavey to push the log forward.

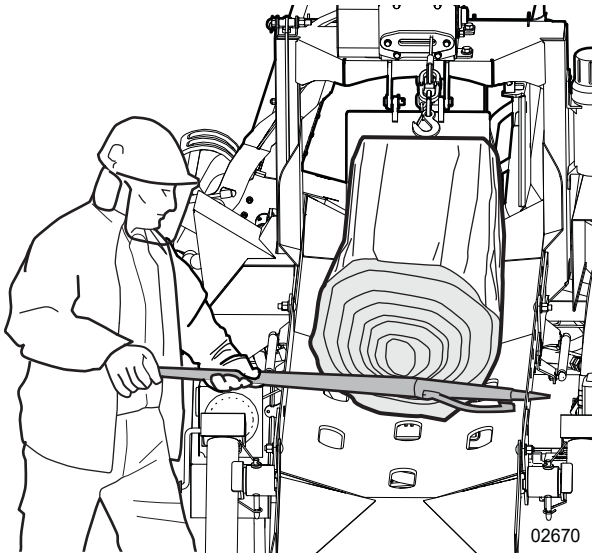


Figure 45–Use a tool to push the last log forward

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 the machine has the necessary lighting, reflectors, and markings, and that they are in good condition.

For specific requirements, contact your local transportation authority.

7.1 Transport Safety

⚠ CAUTION!

Before you tow the machine, make sure that the trailer tongue is straight and the pivot pin is engaged.

⚠ CAUTION!

Do not use the winch rope to hold something on the machine during transport.

- 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 running.
- Examine 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 69*.
- Examine 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 on and tight.
- Remove all debris from the machine.
- After the machine is prepared for transport, do a circle check to make sure that everything is safe and the lights function correctly.

7.2 Prepare the Machine for Transport

1. Stop the chainsaw and remove it from the holder.
2. If necessary, remove the winch rope and strap from the log.
3. Wind the winch rope into the winch.
4. Pull the **splitter cylinder extend** control lever up to retract the push block.
5. Move the hydraulic controls to neutral.
6. Stop the machine.
   For instructions, see *Stop the Machine on page 33*.
7. Move each hydraulic control to release the pressure.
8. Remove all material from the lead-in chute, log-loader chute, splitting cradle, and splitter chute.
9. Fold the splitter chute.
   For instructions, see *Fold the Splitter Chute on page 51*.
10. Fold the lead-in and log-loader chutes.
    For instructions, see *Fold the Lead-In and Log-Loader Chutes on page 51*.
11. Remove all loose tools and debris from the machine.
12. Attach the machine to a tow vehicle.
    For instructions, see *Connect to a Ball-Mount Hitch on page 53*.
13. If the trailer tongue is not straight, slowly pull the machine forward until the trailer tongue is straight and the pivot pin engages with the hole.

7.2.1 Fold the Lead-In and Log-Loader Chutes

For more information, see *Unfold the Lead-In and Log-Loader Chutes on page 36*.

1. Remove the linchpin from the tab that keeps the latch bar in position.
2. Use the handle to fold the lead-in chute over the log-loader chute.
3. Open the two toggle-clamp latches that hold the log-loader chute. The latches are located below the log-loader chute (one on each side):
   a. Rotate the handle down to the open position.
   b. Remove the latch bar from the catch plate.
   c. Rotate the handle up to the closed position.
4. Fold the log-loader and lead-in chutes to the vertical position.
5. Lift the latch bar and put the hole over the tab on the side of the log-loader chute.
6. Install the linchpin (removed in step 1) through the log-loader chute tab to hold the chutes.
7. Turn each of the two support jacks to the vertical position:
   a. Remove the snap pin.
   b. Rotate the support jack.
   c. Insert the snap pin.

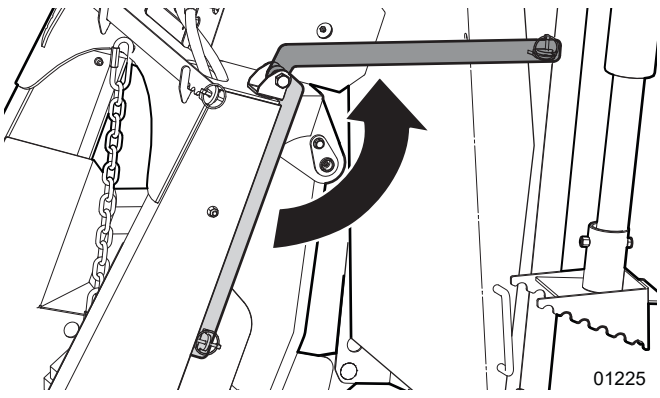


Figure 48–Use the latch bar and linchpin to keep the chutes in the folded position

7.2.2 Fold the Splitter Chute

For more information, see *Unfold the Splitter Chute on page 37*.

1. Remove the linchpin from the tab on the side of the splitting-wedge guard.
2. Remove the hitch pin that holds the bottom of the splitter chute to the splitting-cradle bracket. Remove the linchpin, and then remove the hitch pin.
3. Use the handle to carefully fold the splitter chute.
4. Insert the linchpin (removed in step 1) through the tab you removed it from to hold the splitter chute.
5. Insert the hitch pin through the splitting-cradle bracket (removed in step 2). Insert the linchpin through the hitch pin.

