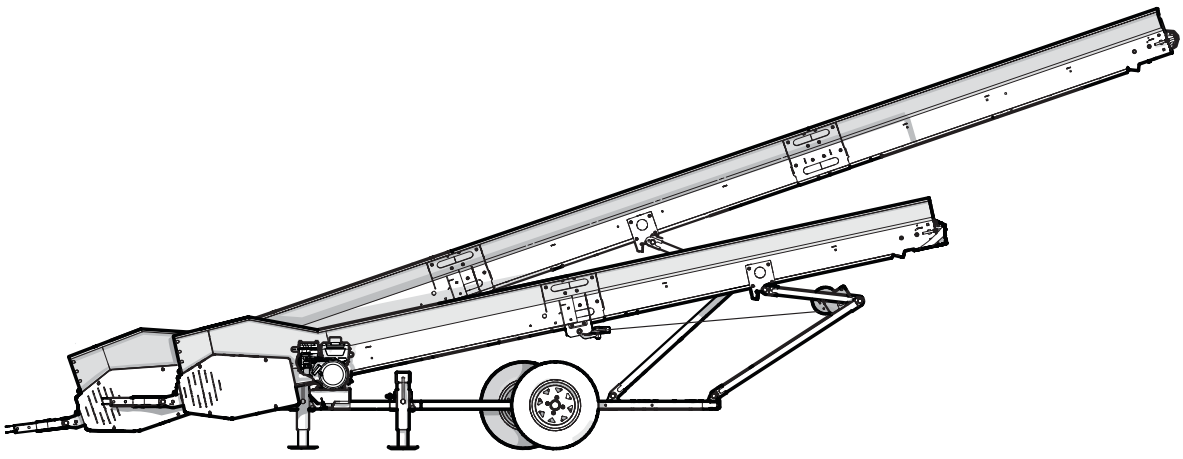
OPERATOR'S MANUAL

CT16B: serial numbers CT16B27-39, 1100000 and up
CT24B: serial numbers CT24B40-66, 1100000 and up

CT16B / CT24B
Firewood Conveyor



Rev Jan-2024

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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.

W034

Congratulations on your choice of a Wallenstein CT16B or CT24B Firewood Conveyor!

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

CT16B or CT24B firewood conveyors are towable, gas engine powered machines meant to be used with Wallenstein firewood processors and log splitters. The gas engine powers the conveyor chain to pull logs up the conveyor trough and off the rear of the conveyor. The wheels on the firewood conveyor can be turned 90-degrees to change the direction the conveyor is pointed. Wallenstein firewood conveyors are an efficient way to move or store large quantities of split wood.

For available accessories, go to WallensteinEquipment.com.

For safe, efficient, and problem-free operation of this Wallenstein Equipment product, make sure that everyone who uses or maintains the machine reads and understands the information in this manual and the engine manufacturer's manual.

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

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

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

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

1.1 Delivery Inspection Report

Wallenstein CT16B or CT24B Firewood Conveyor

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

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

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

_____
Customer

_____
Address

_____
City, State/Province, ZIP/Postal Code

( )
_____
Phone Number

_____
Contact Name

_____
Model

_____
Serial Number

_____
Delivery date

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

_____
Dealer

_____
Address

_____
City, State/Province, ZIP/Postal Code

( )
_____
Phone Number

Dealer Inspection Checklist

_____ Engine starts and runs, and fluid levels are correct.
_____ Reduction case oil level is correct.
_____ The conveyor chain is lubricated.
_____ All fasteners are torqued to the correct specifications.
_____ All grease points are lubricated.
_____ Operator's Manual is in the storage tube.
_____ Tire pressure is correct (see the tire sidewall).
_____ Trailer jack functions correctly.
_____ All belts are aligned and the tension is correct.
_____ Pivot tongue moves freely.
_____ Tires are in good condition.

Safety Checks

_____ All safety labels are applied and legible.
_____ Operating and safety instructions were reviewed.
_____ All guards and shields are installed, and the covers are closed.
_____ A retainer is installed through each hitch point.
_____ Wheel lug nuts are tightened to the correct torque.

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 model and serial number of your product here:

Model	
Serial Number	

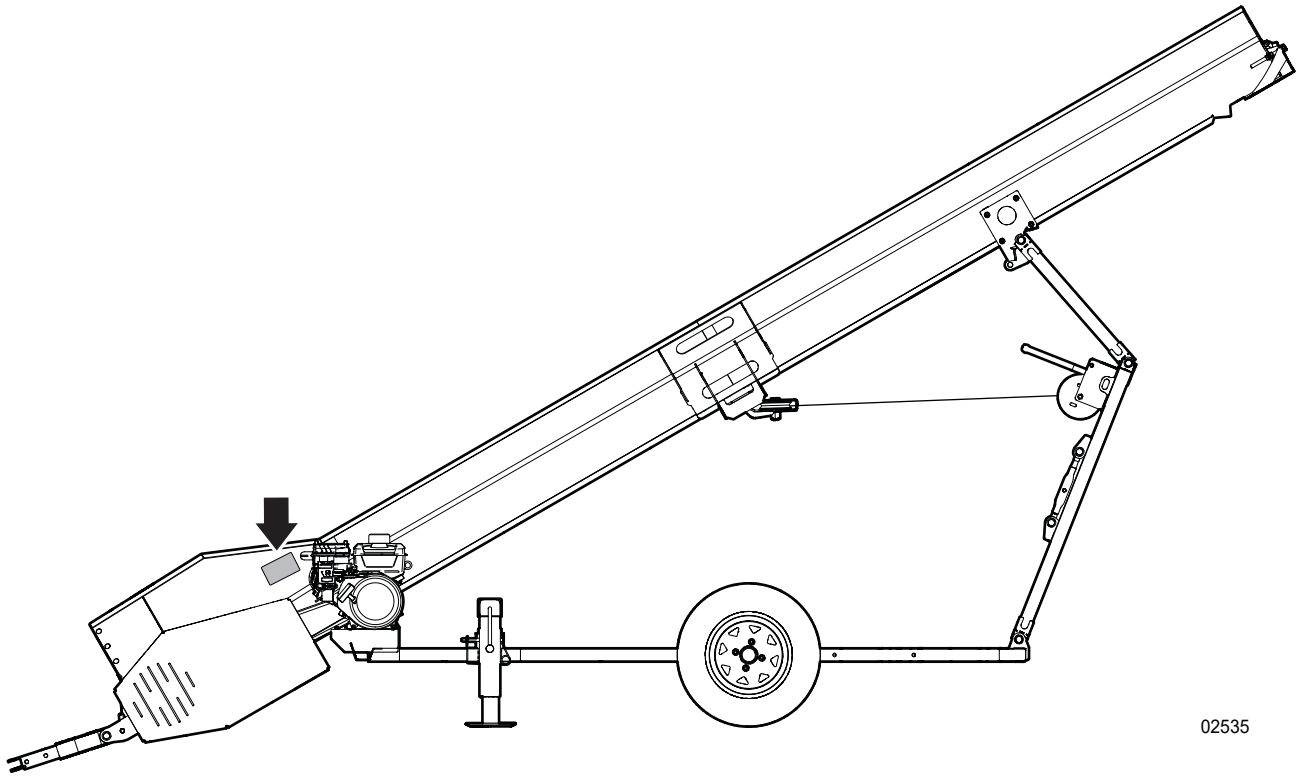
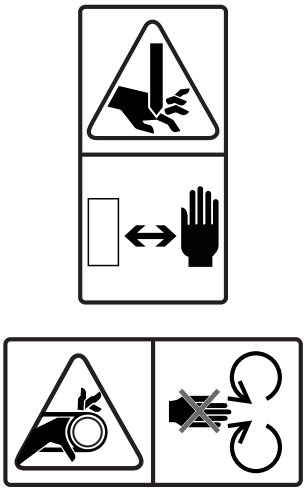


Figure 1 – Product identification plate location (typical)

1.3 Types of Labels on the Machine

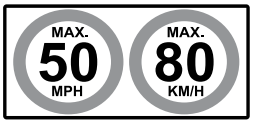
There are different types of labels on your Wallenstein product. The labels are for safety, information, and product identification. This section explains what the labels are for and how to read them.

