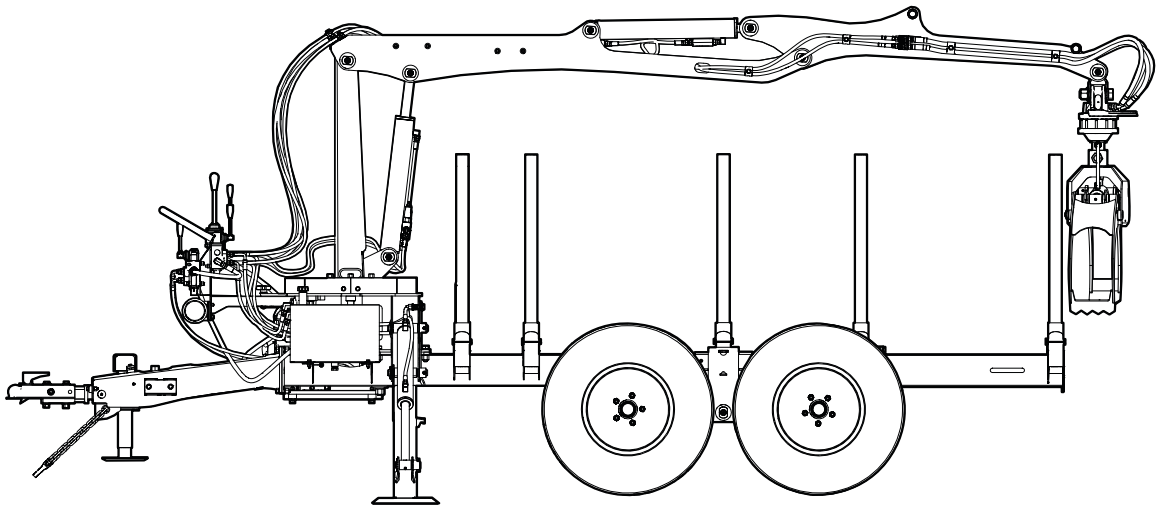
OPERATOR'S MANUAL

LXT95 – Serial number 95X130 to 95X146, 1100000 and up
LXT115 – Serial number 2E9US1115N5060191, 2E9US1115N5060193 to 2E9US1116PS060207, 1100000 and up

LXT95 / LXT115

Log Loader Trailer



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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.

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Congratulations on your choice of a Wallenstein Log Loader Trailer!

This high-quality machine is designed and manufactured to meet the needs of the small timber and landscaping industries.

The following models are described in this manual:

Model	Trailer	Brakes	Axle
LXT95	Off-road towable	Surge	Hydraulic sliding
LXT115	Highway towable	Electric	Stationary

Information that is specific to a model is noted. Otherwise, the information in this manual applies to all of the listed models.

The machine comes with a log trailer, boom, log grapple, stabilizers, operator control panel, engine, and hydraulic system. The log trailer has removable, heavy-duty bunk posts and a back stop. The log grapple turns 360° and the grapple forks bypass to grip small diameter logs.

LXT95 and LXT115 log loader trailers have several accessories available, including a hydraulic winch. For information about the accessories, go to WallensteinEquipment.com.

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

Keep this manual 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.

1.1 Delivery Inspection Report

Wallenstein Log Loader Trailer

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

I have thoroughly instructed the customer about the equipment care, adjustments, safe operation, 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	( )
Contact Name	
Model	
Serial Number	
Delivery date	

Dealer Inspection Checklist

_____ All stabilizers function correctly.
_____ Grapple and boom function correctly.
_____ Adjustable tandem axle functions correctly.
_____ All fasteners are tightened to the correct torque.
_____ All grease points are lubricated.
_____ Engine starts and runs, and fluid levels are correct.
_____ Hydraulic system and cylinders function correctly.
_____ Hydraulic controls move freely.
_____ Hydraulic fluid reservoir level is correct.
_____ Hydraulic connections are tight, and hoses and fittings are in good condition.
_____ There are no hydraulic leaks.
_____ Hydraulic hoses are routed to avoid chafing.
_____ Tire pressure is correct (see the tire sidewall).
_____ Tires are in good condition.
_____ Purchased accessories are included, if applicable.
_____ Operator's Manual is in the storage tube.

Safety checks

_____ All safety sign decals are applied and legible.
_____ Operating and safety instructions were reviewed.
_____ All guards, shields, and covers are installed and secure.
_____ A retainer is installed through each hitch point.
_____ Safety chains are on the ball-mount hitch.
_____ Jack stand functions correctly.
_____ All lights operate correctly (for example; running, brake, turn signal, license plate).
_____ Boom lock-pin is installed.
_____ Brakes function correctly (surge or electric).
_____ Wheel lug nuts are tightened to the correct torque
_____ Bunk posts and back stop are present and in good condition.

Hydraulic winch accessory

_____ The winch functions correctly.
_____ The winch rotation direction and speed are correct.

1.2 Serial Number Location

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

Record the serial number of your product here

Model	
Serial Number	

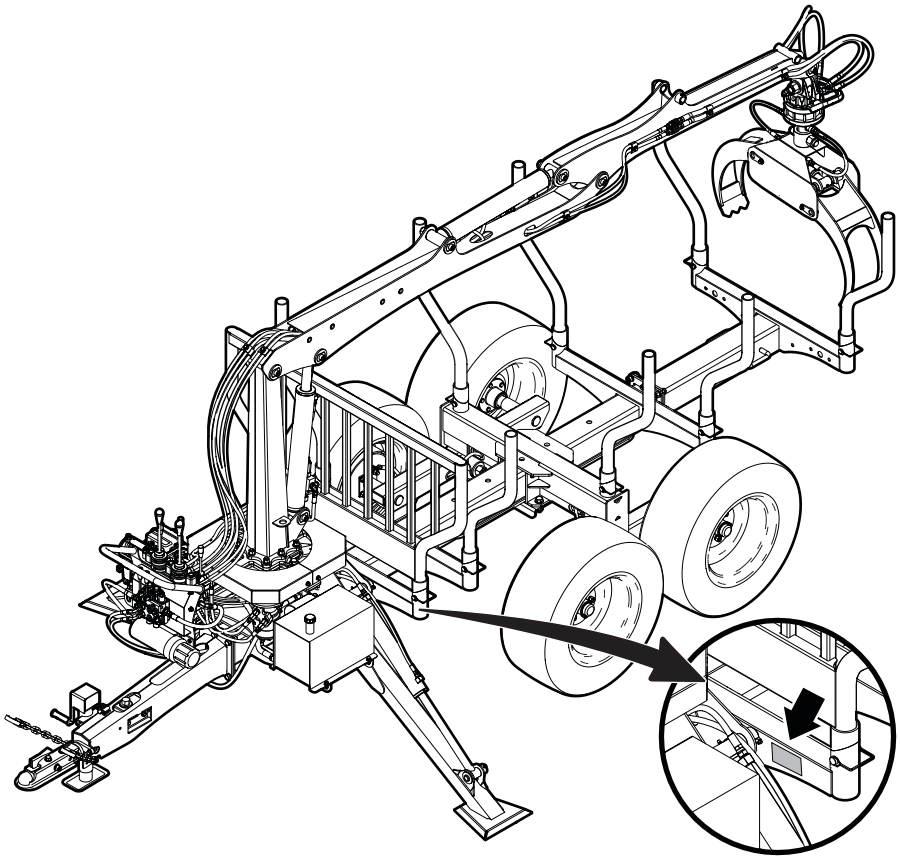


Figure 1 – Product information plate location (LXT95 shown)

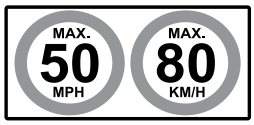
1.3 Types of Decals on the Machine

While you become familiar with your Wallenstein product, look at the decals. There are different types of decals for safety, information, and product identification. This section explains what the decals are for and how to read them

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

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

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



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

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

For safety sign decal definitions, see *Safety Sign Explanations on page 6*. For an illustration that shows all the decals and decal locations, go to WallensteinEquipment.com and download the Parts Manual for your Wallenstein product.

2. Safety

Read and understand all safety information before operating the machine.

2.1 Safety Alert Symbol

This Safety Alert Symbol means:

ATTENTION! BE ALERT!

YOUR SAFETY IS INVOLVED!

The safety alert symbol identifies important safety messages on the machine and in the manual.

When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

2.2 Signal Words

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

DANGER –

Indicates an imminently hazardous situation that, if not avoided, **will** result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.

WARNING –

Indicates a potentially hazardous situation that, if not avoided, **could** result in death or serious injury, and includes hazards that are exposed when guards are removed. It can also be used to alert against unsafe practices.

CAUTION –

Indicates a potentially hazardous situation that, if not avoided, **can** result in minor or moderate injury. It can also be used to alert against unsafe practices.

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

Information

☞ Provides additional information that is helpful.

2.3 Why Safety is Important

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

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

Remember, **YOU** are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Make sure that **EVERYONE** who uses this machine is familiar with the recommended operating and maintenance procedures and complies with all the safety precautions. Most accidents can be prevented.

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

2.4 Safety Rules

⚠ WARNING!

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

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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, understand, and follow ALL safety and operating instructions in this manual.
- If you do not understand any part of this manual or require assistance, contact your local dealer, the distributor, or Wallenstein Equipment.
- Do not let anyone use this machine until they read this manual. Operator's must have a thorough understanding of the safety precautions and how the machine works. Review the safety instructions with all users annually.
- Operators of this machine must be responsible, physically able people who are familiar with machinery and trained in the operation of this equipment. If an elderly person is assisting with the work, their physical limitations need to be recognized and accommodated.
- Make sure that all users understand the safety signs on the machine before operating, servicing, adjusting, or cleaning it. For safety sign explanations, see *Safety Signs on page 13*.
- Learn the controls and how to stop the machine quickly in the event of an emergency. For instructions, see *Emergency Stop on page 41*.
- 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 operating, servicing, or maintaining the machine.
  This includes, but is not limited to:
  - A hard hat.
  - Heavy gloves.
  - Hearing protection.
  - Protective shoes with steel toes and slip resistant soles.
  - Protective glasses, goggles, or a face shield.
- Prolonged exposure to loud noise 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. Consistent exposure to noise over 85 dB can cause severe hearing loss. Consistent exposure to noise over 90 dB can cause permanent, total hearing loss.
- Avoid wearing loose fitting clothing, loose or uncovered long hair, jewelry, and loose personal articles. These can get caught in moving parts and cause injury. Jewelry can also ground a live electrical circuit causing injury and machine damage.
- Never consume alcohol or drugs before or during machine operation. Alertness or coordination can be affected. Consult your doctor about operating this machine while taking prescription medications.
- Only use the machine in daylight or good artificial light.
- Keep all guards, shields, and covers in place. If removal is necessary for repair, replace them before using the machine.
- Never let anyone ride on the machine during transport.
- Keep bystanders at least 20 ft (6 m) from the stacking zone. Mark the zone with safety cones.
- Before starting the engine, make sure that the machine is clear of debris.
- Do not touch hot engine parts, the muffler cover, hoses, engine body, or engine oil during operation or after the engine is turned off. Contact with hot surfaces can cause burns.
- Be aware of overhead hazards (for example, branches, cables, and electrical wires).

2.5 Equipment Safety Guidelines

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

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

- Replace safety or instruction signs (decals) that are not readable or missing. For locations and explanations, see *Safety Signs on page 13*.
- Do not modify the equipment in any way. Unauthorized modifications can affect the integrity of the machine or the ability of the machine to perform as designed. Modifications can impair safety or function. They can affect the life of the equipment and void the warranty.
- Make sure that the machine is correctly stationed, adjusted, and in operating condition.
- Keep the machine free of accumulated trash, grease, and debris to prevent fires.
- If the machine has a winch accessory installed, replace the winch synthetic rope if it is kinked, badly frayed, has knots, cuts, or broken strands. If the rope fails under tension, it can snap back with great force causing injury or death. Avoid sudden jerks, quick starts or stops. Start slowly and smoothly.
- Never exceed the limitations of the machine. If its ability to do the job, or to do it safely is in question–**STOP!**

2.6 Safe Condition

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

Before starting any service or maintenance, complete the following:

SAFE CONDITION

1. If the machine is connected to a tow vehicle, set the tow vehicle's parking brake, turn off the engine, and remove the ignition key.
2. If the machine has a hydraulic winch accessory installed, remove the winch rope and strap from the log, and then wind the winch rope into the winch.
3. Remove all material from the machine.
4. Move the log grapple to grip the rear of the main frame.
5. Install the boom lock pin.
6. Stop the machine.
   For instructions, see *Stop the Machine on page 41*.
7. Operate each of the hydraulic controls two or three times to relieve the pressure.
8. Disconnect the engine spark-plug wire.
   Keep the spark-plug wire away from the spark plug to prevent the engine from being started accidentally.

2.7 Safety Training

An untrained operator can cause serious injury or death to themselves or others. Review the safety instructions with all users annually. The *Sign-Off Form on page 10* can be used to keep a training record.

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

2.8 Sign-Off Form

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

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

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

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

- ASABE S318 Safety for Agricultural Field Equipment.
- ISO 3600 Tractors, machinery for agriculture and forestry, powered lawn and garden equipment – Operator's manuals – Content and format.

Training Sign-Off Form

Date	Owner's signature	Operator or technician's signature

2.9 Work Site

⚠ CAUTION!

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

2.9.1 Select a Work Site

Select a safe work area and machine location:

- Avoid a close or cramped workspace. Make sure that there is enough space and clearance for the machine and logs.
- Avoid extremely wet or soft conditions where the trailer jack and stabilizers will become buried. If necessary, place a board or plate under the stabilizer bases.
- The area must be clear of stones, branches, or hidden obstacles that might cause a tripping, hooking, or snagging hazard.
- There must be no overhead hazards such as branches, cables, and electrical wires. If necessary, modify the work zone eliminate the following hazards:
  - Telephone lines.
  - Tree branches.
  - Roof overhangs.
  - Wash lines, ropes, or cables.
  - Overhead electrical cables (stay a minimum of 50 ft (15 m) away).

2.9.2 Create a Safe Work Area

Heavy material that falls, drops, rolls, or material that is on a rotating boom creates impact and crush hazards for people in the work zone.

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

- Create a 90° operator-and-worker safety zone based on the position of the work station, and material stack. Never move the log grapple or material into the operator and worker safe zone.
- Turn the operator console to a position that is opposite the work area. If work area is on the LH side of the trailer, position the control station on the RH side of the trailer.
- Always be aware of the position of the boom and the material being handled.
- Establish a work zone perimeter and mark it with safety cones. The work zone includes any area where the log grapple is being used and can include the traveled portion of a road if it is being used as a landing.
- The work zone perimeter must be a minimum of 20 ft (6 m) from any hazard.
  The area outside the work zone perimeter is the safe zone.
- 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.
- Never let anyone in the work zone during machine operation.
- Only the operator can authorize entry into the operator-and-worker safety zone. The operator must first make sure that it is safe to enter.
- Workers must signal and make eye contact with the operator before entering the operator-and-worker safety zone. Have a hand-signal scheme worked out. The operator must always be aware of the location of their coworkers.
- Keep all bystanders in the safe zone. Never let bystanders in the work zone.
- Use extreme caution around the material stacks. Stacked logs can roll in unpredictable ways.

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

A safe work area is divided into three zones:

1. **Safe Zone** – The area outside the work zone perimeter. Bystanders or anyone not directly involved with the work is permitted to be in this area. There are minimal potential hazards in the safe zone.
2. **Operator-and-Worker Safety Zone** – The area where an operator must be to operate the machine. Only the operator and workers that the operator approves are permitted to be in this area. Workers must signal and make eye contact with the operator before entering the operator-and-worker safety zone. The operator must always be aware of the location of their coworkers.
3. **Work Zone** – The area between the Hazard Zone and the Safe Zone. People assisting with the work who are wearing the appropriate PPE are permitted to be in this area. Some limited hazards are present in the Work Zone.

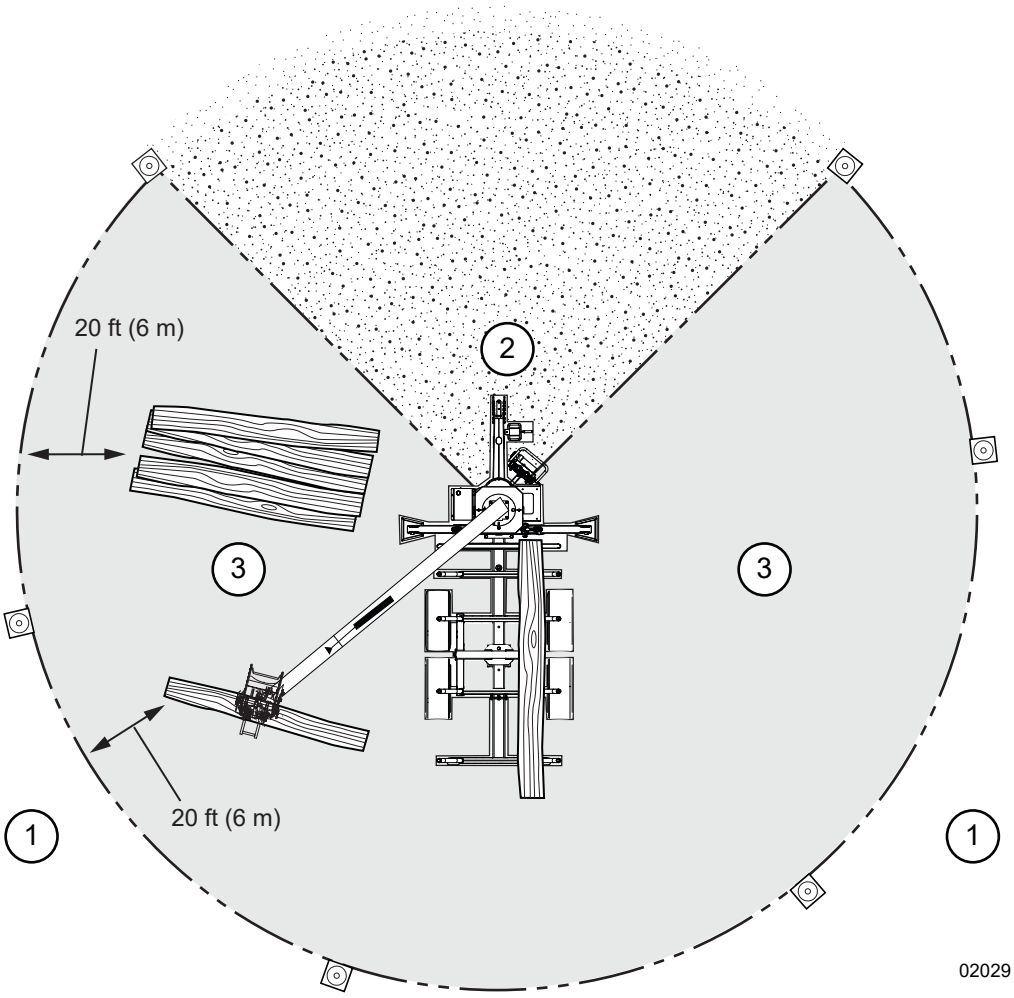

Figure 2–Example layout of a safe work area

3. Safety Signs

⚠ 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.

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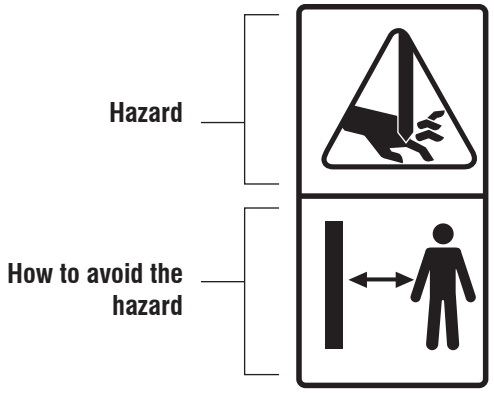
Practicing good safety means becoming familiar with safety signs (decals) and warnings and being aware of situations that require alertness.

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



Think SAFETY! Work SAFELY!

Safety

3.1 Safety Sign Locations

The numbers correspond with the *Safety Sign Explanations on page 15.*

The LXT115 model has the same safety sign locations.

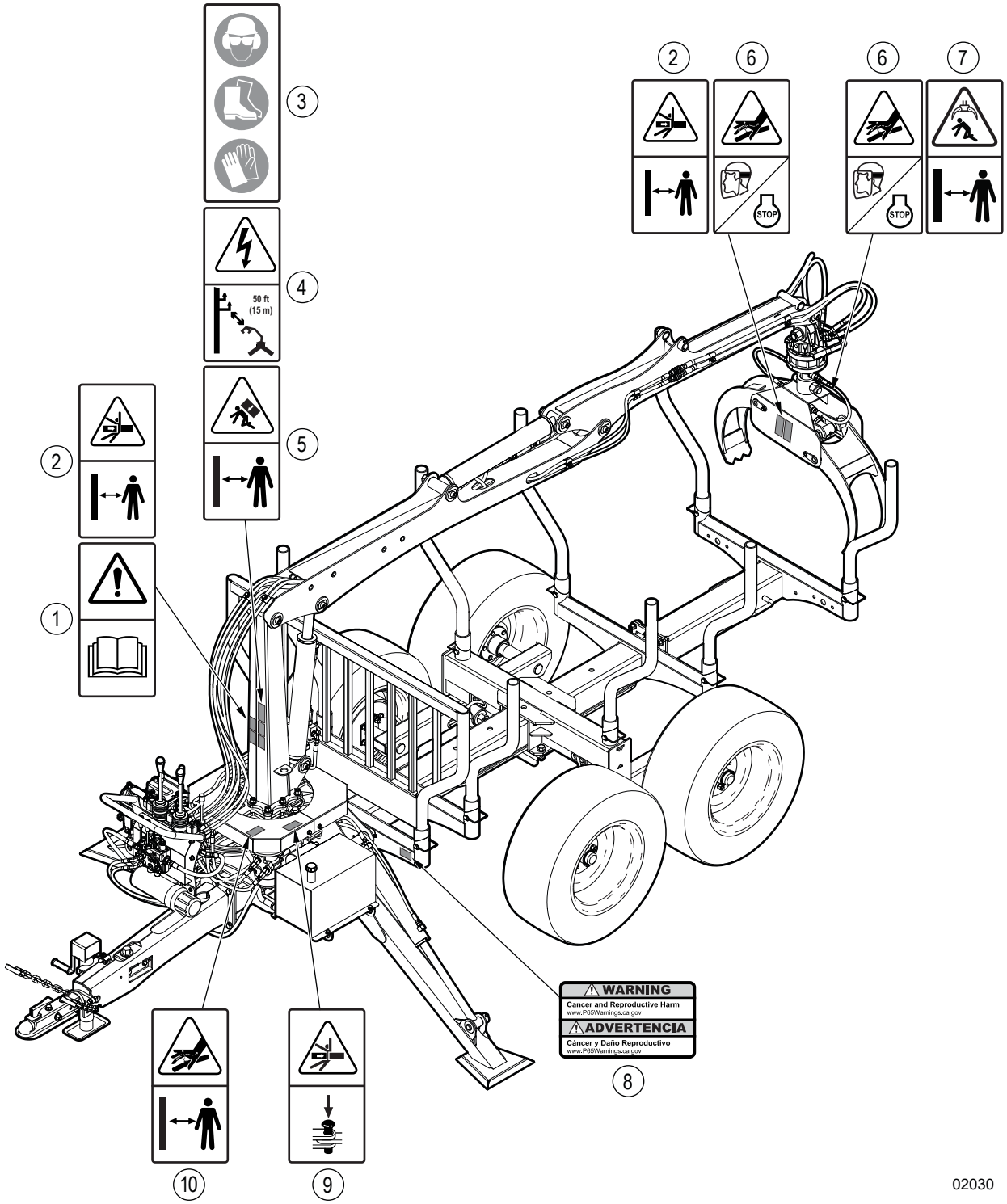


Figure 3– Safety sign locations (LXT95 model shown)

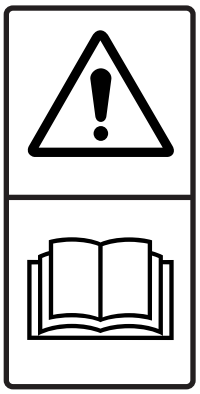
3.2 Safety Sign Explanations

1. Warning!

Read the Operator's Manual

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

The best safety feature is an informed operator.