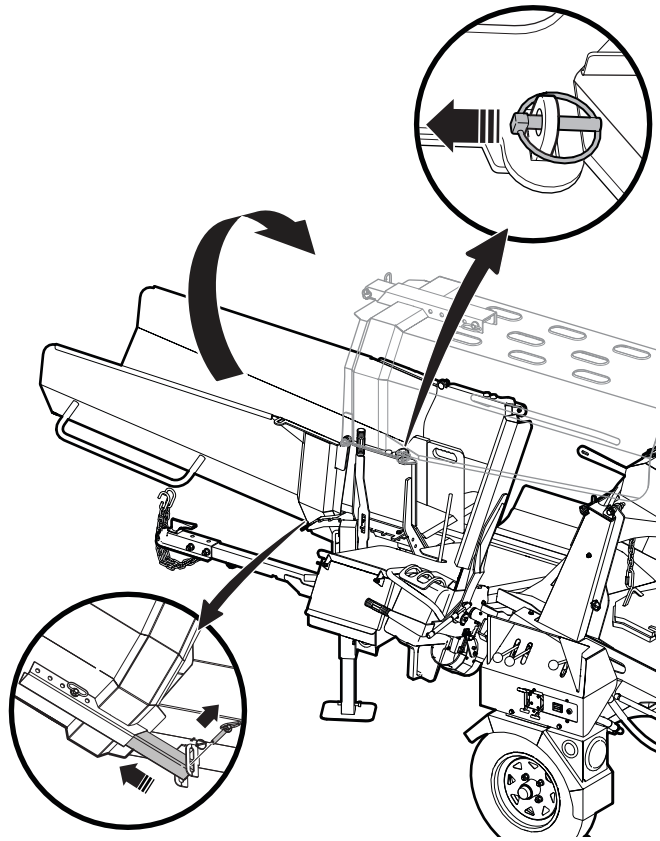


Figure 49–Fold the splitter chute

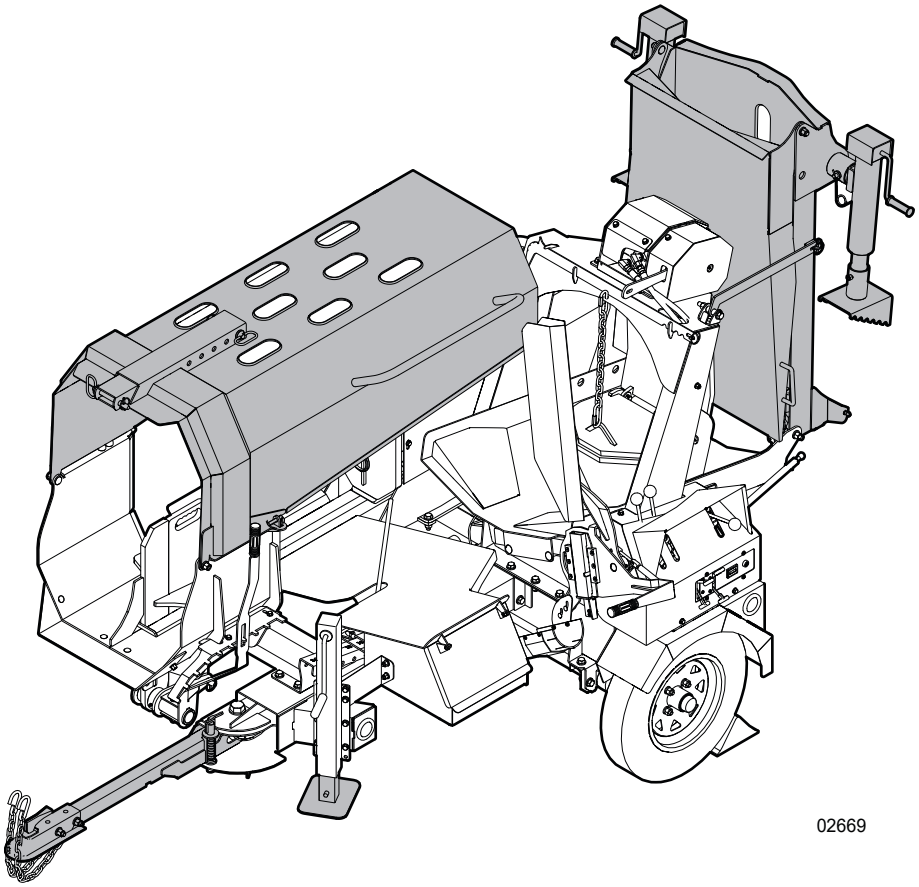


Figure 50 – Transport position (WP845 shown)

7.3 Connect to a Ball-Mount Hitch

⚠ WARNING!

Before you tow the machine, make sure that the safety chains are correctly attached.

W103

IMPORTANT! Before attaching the machine to a tow vehicle, fold the splitter chute and lead-in and log-loader chutes. Failure to fold the chutes may result in damage to the machine.

The machine has a trailer tongue with a two-inch ball-mount hitch coupler.

Make sure that there is space 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 lift the trailer tongue until the hitch coupler is higher than the ball-mount hitch.
3. Remove the snap-lock pin from the hitch-coupler latch. Lift 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. 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 54*.
6. Lower the hitch-coupler latch to the locked position. Install the snap-lock pin through the latch to secure the hitch coupler to the ball-mount hitch.
7. Lift and stow the trailer jack.
   For instructions, see *Lift the Trailer Jack on page 54*.
8. Cross the two safety chains below the tongue, and then attach them to the tow vehicle (one on each side of the ball-mount hitch).
9. Connect the light-bar cable harness to the tow vehicle. Make sure that the cables are long enough to make turns without tension, but do not drag on the ground.
10. Check the function of all the lights. Activate each light and have another person call out to confirm that it functions correctly.
11. Remove the chocks from the machine wheels.