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

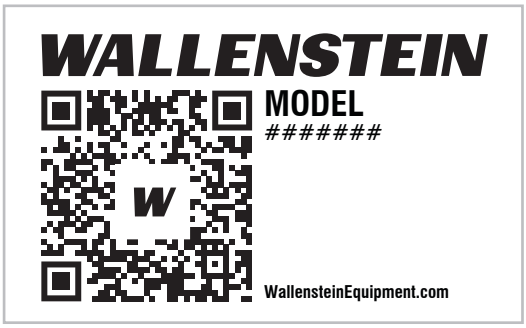


Mandatory action labels are pictorial with a blue background and usually rectangular with single or multiple symbols. This label shows the type of personal protective equipment (PPE) that is necessary for safe operation.

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



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



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

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

2. Safety

Read and understand all safety information before you operate 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 aware of 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** identify the severity of a hazard to anyone who uses the machine. The applicable signal word for each message was selected using the following guidelines:

DANGER

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

WARNING

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

CAUTION

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

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

☞ Provides additional information that is helpful.

2.3 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 uses, maintains, or works around the machine is familiar with the operation and maintenance procedures and related **SAFETY** information contained in this manual. Obey the safety best practices included in this manual when you use your machine.

YOU are responsible for your own safety. Obey safety best practices to protect yourself and the people around you. Make these practices part of your safety program. Make sure that **EVERYONE** who uses this machine is familiar with the recommended operation and maintenance procedures, and obeys all the safety instructions. Most accidents can be prevented.

Do not risk injury or death by ignoring safety instructions and best 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.

W016

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

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

- It is the operator's responsibility to read, understand, and follow ALL safety and operating instructions in this manual.
- If you do not understand any part of this manual or need assistance, contact your local dealer, the distributor, or Wallenstein Equipment.
- Do not let anyone to use this machine until they have read this manual. The operator must have a thorough understanding of the safety precautions and how the machine works. Review the safety instructions with all users annually.
- Operators must be responsible, familiar with, and physically able to use the machine. Each operator must be trained before they use the machine. Before operation, evaluate the physical and/or mental limitations of each operator to make sure that they can use the machine safely. Do not let a child operate the machine.
- Make sure that all users understand the safety labels on the machine before operating, servicing, adjusting, or cleaning it. For safety label definitions, see *Safety Label Definitions on page 16*.
- Learn the controls and how to stop the machine quickly in the event of an emergency. For instructions, see *Emergency Stop on page 32*.
- Keep a first-aid kit available and know how to use the contents of it.

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

- Wear the appropriate PPE when you operate, service, or maintain the machine.
  This includes, but is not limited to:
  - A hard hat.
  - Heavy gloves.
  - Hearing protection.
  - Protective shoes with steel toes and slip resistant soles.
  - Protective glasses, goggles, or a face shield.
- Prolonged exposure to loud noise can cause permanent hearing loss. Power equipment with or without a vehicle attached can often be noisy enough to cause permanent, partial hearing loss.

- Wear hearing protection on a full-time basis if the noise in the operator's position exceeds 80 dB. Noise over 85 dB on a long-term basis can cause severe hearing loss. Noise over 90 dB adjacent to the operator on a long-term basis can cause permanent, total hearing loss.
- Do not wear loose clothing, jewlery, or loose personal articles. Keep long hair tied up and covered. Loose items can get caught in moving parts and cause injury. Jewelry can ground a live electrical circuit which can cause injury and machine damage.
- Do not consume alcohol or drugs before or during machine operation. Alertness or coordination can be affected. When you take prescription medications, consult your doctor before you operate the machine.
- Only use the machine in daylight or good artificial light.
- Make sure that all guards and shields are installed, and the covers are closed. If removal is necessary for repair, replace them before you use the machine.
- Never allow anyone to ride on the machine during transport.
- Keep bystanders at least 20 ft (6 m) from the machine and wood pile. Mark the work zone with safety cones.
- Before starting the engine, make sure that the machine is clear of debris.
- Do not touch hot engine parts, muffler cover, hoses, engine body, or engine oil during operation or after the engine is turned off. Contact with hot surfaces can cause burns.

2.5 Equipment Safety Guidelines

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

Obey the following precautions to avoid hazards. Make sure that

anyone who works with you obeys them as well.

- Replace safety or instruction labels that are not readable or are missing. For locations and explanations, see *Safety Labels on page 13.*
- Do not modify the equipment in any way. Unapproved modification can result in serious injury or death. In addition, unapproved modification can cause incorrect operation and decrease the life of the machine. Unapproved modification voids the warranty.
- Make sure that the machine is correctly stationed, adjusted, and in working condition.
- Keep the machine free of accumulated grease and debris to prevent fires and machine damage.
- Make sure that the wood pile does not interfere with the safe operation of the machine.
- Look for and avoid overhead hazards (for example; branches, cables, and electrical wires).
- Do not exceed the limitations of the machine. If the machine does not operate normally or you feel unsafe, stop the machine!

2.6 Safe Condition

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

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

SAFE CONDITION

1. Stop the machine.
   For instructions, see *Stop the Machine on page 32*.
2. Wait for all moving parts to stop.
3. Disconnect the engine spark-plug wire and keep it away from the spark plug.
4. Lower the conveyor fully.
   For instructions, see *Adjust the Conveyor Angle on page 35.*
5. Lock the conveyor.
   For instructions, see *Engage the Conveyor Lock on page 37.*

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. To keep a record of safety training, see the *Sign-Off Form on page 10.*

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

2.8 Sign-Off Form

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

Schedule an annual review of machine safety and operation for all operators. The following sign-off form can be used to record the completed training.

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

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

Training Sign-Off Form

Date	Owner's signature	Operator or technician's signature

2.9 Work Site

⚠ CAUTION!

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

W112

2.9.1 Select a Work Site

Select a safe work area and machine location:

- The ground should be firm and level.
- Make sure that there is a sufficient amount of space and clearance for the operator, the machine, and the firewood.
- Remove all stones, branches, or hidden obstacles that might cause a tripping, hooking, or snagging hazard.
- Make sure that there are no overhead hazards such as branches, cables, or electrical wires.
- Select a location for firewood to be piled. Make sure that the logs do not interfere with the safe operation of the machine.

2.9.2 Create a Safe Work Area

Read and obey the instructions for safe operation of the machine.

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

- Use safety cones to identify the work zone perimeter. The work zone perimeter should be a minimum of 20 ft (6 m) away from any hazard in the work zone. The area outside the work zone perimeter is the safe zone.
  For more information, see *Figure 2 on page 12.*
- Do not let people approach the work zone during machine operation. Everyone must signal and make eye contact with the operator before they approach the work zone.
- Keep all bystanders in the safe zone. Do not let bystanders in the work zone.
- Only the operator can let people enter the work zone. The operator must make sure that it is safe for a person to enter the work zone.
- When there are two or more workers, they must agree on a system of hand-signals to use for communication.
- The operator must make eye contact with coworkers and use the agreed system of hand signals. The operator must always be aware of their coworkers and know where they are.
- If there is fuel is on the work site, store it far away from the machine and wood material.
- Use extreme caution around the firewood piles. Stacked firewood can roll in unpredictable ways.
- The work zone in a forestry operation must be planned, located, constructed, maintained, and operated to make sure that the following are possible:
  - Logs can be moved safely in the work zone.
  - Log stacks and the equipment used to handle the logs do not become unstable or otherwise create a hazard.
  - Workers can work in locations that are clear of moving logs and equipment.
  - Workers are not exposed to incoming or runaway logs, or other debris.
  - The area is kept free from the buildup of bark and other debris to the extent that it would pose a risk to the workers.
  - An effective method of dust control is used and maintained.

A safe work area is divided into four zones:

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

The following illustration shows a safe work site when the conveyor is used with a firewood processor.