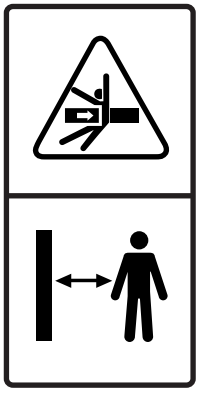


2. Warning!

Pinch and impact hazards

Stay away from the boom and log grapple during operation. When the control panel moves with the boom rotation, be aware of the location of the boom and stabilizer.

Pinch and impact injuries from the machine movement can cause serious injury or death.



3. Warning!

Put on the correct PPE

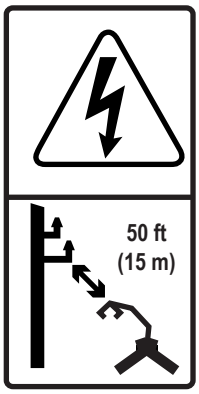
- A hard hat.
- Heavy gloves.
- Hearing protection.
- Protective footwear with steel toes and slip resistant soles.
- Protective goggles or a face shield.

4. Warning!

Electrocution hazard

Stay 50 ft (15 m) or more away from overhead electrical cables. Electrocution can occur without direct contact through an electrical arc.

Electrocution can cause burns, serious injury, or death.

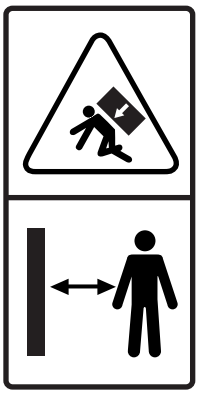


5. Warning!

Impact and crush hazards

The log grapple and material it holds can move in unexpected ways. Always be aware of the boom position and the material in the log grapple. Keep workers and bystanders away from the work area.

Impact or crush injuries from the log grapple or material can cause serious injury, or death.



6. Warning!

High-pressure injection hazard

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

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

7. Warning!

Impact and crush hazard

Do not go below the grapple. Keep people away from the grapple during operation. Material can fall from the grapple. Material that falls from the grapple can cause moderate to serious injury or death.

Do not lift material that is heavier than the maximim lift capacity of the machine.

8. Warning!

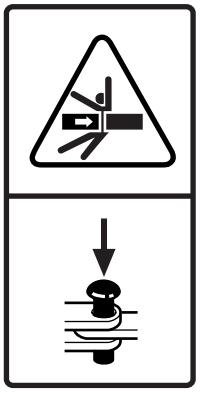
Risk of cancer and reproductive harm

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

9. Warning!

Impact hazard



The boom can move unexpectedly when it is not secure. Install the boom lock pin before transport.

Impact by the boom can cause serious injury or death.

10. Warning!

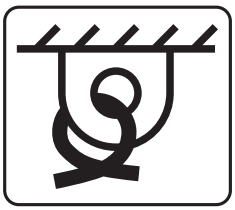
High-pressure injection hazard

Keep your distance from hydraulic hoses and do not touch them. The hydraulic fluid is under pressure. A hose leak can cause hydraulic fluid to be injected through the skin.

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

3.3 Information Decals

Information

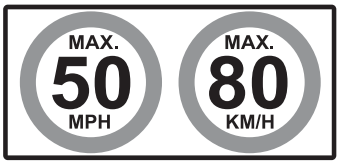


Before transport, always secure the load. This decal indicates a tie-down point location.

A load that is not tied down can fall off the trailer and cause a life threatening collision.

Information

Recommended speed limit



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

3.4 Replace a Safety Sign

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

Requirements

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

Procedure

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

1. Peel the decal off the backing paper.
2. Position the decal above the location where it is being applied to the machine.
3. Starting at one edge, carefully press the center of the exposed sticky-backing in place, smoothing it out as you work from one side to the other.
4. Use an appropriate tool to smooth out the decal, working from one end to the other.

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

4. Familiarization

Your LXT95 or LXT115 log loader trailer is designed for an operator to load and transport logs. Use the boom and log grapple to lift logs and then place them on the trailer. Power to operate the machine is provided by a gas engine and hydraulic pump.

4.1 New Operator

⚠ WARNING!

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

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

An operator that does not have the correct training is not qualified to use the machine. They can endanger themselves and others or damage property.

4.2 Training

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

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

4.3 Operator Orientation

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

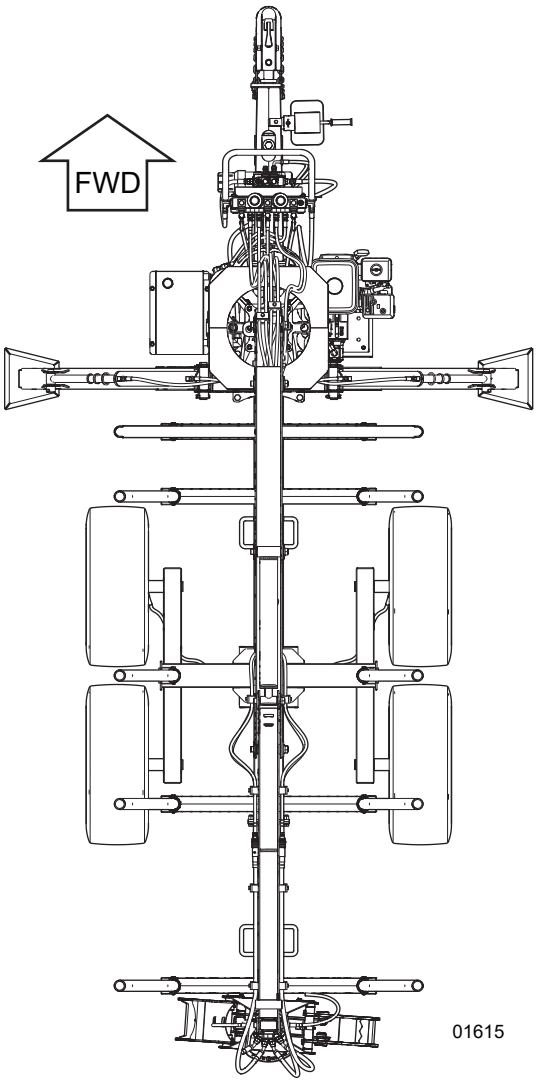


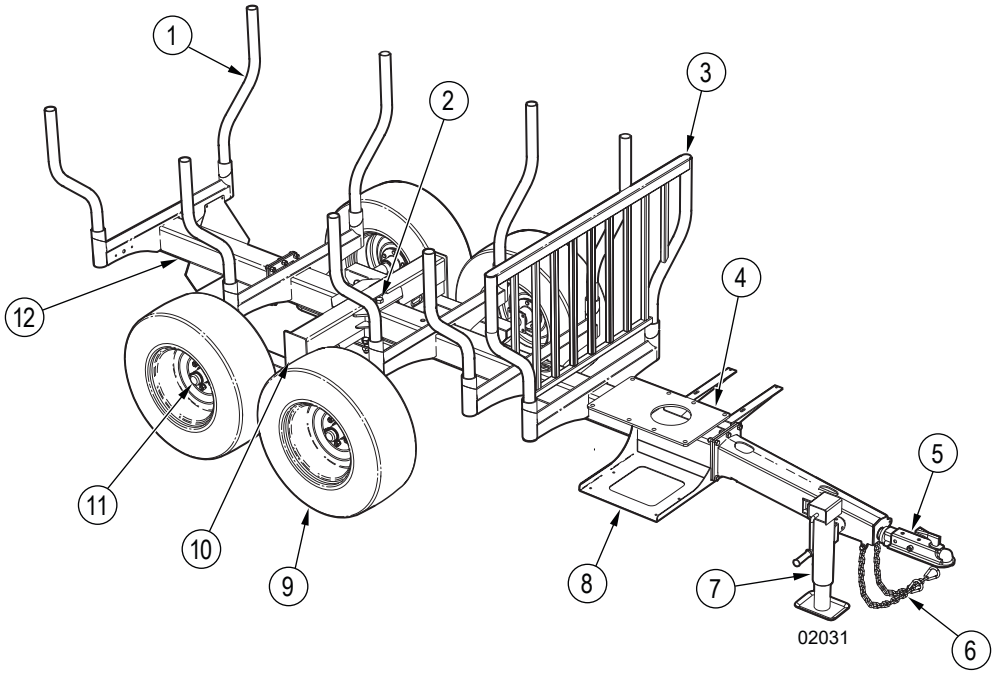
Figure 4–Operator orientation

4.4 Machine Components

The following sections describe the machine components for each machine assembly.

4.4.1 Trailer Components

LXT95



LXT115

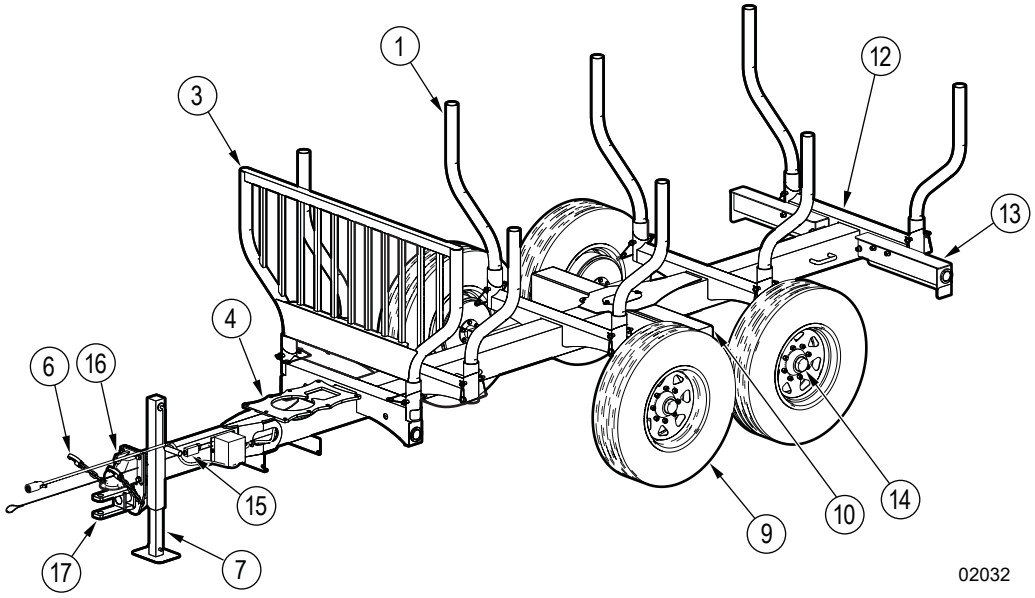


Figure 5– Trailer components

1. Bunk post (removable, self centering)
2. Sliding axle (hydraulic)
3. Back stop
4. Log boom mount
5. Ball-mount hitch (two inch)
6. Safety chains
7. Trailer jack
8. Power-pack mount
9. Tire (1 of 4)
10. Walking-beam axle
11. Surge brakes, hydraulic
12. Main frame
13. Lights (operating, brake, and indicator)
14. Electric brakes
15. Breakaway switch
16. Ball-mount hitch (2 5/16 inch)
17. Clevis hitch

4.4.2 Boom and Log Grapple Components

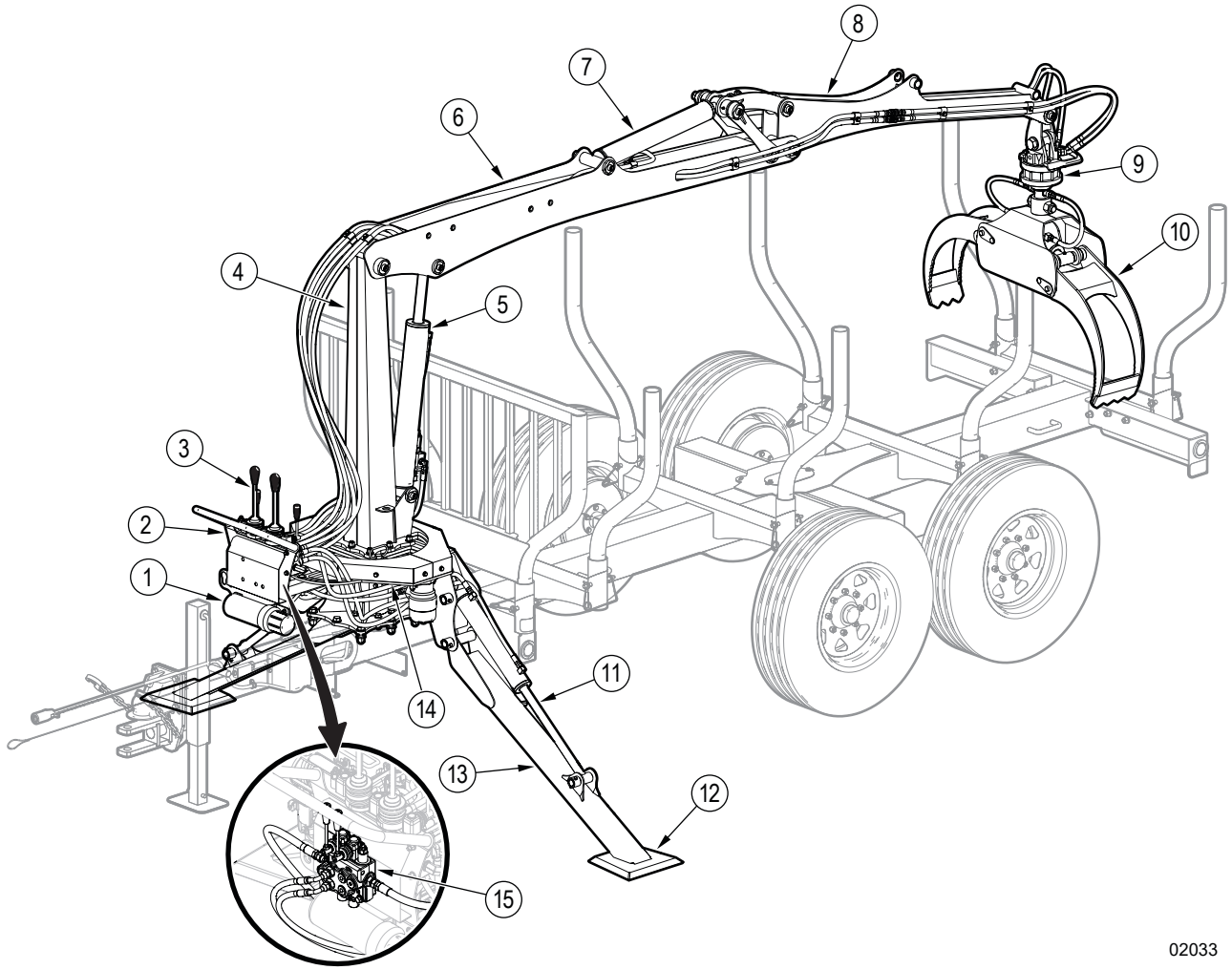
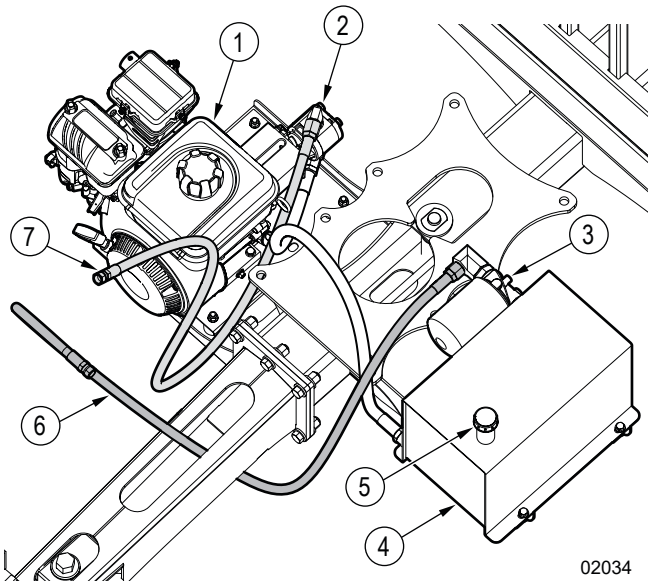


Figure 6–Boom and log grapple components

1. Operator's manual tube
2. Operator control panel
3. Hydraulic control valves
4. Main-boom tower
5. Main-boom hydraulic cylinder
6. Main boom
7. Dipper-boom hydraulic cylinder
8. Dipper boom
9. Log grapple rotator
10. Log grapple fork (1 of 2)
11. Stabilizer hydraulic cylinder (1 of 2)
12. Stabilizer base (1 of 2)
13. Stabilizer (1 of 2)
14. Boom turn assembly
15. LXT95 sliding axle and winch accessory hydraulic control valves

4.4.3 Engine and Hydraulic System Components

LXT95



LXT115

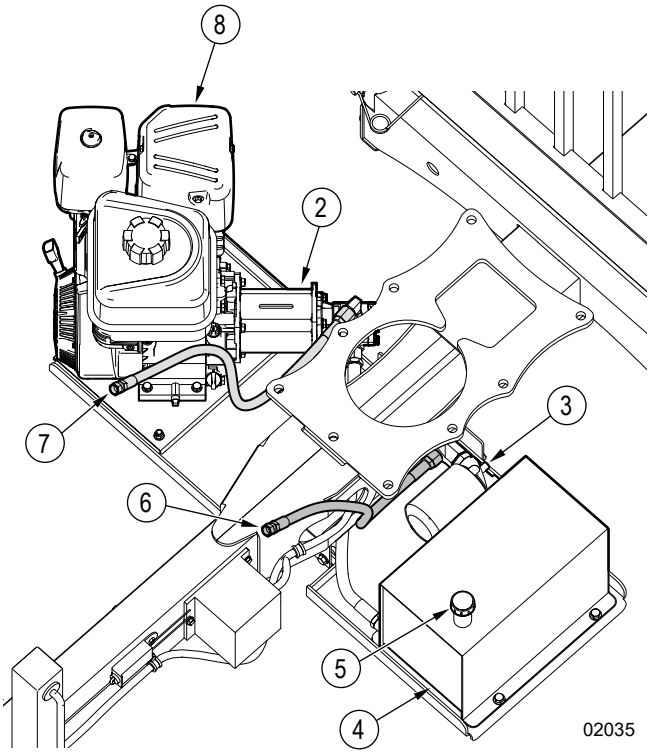


Figure 7 – Engine and hydraulic components

1. Engine, 6.5 hp (203 cc)
2. Hydraulic fluid pump
3. Hydraulic fluid filter
4. Hydraulic fluid reservoir
5. Hydraulic fluid fill cap and dipstick
6. Hydraulic fluid return hose
7. Hydraulic fluid pressure hose
8. Engine, 10 hp (305 cc)

4.4.4 Hydraulic Winch Components

The hydraulic winch is an accessory that is sold separately from the machine.

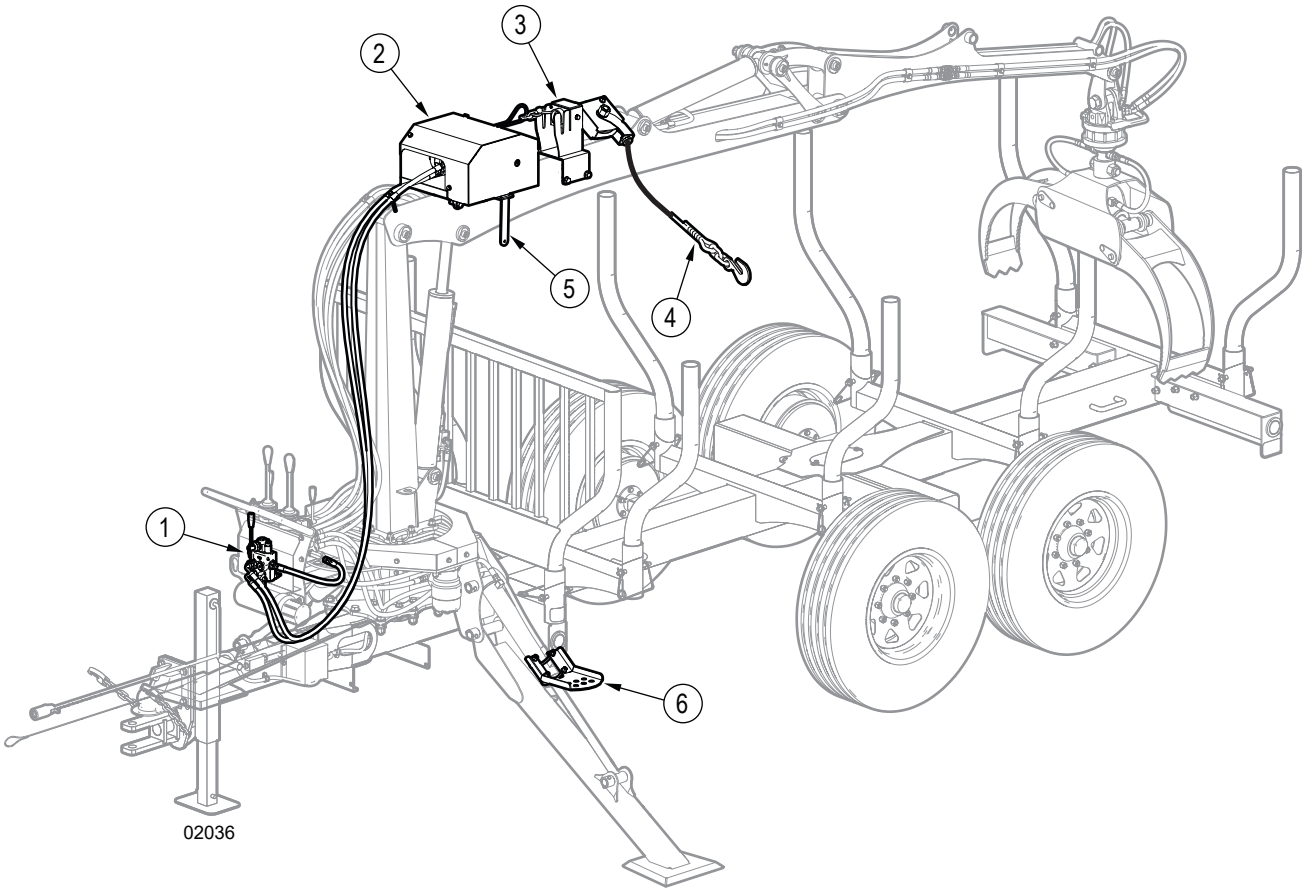


Figure 8– Hydraulic winch components (sold separately)

1. Hydraulic valve and control lever (LXT115 only)
2. Hydraulic winch (two-speed)
3. Top pulley and cable guide
4. Synthetic rope with hook
5. Winch gear lever
6. Step

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 LX95 6.5 hp Engine Controls

WARNING!

Before starting the engine, read and understand the safety and operating information under *Engine Operation on page 34*.

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

5.1.1 Throttle Control and Fuel Shutoff

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

Fast
Engine speed is fast.

Slow
Engine speed is slow.

Fuel shut-off closed

STOP
The engine is stopped.