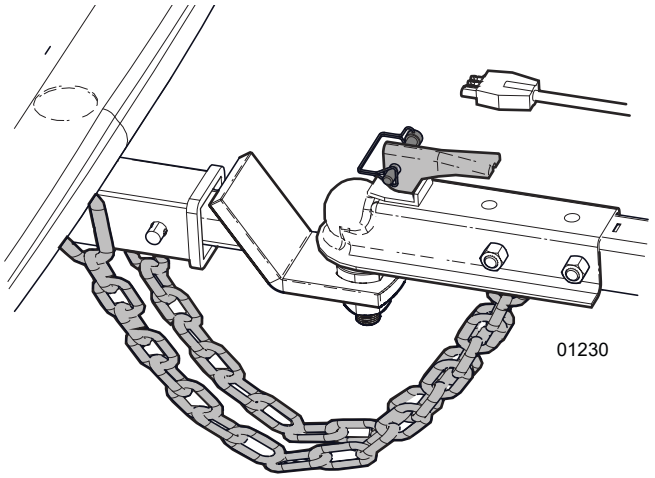


Figure 51 – Ball-mount hitch connection

7.4 Disconnect from a Ball-Mount Hitch

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

Make sure that there is space 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. Stop the engine and apply the parking brake.
2. Put the chocks behind the machine wheels to prevent movement.
3. Rotate and lower the trailer jack to support the machine.
   For instructions, see *Lower the Trailer Jack*.
4. Disconnect the light-bar cable harness from the tow vehicle. Stow the cable harness safely on the machine.
5. Remove the two safety chains from the tow vehicle and stow them securely on the machine.
6. Remove the snap-lock pin from the hitch-coupler latch. Lift the latch to the upright (unlocked) position.
7. Use the trailer jack to lift the trailer tongue until the hitch coupler is higher than the ball-mount hitch.
8. 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.
9. Use the trailer jack to lower the machine until it is level with the ground.
10. Lower the hitch-coupler latch to the locked position. Install the snapper pin through the latch.

7.5 Trailer Jack

CAUTION!

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

The trailer jack has two functions. It supports the machine when it is not attached to a tow vehicle or helps to keep the machine stable when it is attached to a tow vehicle.

7.5.1 Lower the Trailer Jack

1. Pull the pin out of the jack.
2. Turn the handle clockwise to lower the base. Align one of the holes in the base with the hole in the jack.
3. Insert the pin through the jack and base.
4. Insert the ring on the chain through the pin.

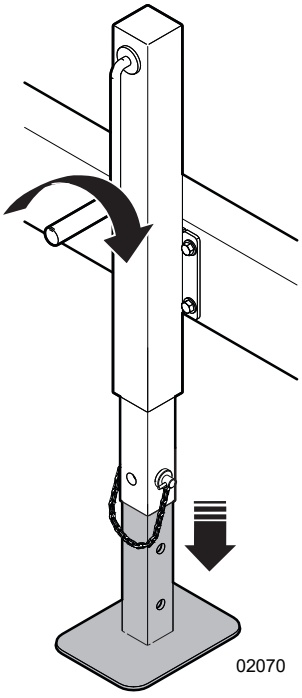


Figure 52 – Trailer jack in the lowered position

7.5.2 Lift the Trailer Jack

1. Support the machine to remove weight from the jack. Attach the machine to a tow vehicle or support the trailer tongue with blocks.
2. Pull the pin out of the jack.
3. Turn the handle counterclockwise to lift the base. Align one of the holes in the base with the hole in the jack.
4. Insert the pin through the jack and base.
5. Insert the ring on the chain through the pin.

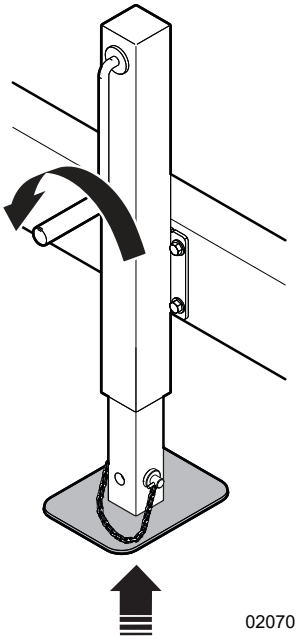


Figure 53 – Trailer jack in the lifted position

8. Storage

At the end of the season or when the machine is not going to be used for an extended period of time, fully examine 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 54 on page 56*.

8.1 Storage Safety

WARNING!

Do not let children play on or around the stored machine. If children play on or around the machine it can result in serious injury or death.

W105

- Store the machine in a dry, level location away from human activity.
- Store the machine indoors, where possible.
- If necessary, support the frame with planks.