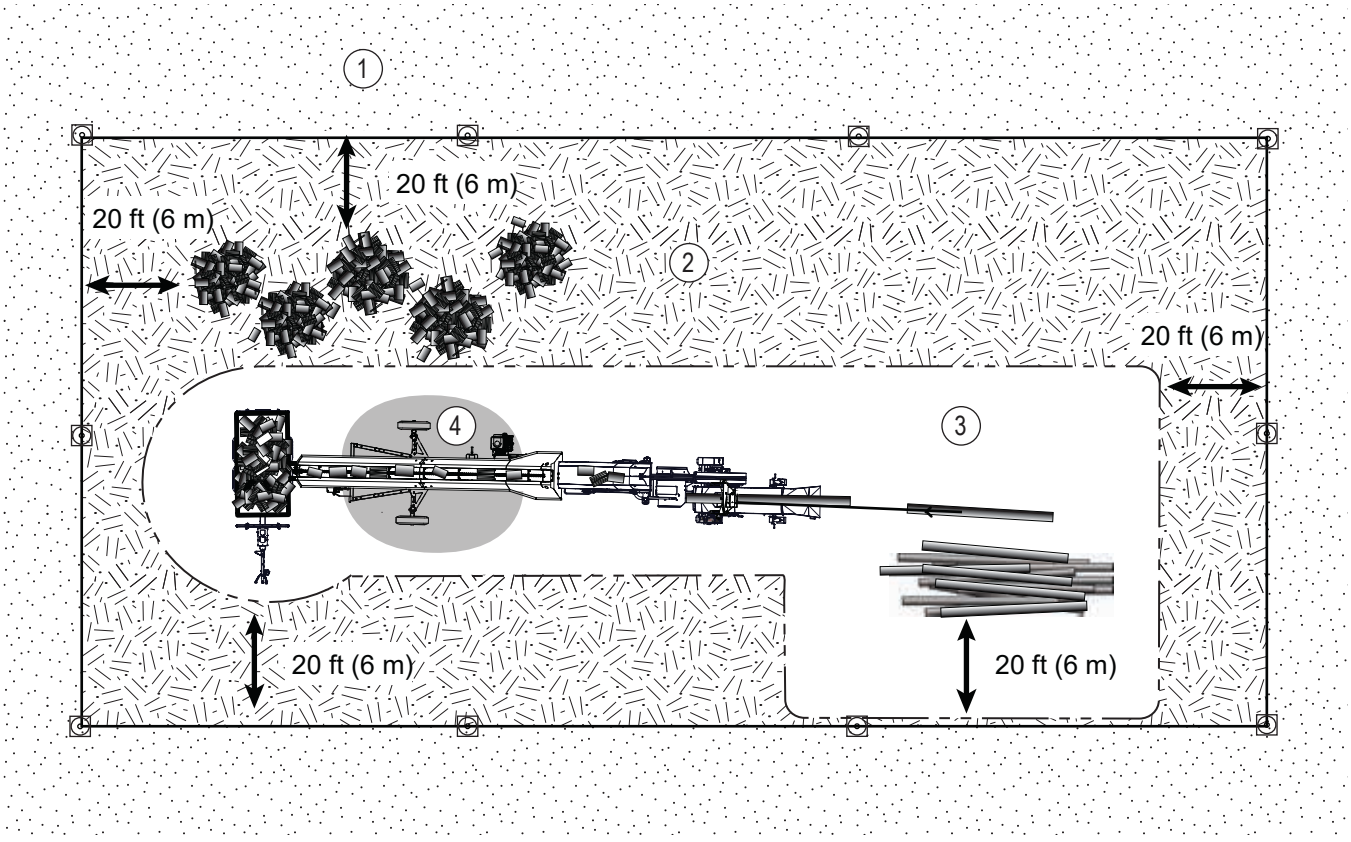


Figure 2–Example work site

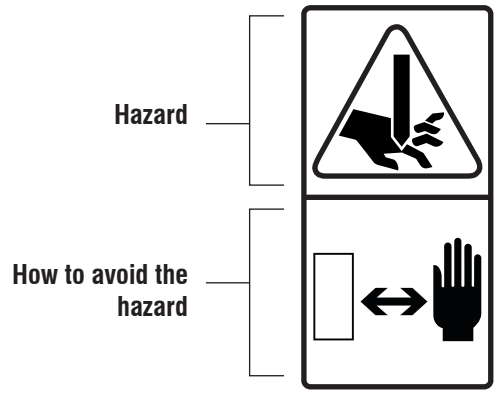
3. Safety Labels

⚠ WARNING!

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

W100

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



Think SAFETY! Work SAFELY!

3.1 Replace a Safety Label

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

3.1.1 Conditions

- The installation area must be clean and dry.
- The application surface must be clean and free of grease or oil.
- The ambient temperature must be above 50 °F (10 °C).

3.1.2 Tool

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

3.1.3 Procedure

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

3.2 Safety Label Locations

Numbers correspond with the *Safety Label Definitions on page 16.*.