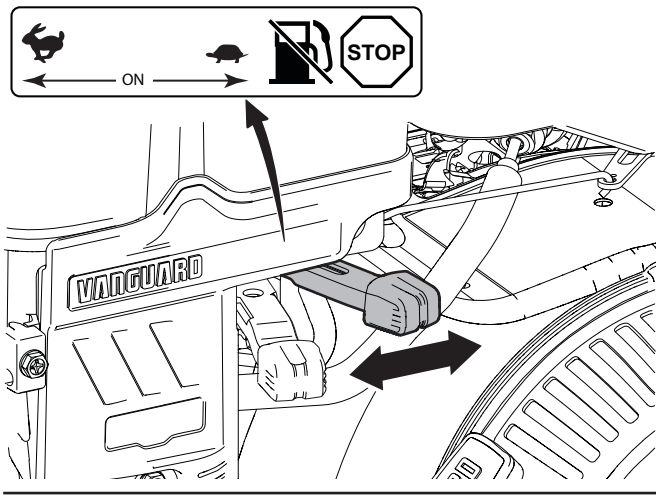


Figure 9–6.5 hp engine throttle control and fuel shutoff

5.1.2 Choke Control

The choke control lever has the following functions:

Closed
Close the choke to start a cold engine.

Open
Open the choke when the engine is warm.

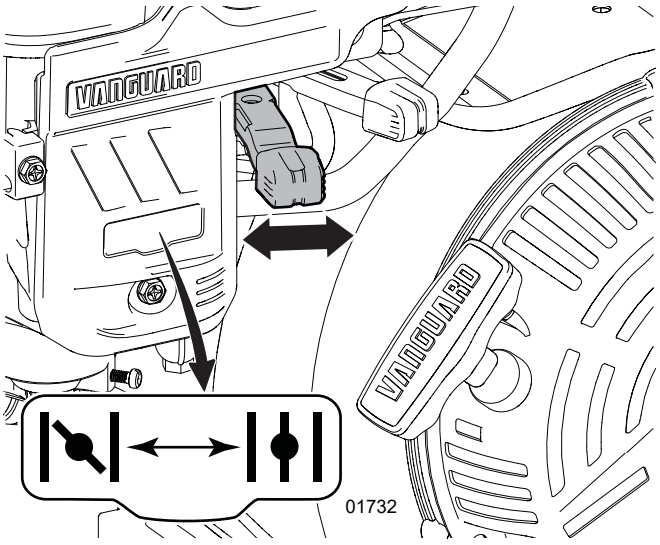


Figure 10–6.5 hp engine choke control

5.1.3 Rewind Start

WARNING!

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

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

W102

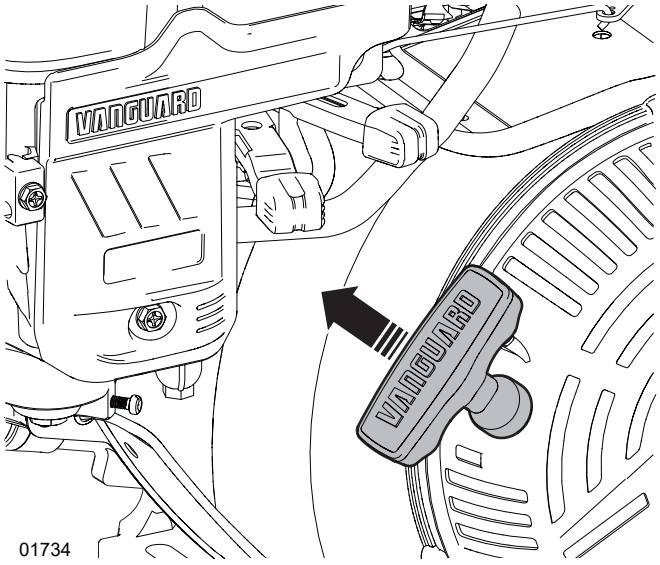


Figure 11 – Rewind-start handle

5.2 LX115 10 hp Engine Controls

WARNING!

Before starting the engine, read and understand the safety and operating information under *Engine Operation on page 34*.

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

5.2.1 Throttle Control

The throttle control lever has the following functions:

Fast
Engine speed is fast.

Slow
Engine speed is slow.

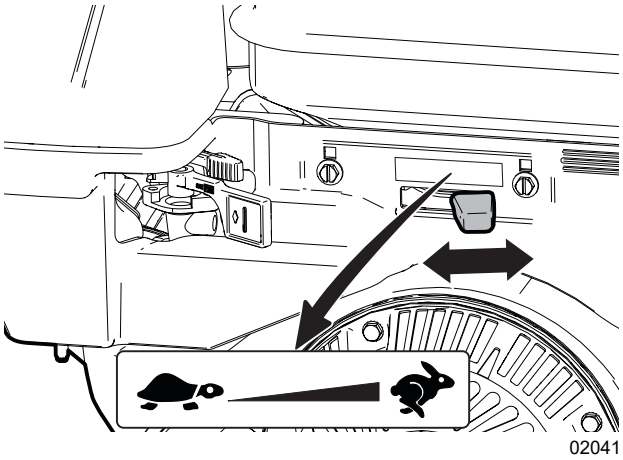


Figure 12 – 10 hp engine throttle control

5.2.2 Fuel-Shutoff Control

The throttle control lever has the following functions:

Closed and Off
The fuel-shutoff valve is closed and the engine is off.

Open and On
The fuel-shutoff valve is open and the engine is on.

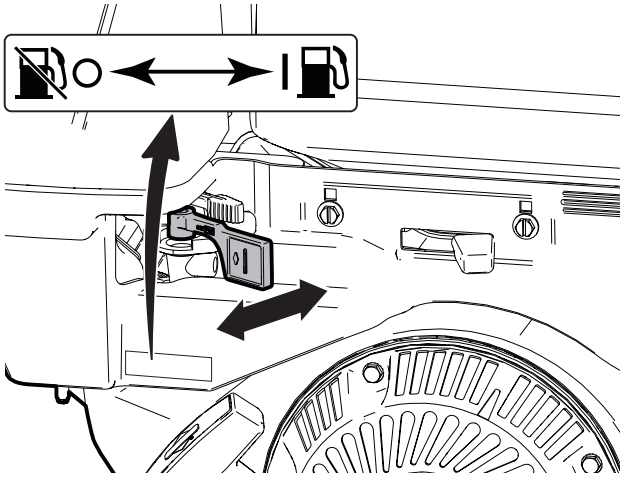


Figure 13–10 hp engine fuel shutoff

5.2.3 Choke Control

The choke control lever has the following functions:

Closed
Close the choke to start a cold engine.

Open
Open the choke when the engine is warm.

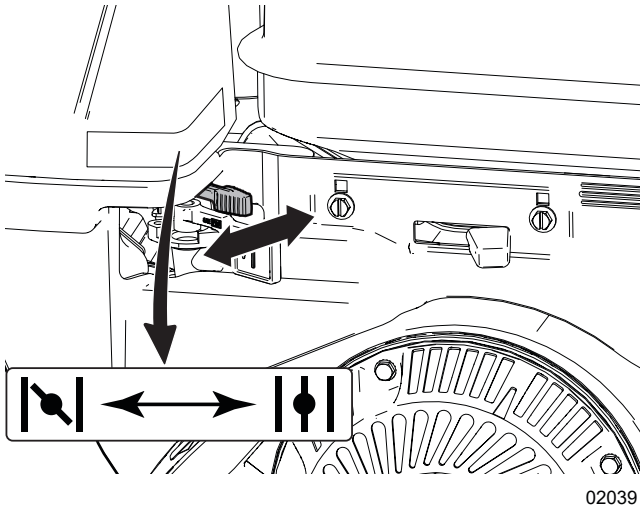


Figure 14–10 hp engine choke control

5.2.4 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

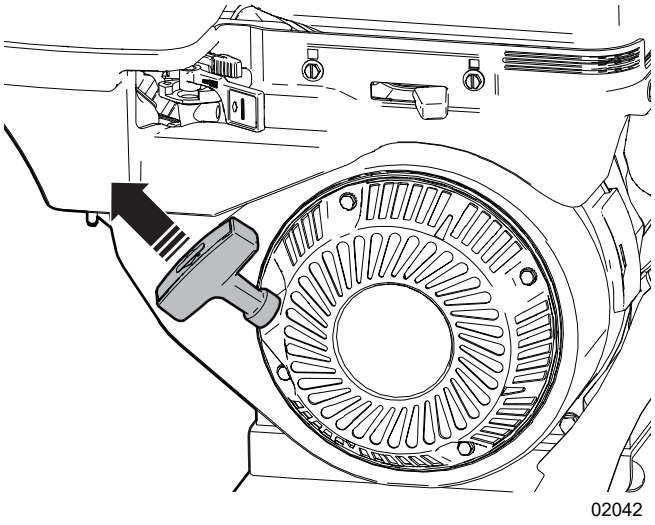


Figure 15– Rewind-start handle

5.3 Operator Control Panel Lock

The operator control panel can be turned to the left or right side of the machine. Position the operator controls on the opposite side of the machine from the work area. For example, if the work area is on the left side of the machine, turn the operator controls to the right side of the machine.

Turn the operator control panel:

1. Below the operator control panel, loosen the lock handle.
2. Turn the operator control panel to the necessary position.
3. Tighten the lock handle.

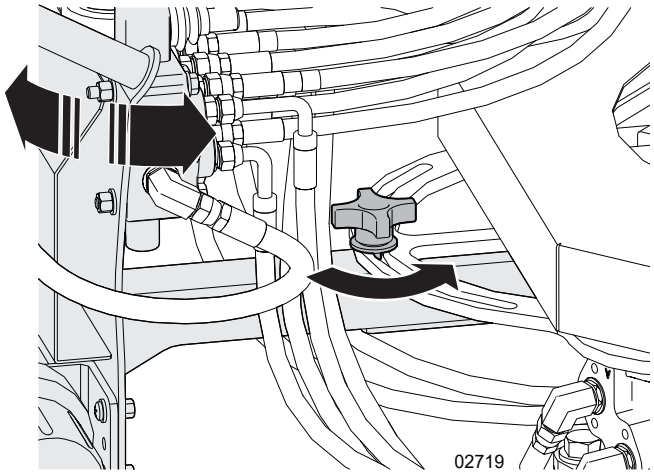


Figure 16– Turn the operator control panel

5.4 Boom Lock Pin

The boom lock pin prevents the main boom from turning. When it is not in use, put the boom lock pin in the storage bracket on the side of the main boom.

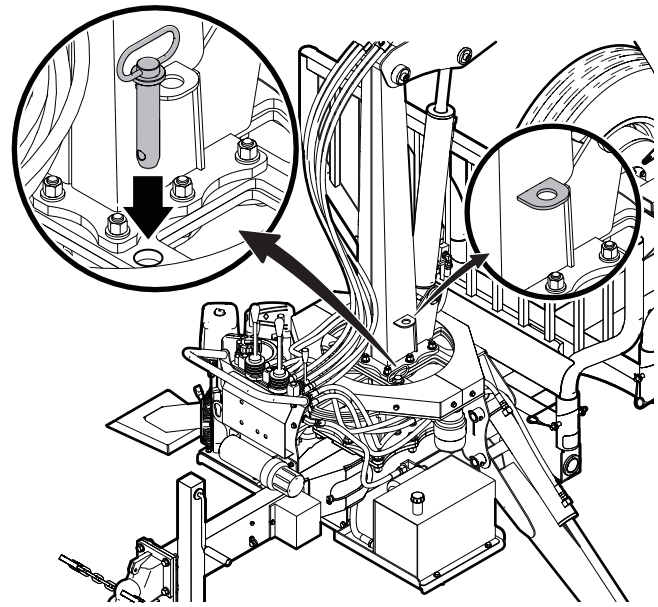


Figure 17 – Lock and storage bracket locations

5.5 Stabilizer Latch

Each stabilizer has a latch that holds the stabilizer in the retracted position.

5.5.1 Disengage a Stabilizer Latch

1. Push the stabilizer toward the machine to release pressue on the latch bar.
2. Pull the latch bar away from the stabilizer (over the latch hook).
3. Lower the end of the latch bar until the latch bar is vertical.
4. Release the stabilizer.

5.5.2 Engage a Stabilizer Latch

1. Raise the end of the latch bar to align the hole with the latch hook.
   If necessary, push the stabilizer toward the machine to align the latch-bar hole with the latch hook.
2. Push the latch bar toward the stabilizer (over the latch hook).
3. Release the stabilizer to engage the latch bar with the latch hook.

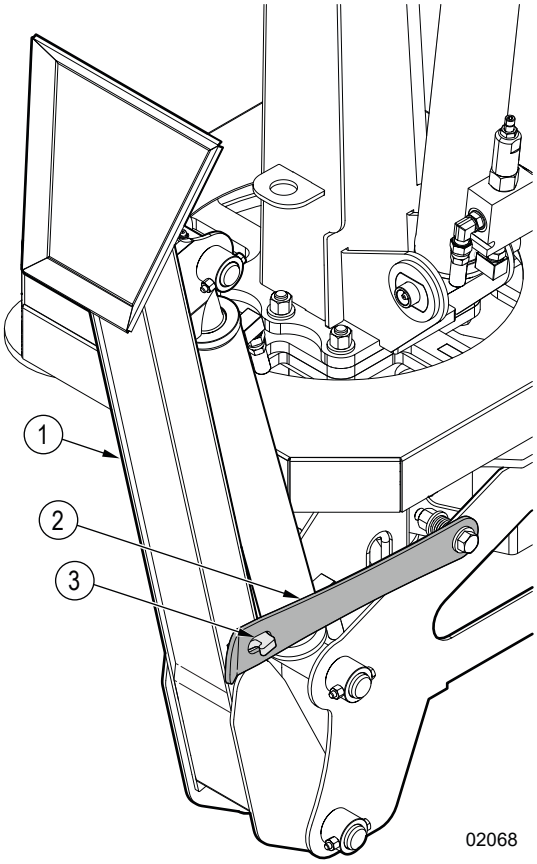


Figure 18 – Stabilizer latch

1. Stabilizer
2. Latch bar
3. Latch hook

5.6 Main Hydraulic Controls

IMPORTANT! Stand at the operator control panel and face the main boom. The left hand (LH), right hand (RH), forward, and backward directions in this section are referenced from this position.

The machine has one main hydraulic control valve and five control levers for the stabilizers, main boom, dipper boom, and log grapple. The control levers are located on the operator control panel.

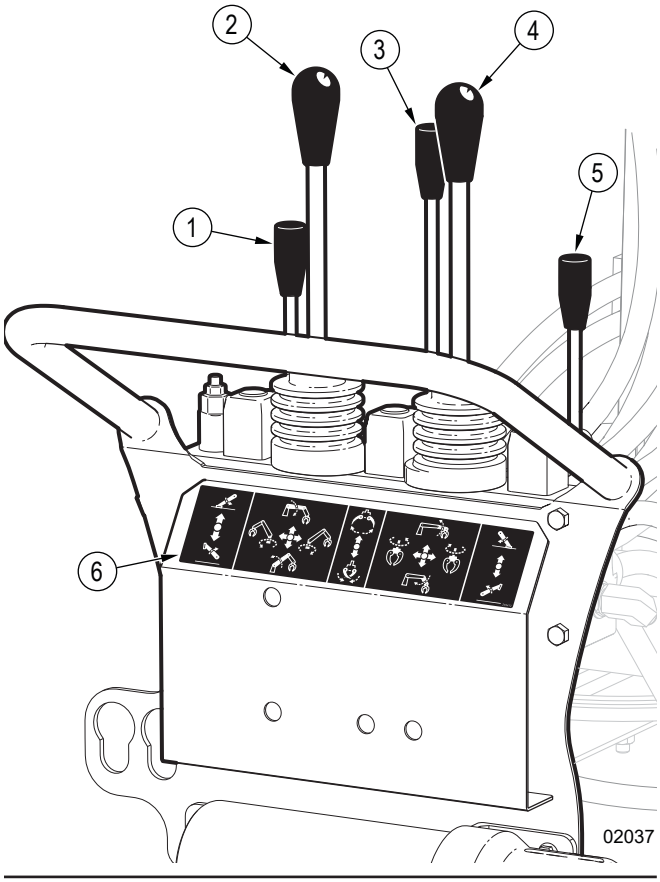


Figure 19–Main hydraulic controls

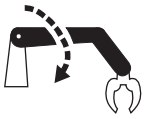
1. LH stabilizer - raise or lower
2. Main boom - raise, lower, or turn
3. Log grapple - open or close
4. Dipper boom - raise or lower, or log grapple turn
5. RH stabilizer - raise or lower
6. Main hydraulic control functions decal

5.6.1 LH Stabilizer Control Lever

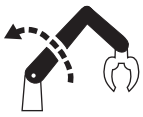
Extend
Push the lever forward to extend the LH stabilizer.

Retract
Pull the lever backward to retract the LH stabilizer.

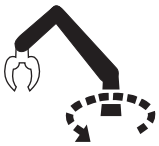
5.6.2 Main Boom Control Lever



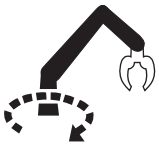
Lower
Push the lever forward to lower the main boom.



Raise
Pull the lever backward to raise the main boom.

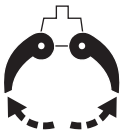


Turn counterclockwise
Push the lever to your LH side to turn the main boom counterclockwise.



Turn clockwise
Push the lever to your RH side to turn the main boom clockwise.

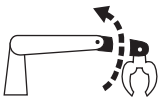
5.6.3 Log Grapple Control Lever



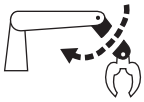
Open
Push the lever forward to open the log grapple forks.

Close
Pull the lever backward to close the log grapple forks.

5.6.4 Dipper Boom or Log Grapple Control Lever



Raise
Push the lever forward to raise the dipper boom.



Lower
Pull the lever backward to lower the dipper boom.

Turn counterclockwise
Push the lever to your LH side to turn the log grapple counterclockwise.

Turn clockwise
Push the lever to your RH side to turn the log grapple clockwise.

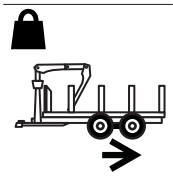
5.6.5 RH Stabilizer Control Lever

Extend
Push the lever forward to extend the RH stabilizer.

Retract
Pull the lever backward to retract the RH stabilizer.

5.7 LXT95 Sliding-Axle Control

The LXT95 has a second hydraulic control valve and two control levers. The LH control lever is for the sliding axle. The valve and control levers are located on the front of the operator control panel.
The RH control lever is for a hydraulic winch (sold separately). For more information, see *Winch Control Lever on page 31*.



Increase the trailer-tongue weight
Push the lever forward to move the axle backward on the trailer frame.

Decrease the trailer-tongue weight
Pull the lever backward to move the axle forward on the trailer frame.

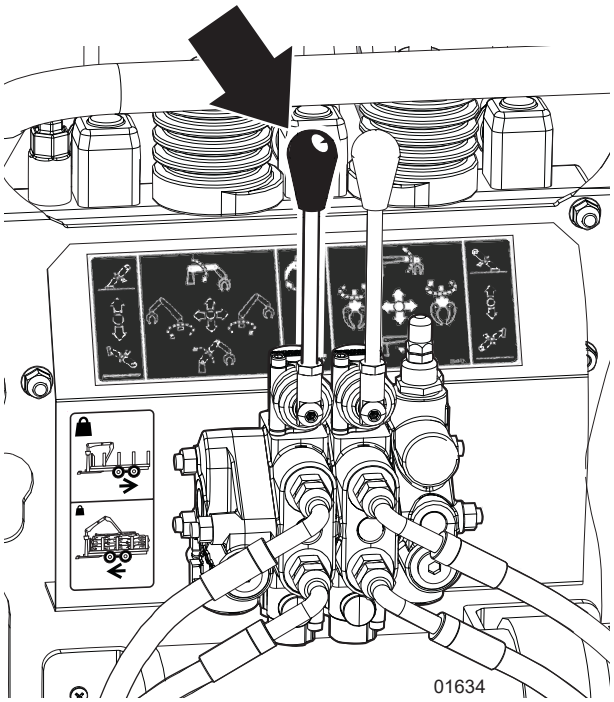


Figure 20 – LXT95 sliding-axle control

5.8 LXT95 Surge Brake Control

The surge brake control is located on the trailer tongue. Use the surge brake control to disengage the surge brakes and prevent them from operating. It is necessary to disengage the surge brakes when the tow vehicle moves the machine in reverse (backward).

For more information, see *LXT95 Surge Brake Operation on page 39*.

Disengage
Turn the surge brake control to the horizontal position to disengage the surge brakes (the surge brakes do not operate).

Engage
Turn the surge brake control to the vertical position to engage the surge brakes (the surge brakes operate when the tow vehicle speed decreases).

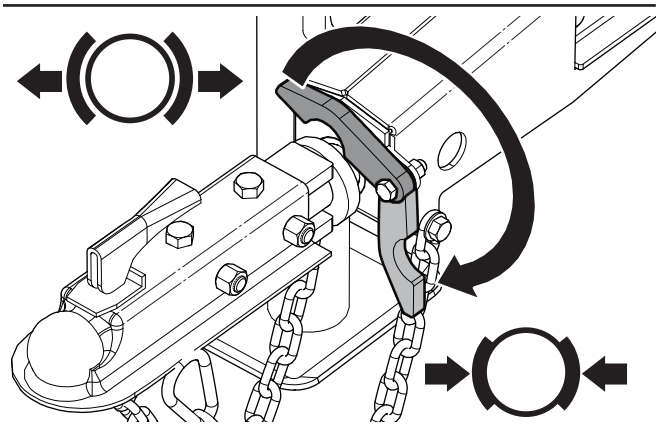


Figure 21–Surge-brake control

5.9 Bunk Posts

The bunk posts are designed to keep logs on the trailer; however, they are removable.

Each bunk post stop and mount are beveled. The beveled design provides flexibility for the post to move when it is bumped, and then guides the post back to an upright position.

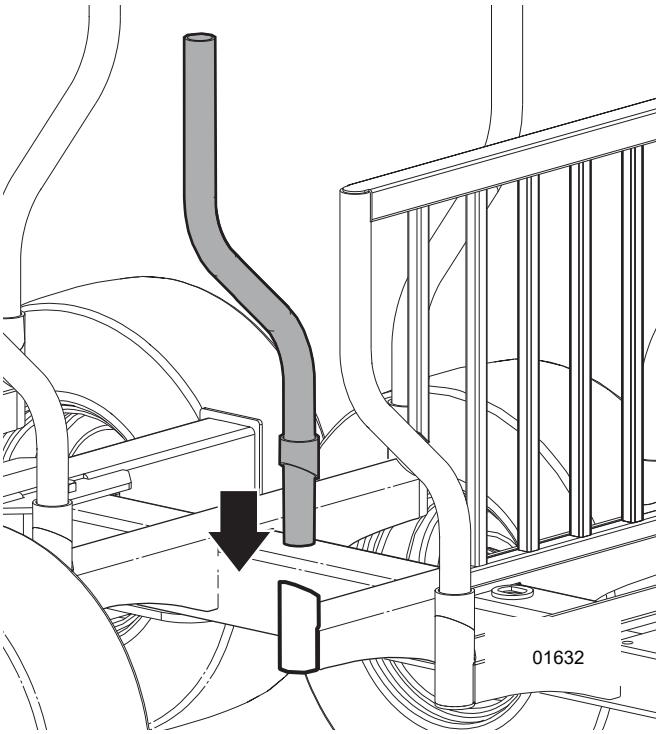


Figure 22–Bunk posts

5.10 Hydraulic Winch Controls

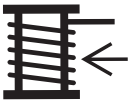
The hydraulic winch is sold separately.

Model	Winch Control Location
LXT95	The hydraulic winch accessory connects to the RH control lever (beside the sliding-axle control lever).
LXT110	The hydraulic winch accessory includes a valve and control lever that are installed on the operator control panel.

5.10.1 Winch Control Lever

Unwind
Push the lever forward to unwind the winch rope.

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



Wind
Pull and hold the lever backward to start the winch, and then wind the winch rope onto the drum.