8.2 Put the Machine in Storage

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

1. Stop the chainsaw and remove it from the holder.
2. If necessary, remove the winch rope and strap from the log.
3. Wind the winch rope into the winch.
4. Fully retract the push block.
5. Move the hydraulic controls to neutral.
6. Stop the machine.
   For instructions, see *Stop the Machine on page 33*.
7. Move each hydraulic control to release the pressure.
8. Remove all material from the lead-in chute, log-loader chute, splitting cradle, and splitter chute.
9. Use a pressure washer or water hose to thoroughly wash the machine. Remove all dirt, mud, and debris.
10. Check all moving parts for entangled material. Remove all entangled material.
11. Check the condition of the winch rope. If necessary, replace or adjust the winch rope.
12. 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 58*. For instructions, see *Replace the Engine Fuel*.
13. Park the machine in the storage location.
14. Disconnect the tow vehicle.
    For instructions, see *Disconnect from a Ball-Mount Hitch on page 53*.
15. Adjust the trailer jack until the machine is level. If soft ground is unavoidable, place boards or plates under the jack to increase the surface area.
16. Chock the machine wheels to prevent accidental movement and increase the wheel bearing life.
17. 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

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 29*.
3. Start the machine.
   For instructions, see *Start the Machine on page 32*.
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 33*.

8.3 Remove the Machine from Storage

1. Do the tasks in the *Pre-Start Checklist on page 26*.
2. Do the necessary maintenance.
   For maintenance information, see the *Maintenance Schedule on page 59*.

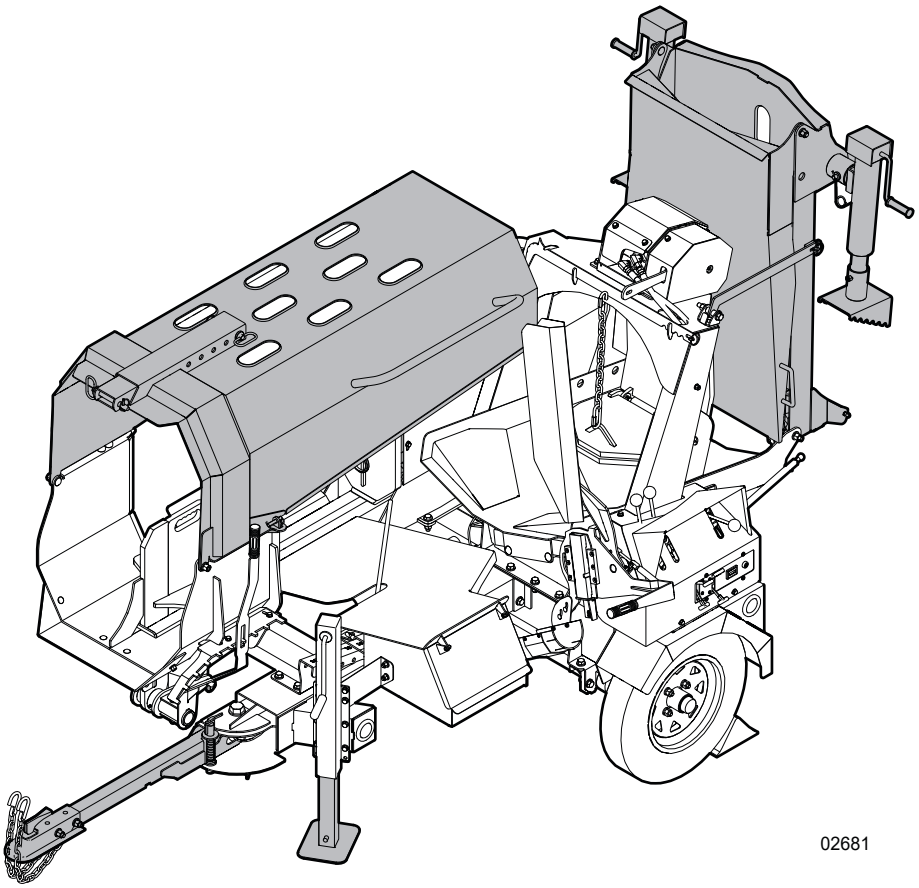


Figure 54 – Storage position (WP845 shown)

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!

Before you start service or maintenance:

- **Set the machine to a safe condition.**
- **Wait for the machine to cool. Engine components and fluids can cause burns.**
- **Read and understand all the service and maintenance safety information.**

W041

⚠ WARNING!

Wear the personal protective equipment (PPE) that is necessary to do 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!

After service and maintenance, install all of the guards and shields, and close all of the covers. Do not operate the machine with any guard or shield removed, or cover open.

W110

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

SAFE CONDITION

1. If the machine is connected to a tow vehicle, set the tow vehicle's parking brake, stop the engine, and remove the ignition key.
2. Chock the machine wheels to prevent movement.
3. Remove the winch rope from the log and wind it into the winch.
4. Move the hydraulic controls to neutral and wait for all motion to stop.
5. Stop the chainsaw.
6. Stop the machine.
   For instructions, see *Stop the Machine on page 33*.
7. Disconnect the engine spark-plug wire and keep it away from the spark plug.
8. Move each hydraulic control to release the pressure.
9. Remove all material from the lead-in chute, log-loader chute, splitting cradle, and splitter chute.

- 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 know how to use the tools before you use them.
- Only operate the engine in a location that has good air flow. Engine exhaust gases contain carbon monoxide (an odorless gas) that can cause asphyxiation.
- Do not work under equipment unless it is safely supported with blocks.
- 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 available at all times.
- Do not use gasoline or diesel fuel to clean parts. Use the correct cleaning product.

- When service or maintenance is complete, do the following:
  - Replace all guards and shields, and close the covers.
  - Torque the fasteners to the correct specifications.
  - Make sure that all the electrical, hydraulic, and fuel connections are connected in a safe good condition.

9.2 Fluids and Lubricants

The machine needs the correct fluids and lubricants for operation and maintenance.