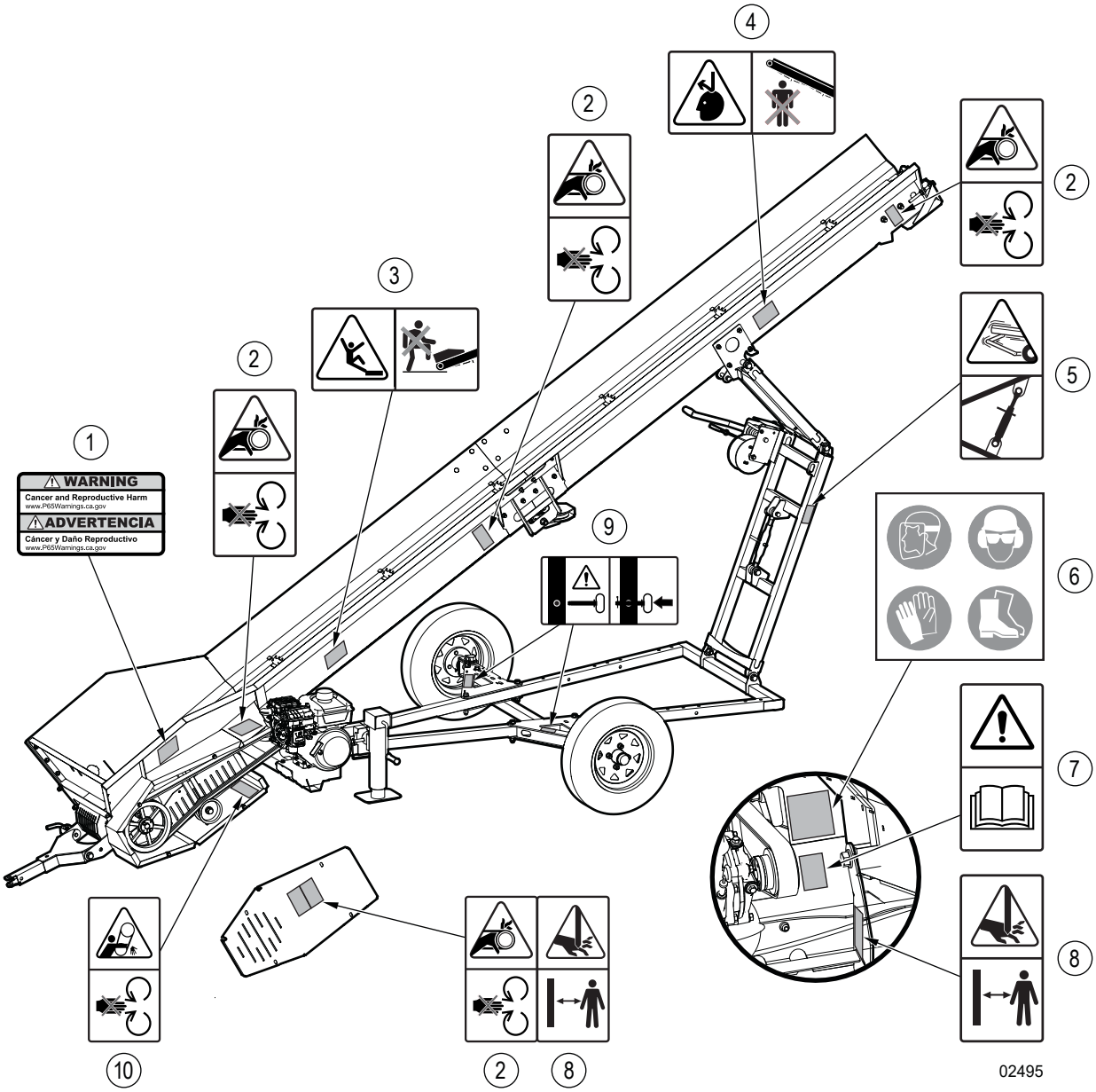


Figure 3– Safety label locations- left side

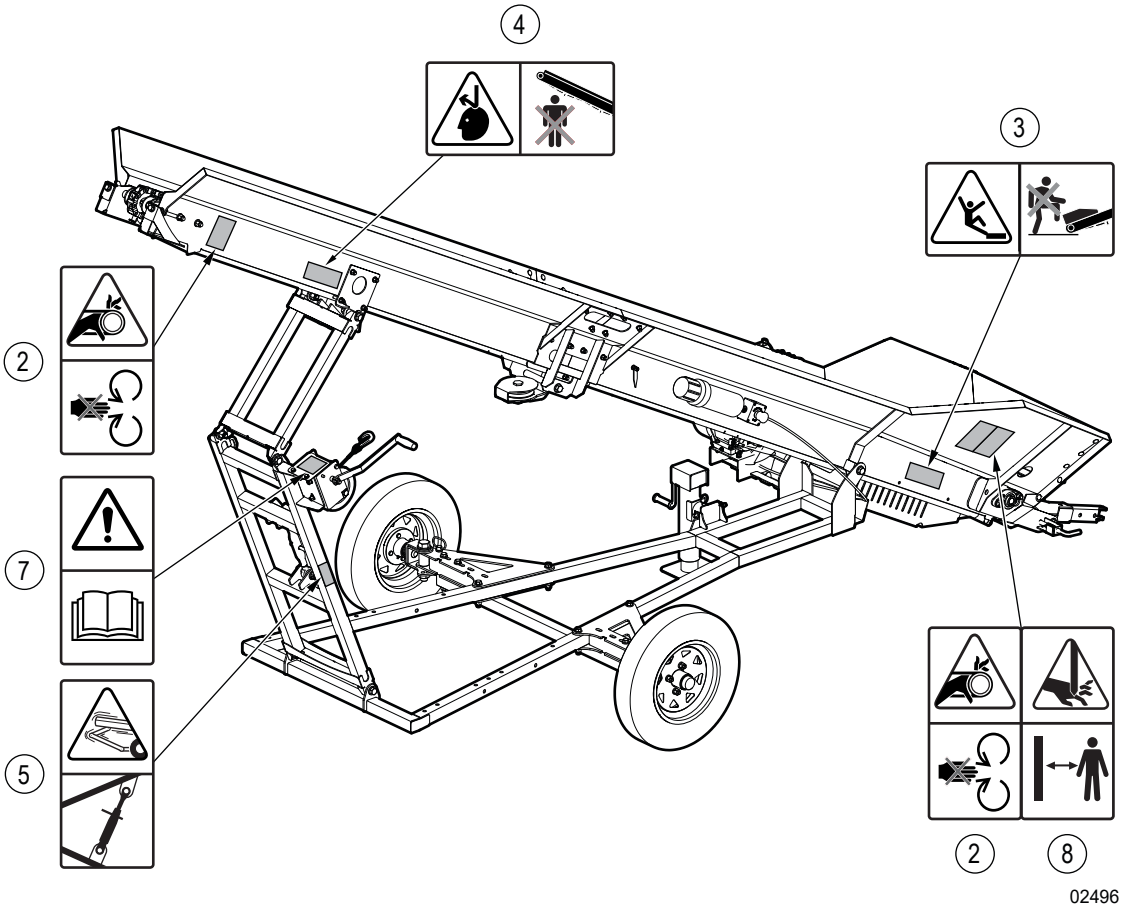


Figure 4– Safety label locations- right side

3.3 Safety Label Definitions

1. Warning!

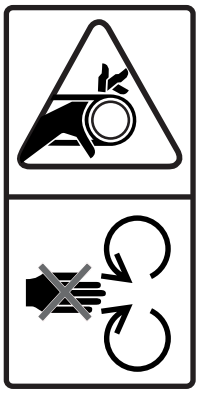
Risk of cancer and reproductive harm

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

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

2. Warning!

Entanglement, pinch, and crush hazards



Keep hands away from this area. Do not put your hands inside the guard.

Do not operate the machine with a guard removed. Make sure that all of the guards and shields are installed and the covers are closed before you start the machine.

Rotating parts that can entangle, pinch, or crush fingers and hands are exposed when the guard is removed.

3. Warning!

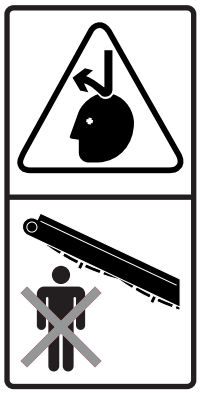
Slip, trip, and fall hazards

If you stand, sit, or climb on the machine, you can slip, trip, or fall.

Do not stand, sit, climb on the machine. Stay in the safe operating zone while you operate the machine. Keep children away from the machine. Do not let anyone ride on the machine.

4. Warning!

Crush and impact hazard

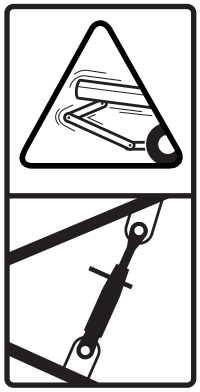


Do not go below or near the rear of the conveyor where the material falls.

Material that falls from the rear of the conveyor can break or crush bones and cause a severe head injury. Keep people away from this area.

5. Warning!

Risk of unexpected movement

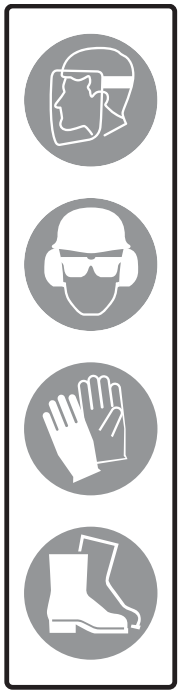


If you transport or service the machine without the conveyor lock engaged, the machine can fold or vibrate unexpectedly and cause serious injury.

Lower the machine and engage the conveyor lock before you transport or service the machine.

6. Caution!

Wear the necessary PPE



For example:

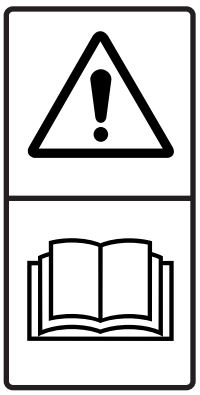
- A hard hat.
- Heavy gloves.
- Hearing protection.
- Protective footwear with steel toes and slip resistant soles.
- Protective goggles or a face shield

7. Caution!

Read the Operator's Manual

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

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



8. Warning!

Crush, cut, or sever hazard

Hands or fingers can be crushed, cut, or severed in this area.

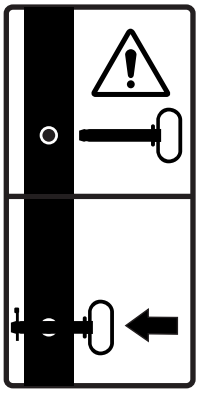
Keep your hands away from all moving parts. Wait for all moving parts to stop before you load or remove material. Put the machine in a safe condition before you remove a blockage.

9. Warning!

Risk of unexpected movement

The wheels can move unexpectedly if the hitch pin is not installed through the axle.

Make sure that the hitch pin is installed through the axle and the linchpin is installed through the hitch pin.

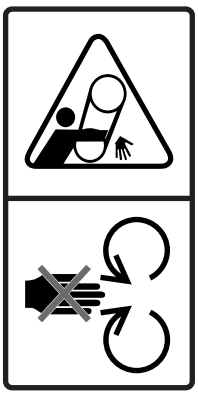


10. Warning!

Entanglement, pinch, and crush hazards

Rotating parts can pull in, pinch, and crush fingers and hands. Install the guard when work is complete.

Keep your hands away from the drive belt. Turn off the machine and put it in a safe condition before service or maintenance. Wear heavy gloves and use caution when working in this area.



4. Familiarization

The Wallenstein CT16B and CT24B firewood conveyors are designed to move split wood from a firewood processor or log splitter to a designated wood pile or trailer. Use a Wallenstein firewood conveyor to efficiently transport or store large quantities of split wood.

4.1 New Operator

⚠ WARNING!