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

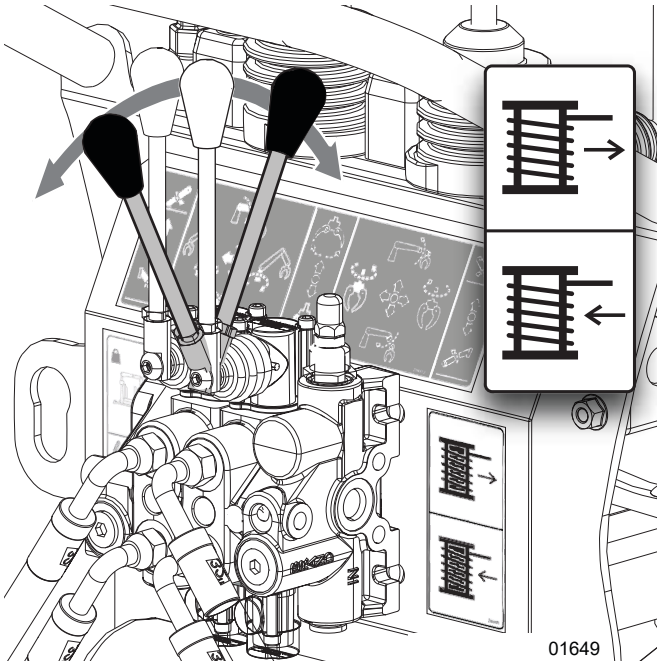
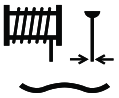


Figure 23–Winch control lever (LXT95 model shown)

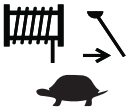
5.10.2 Winch Gear Lever

The winch drive has a three-position lever that controls the winch speed.

Fast
Push the gear lever to the left (toward the main boom) to select a fast winch speed.



Freewheel
Place the lever in the center position to release the winch drive and pull the winch rope out by hand.



Slow
Pull the gear lever to the right (away from the main boom) to select a slow winch speed.

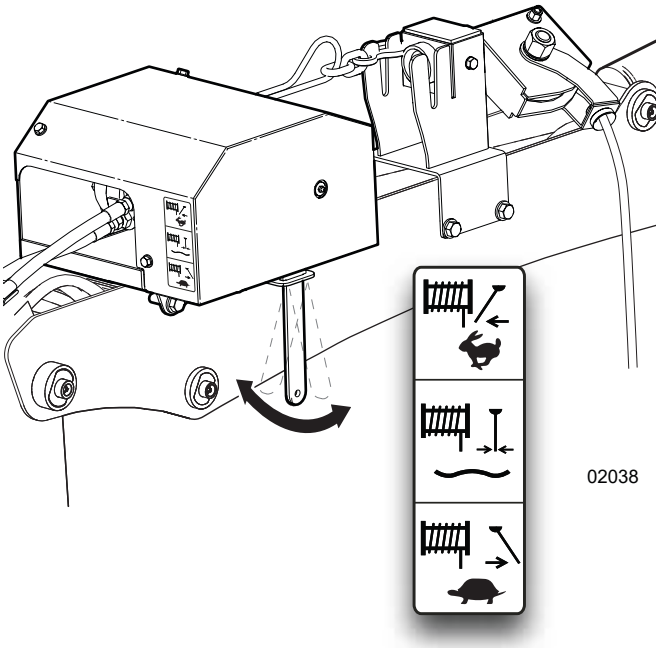


Figure 24–Winch gear lever

6. Operating Instructions

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

6.1 Operating Safety

⚠ WARNING!

Wear the personal protective equipment (PPE) that is 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

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

- Park the machine in a clear location on dry, level ground. Do not operate the machine on a hillside or in an area that is cluttered, wet, muddy, or icy to prevent slips and trips.
- Keep the work area clean and free of debris.
- Never operate an engine inside a closed building. The exhaust fumes can cause asphyxiation.
- Before starting the machine, close and secure all guards, shields, and covers. If a guard, shield, or cover was removed, install it.
- De-limb logs before loading them.
- Do not move or transport the machine with the engine on.
- Never stand, sit, or climb on any part of the machine while the engine is on.
- Never move or carry people on the machine (trailer, boom, or log grapple).
- **Never operate the machine alone!** Always have a minimum of two fully trained people present:
  - It is recommended that there be one operator and one spotter present during machine operation. The operator and spotter must both be completely familiar with all the machine safety, controls, and operating functions.
  - The operator and spotter should review and understand a system of hand signals.
  - **The operator must be in control of the machine at all times. The spotter must remain outside of the hazard zone while the machine is in operation.**
- Turn off the engine before leaving the machine unattended.
- Stay a minimum 50 ft (15 m) away from power lines. Power lines as well as the surrounding air space which insulates the line can be hazardous. Electricity can arc or jump through the insulating air space. The higher the voltage, the more likely it is for an arc to occur.
- Never swing a load when the operator's line of sight is obstructed. Do not lift a load higher than is necessary to provide the operator an unobstructed view.
- Extend the stabilizers to support the machine during loading or unloading. Make sure that the stabilizers are positioned on firm ground.
- Keep the machine attached to the tow vehicle.
- Handle logs with respect and be aware of other people in the area.
- Keep all bystanders a minimum of 20 ft (6 m) feet away from the machine, boom, log grapple, and logs during operation. Mark the safe zone with safety cones.
  For more information, see *Work Site on page 11*.
- Position the operator control panel and operate the machine on the opposite side of the trailer from the work zone.
- Be aware of the operator safe zone. Keep the boom and material out of the safety zone.
- Make sure that the load weight is less than the maximum boom and trailer capacity.
- Before operation, complete the tasks described in the *Pre-Start Checklist on page 33*.

6.2 Pre-Start Checklist

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

Items to Complete	✓
Review and follow the *Operating Safety on page 32*.	
Check the engine oil, fuel, and hydraulic fluid levels. If necessary, add engine oil, fuel, or hydraulic fluid.	
Check that the engine spark plug, muffler, fuel cap, and air filter cover are installed correctly.	
Make sure that the machine is lubricated, as specified in the *Maintenance Schedule on page 60*.	
Check that the boom pivot points, log grapple, and stabilizers move freely.	
Check the hydraulic system for leaks. Use a safe method to examine for leaks. Tighten fittings or replace components, as necessary. For more information, see *Hydraulic Fitting Torque on page 77*.	
Check the machine for entangled material. Remove any twine, wire, or other material that has become entangled.	
Check that all guards, shields, and covers are installed, secure, and in good condition. Replace and install them, as necessary.	
Check that all the fasteners are installed and tightened to the correct torque. For more information, see *Bolt Torque on page 76*.	
Make sure that the operator and spotter are wearing the necessary PPE (including hard hat, safety eye wear, safety footwear, safety vest, hearing protection, and work gloves). The PPE must be in good condition.	
Make sure that the operator and spotter are not wearing loose-fitting clothing or jewelry, and long hair is tied up.	
Make sure that there are no bystanders inside the work zone and the spotter is outside the hazard zone. For zone definitions, see *Create a Safe Work Area on page 11*.	
Hydraulic Winch Accessory	
Make sure that the winch is in working condition. Repair or replace the winch, as necessary.	
Make sure that the winch rope is in good condition. Replace the rope if it is cut, knotted, worn, or has any broken strands.	
Make sure that the winch strap (or choker chain) is in good condition. Replace the strap if it is torn or damaged.	
Dump Box or Flat Bed Accessory	
Make sure that the mounting leg pins are installed correctly.	

6.3 Machine Break-In

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

Before the First Start

1. Read and understand all safety information in this manual, the engine manufacturer's manual, and the chain saw manufacturer's manual.
2. Review the *Machine Components on page 19*.
3. Review the operation and function of the *Controls on page 23*.
4. Complete the *Pre-Start Checklist*.

Before the First Use

Burnish the brakes.
For instructions, see *Burnish the Brakes on page 70*.

After Five Hours of Operation

Complete each of the following:

- Check that all the fasteners are installed and tightened to the correct torque. For more information, see *Bolt Torque on page 76*.
- Check the hydraulic system for leaks.
  Use a safe method to examine for leaks. Tighten fittings or replace components, as necessary. For more information, see *Hydraulic Fitting Torque on page 77*.
- Check the engine fuel and hydraulic fluid levels. If necessary, add fuel or hydraulic fluid.
- Change the engine oil.
  For instructions, see the engine manufacturer's manual.
- Check the machine for entangled material. Remove any twine, wire, or other material that has become entangled.
- Lubricate all grease points. For more information, see *Grease Points on page 61*.
- If the hydraulic winch accessory is installed, check the condition of the winch rope. Replace the rope if it is cut, knotted, worn, or has any broken strands.

After 20 Hours of Operation

1. Complete the tasks listed under *After Five Hours of Operation*.
2. Continue with the regular *Maintenance Schedule on page 60*.

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 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!

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!

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

WARNING!

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

CAUTION!

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

IMPORTANT! In some regions, when an engine is used on any forest covered, brush covered, or grass covered unimproved land it is required 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.

- Remove the wire from the spark plug before servicing the engine or equipment to prevent the engine from being started accidentally.
- Keep cylinder fins and governor parts free of grass and other debris that can affect the engine speed.
- Examine the muffler at regular intervals. Make sure that the muffler operates correctly. Repair or replace a worn or leaking muffler.
- Use fresh gasoline (less than three months old). Stale fuel creates insoluble solids (deposits) that clog the carburetor and cause leaks.
- Check the fuel lines and fittings frequently. Look for cracks or leaks. Replace damaged fuel lines or fittings, as necessary.
- Store fuel well away from all flammable material.
- Do not operate a gas engine in an enclosed area. Exhaust gases contain carbon monoxide (an odorless and deadly gas).
- Do not put hands or feet near moving or rotating parts.
- Do use the choke to stop the engine. When it is possible, gradually reduce the engine speed before you stop the engine.
- Do not tamper with components that control the maximum engine speed. The maximum engine speed is set by the manufacturer.
- Do not check for the engine spark with the spark plug or spark plug wire removed.

- Do not attempt to start the engine with the spark plug removed. If the engine floods, set the choke control to **Open**, set the throttle control to **Fast**, and then try starting the engine again.
- Do not strike the flywheel with a hard object or metal tool. This can cause the flywheel to shatter during operation. Use the correct tools to service the engine.
- When the engine is hot, do not touch the muffler, cylinder, or fins. Contact with hot engine parts can cause severe burns.
- Do not operate the engine in any of the following situations:
  - With an accumulation of wood chips, dirt, or other combustible materials in the muffler area.
  - In an area where fuel is spilled. Move the machine away from the spill until the fuel evaporates. Do not create any sources of ignition in the spill area.
  - With the air filter or air filter cover removed. Doing this can damage the engine.
  - Without a muffler or heat shield. Examine the muffler and heat shield at regular intervals. Replace a muffler or heat shield that is damaged.

6.4.2 Check the Engine Fuel Level

Check the engine fuel level before each use.

To eliminate or reduce interruptions during operation, start with a full fuel tank. Make sure that there is always some fuel in the fuel tank.

1. Park the machine on level ground.
2. Stop the machine.
   For instructions, see *Stop the Machine on page 41*.
3. Wait a minimum of five minutes for the engine temperature to decrease.
4. Turn the fuel cap counterclockwise to remove it.
5. Check the fuel level.
   The fuel tank is full when the fuel level is visible 1/2 inch (12 mm) below the filler neck. There must be room for fuel expansion.
6. Complete one of the following:
   - If there is a sufficient amount of fuel in the tank, install the fuel cap to prevent spills.
   - If there is not a sufficient amount of fuel in the tank, add fuel to the tank.
     For instructions, see *Add Fuel to the Engine*.

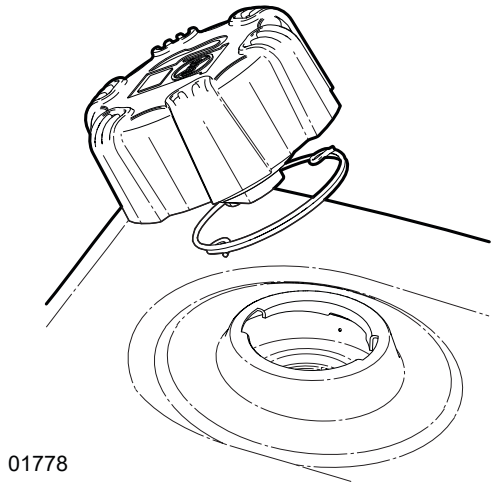


Figure 25–Fuel cap

6.4.3 Add Fuel to the Engine

The engine requires clean, fresh, unleaded gasoline with a pump octane rating of 87 or higher (research octane number [RON] of 91 or higher). Gasoline with up to 10% ethanol (gasohol) is acceptable. For more information, see *Engine Fuel on page 59*.

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

Model	Engine	Fuel tank capacity
LXT95	6.5 hp	0.82 US gal (3.1 L)
LXT115	10 hp	0.95 US gal (3.6 L)

1. Stop the machine.
   For instructions, see *Stop the Machine on page 41*.
2. Wait a minimum of five minutes for the engine temperature to decrease.
3. Turn the fuel cap counterclockwise to remove it.
4. Add the correct type and amount of fuel to the tank until the fuel level is visible 1/2 inch (12 mm) below the filler neck. Leave room for expansion. **Do not overfill the tank.**
5. If fuel is spilled, carefully clean it up and wait until the fuel dries before starting the engine.
6. Install and secure the fuel cap to prevent spillage.

6.4.4 Check the Engine Oil Level

IMPORTANT! For more information about engine oil, see the engine manufacturer's manual and *Engine Oil on page 59*.

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 41*.
3. Do one of the following:
   - For the 6.5 hp engine, pull out the oil-level dipstick.
   - For the 10 hp engine, remove the oil-fill cap.
     Turn it counterclockwise.
4. Wipe the oil off the oil-level dipstick.
5. Fully insert the oil-level dipstick.
6. Pull out the oil-level dipstick and check the oil level.
   The oil level is correct when oil is visible on the dipstick from the end to the full (upper) mark.
7. Do one of the following:
   - If the oil level is correct, continue with step 8.
   - If the oil level is low, add oil until the oil-level is at the full (upper) mark. For instructions, see *Add Oil to the Engine on page 37*.
8. Do one of the following:
   - For the 6.5 hp engine, insert the oil-level dipstick.
   - For the 10 hp engine, install the oil-fill cap.
     Turn it clockwise.

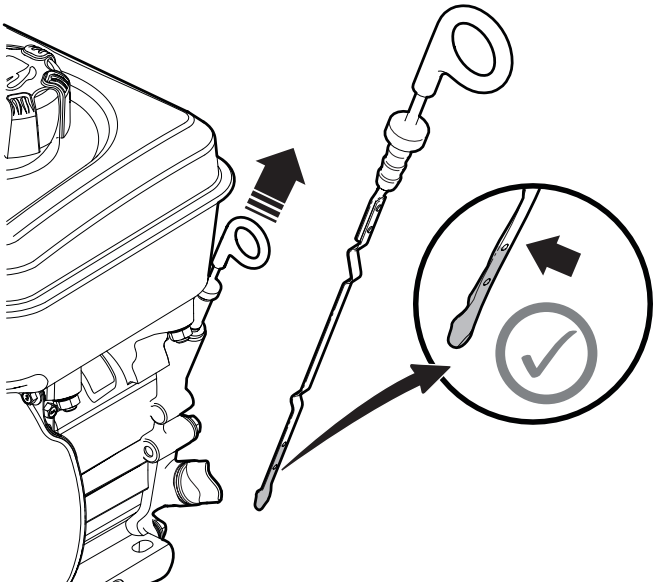
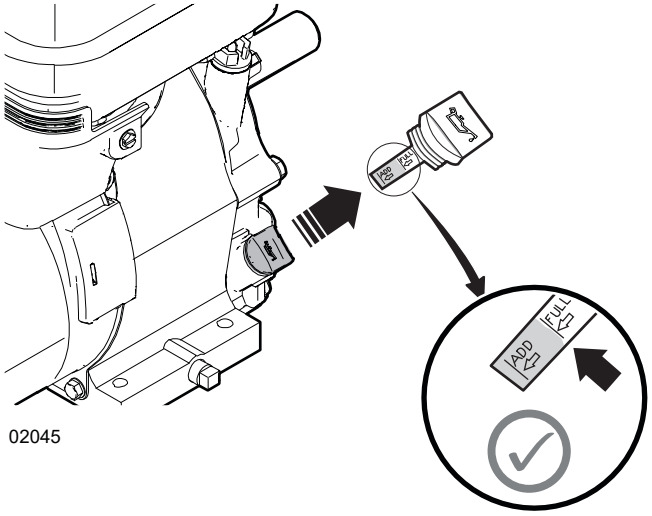


Figure 26 – Check the LXT95 6.5 hp engine oil level



02045

Figure 27 – Check the LXT115 10 hp engine oil level

6.4.5 Add Oil to the Engine

IMPORTANT! For more information about engine oil, see the engine manufacturer's manual and *Engine Oil on page 59*.

The engine has two oil-fill locations. The one location is shown in the following image. The second location is on the opposite side of the engine.

1. Check the engine oil level to make sure that the oil level is low. For instructions, see *Check the Engine Oil Level on page 36*.
2. Turn an oil-fill cap counterclockwise to remove it.
3. Use a clean funnel to slowly add the correct type and amount of oil. **Do not overfill.**
4. Wait a minimum of one minute.
5. Remove the funnel, and then check the engine oil level.
6. Install and secure the oil-fill cap to prevent spillage.

6.4.6 LXT95 6.5 hp Engine Oil-Fill Locations

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

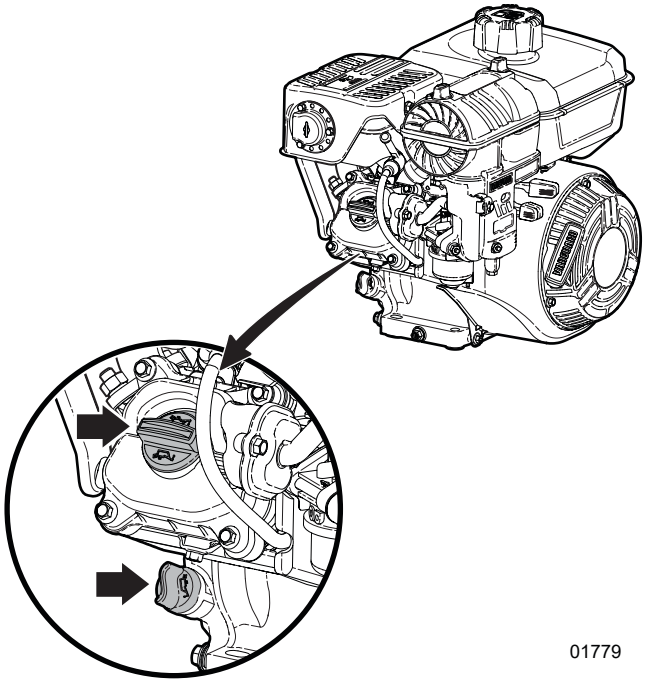


Figure 28–LXT95 6.5 hp engine oil-fill locations

6.4.7 LXT115 10 hp Egine Oil-Fill Locations

The engine has two oil-fill locations. One location is shown in the following image. The second location is on the opposite side of the engine.

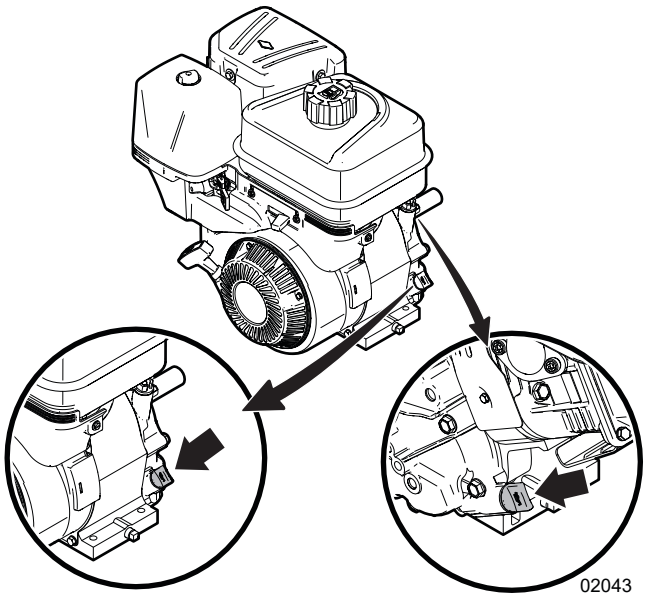


Figure 29–LXT115 10 hp engine oil-fill locations

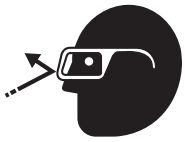
6.5 Hydraulic System Operation

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

6.5.1 Hydraulic System Safety

- Make sure that all hydraulic system components are kept clean and in good condition.
- Relieve pressure on the hydraulic system before working with it. The hydraulic system operates under extremely high pressure.
- Before applying pressure to the hydraulic system, make sure that all the connections are tight, and the hoses and fittings are not damaged.
- Immediately replace any hydraulic hose that shows signs of swelling, wear, leaks, or damage. A swollen, worn, damaged, or leaking hose can burst and cause a hazardous and unsafe condition.
  For more information, see *Hydraulic Hose Specifications on page 75*.
- High-pressure hydraulic oil leaks:
  - Do not use your hand to check for hydraulic oil leaks. Hydraulic fluid escaping under pressure can penetrate the skin causing serious injury or death. Use a piece of cardboard or wood to check for leaks.

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

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

6.5.2 Check the Hydraulic Fluid Level

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

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

IMPORTANT! 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.

Check the hydraulic fluid level daily, after changing the filter, and after servicing hydraulic components. The fluid-level dipstick is on the bottom of the fill cap. For more information, see *Figure 30*.

1. Park the machine on level ground.
2. Set the machine to a safe condition.
   For instructions, see *Safe Condition on page 9*.
3. Turn the hydraulic-fluid fill cap counterclockwise to remove it.
4. Wipe the dipstick clean.
5. Fully reinsert the dipstick in the reservoir.
6. Remove the dipstick and check the fluid level. The fluid level is correct when fluid is visible on the dipstick from the end to the full (F) mark.
7. Do one of the following:
   - If the fluid level is correct, install and secure the fill cap.
   - If the fluid level is low, add fluid until the fluid-level is at the full (F) mark. For instructions, see *Add Hydraulic Fluid to the Reservoir on page 39*.

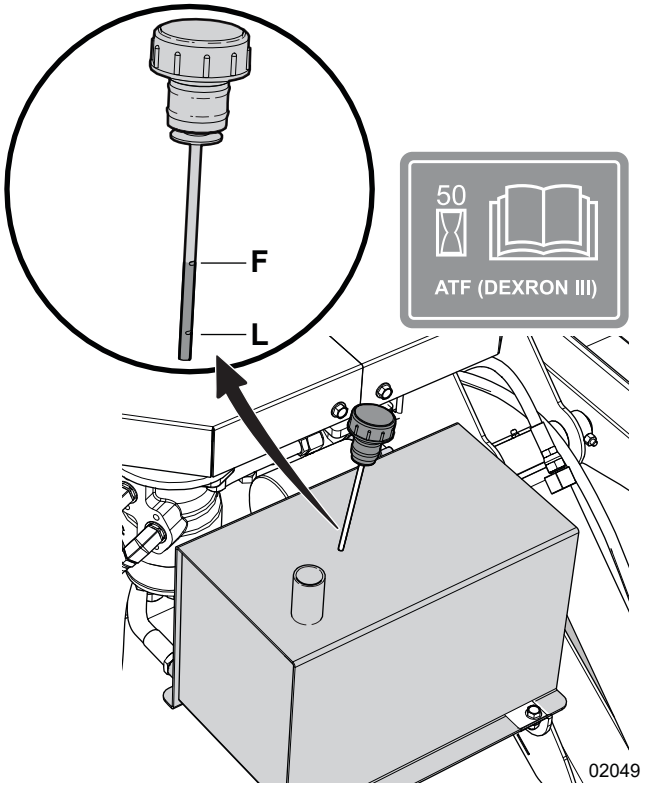


Figure 30–Check the hydraulic fluid level

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6.5.3 Add Hydraulic Fluid to the Reservoir

IMPORTANT! Do not fill the hydraulic-fluid reservoir higher than the full (F) mark on the dipstick.