9.2.1 Lubricant Handling and Storage

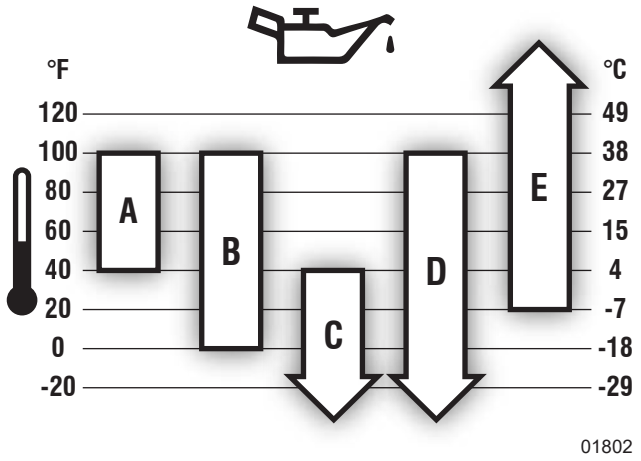
For optimum machine efficiency, use clean lubricants and clean containers to handle all lubricants. Store lubricants in an area that is protected from dust, moisture, and other contaminants.

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 necessary 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 more 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 55*.

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®

9.2.6 Rust-Protection Oil

Use a good quality rust-protection oil that is intended for use on metal.

9.3 Maintenance Schedule

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

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

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 64*.
Check the hydraulic hoses, fittings, and frame slide.	●						N/A.[1]
Check the hydraulic fluid level.	●						See *page 31*.
Check the engine oil level and quality.	●						See *page 30*.
Check the engine fuel level.	●						See *page 29*.
Clean around the muffler and controls.	●						See the engine manual.
Clean the engine air-intake grille.	●						N/A.
Check that all fasteners are tightened to the specified torque.	●						See *page 68*.
Check that the wheel lug nuts are tightened to the specified torque.	●						See *page 69*.
Grease the machine.		●					See *page 60*.
Check the hydraulic fluid quality.		●					See *page 31*.
Check the tire pressure.			●				See the tire sidewall.
Change the hydraulic fluid and filter.			●				See *page 62*.
Clean the machine. Remove debris and entangled material.			●				N/A.
Service the engine exhaust system.			●				See the engine manual.
Clean the engine air filter.[2]				●			See *page 63*.
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 *page 63*.

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

IMPORTANT! Do not over grease a bearing. Too much grease can cause the bearing seals to fail.

Look for this type of label on the machine. Each label identifies a grease point and shows the greasing interval in hours.

For grease specifications, see *Grease on page 58*.

- Use a clean cloth to clean each grease fitting before you apply grease. This prevents grease and dirt from getting inside the component.
- Use a hand-held grease gun to apply **one pump** of grease to each grease point.
- If a grease fitting is damaged, replace it immediately.
- If a grease fitting does not accept grease:
  a. Remove the grease fitting.
  b. Clean the passageway behind the grease fitting.
  c. Clean the grease fitting thoroughly or get a new grease fitting.
  d. Install the grease fitting.
- Hinge and pivot points can rust and become difficult to move without the correct maintenance. Apply a small amount of rust-prevention oil to these locations.

For more information about the grease point locations, see *Figure 55 on page 61*.

Location	Grease Points – Every 50 hours or annually	Type	Number of Grease Points
1	Splitting-wedge height adjustment bushing	Grease fitting	1
2	Winch	Grease fitting	2
3	Splitting cradle	Apply a small amount of grease	1
4	Log stabilizer lower bearings	Grease fitting	2
5	Log stabilizer upper bearings	Grease fitting	2