All operators must understand how to put the machine in a safe condition before they service, maintain, or store the machine. For instructions, see *Safe Condition on page 9.*

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

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

4.2 Training

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

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

4.3 Operator Orientation

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

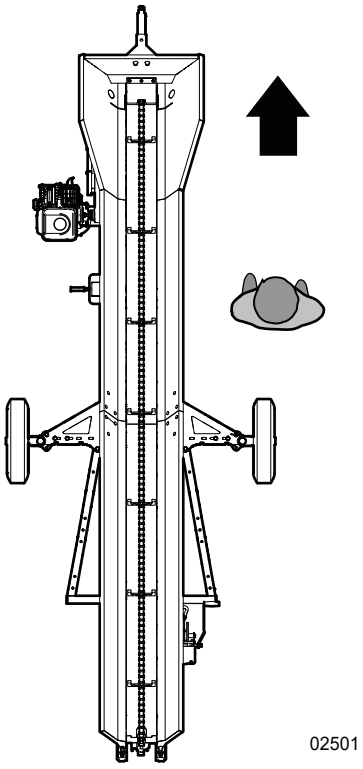


Figure 5–Direction of forward machine travel

4.4 Machine Components

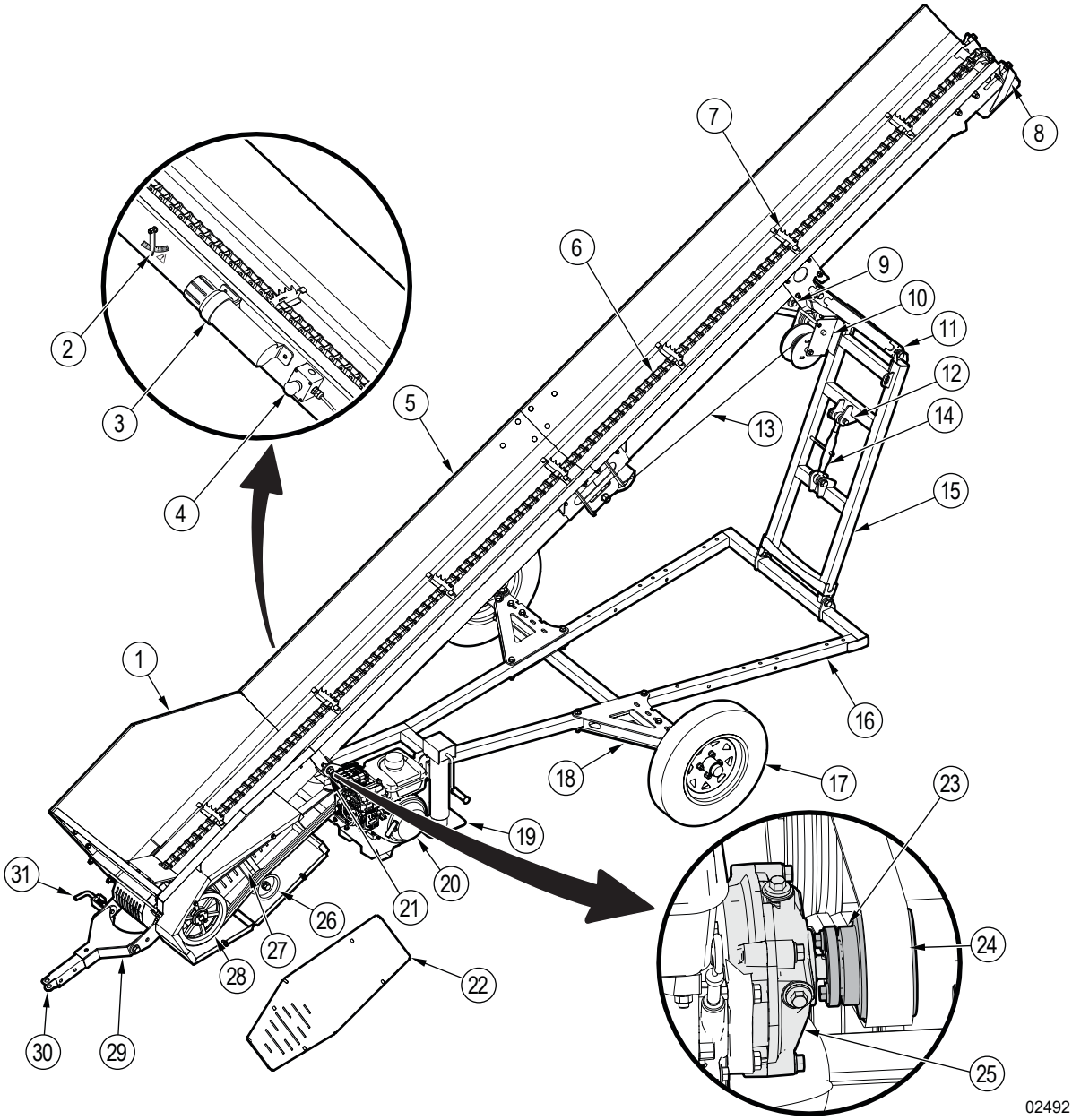


Figure 6– CT16B / CT24B Conveyor Components

1. Conveyor hopper
2. Conveyor angle indicator
3. Document tube
4. Emergency stop button
5. Conveyor trough
6. Conveyor chain
7. Conveyor-chain cleat (1 of 15)
8. Conveyor chain tension assembly
9. Conveyor lock-plate
10. Hand winch
11. Upper folding-frame
12. Folding-frame lock-plate
13. Hand-winch cable
14. Toplink
15. Lower folding-frame
16. Base frame
17. Wheel (1 of 2)
18. Axle (1 of 2)
19. Trailer jack
20. Engine
21. Engine guard
22. Drive belt guard
23. Engine clutch
24. Drive belt
25. Reduction unit
26. Tension sheave
27. Tension-sheave bracket
28. Conveyor sheave
29. Trailer tongue
30. Clevis hitch
31. Hitch latch

5. Controls

Before operating the machine, be familiar with the location and function of the controls.

5.1 Emergency Stop Button

IMPORTANT! Only use the emergency stop button in an emergency. Frequent use of the emergency stop button can damage the machine.

An emergency stop button (commonly called an E-stop) is located on the right side of the conveyor trough.

In the event of an emergency, press the emergency stop button to immediately stop the machine. The button stays on (pressed) until it is reset.

The emergency stop button has two states:

Off	The emergency stop is off. The machine can operate.
On	The emergency stop is on (the button is pressed). The machine cannot operate. To reset (turn off) the emergency stop button, turn the button clockwise and pull.

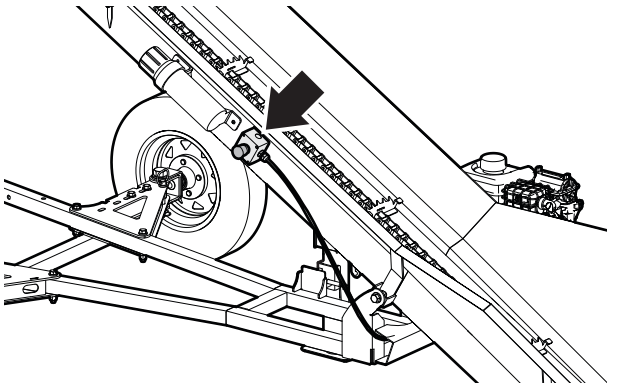


Figure 7–Emergency stop button

5.2 Engine Controls

⚠ WARNING!

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

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

5.2.1 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**
	**Stopped** The engine is stopped.

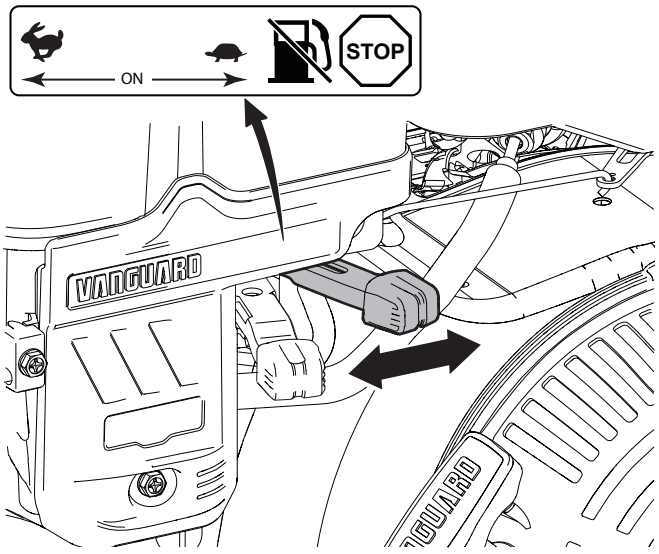
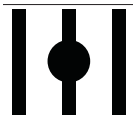


Figure 8–Engine throttle control and fuel shutoff

5.2.2 Choke Control

The choke control lever has the following functions:

Choke closed
Engine start.



Choke open
Engine start

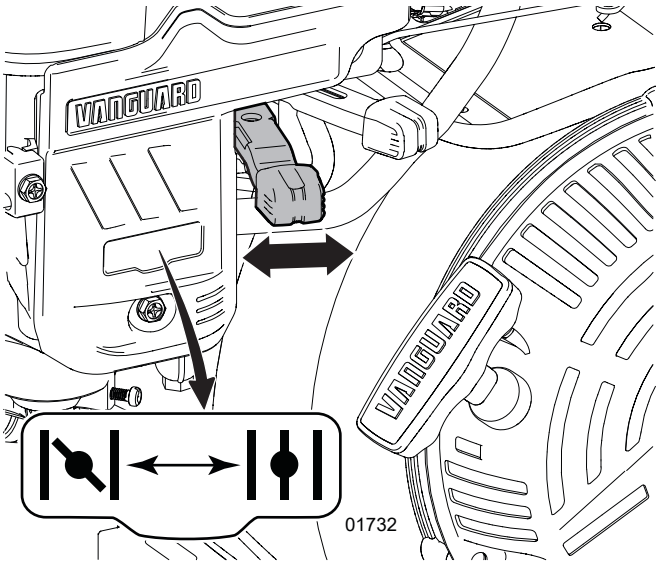


Figure 9–Engine choke control

5.2.3 Starter-cord Handle

WARNING!