The hydraulic-fluid reservoir capacity is **4.6 US gal (17.5 L)**.

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

1. Check the hydraulic fluid level to make sure that the fluid level is low.
   For instructions, see *Check the Hydraulic Fluid Level on page 38*.
2. Use a clean funnel to add hydraulic fluid to the reservoir. **Do not overfill.**
3. Check the hydraulic fluid level.
4. Remove the funnel.
5. Install and secure the fill cap to prevent spillage.
6. Clean the area around the fill cap and wipe off any spilled fluid.

6.6 LXT95 Surge Brake Operation

IMPORTANT! Before you transport the machine, read and understand the information under *Transport on page 50*.

LXT95 machines are not intended for use or transport on a public roadway. The surge brakes help to decrease the speed of the machine when it goes down a slope.

Surge brakes operate independently of the tow vehicle. No electrical connection is necessary. When the tow vehicle speed decreases, inertia causes the machine to continue at the same speed. When this happens, the surge brake plunger pushes against the trailer tongue and causes the brake cylinder to apply the brakes.

It is necessary to disengage the surge brakes when the tow vehicle moves the machine in reverse (backward). The surge brake control can also be used to prevent the surge brakes from operating because of rough terrain. For more information, see *LXT95 Surge Brake Control on page 30*.

6.6.1 Surge Brake Safety

- When approaching a long down slope, do not shift into a lower gear. This can cause the surge brakes to be applied for the entire descent.
- To reduce speed on a steep slope:
  a. Press the brake pedal, but do not lock the wheels.
  b. Fully release the brake pedal.
  c. Repeat steps a and b as necessary.
- Do not use a weight-distributing hitch on the machine. A weight-distributing hitch that is installed incorrectly or is overloaded can prevent the surge brake hydraulic system from operating. Without the surge brakes, the tow vehicle and trailer can take longer to stop.

For more information, see *Brake Maintenance on page 68*.

6.7 LXT115 Electric Brake Operation

IMPORTANT! Before you transport the machine, read and understand the information under *Transport on page 50*.

LXT115 machines are equipped for transport on public roadways. For example, the machine has electric brakes, turn signals, and brake lights.

An electrical signal from the tow vehicle is necessary for the brakes to operate. Therefore, a brake controller (not included with the machine) must be installed on the tow vehicle. The brake controller receives a signal when the tow vehicle speed decreases, and then applies the machine brakes. The electric brake system can be used when the trailer moves forward or in reverse.

Usually, brake lockup and sensitivity is caused by incorrect synchronization between the tow vehicle and the item being towed (for example, the threshold voltage or brake adjustment is incorrect).

For more information, see the brake and brake controller manufacturer's information.

6.7.1 Electric Brake Safety

⚠ WARNING!

Never use only the tow vehicle brakes or machine brakes to stop the combined load. Electric brakes work in synchronization with the tow vehicle brakes.

The brake controller must be set up correctly. Make sure that the syncronyzation between the tow vehicle and the machine is correct. Small adjustments can be necessary because of different loads and driving conditions.

For more information, see *Brake Maintenance on page 68*.

6.8 LXT95 Sliding Axle Operation

Move the sliding axle to adjust the tongue weight. Adjust the tongue weight to help balance a load or to provide more traction when it is necessary.

Make sure that the machine is parked on level ground and the trailer frame is not under tension or twisted.

1. Attach the machine to a tow vehicle.
   For instructions, see *Attach to a Tow Vehicle on page 52*.
2. Start the machine.
   For instructions, see *Start the Machine on page 41*.
3. Extend the two stabilizers.
   For each stabilizer, disengage the latch bar, and then use the **LH** or **RH Stabilizer Control** lever to **extend** the stabilizer.
4. Use the **Sliding-Axle Control** lever to do one of the following:
   - **Increase the trailer-tongue weight** (move the axle backward). For more information, see *Figure 31.*
   - **Decrease the trailer-tongue weight** (move the axle forward). For more information, see *Figure 32*.

   For more information, see *LXT95 Sliding-Axle Control on page 29*.

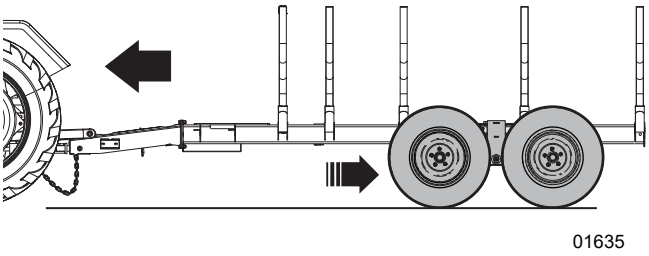


Figure 31–Increase the trailer-tongue weight

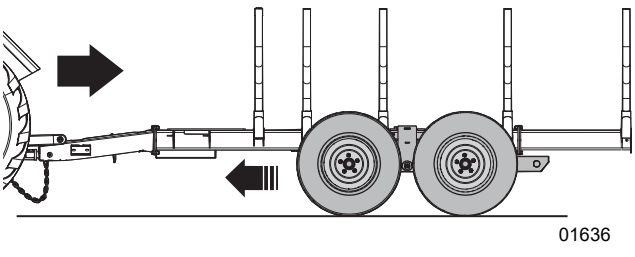


Figure 32–Decrease the trailer-tongue weight

6.9 Start the Machine

⚠ WARNING!

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

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

W102

⚠ WARNING!

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

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

Before you start the machine, see the information under *Controls on page 23*.

1. Complete the tasks described in the *Pre-Start Checklist on page 33.*
2. Make sure that the machine is set up correctly, level, and in a stable position.
3. Move the choke control to the **Closed** position.
4. Move the throttle control and fuel-shutoff (LXT95 model) or throttle control (LXT115 model) to the **Fast** position.
5. For an LXT115 model: move the fuel-shutoff control to the **Open and On** position.
6. Firmly grip the starter-cord handle.
7. Pull the starter cord out slowly until you feel resistance, and then pull it rapidly.
8. When the engine warms up, move the choke control to the **Open** position.

6.10 Stop the Machine

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

1. Empty the log grapple.
2. Put the log grapple on the ground, trailer, or on the load to prevent it from moving.
3. Stop all hydraulic operations.
4. Complete one of the following:
   - LXT95 model:
     Move the engine throttle control to the **STOP** position to turn off the engine and close the fuel shutoff valve.
   - LXT115 model:
     i. Move the engine throttle control to the **Slow** position.
     ii. Move the engine fuel shutoff control to the **Closed** position to stop the engine and close the fuel shutoff valve.
5. Move each hydraulic control two or three times to relieve the hydraulic system pressure.

6.11 Emergency Stop

In the event of an emergency, complete the applicable procedure.

LXT95 model

1. Move the engine throttle control to the **STOP** position to turn off the engine and close the fuel shutoff valve.
2. Remove the cause of the emergency before starting the engine to continue the work.

LXT115 model

1. Move the engine throttle control to the **Slow** position.
2. Move the engine fuel shutoff control to the **Closed and Off** position to stop the engine and close the fuel shutoff valve.
3. Remove the cause of the emergency before starting the engine to continue the work.

6.12 Set Up the Machine

WARNING!

Read and understand the *Operating Safety on page 32*.

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

WARNING!

Before operating the machine, attach it to a tow vehicle and lower the stabilizers. Keep the machine attached to the tow vehicle and the stabilizers firmly on the ground during operation. If the machine is not attached to a tow vehicle or the stabilizers are up, it can tip over and cause serious injury or death.

W097

Position the machine as close to the log stack as possible (this makes the log grapple easier to use, especially with heavy logs). However, the log stack must not interfere with safe loading or unloading of the machine.

The numbers in *Figure 33 on page 43* refer to the following instruction step numbers.

1. Park the tow vehicle and machine at the work site.
   For more information, see *Work Site on page 11*.
2. Engage the tow vehicle parking brake.
   Leave the machine attached to the tow vehicle.
3. Lower the trailer jack for added stability.
   For instructions, see *Trailer Jack on page 53*.
4. Turn the operator control panel.
   Position the operator controls on the opposite side of the machine from the log stack (it is necessary for the operator to face the work area). For more information, see *Operator Control Panel Lock on page 26*.
5. Start the machine.
   For instructions, see *Start the Machine on page 41*.
6. Extend the two stabilizers.
   For each stabilizer:
   a. Disengage the stabilizer latch.
      For instructions, see *Stabilizer Latch on page 27*.
   b. Use the **LH** or **RH Stabilizer Control** lever to **extend** the stabilizer.

   Make sure that both stabilizers are fully on the ground.
7. Remove the boom lock pin from the main boom.
   Place the pin in the storage bracket that is on the side of the main boom.
8. Test each hydraulic control to make sure that it functions correctly.
9. For the LXT95 model: adjust the sliding axle.
   For instructions, see *LXT95 Sliding Axle Operation on page 40*.
10. Position the log grapple:
    a. Open the log grapple.
    b. Use the boom controls to raise the log grapple higher than the bunk posts.
    c. Turn the boom to position the log grapple over the work area.

6.12.1 Rugged Terrain

The machine can be used in a variety of conditions, including rugged terrain. However, the area must be clear, and the ground must be firm and level.

In an area where the terrain is rugged:

- Use the stabilizers to keep the machine as level as possible.
- Make sure that the tow vehicle parking brake is on.
- Put blocks in front and behind the tow vehicle wheels and the machine wheels to prevent movement.
- Use extra caution and common sense.

The numbers in the following figure refer to the step numbers in *Set Up the Machine on page 42*.

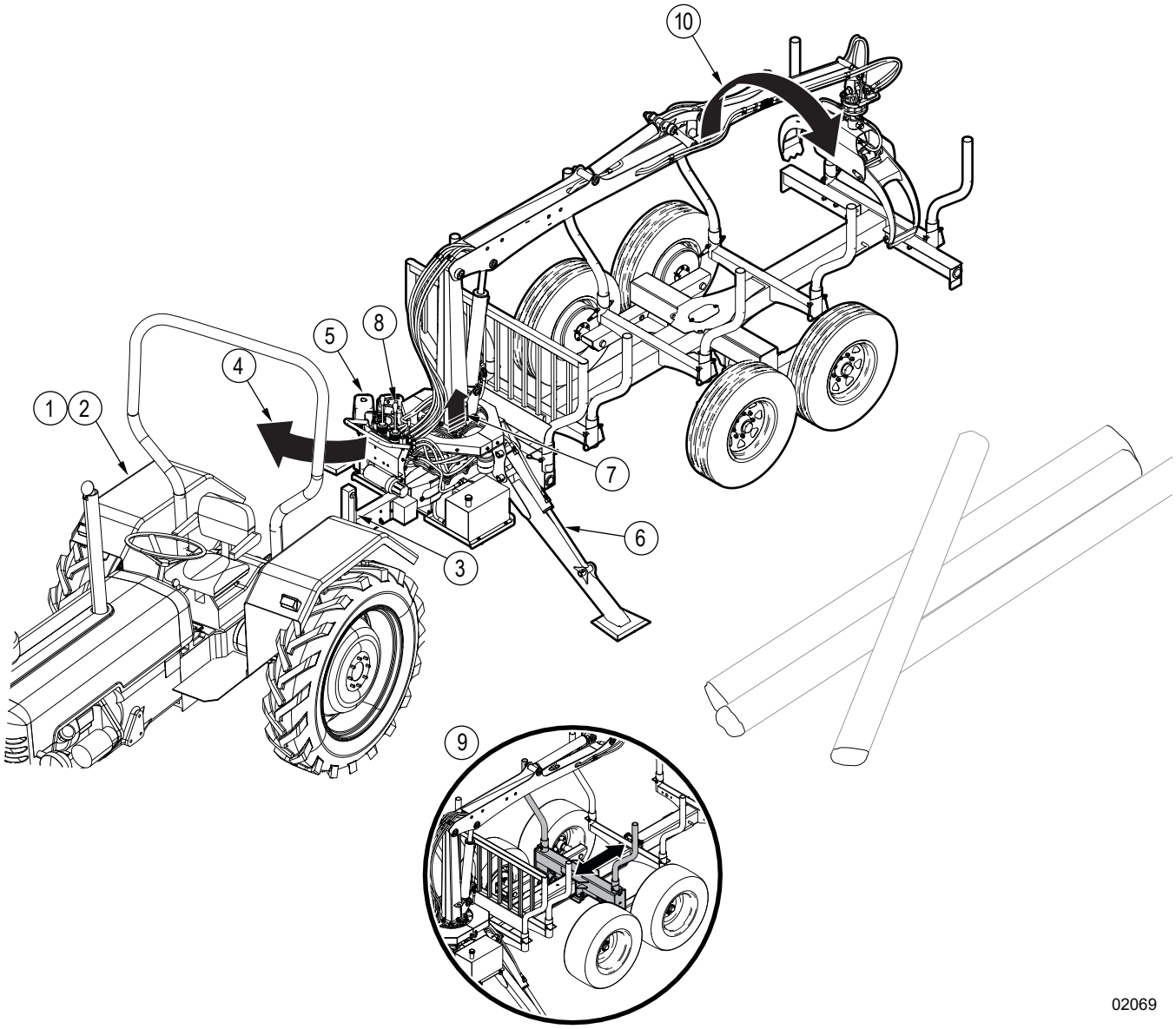


Figure 33 – Set up the machine (LXT115 shown)

6.13 Load the Log Trailer

WARNING!

Stay 50 ft (15 m) or more away from overhead and underground electrical cables. Electrocution can occur without direct contact through an electrical arc. Electrocution can cause burns, serious injury, or death.

WARNING!

Always be aware of the position of the boom and material being handled. In cases where the boom is fully retracted and handling an 8 ft (2.4 m) log, it is possible to create an impact or crush hazard for the operator at the control station. For more information, see *Create a Safe Work Area on page 11*.

WARNING!

Never lift or move objects over people. Keep people out of the work zone. A log that swings or falls from the log grapple can cause severe injury or death.

IMPORTANT! Before using the log grapple, estimate the position where the log's centre-of-mass is located. Lift the log at its centre-of-mass to keep it balanced in the log grapple.

IMPORTANT! Monitor the log when you move the boom or log grapple, to make sure that the log does not hit the machine.

For information about the boom and log grapple controls, see *Main Hydraulic Controls on page 28*.

A balanced load is necessary to maintain an equal weight distribution on the tires and trailer frame. Put longer and larger diameter logs on the bottom. Put shorter and smaller diameter logs on top. For the best results, plan the load with safety in mind.

Log Load Safety

- Do not load logs above the top of the bunk posts.
- Distribute the logs evenly across the trailer. Keep the load as level as possible. Do not create a peak in the center of the load.
- Make sure that no logs or branches protrude out the side of the trailer. The load must be contained within the bunk posts.
- Make sure that all the logs are in a stable position.
- Before transport, attach straps over the load to make it safe.

Load Procedure

1. Set up the machine.
   For instructions, see *Set Up the Machine on page 42*.
2. Raise the boom until the bottom of the log grapple is higher than the machine bunk posts.
3. Turn the boom to position it above the centre-of-mass of a log.
4. Turn the log grapple until it is perpendicular to the log.
5. Pick up the log:
   a. Open the log grapple.
   b. Lower the log grapple around the log.
   c. Close the log grapple.
   d. Slowly, raise the boom.

   For more information, see *Figure 34 on page 45.*
6. Do one of the following:
   - If the log is balanced in the log grapple, continue with step 7.
   - If the log is not balanced in the log grapple:
     i. Lower the boom.
     ii. Open the log grapple.
     iii. Move the log grapple along the log.
     iv. Return to step 5.
7. Raise the boom until the log is higher than the machine bunk posts.
8. Carefully, turn the boom to position the log above the trailer.
9. Turn the log grapple until the log is parallel with the trailer.
   For more information, see *Figure 35 on page 45*.
10. Slowly, lower the boom to put the log on the trailer.
    For more information, see *Figure 36 on page 45*.
11. Open the log grapple to release the log.
12. Repeat steps 2 through 11 until the trailer is loaded.
    Make sure that the load does not weigh more than the trailer maximum weight rating.

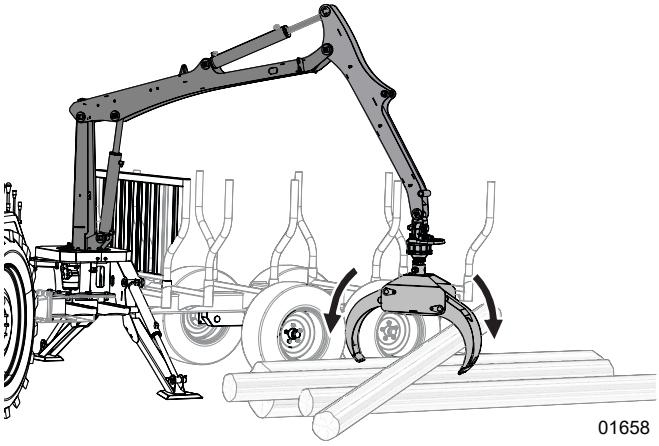


Figure 34–Pick up a log

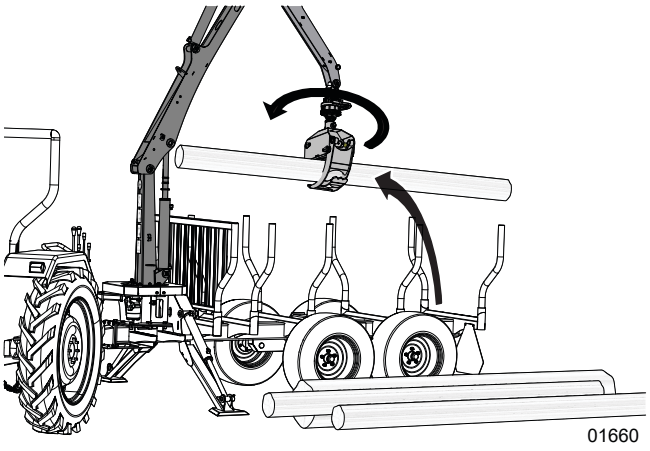


Figure 35–Align a log with the trailer

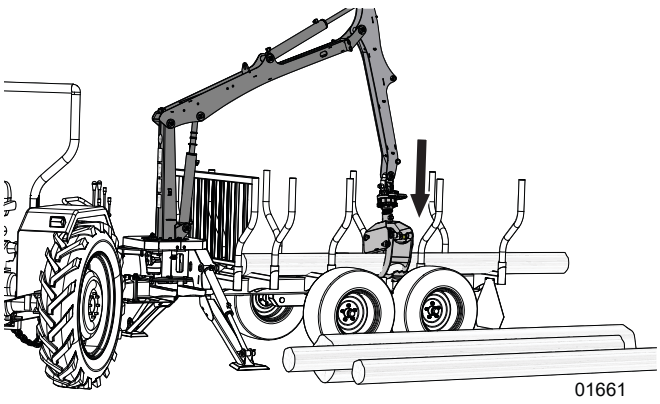


Figure 36–Put the log on the trailer

6.14 Unload the Log Trailer

⚠ WARNING!

Stay 50 ft (15 m) or more away from overhead and underground electrical cables. Electrocution can occur without direct contact through an electrical arc. Electrocution can cause burns, serious injury, or death.

⚠ WARNING!

Always be aware of the position of the boom and material being handled. In cases where the boom is fully retracted and handling an 8 ft (2.4 m) log, it is possible to create an impact or crush hazard for the operator at the control station. For more information, see *Create a Safe Work Area on page 11*.

⚠ WARNING!

Never lift or move objects over people. Keep people out of the work zone. A log that swings or falls from the log grapple can cause severe injury or death.

IMPORTANT! Before using the log grapple, estimate the position where the log's centre-of-mass is located. Lift the log at it's centre-of-mass to keep it balanced in the log grapple.

IMPORTANT! Monitor the log when you move the boom or log grapple, to make sure that the log does not hit the machine.

For information about the boom and log grapple controls, see *Main Hydraulic Controls on page 28*.

Log Stack Safety

- Stack the logs, as much as possible, on stable, level ground.
- Do not stack logs higher than the safe operating reach of the machine.
- Brace a tall log stack to prevent it from collapsing.

Unload Procedure

1. Set up the machine.
   For instructions, see *Set Up the Machine on page 42*.
2. If the log grapple is closed, open the log grapple.

3. Raise the boom until it is higher than the machine bunk posts.
4. Turn the boom to position it above the trailer and the centre-of-mass of a log.
5. Turn the log grapple until it is perpendicular to the log.
6. Pick up the log:
   a. Open the log grapple.
   b. Lower the log grapple around the log.
   c. Close the log grapple.
   d. Slowly, raise the boom.
7. Do one of the following:
   - If the log is balanced in the log grapple, continue with step 8.
   - If the log is not balanced in the log grapple:
     i. Lower the boom.
     ii. Open the log grapple.
     iii. Move the log grapple along the log.
     iv. Return to step 6.
8. Raise the boom until the log is higher than the machine bunk posts.
9. Carefully, turn the boom to position the log above the stack. Monitor the log during movement to make sure that it stays clear of the main boom and cylinders.
   For more information, see *Figure 37*.
10. If necessary, turn the log grapple until the log is parallel with the stack.
11. Slowly, lower the boom to put the log on the ground or stack.
    For more information, see *Figure 38*.
12. Open the log grapple to release the log.
13. Repeat steps 3 through 12 until the trailer is empty.

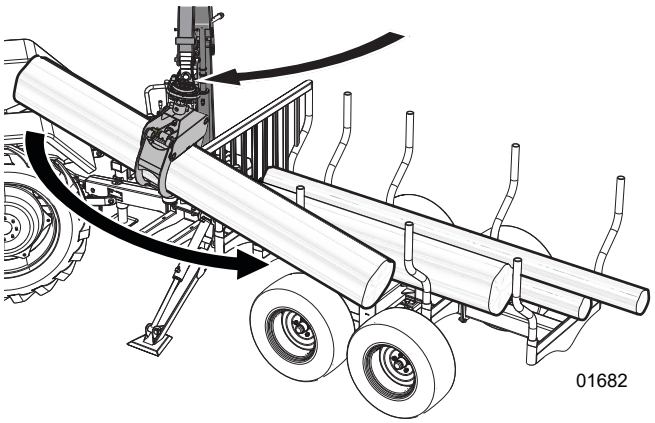


Figure 37 – Move and turn the log

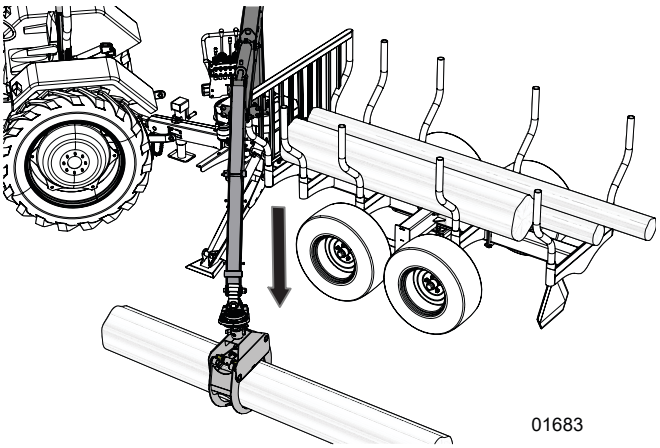


Figure 38 – Place the log on the ground or stack

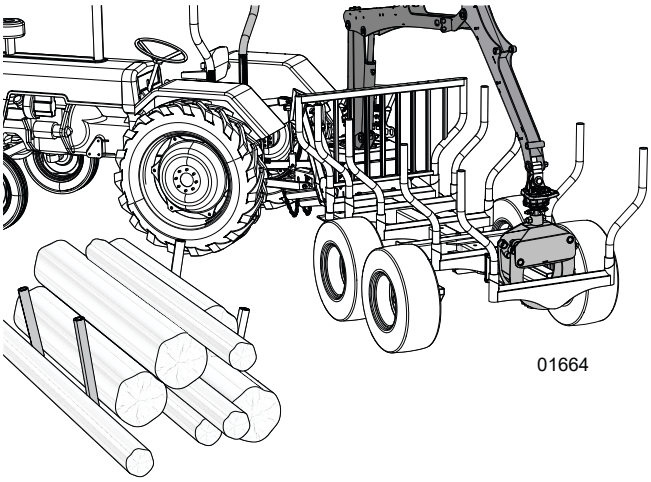


Figure 39 – Example of a braced log stack

6.15 Hydraulic Winch Operation

This section describes how to use the hydraulic winch accessory (sold separately). Use the winch to pull logs to the machine.