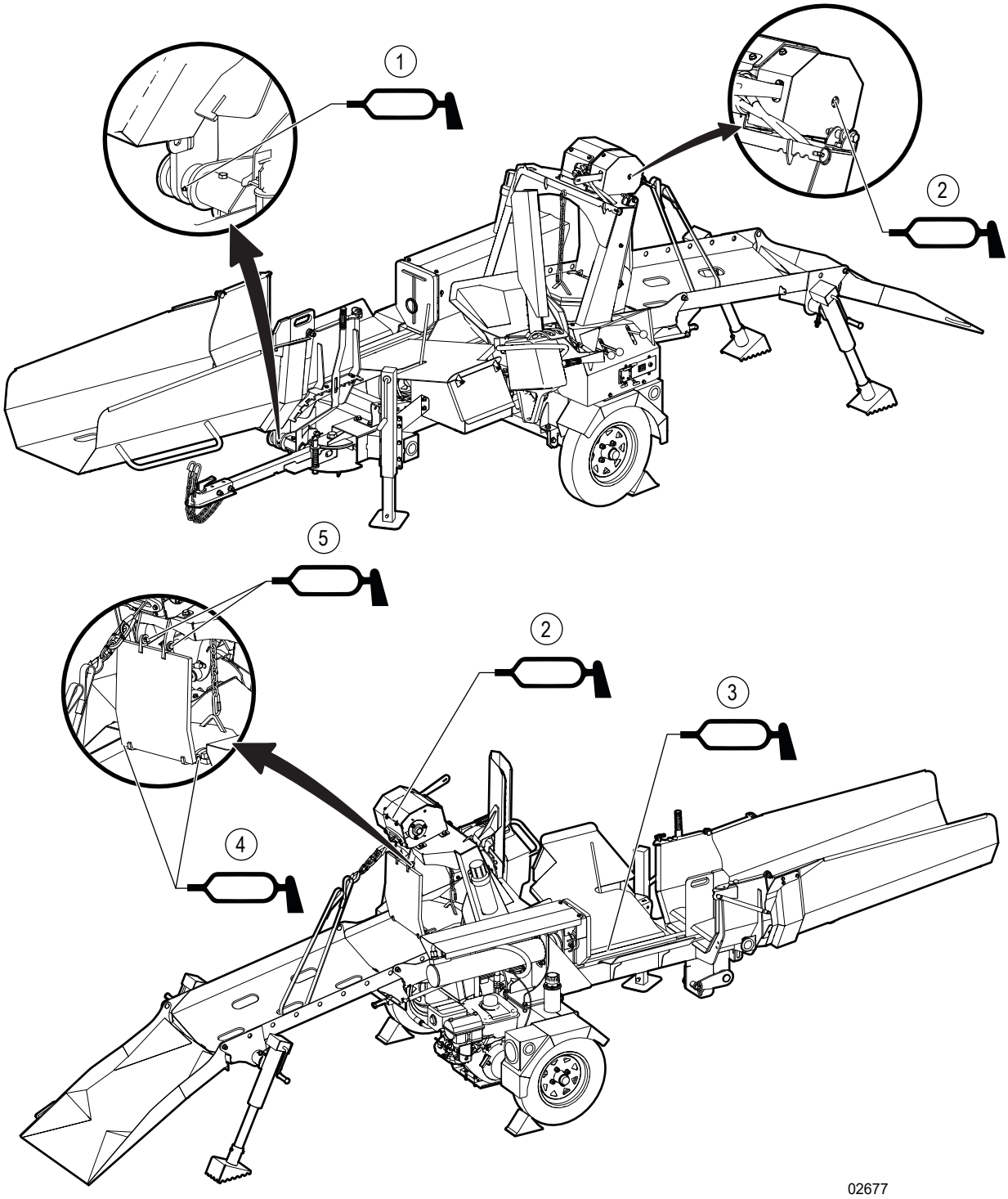


Figure 55–Grease point locations

9.5 Hydraulic System Maintenance

The hydraulic system controls the push block and the winch.

9.5.1 Hydraulic System Maintenance Safety

⚠ CAUTION!

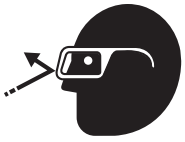
Risk of burns to exposed skin. Hydraulic fluid gets hot during operation, which makes hoses, tubes, and other parts hot as well. Wait for the fluid and components to cool before you start maintenance or service.

IMPORTANT! Optimal hydraulic fluid temperatures are between 120° F and 140° F (50° C and 60° C). If the hydraulic fluid temperature is higher than 180° F (82° C), it can cause seal damage and degrade the hydraulic fluid. High hydraulic fluid temperatures often indicate that there is a problem.

For more information, see *Hydraulic System Operation Safety on page 31*.

- Keep all the hydraulic system components clean and in good condition.
- Release the pressure on the hydraulic system before you work with it. The hydraulic system operates under extremely high pressure.
- Before you apply pressure to the hydraulic system, make sure that all the connections are tight, and the hoses and fittings are not damaged.
- Replace hydraulic hoses that show 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 67*.
- High-pressure hydraulic fluid leaks:
  - Do not use your hand to check for hydraulic fluid leaks. Hydraulic fluid that leaks under pressure can penetrate the skin and cause serious injury or death. Use a piece of cardboard, wood, or plastic to check for leaks. Put on heavy gloves.

  - Do not use your hand to check for hydraulic fluid leaks. Injection of pressurized hydraulic fluid can cause serious illness, injury, or death. Put on heavy gloves and use a piece of cardboard, wood, or plastic to check for leaks.



  - Get medical attention immediately if you are injured by a concentrated high-pressure stream of hydraulic fluid. Serious infection or a toxic reaction can occur after hydraulic fluid pierces the skin.
- Do not make any temporary repairs to the hydraulic hoses or fittings. Do not use tape, clamps, or cements to attempt a repair. This can cause sudden failure and create a hazardous and unsafe condition.
- Do not bend or hit high-pressure hydraulic hoses or install them in a bent or damaged condition.
- Make sure that hydraulic hoses are routed to avoid chafing.
- Never adjust a pressure relief valve or other pressure-limiting device to a pressure that is higher than the specified rating.

9.5.2 Change the Hydraulic Fluid and Filter

⚠ CAUTION!

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

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

Wait for the machine to cool before you change the hydraulic fluid. However, it is recommended to drain the fluid while it is warm. When the fluid is cool, any contaminants collect in the bottom of the reservoir.

The filter is located on the back, LH side of the hydraulic-fluid reservoir.

1. Set the machine to a safe condition.
   For instructions, see *Safe Condition on page 9*.
2. Place a drain pan under the fluid 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. Remove the bottom hose and strainer to drain the fluid.
4. Wait for the hydraulic fluid to fully drain from the reservoir.

5. Remove the fluid filter. A filter wrench may be necessary.
6. Apply a light coat of clean lubricant to the seal, and then install the new filter. Only tighten it by hand, and then tighten it another half turn.
7. Install and secure the strainer and bottom hose.
8. Fill the reservoir with Dexron III ATF or an acceptable substitute. **The reservoir capacity is 6.8 US gal (26 L)**. For more information, see *Add Hydraulic Fluid to the Reservoir on page 32*.
9. Start the machine.
   For instructions, see *Start the Machine on page 32*.
10. Advance and retract the push block for 1–2 minutes to remove air from the hydraulic system.
11. Check the fluid filter for leaks.
12. Stop the machine.
    For instructions, see *Stop the Machine on page 33*.
13. Check the hydraulic fluid level. If necessary, add hydraulic fluid to the reservoir.
    For instructions, see *Check the Hydraulic Fluid Level on page 31*.
14. Dispose of the used hydraulic fluid in an environmentally safe manner.