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

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

W102

The engine is a rewind-start. An operator grips the starter-cord handle to pull the starter cord and start the engine.

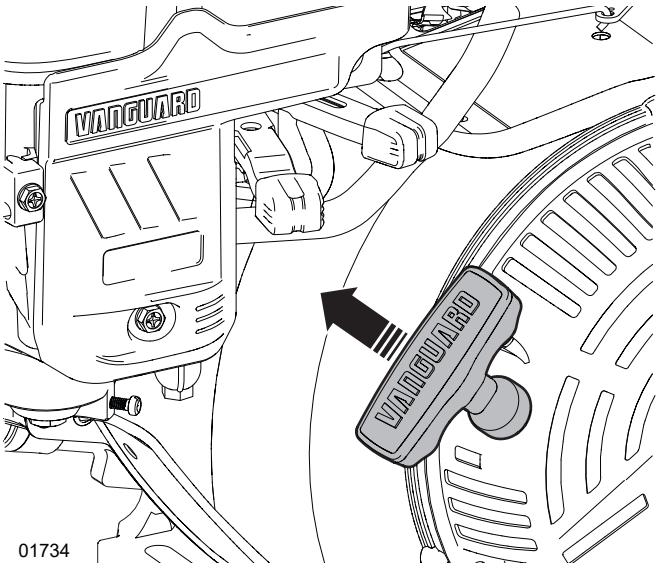


Figure 10–Rewind-start handle

5.3 Conveyor Angle Indicator

The conveyor angle indicator shows the angle of the conveyor and whether or not the angle is safe for operating the machine.

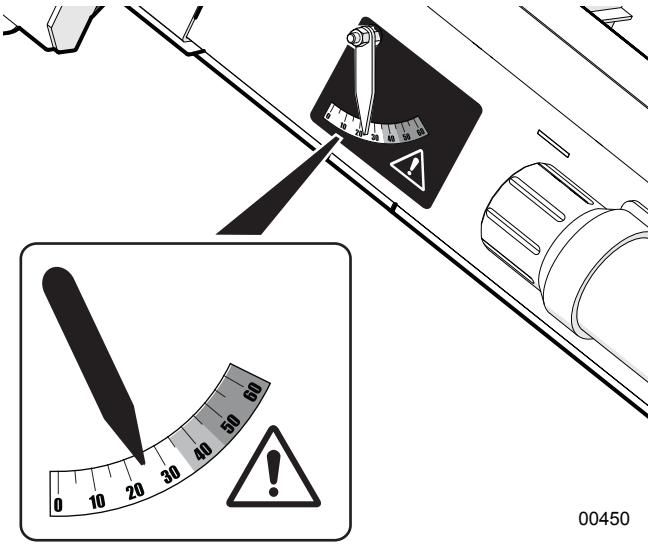


Figure 11–Conveyor angle indicator

5.3.1 Conveyor Angle Indicator Zones

Callout	Colour	Zone definition
1	No colour	The conveyor is fully lowered.
2	Green	The operating angle is safe.
3	Yellow	The operating angle is becoming unsafe.
4	Red	The operating angle is unsafe.

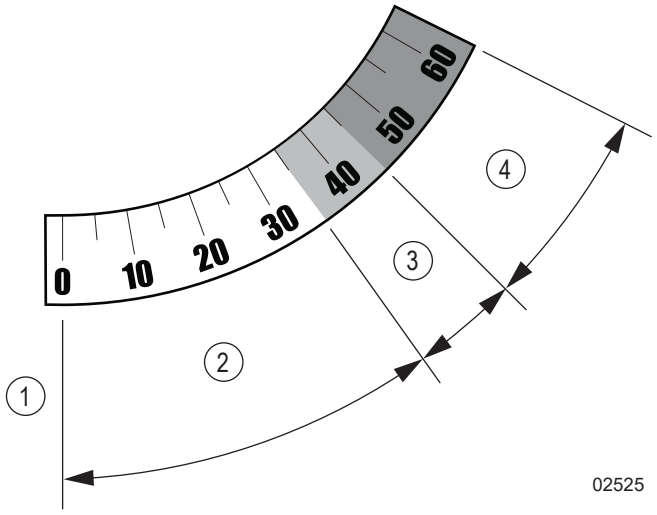


Figure 12–Conveyor angle indicator zones

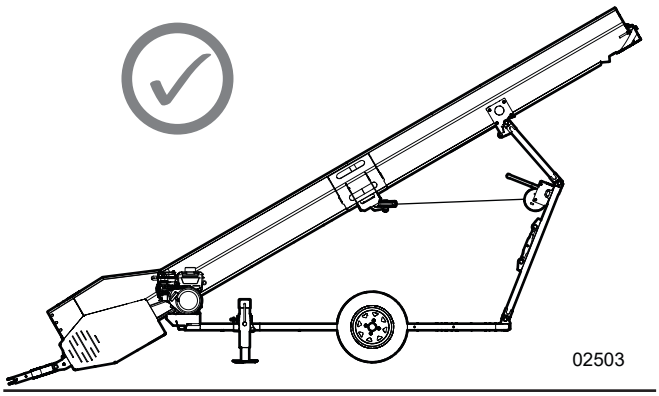


Figure 13–Safe operating position

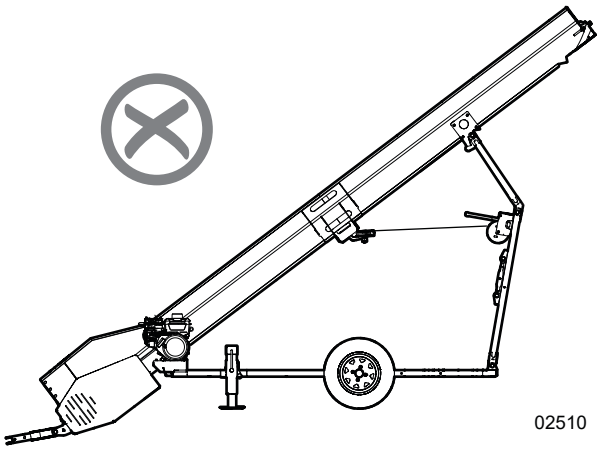


Figure 14–Unsafe operating position

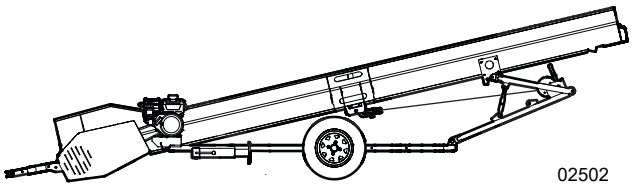


Figure 15–Lowered position (transport and storage)

5.4 Hand Winch

The hand winch lifts or lowers the conveyor. For more information, see *Adjust the Conveyor Angle on page 35.*

The hand winch has two functions:

Lift	Turn the hand winch clockwise to lift the conveyor. The hand winch will make a clicking sound.
Lower	Turn the hand winch counterclockwise to lower the conveyor. The hand winch will not make a clicking sound.

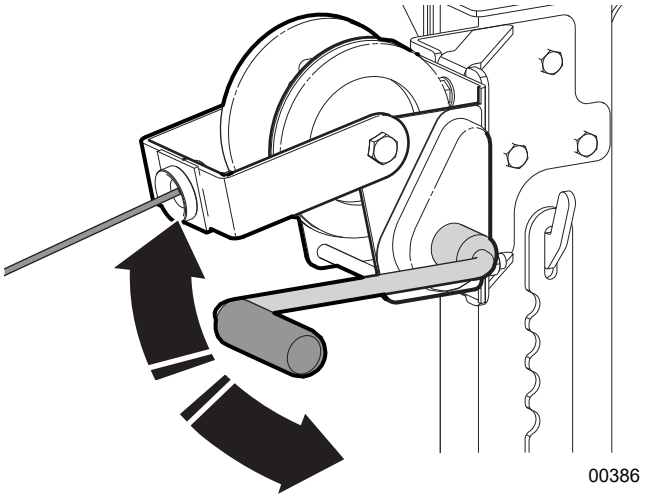


Figure 16–Hand winch

5.5 Conveyor Lock

The conveyor lock prevents the conveyor from being lifted or lowered. Lock the conveyor before transport or maintenance.