6.15.1 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!

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

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

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

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

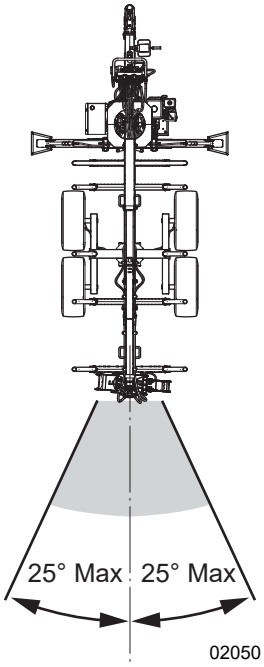


Figure 40 – Safe winch angle

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

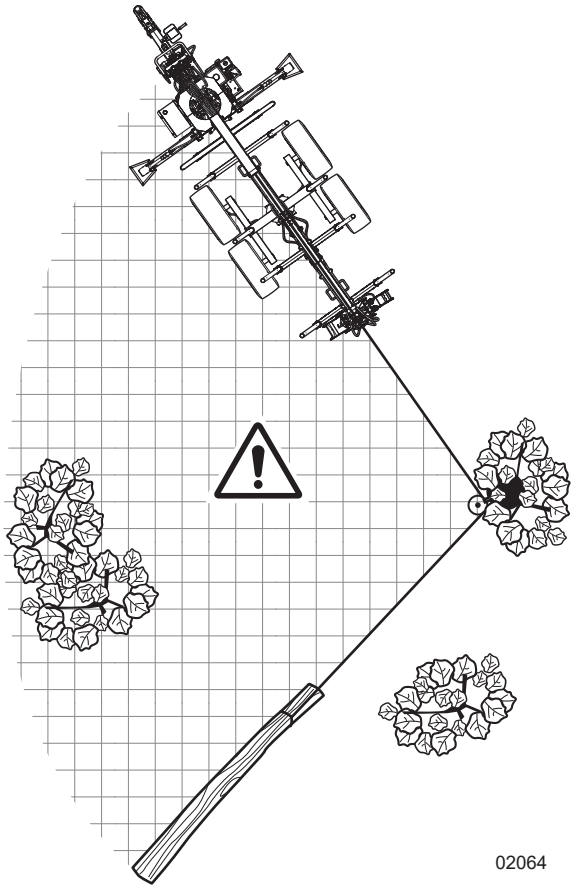


Figure 41 – Use a snatch block

6.15.2 Winch a Log

⚠ WARNING!

Before using the winch, read and understand the information under *Winch Safety on page 47*.

IMPORTANT! Stand at the operator control panel and face the main boom. The left hand (LH), right hand (RH), forward, and backward directions in this section are referenced from this position.

For more information, see *Hydraulic Winch Controls on page 31*.

1. Move the **winch gear lever** to the **Freewheel** position.
2. Grip the winch-rope hook and pull the rope out to the log.
3. Attach the winch strap to the log.
   Do not attach the winch rope directly to the log. A logging choker chain can be used in place of the winch strap.
4. Attach the winch-rope hook to the strap.
5. Do one of the following:
   - To pull the log slowly with less force, move the **winch gear lever** to the **Slow** position.
   - To pull the log fast with more force, move the **winch gear lever** to the **Fast** position.
6. Pull and hold the **winch control lever** backward to pull the log to the machine.
   Release the **winch control lever** to stop the winch.

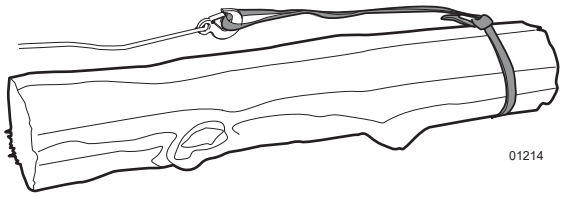


Figure 42–Winch strap on a log

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.

LXT95 log loader trailers are not intended for use or transport on public roadways. Therefore, they do not include the necessary lights, reflectors, and markings.

Before taking a machine on a public roadway, make sure that it has the necessary lighting, reflectors, and markings, and that they are in working condition. For specific requirements, contact your local transportation authority.

7.1 Transport Safety

- Make sure that the machine is securely attached to the tow vehicle with a retainer through the hitch.
- Always attach the safety chains between the machine and the tow vehicle.
- Never let people ride on the machine.
- Plan your route to avoid heavy traffic.
- Do not transport or move the machine with the engine on.
- 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 77*.
- 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.
  For information about the ball-mount size, see *Specifications on page 75*.
- Make sure that all the machine guards, shields, and covers are installed and closed.
- Make sure that the engine fuel tank and oil caps, and hydraulic fluid reservoir cap are installed correctly (to prevent spills during transport).
- Remove all debris from the machine.
- Lower the boom above the trailer and prevent the log grapple from moving.
  For more information, see *Figure 43 on page 51* and *Figure 44 on page 51*.
- Make sure that the load weight is not more than the maximum load capacity.
  For the load capacity, see *Machine Specifications on page 75*.

For model LXT95:

- Make sure that the surge brake lock is in the **Engaged** position.
  For more information, see *LXT95 Surge Brake Control on page 30*.
- Do not go more than the maximum speed of 30 mph (50 km/h). Slow down for rough terrain and cornering.

For model LXT115:

- Make sure that the electric brakes function correctly.
- Make sure that all the reflectors, turn signal lights, and brake lights are installed and in good working condition.
- Do not go more than the maximum speed of 50 mph (80 km/h).

7.2 Prepare the Machine for Transport

1. If the winch accessory is installed:
   a. Remove the winch rope and strap from the log.
   b. Wind the winch rope into the winch.
   c. Attach the winch hook to the machine to keep it from moving.
2. Move the log grapple to one of the following positions:
   - If there are logs in the machine, grip the end of a log at the rear of the machine. For more information, see *Figure 43*.
   - If the machine is empty, grip the main frame at the rear of the machine. For more information, see *Figure 44 on page 51*.
3. Install the boom lock pin.
4. For each of the two stabilizers:
   a. Use the **LH** or **RH stabilizer control** lever to **retract** the stabilizer.
   b. Engage the latch bar to hold the stabilizer in position.
   For instructions, see *Stabilizer Latch on page 27*.
5. Stop the machine.
   For instructions, see *Stop the Machine on page 41*.
6. Operate each hydraulic control to relieve the pressure.
7. Attach the machine to a tow vehicle.
   For instructions, see *Attach to a Tow Vehicle on page 52*.

8. Stow or raise the trailer jack.
   For instructions, see *Trailer Jack on page 53*.
9. Do a circle check to make sure that the machine is safe for transport.

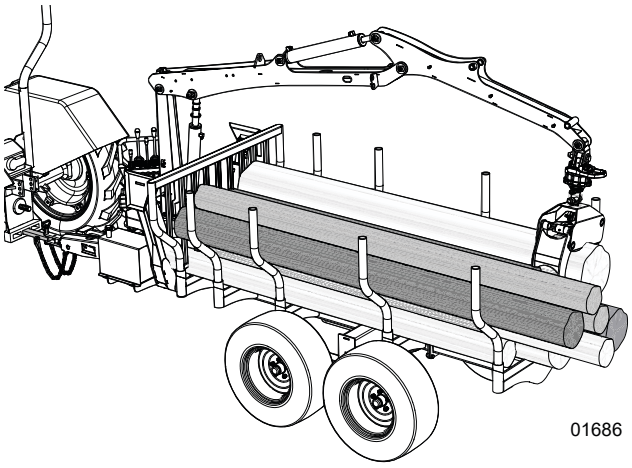


Figure 43–Log grapple position with a load

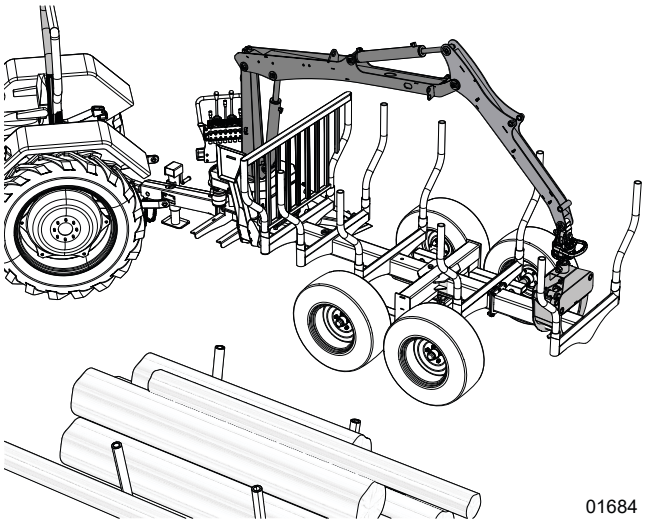


Figure 44–Log grapple position when the machine is empty

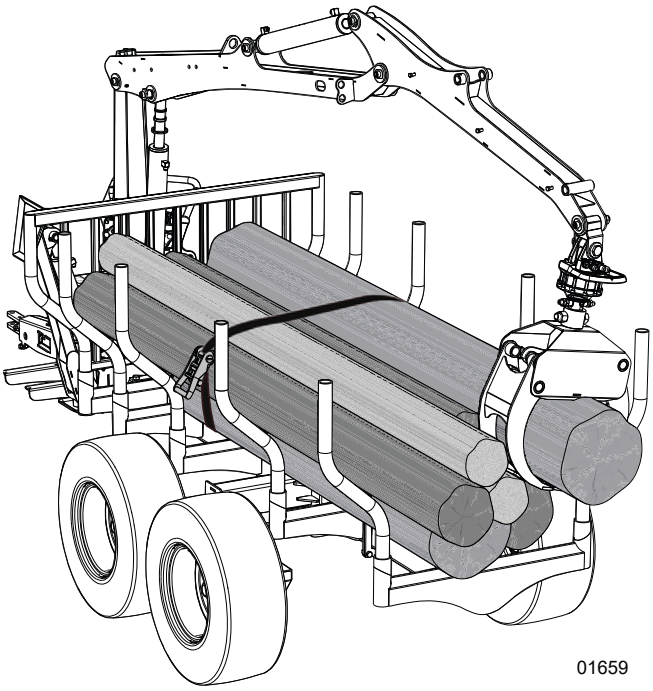


Figure 45–Example of the machine with a strapped load

7.3 Attach to a Tow Vehicle

⚠ WARNING!

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

W103

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

Ball-mount hitch coupler sizes:

- LXT95 - 2 inch.
- LXT115 - 2-5/16 inch.

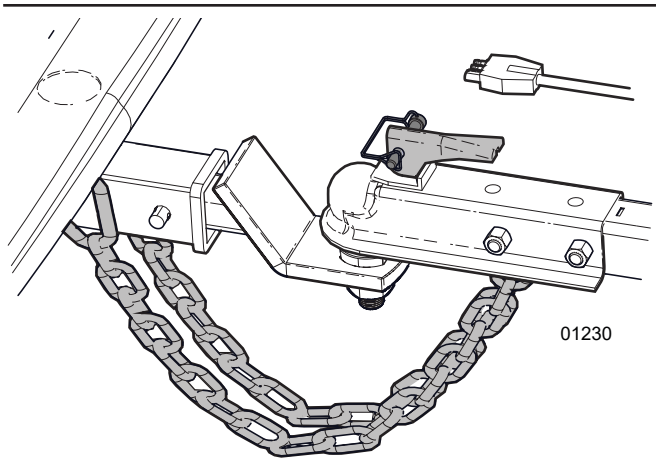


Figure 46–Ball-mount hitch connection

7.3.1 Connect to a Ball-Mount Hitch

Make sure that there is a sufficient amount of 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 raise the trailer tongue until the hitch coupler is higher than the ball-mount hitch.
3. Remove the pin from the hitch-coupler latch. Raise the latch to the upright (unlocked) position.
4. Slowly, reverse the tow vehicle until the ball-mount hitch is below the hitch coupler. Stop the tow vehicle and apply the parking brake.
5. Use the trailer jack to lower the machine and install the hitch coupler over the ball-mount hitch.
   For instructions, see *Trailer Jack on page 53*.
6. Lower the hitch-coupler latch to the locked position. Install a pin through the latch to secure the hitch coupler to the ball-mount hitch.
7. Raise and stow the trailer jack.
   For instructions, see *Trailer Jack on page 53*.
8. Cross the two safety chains below the trailer tongue, and then attach them to the tow vehicle (one on each side of the hitch).
9. If the machine has a light kit installed, do the following:
   a. Connect the light-bar cable harness to the tow vehicle. Make sure that the cables are long enough to make turns without tension and do not drag on the ground.
   b. Activate each light and have another person call out to confirm that it functions correctly.

7.3.2 Disconnect from a Ball-Mount Hitch

Make sure that there is a sufficient amount of 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. Turn off the engine and apply the parking brake.
2. Turn and lower the trailer jack to support the machine.
   For instructions, see *Trailer Jack on page 53*.
3. If the machine has a light kit installed, disconnect the light-bar cable harness from the tow vehicle. Stow the cable harness on the machine in a location that protects it from damage.
4. Remove the two safety chains from the tow vehicle and stow them securely on the machine.
5. Remove the pin from the hitch-coupler latch. Raise the latch to the upright (unlocked) position.
6. Use the trailer jack to raise the trailer tongue until the hitch coupler is higher than the ball-mount hitch.
7. Slowly, drive the tow vehicle forward until the ball-mount hitch is clear of the hitch coupler. Stop the tow vehicle and apply the parking brake.
8. Use the trailer jack to lower the machine until it is level with the ground.
9. Lower the hitch-coupler latch to the locked position. Install a pin through the latch.

7.3.3 Connect to a Clevis Hitch

Make sure that there is a sufficient amount of 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. If a back-up camera is not available, have another person guide you.
2. Use the trailer jack to raise the trailer tongue until the hitch is the same height as the tow vehicle's draw bar.
3. Slowly, reverse the tow vehicle until the draw bar and hitch are aligned.
4. Insert the hitch pin through the hitch and draw bar. Install the snap-lock pin to secure the connection.
5. Raise and stow the jack.
6. Cross the two safety chains below the trailer tongue, and then attach them to the tow vehicle (one on each side of the hitch).
7. If the machine has a light kit installed, do the following:
   a. Connect the light-bar cable harness to the tow vehicle. Make sure that the cables are long enough to make turns without tension and do not drag on the ground.
   b. Activate each light and have another person call out to confirm that it functions correctly.

7.3.4 Disconnect from a Clevis Hitch

Make sure that there is a sufficient amount of 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. Turn off the engine and apply the parking brake.
2. Turn and lower the trailer jack to support the machine. For instructions, see *Trailer Jack on page 53*.
3. If the machine has a light kit installed, disconnect the light-bar cable harness from the tow vehicle. Stow the cable harness on the machine in a location that protects it from damage.
4. Remove the two safety chains from the tow vehicle and stow them securely on the machine.
5. Remove the snap-lock pin from the hitch pin. Remove the hitch pin from the hitch and draw bar.
6. Slowly, drive the tow vehicle forward until the draw bar is clear of the hitch.
7. Stop the tow vehicle and apply the parking brake.
8. Use the trailer jack to lower the machine until it is level with the ground.
9. Install the hitch pin through hitch. Install the snap-lock pin through the hitch pin.

7.4 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.

7.4.1 Lower the LXT95 Trailer Jack

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

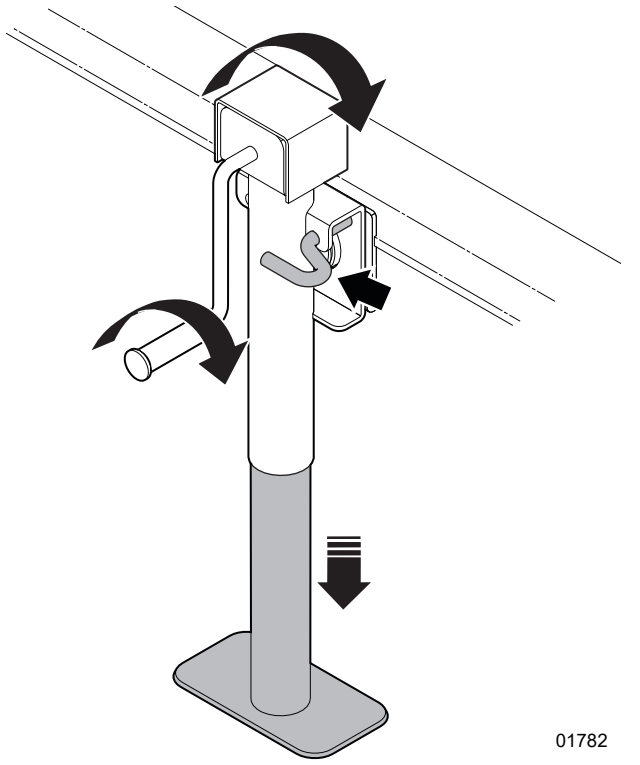


Figure 47 – Trailer jack in the lowered position

7.4.2 Stow the LXT95 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. Turn the handle counterclockwise to raise the base.
3. Pull the pin out of the bracket.
4. Turn the jack to the horizontal position.
5. Insert the pin through the bracket to hold the jack in the horizontal position.

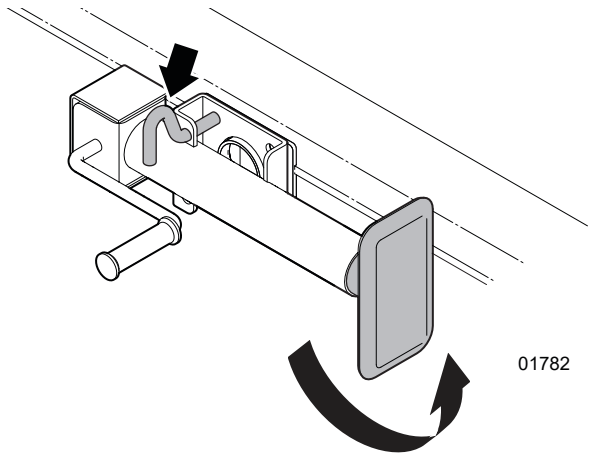


Figure 48 – Trailer jack in the stowed position

7.4.3 Lower the LXT115 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.

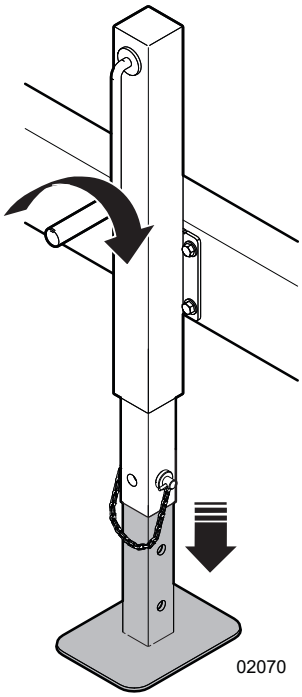


Figure 49 – Trailer jack in the lowered position

7.4.4 Raise the LXT115 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 raise 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.

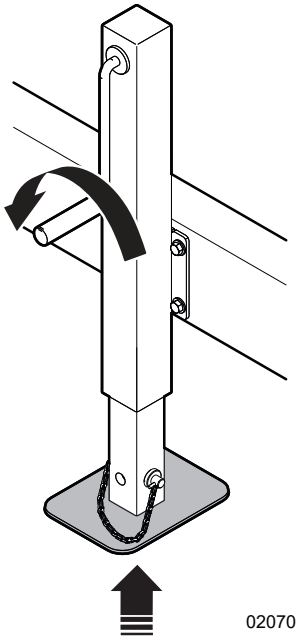


Figure 50 – Trailer jack in the raised position

8. Storage

At the end of the season or when the machine is not going to be used for an extended period of time, completely 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 more information, see *Figure 51 on page 57*.

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

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

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

8.2 Place the Machine in Storage

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

1. Remove all material from the machine. Make sure that you remove all entangled material and debris.
2. Clean the machine.
   For instructions, see *Clean the Machine on page 72*.
3. Grease the machine. Fill all the grease locations to remove any remaining water.
   For more information, see *Grease Points on page 61*.
4. If the hydraulic winch accessory is installed, check the condition of the winch rope. Replace or adjust the winch rope, as necessary.
5. Check the hydraulic components for damage and leaks. Tighten or replace fittings that leak. Replace components that are damaged.
6. Set the machine to the transport position.
   For instructions, see *Prepare the Machine for Transport on page 50*.
7. 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 59*.
     For instructions, see *Replace the Engine Fuel on page 57*.
8. Park the machine in the storage location.
9. Disconnect the tow vehicle.
   For instructions, see *Disconnect from a Ball-Mount Hitch on page 52*.
10. Adjust the trailer jack until the machine is level. If soft ground is unavoidable, place boards or plates under the trailer jack and support stands to increase the surface area.
    For more information, see *Trailer Jack on page 53.*
11. Block the machine wheels to prevent accidental movement and increase the wheel bearing life.
12. Measure the tire pressure. If necessary, adjust the air pressure.
    For the correct pressure, see the tire sidewall.
13. If indoor storage is not possible, cover the machine with a waterproof tarp. It is recommended that the machine be stored indoors.

8.3 Replace the Engine Fuel

⚠ WARNING!

Before you replace the fuel, read and understand the information under *Engine Safety on page 34*.

1. Remove the current fuel from the engine.
   Operate the machine until the fuel tank is empty or drain the fuel tank and dispose of the fuel correctly.
2. Add new fuel to the engine.
   For instructions, see *Add Fuel to the Engine on page 35*.
3. Start the machine.
   For instructions, see *Start the Machine on page 41*.
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 41*.

8.4 Remove the Machine from Storage

1. Do the tasks decribed in the *Pre-Start Checklist on page 33*.
2. Do the necessary maintenance.
   For maintenance information, see the *Maintenance Schedule on page 60*.