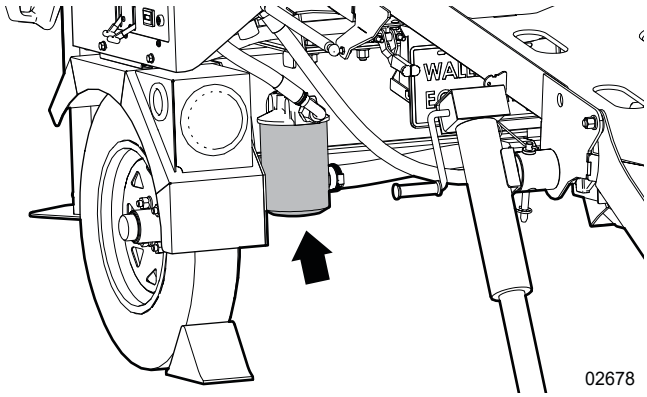


Figure 56–Hydraulic fluid filter

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. Loosen the two air-filter cover fasteners.
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.
   If the air filter is excessively dirty or damaged, replace it with a new air filter.
5. Install the air filter in the engine.
6. Install the cover.
7. Tighten the two air-filter cover fasteners.

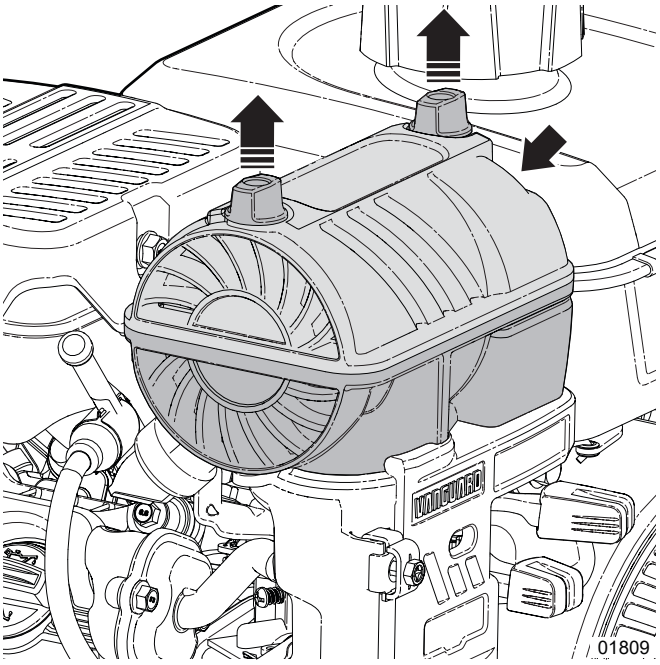


Figure 57–Engine air filter

9.7 Winch Rope Maintenance

CAUTION!

Only use the correct type of synthetic rope in the winch. Use of any other type of rope or cable in the winch can cause personal injury or machine damage, and immediately voids the machine 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 Examine the Winch Rope

IMPORTANT! Heat and exposure to ultra-violet (UV) light deteriorate the synthetic winch rope fibres. As the fibres deteriorate, the winch rope becomes brittle and can break. Frequent use of a synthetic winch rope in mud, dirt, or sand can also damage the rope if you do not fully clean and care for it.

Examine the full length of the winch rope for wear, such as cut strands, fraying, abrasion, or heat damage. Apply tension and wind the winch rope onto the winch drum after each use. It is normal for all synthetic winch ropes to show a small amount of abrasion (fuzz) after some use. However, **if an entire strand is cut, the winch rope must be replaced or repaired**. All the strands must be intact for the winch rope to work correctly and keep its strength.

9.7.2 Clean the Winch Rope

Dirt and grit that is lodged between the strands of the winch rope, cause abrasion to the fibers when the winch rope operates with a load attached. Over time, this abrasion can cause the winch rope to deteriorate and lose strength.

1. Unwind and remove the entire rope from the winch drum.
2. Put 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. Put the rope in the bucket.
   c. Put a clean towel beside the bucket for the clean portion of the rope to go on.
   d. Start at one end of the rope.
   e. Push the rope strands together to open them up and rinse between the strands.
   f. Move to the end of the clean strands.
   g. Do steps e. and f. again until the full length of the rope is clean and on the towel.
5. Use a towel to remove excess water.
6. Wait for the rope to fully dry.
7. Examine the winch drum and fairlead for sharp or rough surfaces that can damage the rope.
   If necessary, remove or repair sharp or rough surfaces.
8. Install the end of the rope that you removed in step 1 on the winch drum.
9. Apply tension and neatly wind the rope onto the winch drum.

9.8 Tire Maintenance

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 69*.
- Check the tire pressure before towing the machine on a roadway. See the tire sidewall for the correct pressure.

9.9 Clean the Machine

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

IMPORTANT! Do not direct the spray from a pressure washer onto the following components:

- **The product identification plate.**
- **Bearings.**
- **Electrical components.**

A pressure washer can damage these components.