The conveyor lock has two positions:

Engaged	The toplink is connected to the conveyor lock plate. The conveyor cannot be lifted or lowered.
Disengaged	The toplink is disconnected from the conveyor lock plate. The conveyor can be lifted or lowered.

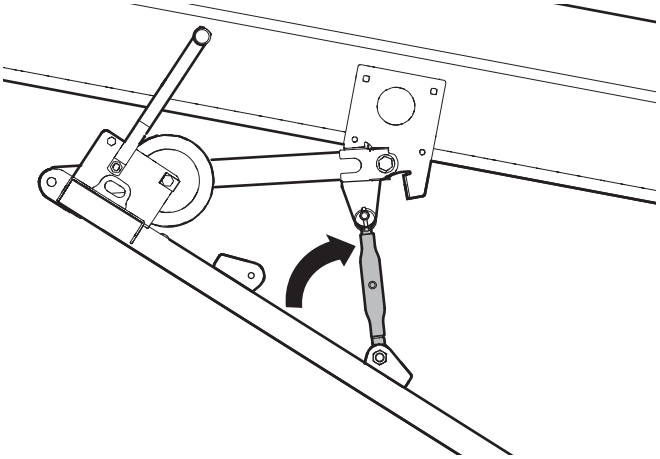


Figure 17–Engage the conveyor lock

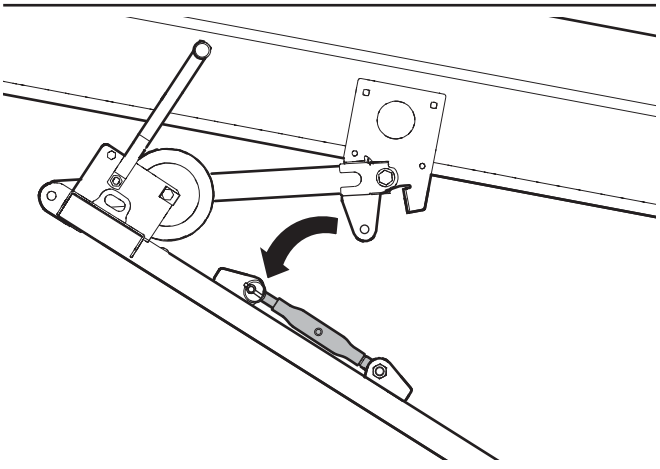


Figure 18–Disengage the conveyor lock

5.6 Hitch Latch

The hitch latch prevents the trailer tongue from moving when you tow the machine.

The hitch latch has two positions:

Engaged	Turn the hitch latch counterclockwise and push it into the hitch-latch plate. Engage the hitch latch before you transport the machine.
Disengaged	Turn the hitch latch clockwise and pull it out of the hitch-latch plate. Disengage the hitch latch before you operate the machine.

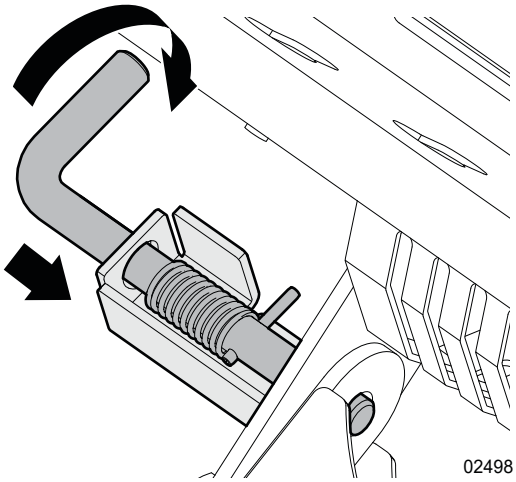


Figure 19 – Engage the hitch latch

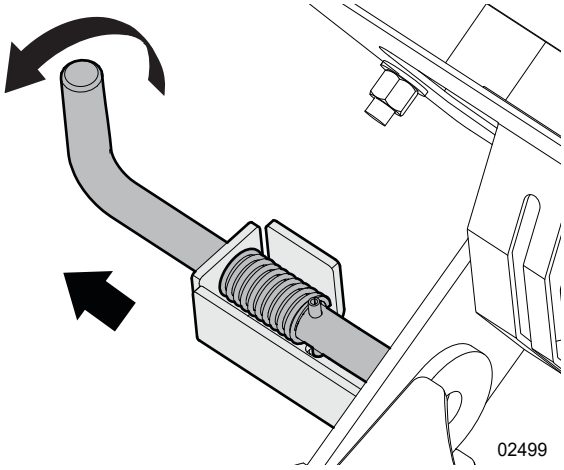


Figure 20 – Disengage the hitch latch

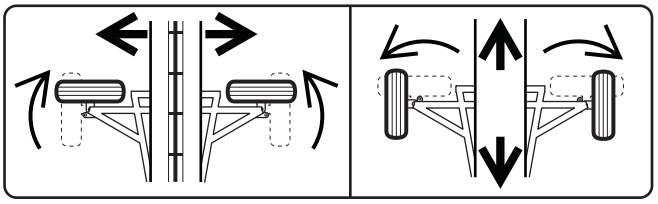
5.7 Conveyor Wheels

The conveyor wheels can be adjusted to move the conveyor to the side, or forward and rearward.
For instructions, see *Adjust the Conveyor Position on page 36.*

The conveyor wheels have two positions:

Perpendicular	Turn the wheels to the perpendicular position to move the conveyor to the side.
Parallel	Turn the wheels to the parallel position to move the conveyor forward or rearward.

Perpendicular **Parallel**



6. Operating Instructions

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

6.1 Operating Safety

⚠ WARNING!

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

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

W101

⚠ WARNING!

Do not use the hand winch if the hand-winch cable is worn, kinked, or frayed. A broken cable can move fast, with great force and the conveyor can close. These incidents can cause serious injury or death. Replace the hand-winch cable if it is damaged.

⚠ 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

⚠ CAUTION!

Do not go below or near the end of the conveyor where firewood falls. Firewood that falls from the rear of the conveyor can break or crush bones and cause a severe head injury. Stay within the operator zone. For more information, see *Work Site on page 11.*

- Read and understand this manual before you start the machine. Review all safety information annually.
- Park the machine in a clear location on dry, level ground. Do not operate the machine on a hillside or area that is cluttered, wet, muddy, or icy to prevent slips, trips, and falls.
  For more information, see *Figure 2 on page 12.*
- Keep the work area clean and free of debris.
- Only operate the engine in a location that has good air flow. Engine exhaust gases contain carbon monoxide (an odorless gas) that can cause asphyxiation.
- Attach all guards and shields, and close all covers before you start the machine.
- Do not move or transport the machine when the engine is on.
- Stop the engine before you leave the machine unattended.
- Do not stand, sit, or climb on any part of the machine, especially while the engine is on.
- Do not operate the machine alone. Always have a minimum of two trained people:
  - There should be one operator and one spotter present during machine operation. The operator and spotter must know all the machine safety, controls, and operating functions.
  - The operator must be in control of the machine at all times. The spotter must stay outside of the hazard zone while the machine is operating.
- Keep bystanders a minimum of 20 ft (6 m) from the machine and firewood pile. Mark the safe zone with safety cones.
- Examine the hand-winch cable before each use to make sure that it is not damaged. Do not use the hand winch if the cable is worn, kinked, or frayed. The cable can move fast, with great force and cause serious injury or death.
- Do not stand beside the conveyor hand winch cable or guide the cable with your hands.
- Always keep a firm grip on the hand-winch handle. Make sure that your hands are not wet or oily. Do not attempt to grab the hand-winch handle while it is moving.
- Make sure that the hand-winch cable is wrapped around the hand-winch drum of the a minimum of three times.
- When you lift the conveyor, listen for a loud clicking noise from the hand winch. If you do not hear a loud clicking noise, stop turning the hand winch. Replace the hand winch immediately!
- Only release the hand winch when the ratchet pawl is engaged and the load is correctly supported.

- You must operate the hand winch manually (without assistance of equipment). If you cannot operate the hand winch, the conveyor has too much material on it or the hand winch is damaged. If the hand winch is damaged, replace it immediately.