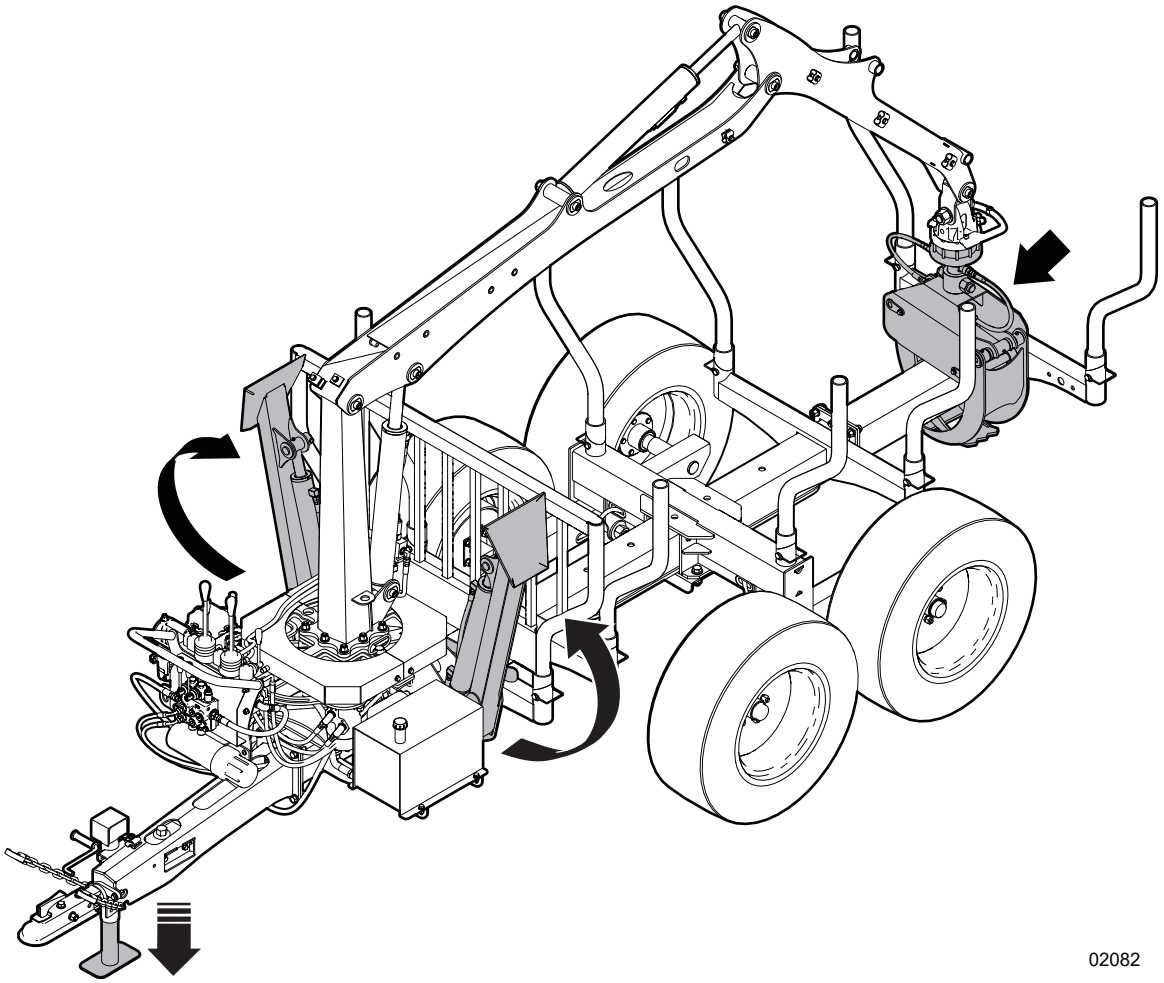


Figure 51 – Storage position

9. Service and Maintenance

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

9.1 Service and Maintenance Safety

⚠ WARNING!

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

W033

⚠ WARNING!

Before you start service or maintenance:

- **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

Place 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, turn off the engine, and remove the ignition key.
2. If the machine has a hydraulic winch accessory installed, remove the winch rope and strap from the log, and then wind the winch rope into the winch.
3. Remove all material from the machine.
4. Move the log grapple to grip the rear of the main frame.
5. Install the boom lock pin.
6. Stop the machine.
   For instructions, see *Stop the Machine on page 41*.
7. Operate each of the hydraulic controls two or three times to relieve the pressure.
8. Disconnect the engine spark-plug wire.
   Keep the spark-plug wire away from the spark plug to prevent the engine from being started accidentally.

- Use good shop practices:
  - Keep the work area clean and dry.
  - Ground electrical outlets and tools.
  - Have sufficient light for good visibility.
- Use tools that are in good condition and correct for the task. Make sure that you understand how to use the tools before you do any work.
- Never operate an engine inside a closed building. The exhaust fumes can cause asphyxiation.
- Wait until the engine and hydraulic system temperatures decrease. Hot components and fluids can cause burns.
- Never work under equipment that is not safe (for example, supported with blocks).
- Always have a minimum of two people present during maintenance or service. Do not work alone in case an emergency situation occurs.
- When replacement parts are necessary, use genuine factory replacement parts to restore your equipment to the original specifications. The manufacturer cannot be responsible for injuries or damage caused by use of unapproved parts or accessories.
- Keep a fire extinguisher and first aid kit readily accessible at all times.
- Do not use gasoline or diesel fuel to clean parts. Use a regular cleaner.

- After the work is complete, do the following:
  - Check all the fasteners. Tighten any loose bolts, nuts, or screws.
  - Check all electrical and fluid connections to make sure that they are tight and the machine is in a safe operating condition.
  - Make sure that all guards, sheilds, and covers are installed and closed.

9.2 Fluids and Lubricants

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

9.2.1 Lubricant Handling and Storage

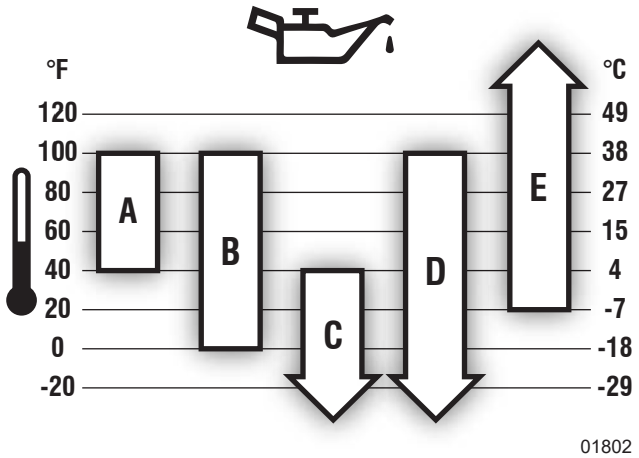
For optimal machine performance, use clean lubricants and clean containers to handle all lubricants. Store lubricants in an area that is protected from dust, moisture, and other contaminants.

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 correct 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 can cause increased oil consumption. Check the oil level frequently.
C	**5W-30**
D	**Synthetic 5W-30**
E	**Vanguard® Synthetic 15W-50**

9.2.3 Engine Fuel

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

Fuel must meet the following specifications:

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

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

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

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

9.3 Maintenance Schedule

IMPORTANT! For more information, see the engine, axle, and brake manufacturer manuals.

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

Task	8 hours or daily	25 hours or annually	50 hours or annually	100 hours or annually	200 hours or annually	Annually	600 hours or every three years	Reference
Check the hydraulic hoses and fittings.	●							N/A[1]
Check the hydraulic fluid level.	●							See *page 38*
Check the engine oil level and quality.	●							See *page 36*
Check the engine fuel level.	●							See *page 35*
Clean around the muffler and controls.	●							See the engine manual
Clean the engine air-intake grille.	●							N/A
Check that all fasteners and the wheel lug nuts are tightened to the specified torque.	●							See *page 75*
Clean the 10 hp engine air filter.[2]		●						See *page 66*
Grease the machine.			●					See *page 61*
Check the hydraulic fluid quality.			●					See *page 38*
Change the 10 hp engine oil.			●					See the engine manual
Service the 10 hp engine exhaust system.			●					See the engine manual
Repack the axle bearings				●				See the axle manual
Check the tire pressure.				●				See the tire sidewall
Change the hydraulic fluid and filter.				●				See *page 67*
Clean the machine. Remove debris and entangled material.				●				See *page 72*
Service the 6.5 hp engine exhaust system.				●				See the engine manual
Clean the 6.5 hp engine air filter.[2]					●			See *page 66*
Change the 6.5 hp engine oil.					●			See the engine manual
Replace the engine spark plug.						●		See the engine manual
Service the engine cooling system.[2]						●		See the engine manual
Service the engine fuel system.						●		See the engine manual

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

Task	8 hours or daily	25 hours or annually	50 hours or annually	100 hours or annually	200 hours or annually	Annually	600 hours or every three years	Reference
Replace the 10 hp engine air filter.						◉		See the engine manual
Replace the 6.5 hp engine air filter.							◉	See the engine manual
Hydraulic winch accessory								
Check the winch rope condition.	◉							See *page 71*

9.4 Grease Points

Look for this decal on the machine. It indicates a grease point and the interval in hours.

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

For more information, see the following illustrations:

- *Figure 52 – LXT95 grease points on page 62*
- *Figure 53 – LXT115 grease points on page 63*
- *Figure 54 – Log grapple grease points on page 64*
- *Figure 55 – Hydraulic winch accessory grease points on page 65*

Location	Every 50 hours of operation	LXT95 points	LXT115 points
1	Main boom and hydraulic cylinder pins	3	3
2	Dipper boom and hydraulic cylinder pins, and LXT115 bushings	3	7
3	Dipper-boom log grapple pin	1	1
4	Tandem axle (one on each side)	2	2
5	LXT95 sliding axle (one on each side)	2	2
6	Stabilizer and hydraulic cylinder pins (three on each stabilizer)	6	6
7	Main boom sprocket	1	1
8	Trailer tongue bushing	1	1
9	Log grapple hydraulic rotator	1	1
10	Log grapple fork pin and bushings	8	8
11	Hydraulic winch accessory	1	1

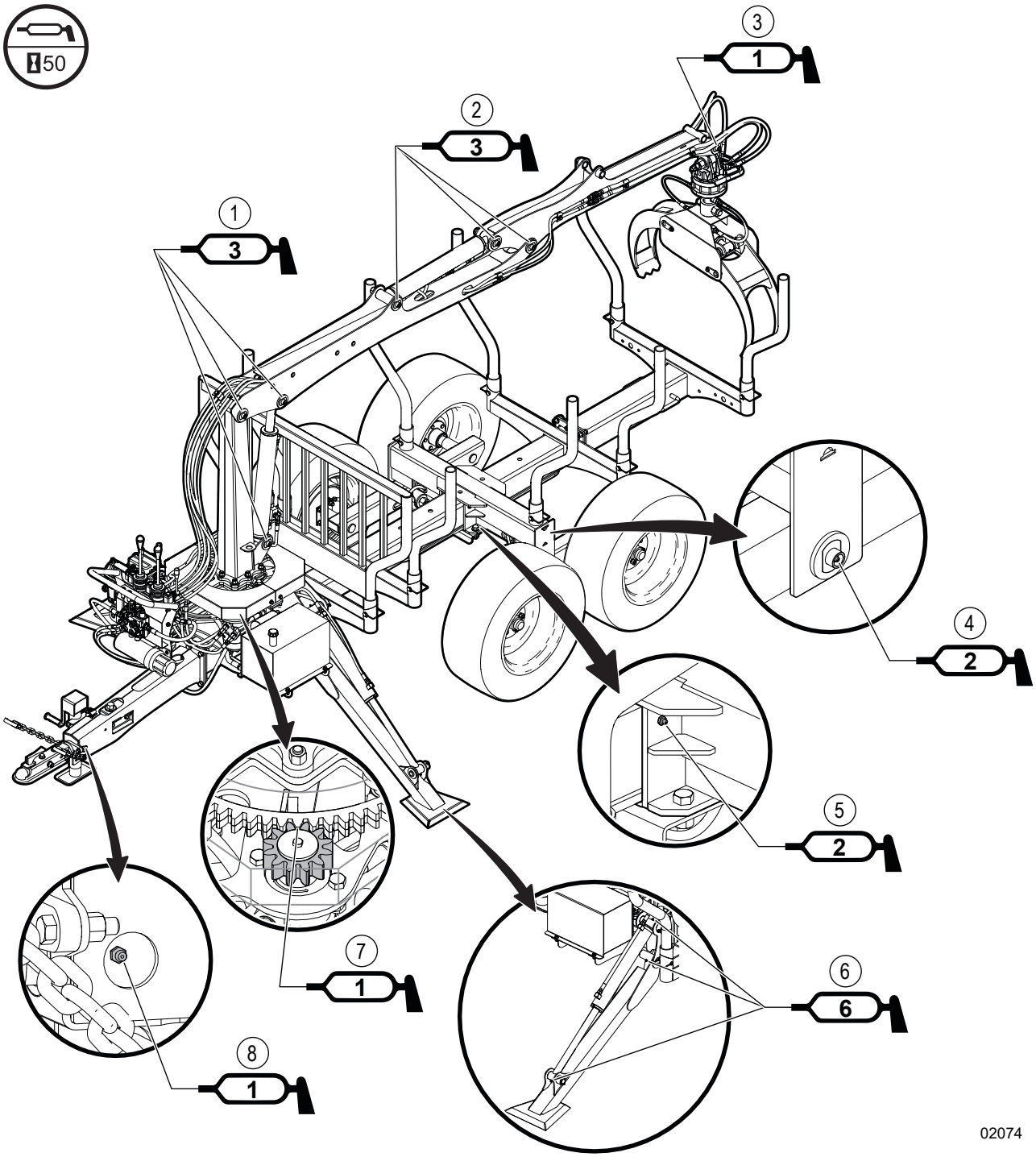


Figure 52–LXT95 grease points

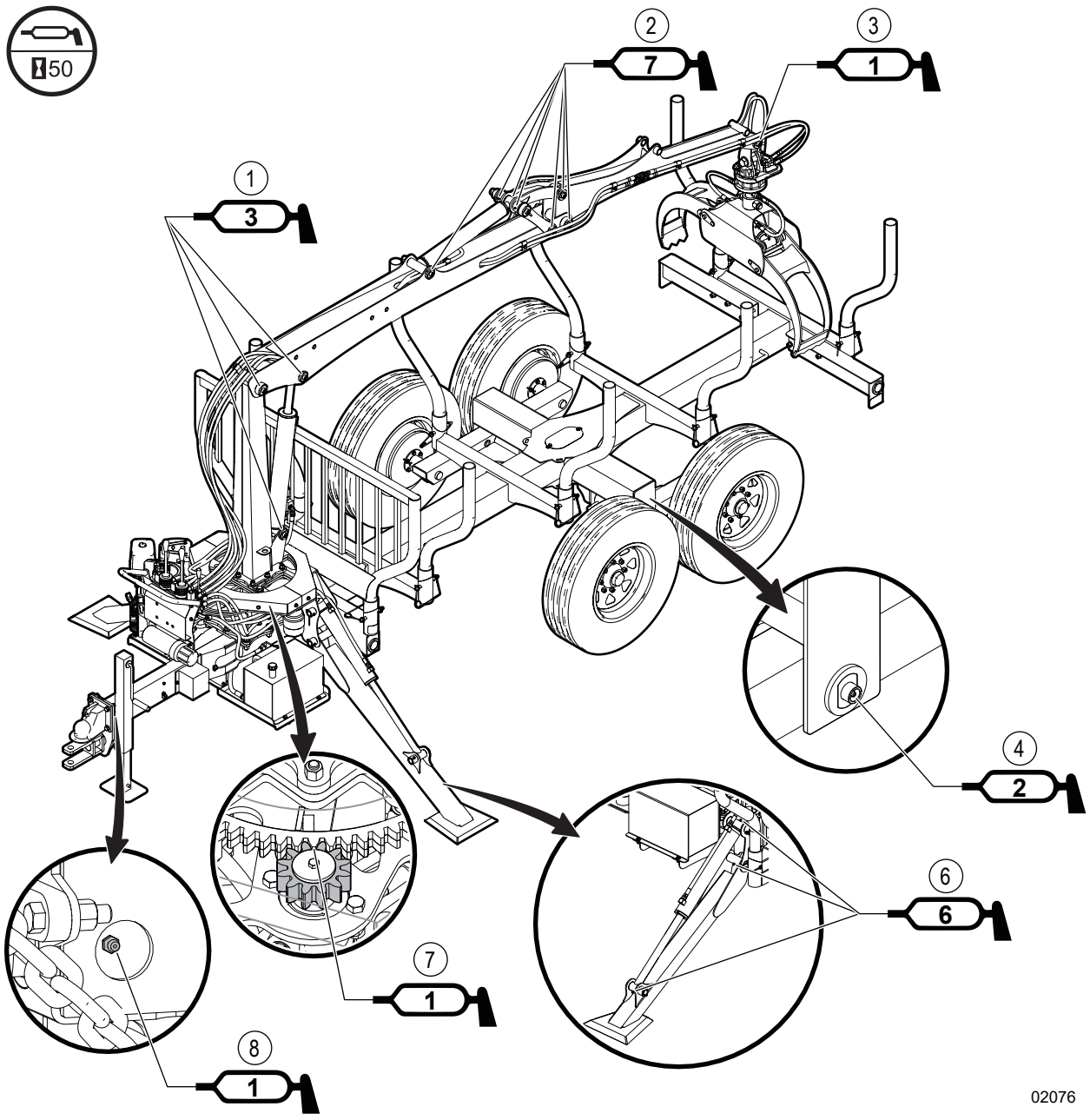


Figure 53 – LXT115 grease points

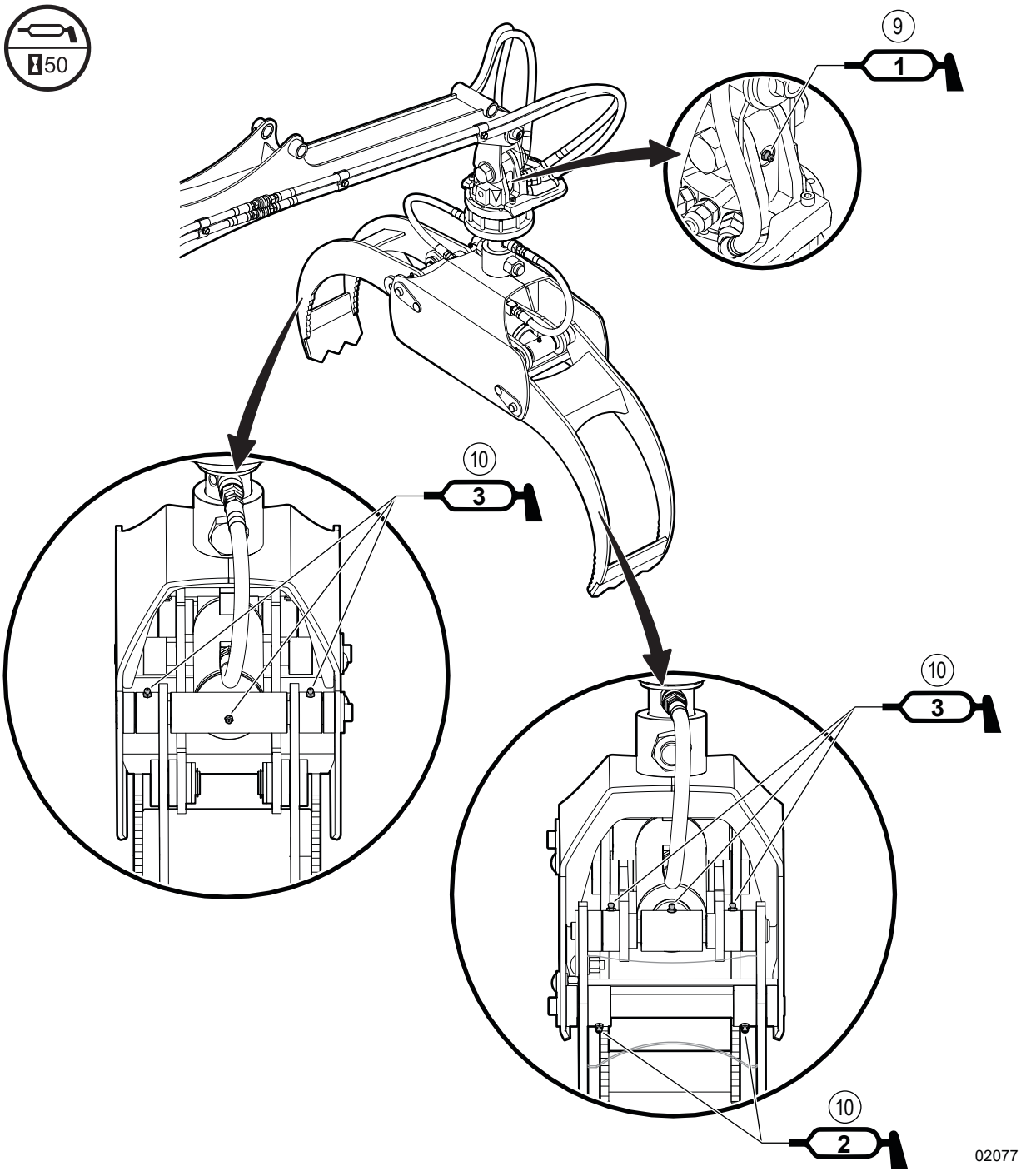


Figure 54–Log grapple grease points

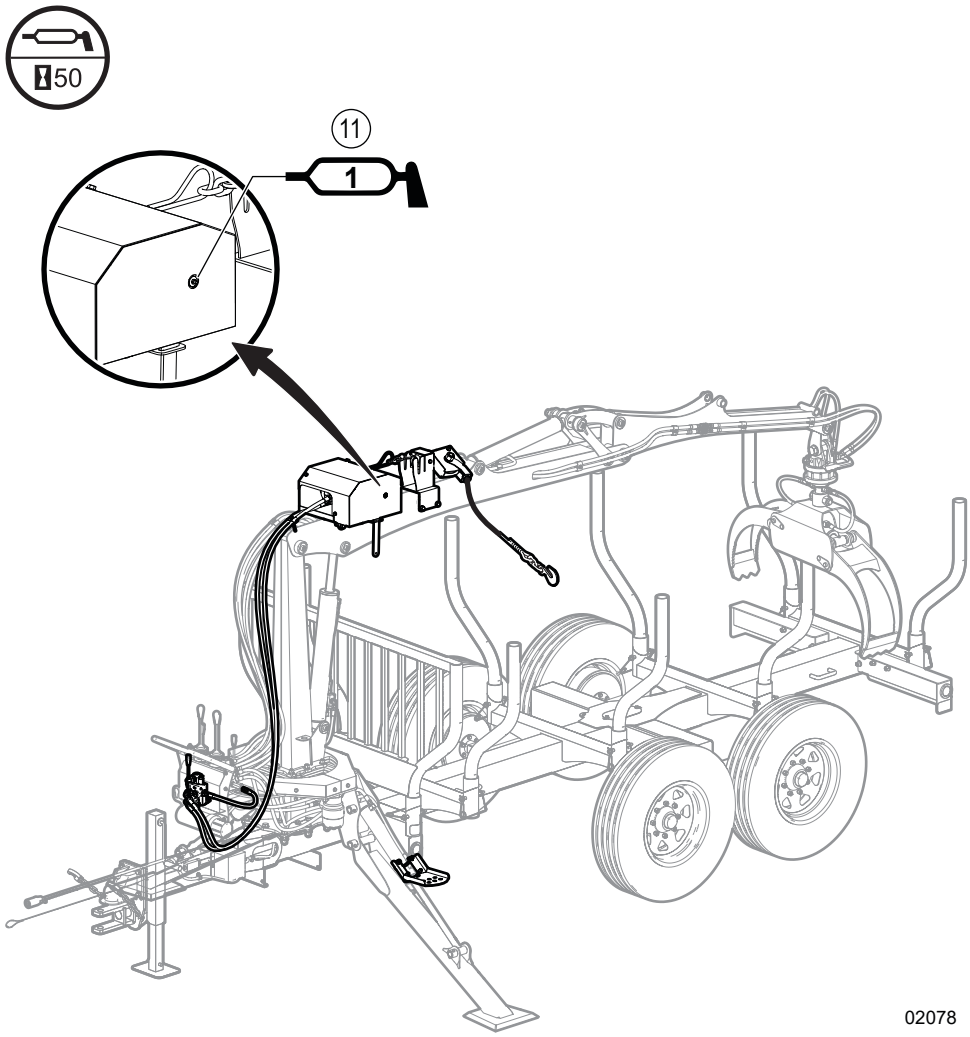


Figure 55–Hydraulic winch accessory grease points

9.5 Clean the Engine Air Filter

IMPORTANT! If you operate the engine with no air filter, or with a damaged air filter, dirt and debris can go into the engine. Dirt and debris in the engine causes fast engine wear. This type of damage is not covered by warranty.

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.

9.5.1 Clean the LXT95 6.5 hp Engine Air Filter

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

1. Turn the two air-filter cover fasteners to loosen them.
2. Remove the cover.
3. Remove the air filter.
4. Gently tap the air filter on a hard surface to loosen and remove dust and debris.
   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.