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 32.*
4. Let the engine run for a few minutes to dry.
5. Stop the machine.
   For instructions, see *Stop the Machine on page 33.*
6. Apply grease to the areas where the pressure washer possibly removed it.
   For instructions, see *Grease Points on page 60.*

10. Troubleshooting

⚠ WARNING!

Before troubleshooting, read and understand the *Service and Maintenance Safety on page 57*.
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
The engine is difficult to start or the performance is reduced.	The engine fuel is not correct.	Change the engine fuel. See the engine manufacturer specifications.
The winch rope does not move.	The winch rope is blocked.	Disengage the winch gear, pull the winch rope out, and then apply tension to the winch rope while you wind it onto the winch drum.
The winch rope does not pull out.	The winch gear is engaged.	Disengage the winch gear. See *page 23*.
The winch rope does not retract.	The winch gear is disengaged.	Engage the winch gear. See *page 23*.
The push block moves slowly or does not move.	The splitting wedge is blocked with wood.	Set the machine to a safe condition, and then remove the wood. See *page 70*.
The push block or winch motor moves slowly or does not move.	There is no hydraulic fluid pressure because the fluid filter is blocked.	Change the hydraulic fluid filter. See *page 62*.
	There is no hydraulic fluid pressure because the hydraulic fluid is low.	Add hydraulic fluid. See *page 32*.
	The hydraulic fluid pressure is low.	The relief setting might be set too low. Contact an approved technician.
	The engine speed is slow.	Make sure that the choke is **Closed** and the throttle is set to **Fast**. See *page 21*.
A splitter control lever does not move to neutral when the push block is fully extended or retracted.	The hydraulic detent valve is set too tight.	Contact an approved technician to adjust the detent valve.
	The hydraulic fluid is too cold.	Operate the push block until the hydraulic fluid is warm.
	The hydraulic fluid is old or contaminated.	Change the hydraulic fluid and filter. See *page 62*.
A splitter control lever moves to neutral before the push block is fully extended or retracted.	The hydraulic detent valve is set too loose.	Contact an approved technician to adjust the detent valve.
A control lever does not move to neutral when you release it.	The control lever or valve is damaged.	Contact an approved technician to repair or replace the component.
The push block stops when it touches wood.	The second pump stage is not functioning.	Contact an approved technician to repair or replace the pump.
The splitting wedge does not move freely.	The splitting wedge is blocked.	Put a small amount of rust-protection oil on the splitting-wedge frame wear plates.
There is a hydraulic fluid leak.	A hose is worn or damaged or a fitting is not tight.	Use a safe method to examine the hydraulic hoses and connections for leaks. Repair or replace damaged hoses and connections.
A hydraulic cylinder is leaking.	The hydraulic cylinder are worn.	Contact an approved technician to replace the cylinder.

11. Specifications

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

For available accessories, go to WallensteinEquipment.com.

11.1 Machine Specifications[1]

Specification	WP845	WP875
Engine	Vanguard® 14 hp (408 cc)	
Hydraulic pump flow / type	22 US gpm (83.2 Lpm) / 2 stage	
Cylinder diameter	4.50" (11 cm)	
Splitter control valve type	Dual-valve open center with auto-cycle detent valve	
Full-stroke splitting cycle time	8.3 seconds	12.1 seconds
Split force	25 ton	
Maximum split length	24" (61 cm)	36" (91 cm)
Maximum log diameter	22" (56 cm)	
Splitting-wedge configuration	Adjustable 4-way	
Suspension	Torflex® suspension	
Tire size / type	5.30 x 12.00 / highway	
Ball-hitch size	2" (50 mm) ball coupler and safety chains	
Trailer light package	Highway lights and cable	
Total weight	2,050 lb (930 kg)	2,275 lb (1 031 kg)
Trailer tongue weight	160 lb (73 kg)	285 lb (129 kg)
Dimensions: unfolded (L x W x H)	220" x 69" x 66" (559 cm x 175 cm x 168 cm)	246" x 69" x 66" (625 cm x 175 cm x 168 cm)
Dimensions: folded (L x W x H)	98" x 73" x 79" (249 cm x 185 cm x 201 cm)	125" x 73" x 79" (318 cm x 185 cm x 201 cm)
Winch type	Hydraulic (control valve operated)	
Synthetic winch rope length	50' (15 m)	
Synthetic winch rope diameter	1/4" (6 mm)	
Winch pulling capacity	1,550 lb (703 kg)	
Maximum splitter chute height	54" (137 cm)	
Hydraulic fluid capacity	10.6 US gal (40 L)	
Winch strap length	60" (1,5 m)	
Recommended chainsaw bar length	22" to 30" (55.9 cm to 76.2 cm)	30" (76.2 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 top of the bolt head.

These 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.

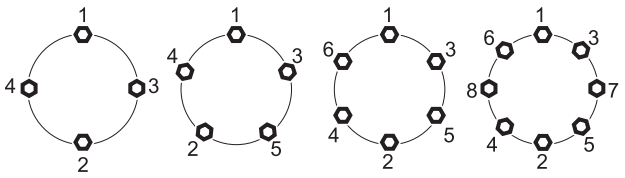
Tighten wheel lug nuts to the correct torque before the first use and after each wheel removal. After a wheel is installed, check and torque the lug nuts after the first 10 miles (16 km), 25 miles (40 km), and 50 miles (80 km). Check the lug nut torque periodically thereafter.

- 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. Warranty

LIMITED WARRANTY

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

Five Years for Consumer Use

Two Years for Commercial/Rental Use

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

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

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

This warranty does not cover the following:

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

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13. Index

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