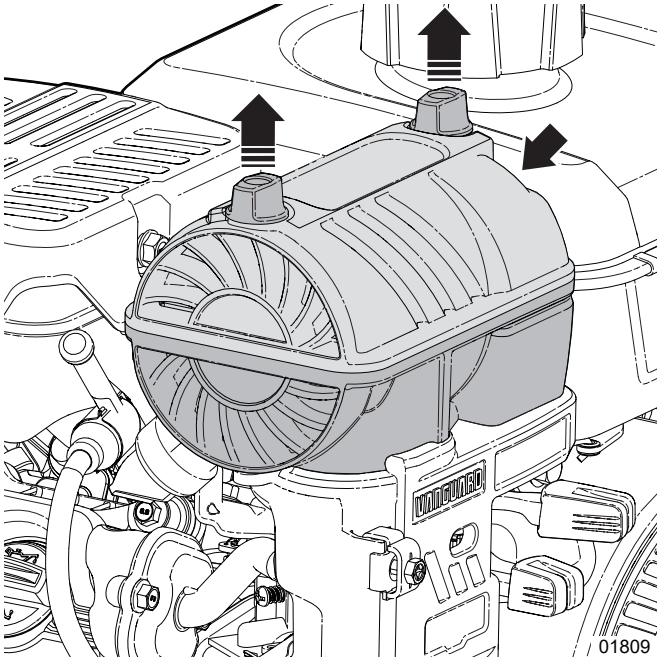


Figure 56–LXT95 6.5 hp engine air filter

9.5.2 Clean the LXT115 10 hp Engine Air Filter

Clean the air filter after every 25 hours of operation or annually.

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

1. Turn the air-filter cover fastener to loosen it.
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 air-filter cover fastener.

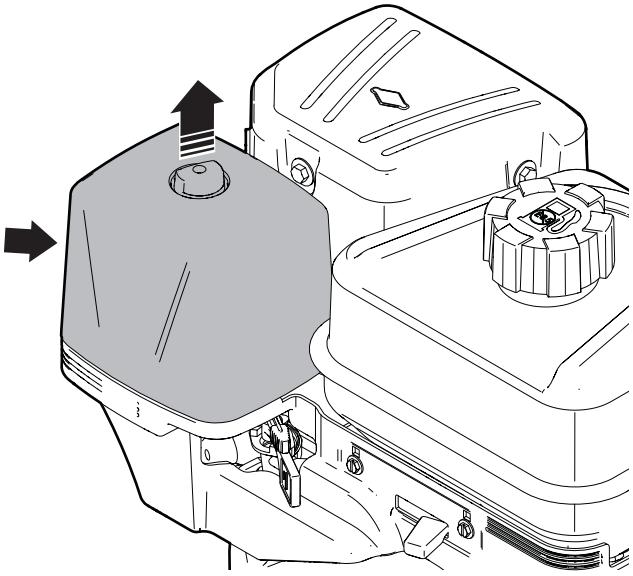


Figure 57–LXT115 10 hyp engine air filter

9.6 Replace the Hydraulic Fluid and Filter

WARNING!

Read and understand the *Hydraulic System Safety on page 38*.

CAUTION!

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

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

For hydruaulic fluid information, see *Hydraulic Fluid on page 59*. The hydraulic reservoir capacity is **4.6 US gal (17.5 L)**.

Wait until the machine temperature decreases before changing the hydraulic fluid. However, it is best to change the hydraulic fluid while the machine is warm to keep any contaminants in suspension.

The drain plug is on the bottom of the hydraulic reservoir. The filter is beside the hydraulic reservoir (below the main boom rotate).

1. Set the machine to a safe condition.
   For instructions, see *Safe Condition on page 9*.
2. Place a drain pan under the drain plug and filter. Make sure that the drain pan is large enough to collect and contain the hydraulic fluid that will drain from the filter and reservoir.
3. Clean the area around the drain, and then remove the drain plug.
4. Clean around the filter connection, and then turn the filter counterclockwise to remove it. A filter wrench may be necessary.
5. Wait for the hydraulic fluid to fully drain from the reservoir and filter connection.
6. On a new filter, apply a light coat of clean hydraulic fluid to the seal.
7. Turn the new filter clockwise to install it. Tighten the filter by hand, and then turn it one more 1/4 turn.
8. Install the drain plug.
9. Fill the reservoir to the top mark on the dipstick.
   For more information, see *Add Hydraulic Fluid to the Reservoir on page 39*.
10. Start the machine.
    For instructions, see *Start the Machine on page 41*.
11. Operate the hydraulic controls for one to two minutes to remove air from the hydraulic system.
12. Examine the filter connection for leaks.
    If necessary, turn the filter one more 1/4 turn.
13. Stop the machine.
    For instructions, see *Stop the Machine on page 41*.
14. Check the hydraulic fluid level. Add fluid, as necessary.
    For instructions, see *Check the Hydraulic Fluid Level on page 38*.
15. Dispose of the used hydraulic fluid in an environmentally safe manner.

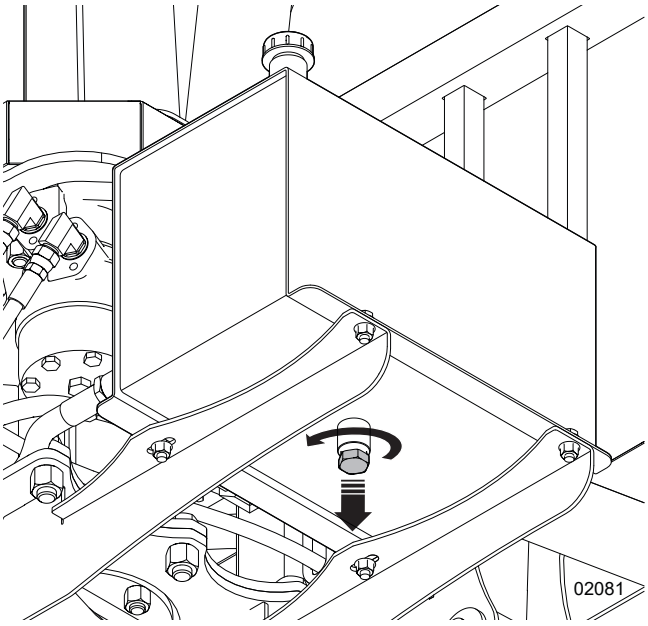


Figure 58 – Hydraulic reservoir drain plug

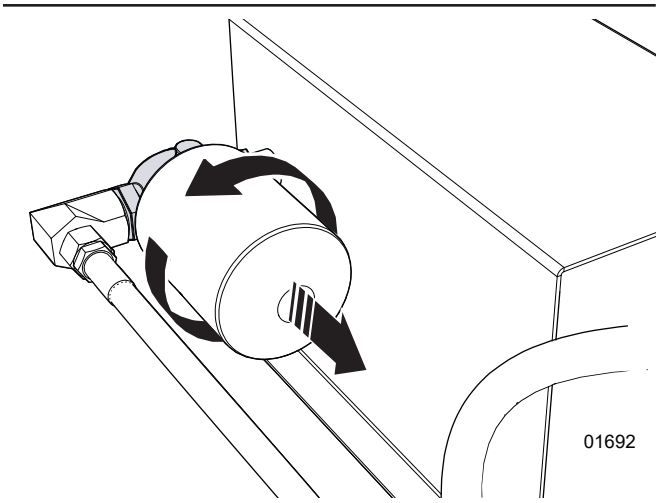


Figure 59–Remove the hydraulic fluid filter

Figure 60–Apply a light coat of hydraulic fluid to the filter seal

9.7 Brake Maintenance

⚠ WARNING!

If there is a decrease in brake performance, have a qualified mechanic examine and service the brakes immediately.

IMPORTANT! All brake repairs or replacements must be done by a qualified mechanic.

For more information, see *LXT95 Surge Brake Operation on page 39* and *LXT115 Electric Brake Operation on page 40*.

For the manufacture's information, go to DexterAxle.com.

With normal use, it should be sufficient to service the brakes annually. With increased use, service the brakes more frequently.
For more information, see the brake manufacturer's information.

The left side and right side brake assemblies are different.

After the brake shoes and linings are replaced, burnish the brakes to set the new components.
For instuctions, see *Burnish the Brakes on page 70*.

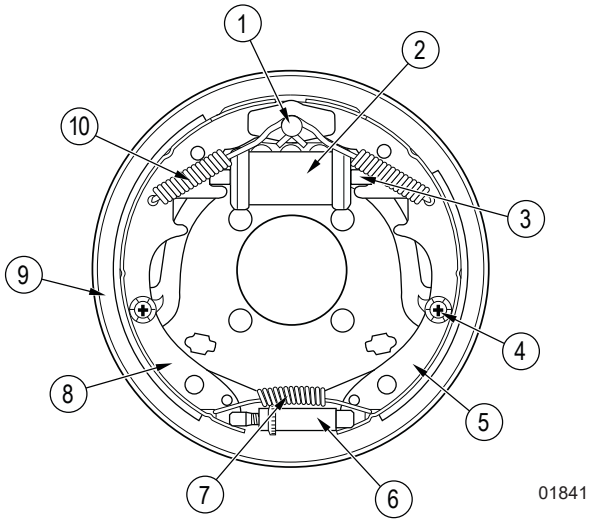


Figure 61–Hydraulic drum (surge) brake components

1. Anchor post
2. Hydraulic wheel cylinder
3. Actuator pin
4. Hold-down spring
5. Primary shoe
6. Adjuster assembly
7. Adjuster spring
8. Secondary shoe
9. Back plate
10. Retractor springs

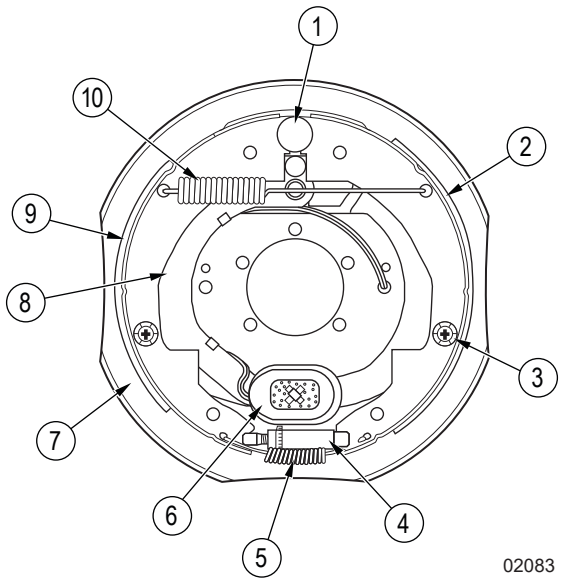


Figure 62–Electric drum brake components

1. Anchor post
2. Secondary shoe
3. Hold-down spring
4. Adjuster assembly
5. Adjuster spring
6. Magnet
7. Back plate
8. Actuating lever
9. Primary shoe
10. Retractor spring

9.7.1 Adjust the Brakes

⚠ WARNING!

There is a potential inhalation hazard from asbestos dust. Do the following:

- **Were the applicable PPE.**
- **Avoid creating or breathing dust.**
- **Do not use compressed air or dry brush the brakes.**

Asbestos dust can cause serial or fatal illness.

⚠ WARNING!

Use jack stands that have the correct load rating to support the machine. Never go under the machine until it is correctly supported. The machine can fall unexpectedly and cause serious personal injury or death.

IMPORTANT! Use the machine main frame to lift or support the machine. Axle or suspension components can be damaged if they are used to lift or support the machine.

The following procedure applies to surge brakes and electric brakes.

1. Use a scissor jack or trolley jack to lift one side of the machine.
   Make sure that the wheels can turn freely.
2. Put jack stands below the main frame to support the machine.
3. Find and remove the adjustment hole cover from the back plate.
   The back plate is on the rear of the wheel.
4. Use a screwdriver or drum brake adjustment tool, to turn the adjuster-assembly star wheel and expand the brake shoes. Expand the brake shoes until the pressure of the brake linings against the drum makes the wheel difficult to turn.
5. Turn the adjuster-assembly star wheel in the opposite direction until the wheel turns freely with a slight pull on the linings.
6. Install the adjustment hole cover in the brake back plate.
7. Remove the jack stands.
8. Use the scissor jack or trolley jack to lower the wheels to the ground.
9. Repeat steps 1 to 8 for the remaining brakes. For the best results, set all the brakes to the same clearance.

9.7.2 Burnish the Brakes

WARNING!

Before starting the burnishing process, make sure that the area is clear of vehicles and pedestrians. Failure to brake safely can result in a collision and severe injury to yourself and/or other people.

IMPORTANT! Only burnish the brakes before the first use or after new brake pads and rotors are installed.

IMPORTANT! During the burnishing process, do not stop fast, do not travel at a high speed, and make sure that the brakes are cool before you repeat the process.

The burnishing process prepares the brake shoes and drum surface. This process applies to surge or electric drum brakes.

1. Remove all material from the trailer and log grapple.
2. Move the log grapple to the storage position.
   For more information, see *Place the Machine in Storage on page 56*.
3. If the machine has a hydraulic winch, wind in the winch rope, and then attach the hook to the machine.
4. Stop the machine.
   For instructions, see *Stop the Machine on page 41*.
5. Attach the machine to a tow vehicle.
   For instructions, see *Attach to a Tow Vehicle on page 52*.
6. Do one of the following:
   - At a speed of 30 km/hr, with smooth, moderate pressure apply the brakes and come to a full stop.
   - At a speed of 50 km/hr, with smooth, moderate pressure apply the brakes until the speed decreases to 20 km/hr.
7. Wait a minimum of one minute for the brake temperature to decrease.
   Use a hand-held non-contact thermometer to make sure that the brakes are cool.
8. Repeat steps 6 and 7, 19 to 29 times.

9.7.3 Examine the LXT95 Surge Brake System

WARNING!

There is a potential inhalation hazard from asbestos dust. Do the following:

- **Were the applicable PPE.**
- **Avoid creating or breathing dust.**
- **Do not use compressed air or dry brush the brakes.**

Asbestos dust can cause serious or fatal illness.

WARNING!

Use jack stands that have the correct load rating to support the machine. Never go under the machine until it is correctly supported. The machine can fall unexpectedly and cause serious personal injury or death.

IMPORTANT! Use the machine main frame to lift or support the machine. Axle or suspension components can be damaged if they are used to lift or support the machine.

1. Look at the brake backing plate (on the rear of the wheel) for brake fluid leaks.
   Typically, a brake fluid leak is identified by dampness on the backing plate. If the leak is severe, the brake fluid drips down the backing plate.
2. Examine the brake lines.
   Look for kinks, leaks, or signs of damage (for example, cracks or abbrasions).
3. Examine the brake fluid reservoir that is inside the trailer tongue (between the hitch and the machine). Look for leaks or signs of damage.

9.7.4 Syncronize the LXT115 Electric Brake System

WARNING!

Before a road test, make sure that the area is clear of vehicles and pedestrians. Failure to brake safely can result in a collision and severe injury to yourself and/or other people.

IMPORTANT! For safe brake performance and synchronization, read the brake controller manufacturer's information before you start the synchronization procedure.

1. Make sure that the brake controller is set up correctly. For instructions, see the brake controller manufacturer's information.
2. Make sure that the brakes are burnished. For instructions, see *Burnish the Brakes on page 70.*
3. On a dry, paved road that has no sand or gravel on it, drive 20 mph (32 kph), and then brake to a hard stop.
4. Repeat step 3 several times and notice how the machine behaves.
5. Do one of the following:
   - If the brakes lock and slide, use the brake controller to decrease the gain setting.
   - If the brakes do not slide, use the brake controller to increase the gain setting a small amount.
6. If the brake controller applies the machine brakes before the tow vehicle brakes, adjust the brake controller settings. For correct brake performance, set the brake controller to apply the machine brakes a small distance before the tow vehicle brakes. For instructions, see the brake controller information.
7. Test the tow vehicle and machine to make sure that the synchronization is correct. Synchronization is correct when the machine does not have unusual movement or push the tow vehicle when the brakes are applied.

9.8 Synthetic Winch Rope Maintenance

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

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

The information in this section applies to the hydraulic winch accessory (sold separately).

9.8.1 Examine the Synthetic Winch Rope

Check the entire synthetic winch rope for wear and spool it neatly (under tension) after every use. Check the synthetic winch rope for cut strands, fraying parts, abrasion, or heat damage from the winch. After some use, all winch ropes get a small amount of fuzz on them from abrasion. This is normal. However, **if an entire strand is cut, the synthetic winch rope must be replaced or repaired**. All strands must in good condition (not damaged) for the synthetic winch rope to work correctly and be strong.

9.8.2 Clean the Synthetic Winch Rope

When dirt and grit become lodged between the strands of the synthetic winch rope, they cause abrasion to the fibers when the winch rope is used to pull logs. Over time, this can cause the synthetic winch rope to lose integrity and strength.

1. Unspool and remove the entire rope from the winch.
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. Place the rope in the bucket.
   c. Put a clean towel beside the bucket for the clean portion of the rope to go on.
   d. Starting at one end of the rope, push the rope strands together to open them up and rinse between them.

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

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

5. Dry the rope.

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

9.9 Tire Maintenance and Safety

⚠ WARNING!

Do not attempt to mount a tire on a wheel or rim without the correct equipment and experience. Tire maintenance should be done by an approved tire dealer or repair service. Failure to follow the correct procedures when mounting a tire can produce an explosion and cause serious injury or death.

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 77*.
- Check the tire pressure before towing the machine on a roadway. See the tire sidewall for the correct pressure.

9.10 Clean the Machine

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

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

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

1. Use a hose or pressure washer and mild detergent to remove dust, dirt, and debris.
2. Use a clean, soft cloth, that is dampened with water to remove dirt from the product identification plate.
3. Start the machine.
   For instructions, see *Start the Machine on page 41*.
4. Operate the engine for a few minutes for it to dry.
5. Stop the machine.
   For instructions, see *Stop the Machine on page 41*.
6. Apply grease to the areas where the pressure washer could remove it.
   For instructions, see *Grease Points on page 61*.

10. Troubleshooting

⚠ WARNING!

Before troubleshooting, read and understand the *Service and Maintenance Safety on page 58*. 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 Wallenstein Equipment dealer or distributor. Before you call, please have the serial number for your product available.

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

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

Problem	Cause	Solution
Hydraulic cylinder pistons move slowly or do not move (main boom, dipper boom, log grapple, stabilizers).	The hydraulic fluid is not pressurized.	Change the hydraulic fluid filter. For instructions, see *page 67*.
		The hydraulic fluid is low. Check the hydraulic fluid level. For instructions, see *page 38*.
	The log grapple hydraulic hoses are not connected correctly.	Examine the hydraulic hose connections. Use the color codes to match the connections.
	The engine speed is low.	Make sure that the engine choke control is in the **Open** position. Increase the engine speed. For more information, see *page 34*.
Hydraulic cylinder movement is not smooth.	There is a leak or air in the hydraulic system.	Tighten all the hydraulic hose connections.
Hydraulic control lever does not go to the neutral position when you release it.	The hydraulic valve spool-return spring is faulty.	Replace the spool-return or valve. Contact your local Wallenstein Equipment dealer or distributor.
	The hydraulic fluid is not pressurized.	Change the hydraulic fluid filter. For instructions, see *page 67*.
		The hydraulic fluid is low. Check the hydraulic fluid level. For instructions, see *page 38*.
	The hydraulic control may be damaged.	Contact your local Wallenstein Equipment dealer or distributor.
Hydraulic hose leak.	The hose is worn or damaged.	Replace the hydraulic hose. Contact your local Wallenstein Equipment dealer or distributor.
Hydraulic cylinder leak.	The hydraulic cylinder seals are worn.	Replace the seals or the hydraulic cylinder. Contact your local Wallenstein Equipment dealer or distributor.
Main boom or dipper boom slowly moves down.	There is a leak in the hydraulic cylinder seals.	Replace the seals or the hydraulic cylinder. Contact your local Wallenstein Equipment dealer or distributor.
	The hydraulic cylinder counterbalance valve is damaged.	Contact your local Wallenstein Equipment dealer or distributor.
Main boom does not turn or turns slowly.	The boom lock pin is installed.	Remove the boom lock pin. For more information, see *page 27*.
	The hydraulic fluid is not pressurized.	Change the hydraulic fluid filter. For instructions, see *page 67*.
		The hydraulic fluid is low. Check the hydraulic fluid level. For instructions, see *page 38*.
	The engine speed is low.	Make sure that the engine choke control is in the **Open** position. Increase the engine speed. For more information, see *page 34*.
	The main boom rotate gears are jammed.	Remove all debris from the gears.
	The main boom rotate sprocket and gears are not lubricated.	Apply grease to the sprocket. For instructions, see *page 61*.

Problem	Cause	Solution
Brakes do not operate correctly.	LXT95 - The surge brake control is engaged.	Disengage the surge brake control. For more information, see *page 30*.
	LXT95 - A brake line is damaged.	Replace the damaged brake line. Contact your local Wallenstein Equipment dealer or distributor.
	LXT115 - There is a problem with the electrical connections or wire harness.	Examine the wire harness and connections. Clean the electrical contacts or replace the wire harness. Contact your local Wallenstein Equipment dealer or distributor.
	The brakes are not adjusted correctly.	Adjust the brakes or contact your local Wallenstein Equipment dealer or distributor..
	There is grease or oil on the brake linings.	Clean or replace the brake linings. Contact your local Wallenstein Equipment dealer or distributor.

11. Specifications

For engine specifications, see the engine manufacturer's manual. For axle and brake specifications, see the axle and brake manufacturer's information. For available accesories, go to WallensteinEquipment.com.

11.1 Machine Specifications[1]

Parameter	LXT95	LXT115
Engine	Vanguard® 6.5 hp (203 cc)	Vanguard® 10 hp (305 cc)
Load capacity	5,000 lb (2 268 kg)	11,500 lb (5 216 kg)
Lift capacity	800 lb (363 kg)	1,200 lb (544 kg)
Engine oil capacity	18 oz to 20 oz (532 mL to 591 mL)	1.16 US qt (1.1 L)
Engine fuel tank capacity	2.2 US qt (3.1 L)	1.59 US gal (6.0 L)
Log grapple opening	3" to 30" (8 cm to 76 cm)	
Log grapple rotation	360°	
Main boom rotation	270°	
Trailer bed length	96" (244 cm)	132" (335 cm)
Sliding axle	Hydraulic	N/A
Horizontal reach	9' 6" (290 cm)	11' 6" (351 cm)
Vertical reach (ground to closed log grapple)	12' 11" 394 cm)	15' 5" (470 cm)
Stabilizer spread	7' 5" (226 cm)	8' 11" (272 cm)
Main boom lift cylinder diameter	2 1/2" (6 cm)	
Dipper cylinder diameter	2 1/2" (6 cm)	
Stabilizer cylinder diameter	2" (5 cm)	
Ground clearance	14" (36 cm)	17" (43 cm)
Tires	27 x 10.5 x 15 – 8 ply	ST235-80R16LRE
Ball-hitch Size	2"	2 5/16"
Brake type	Surge	Electric
Tongue Weight (empty)	250 lb to 515 lb (114 kg to 234 kg)	555 lb (252 kg)
Trailer weight (empty)	1,650 lb (748 kg)	2,470 lb (1 120 kg)
Dimensions (L x W x H)	161" x 64" x 58" (409 cm x 163 x 147 cm)	198" x 68" x 60" (503 cm x 173 cm x 152 cm)
Minimum tow vehicle requirement	3/4 Ton	

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 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 you use 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.

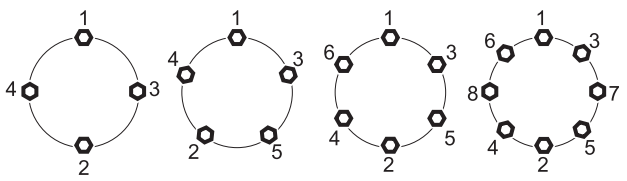
Tighten wheel lug nuts to the correct torque before the first use and after each wheel removal. After a wheel is installed, check and torque the lug nuts after the first 10 miles (16 km), 25 miles (40 km), and 50 miles (80 km). Check the lug nut torque periodically thereafter.

- 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. Product Warranty

LIMITED WARRANTY

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

Five Years for Consumer Use

Two Years for Commercial/Rental Use

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

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

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

This warranty does not cover the following:

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

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