6.2 Pre-Start Checklist

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

Items to Complete	✓
Read and obey the *Operating Safety on page 25*, *Engine Operation Safety on page 27,* and *Fuel Safety on page 28.*	
Check the drive belt tension and alignment. If necessary, adjust the drive belt. For instructions, see *Set the Drive Belt Tension on page 55,* and *Align the Drive Belt on page 55.*	
Check the engine and reduction unit oil level. For instructions, see *Check the Engine Oil Level on page 29* and *Check the Reduction Unit Oil Level on page 30*. If necessary, add oil.	
Check the engine fuel level. For instructions, see *Check the Engine Fuel Level on page 28*. If necessary, add fuel.	
Check the engine air filter. For instructions, see *Clean the Engine Air Filter on page 53.* If necessary, clean or replace the filter.	
Make sure that the machine is lubricated, as specified in the *Maintenance Schedule on page 49*.	
Remove anything that is entangled on the machine. For example, branches or vines.	
Check the conveyor chain tension. If necessary, adjust the conveyor chain. For instructions, see *Set the Conveyor Chain Tension on page 58.*	
Make sure that the conveyor bearings turn freely. If the bearings are damaged or do not turn freely, lubricate them or contact your local Wallenstein dealer to have them replaced.	
Make sure that all guards and shields are installed, and the covers are closed. If necessary, replace the guards, shields, or covers.	
If you use the conveyor to load a trailer or tow vehicle, make sure that the trailer wheels are blocked or the tow vehicle parking brake is on.	
Check the tire air pressure, and the wheels, hubs, and axle. See the side of the tire for the correct air pressure.	
Make sure that all the fasteners are installed and torqued to the correct specifications. For more information, see *Bolt Torque on page 62* and *Lug Nut Torque on page 63.*	
Make sure that the operator and spotter are wearing the necessary PPE. The PPE must be in good condition.	
Make sure that the operator and spotter are not wearing loose-fitting clothing or jewelry, and long hair is tied up.	
Make sure that there are no bystanders inside the work zone and the spotter is not near a hazard. For zone definitions, see *Work Site on page 11.*	

6.3 Machine Break-In

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

6.3.1 Before Initial Startup

1. Read and understand all safety information in this manual and the engine manufacturer's manual.
2. Review the *Machine Components on page 19.*
3. Review the operation and function of the *Controls on page 20.*
4. Complete the *Pre-Start Checklist on page 26.*

6.3.2 After One to Five Hours of Operation

- Check the drive belt tension and alignment. If necessary, adjust the drive belt.
  For instructions, see *Set the Drive Belt Tension on page 55* and *Align the Drive Belt on page 55.*
- Check the conveyor chain tension. If necessary, adjust the conveyor chain.
  For instructions, see *Set the Conveyor Chain Tension on page 58.*
- Check the engine and reduction unit oil level. For instructions, see *Check the Engine Oil Level on page 29,* and *Check the Reduction Unit Oil Level on page 30*. If necessary, add oil.
- Check the engine fuel level. If necessary, add fuel. For instructions, see *Check the Engine Fuel Level on page 28.*
- After five hours, change the engine oil.
  For instructions, see the engine manufacturer's manual.
- Check the condition of the conveyor bearings. Make sure that the rotor bearings turn freely.
- Check the fasteners and make sure that they are torqued to the correct specifications. For more information, see *Bolt Torque on page 62* and *Lug Nut Torque on page 63.*
- Check the tire air pressure, and the wheels, hubs, and axle. See the side of the tire for the correct air pressure.
- Remove material that is entangled on the machine.

6.3.3 After Eight hours of Operation

1. Complete the tasks listed under *After One to Five Hours of Operation*.
2. Torque the wheel lug nuts to the correct specification. For more information, see *Lug Nut Torque on page 63.*
3. Continue with the regular *Maintenance Schedule on page 49*.

6.4 Engine Operation

⚠ CAUTION!

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

W019

For complete safety and operating information, see the engine manufacturer's documentation.

6.4.1 Engine Operation Safety

⚠ WARNING!

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

⚠ 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!

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

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

W102

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

- Keep the cylinder fins and engine shrouds free of debris to prevent the engine from overheating.
- Keep the engine free of wood chips and other debris that can affect the engine speed.
- Use fresh fuel (less than three months old). Stale fuel creates deposits that cause the carburetor to be blocked and leak.
- Check the fuel lines and fittings on a regular basis for cracks or leaks. Replace damaged fuel lines or fittings if necessary.
- Store fuel away from all wood material.
- Only operate the engine in a location that has good air flow. Engine exhaust gases contain carbon monoxide (an odorless gas) that can cause asphyxiation.
- Do not put your hands or feet near moving parts.
- Do not check for a spark with the spark plug or spark plug wire removed.
- Do not choke the carburetor to stop the engine. When it is possible, gradually reduce the engine speed before you stop the engine.
- 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 to start the engine again.
- Do not hit the flywheel with a hard object or metal tool. This can cause the flywheel to shatter during operation. Use the correct tools to service the engine.
- Do not touch a hot muffler, cylinder, or fins. Contact can cause burns. Wait for the machine to cool. Use a no-touch thermometer to measure the temperature.
- Do not tamper with governor springs, governor links or other parts that can increase the governed speed. Engine speed is selected by the original equipment manufacturer.
- Do not operate the engine in the following situations:
  - When there is an accumulation of wood material, dirt, or other combustible materials in the muffler area.
  - In an area where there is a fuel spill. Move the machine away from the spill until the fuel evaporates. Make sure that are no sources of ignition in the area of the fuel spill.
  - With the air filter or air filter cover removed. This can damage the engine.

- Without a muffler or heat shield. Examine the muffler and heat shield on a regular basis. Replace a muffler or heat shield that is damaged.

6.4.2 Fuel Safety

WARNING!

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

W027

WARNING!

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

W116

CAUTION!

Fuel vapors are very toxic. 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.

W117

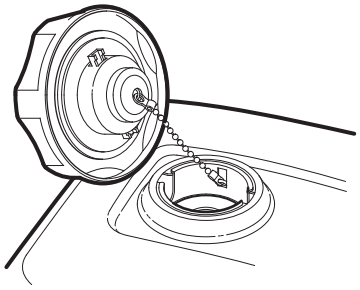
- Engine fuel is highly flammable. Handle it carefully.
- Stop the engine and let it cool before you add fuel to the tank.
- Do not overfill the fuel tank.
- Carefully remove any spilled fuel, and then wait until any remaining fuel dries before you start the engine.
- After you add fuel to the tank,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

6.4.3 Check the Engine Fuel Level

Check the engine fuel level before each use.

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

1. Park the machine on level ground.
2. Stop the machine.
   For instructions, see *Stop the Machine on page 32.*
3. Wait a minimum of five minutes for the engine to cool.
4. Turn the fuel cap counterclockwise to remove it.
5. Check the fuel level. The fuel tank is full when the fuel level is visible 1/2 inch (12 mm) below the filler neck. There must be room for fuel expansion.
6. Do one of the following:
   - If the fuel level is sufficient, install and the fuel cap and make sure that it is tight.
   - If the fuel level is not sufficient, add fuel to the tank.
     For instructions, see *Add Fuel to the Engine on page 29*.



00198

Figure 21 – Fuel Filler Cap

6.4.4 Add Fuel to the Engine

This engine is certified to operate on unleaded gasoline with a pump octane rating of 86 or higher (a research octane rating of 91 or higher).

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

1. Stop the machine.
   For instructions, see *Stop the Machine on page 32.*
2. Wait a minimum of five minutes for the engine to cool.
3. Clean the area around the fuel cap.
4. Turn the fuel cap counterclockwise to remove it.
5. Use a clean funnel to add the correct type and amount of fuel to the tank. Add fuel until the fuel level is visible 1/2 inch (12 mm) below the filler neck. Leave room for expansion. **Do not overfill the tank.**
6. Carefully remove any spilled fuel, and then wait until any remaining fuel dries before you start the engine.
7. Install the fuel cap and make sure that it is tight.

6.4.5 Check the Engine Oil Level

IMPORTANT! For more information about engine oil, see the engine manufacturer's manual and *Engine Oil on page 48.*

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 32.*
3. Remove the oil-level dipstick and clean it.
4. Fully insert the oil-level dipstick.
5. Remove the oil-level dipstick and check the oil level.
   The oil level is correct when the oil is visible on the dipstick from the end to the full (upper) mark.
6. Do one of the following:
   - If the oil level is correct, continue with step 7.
   - If the oil level is low, add oil until the oil level is at the full (upper) mark. For instructions, see *Add Oil to the Engine on page 30*.
7. Install the oil-level dipstick and make sure that it is tight.

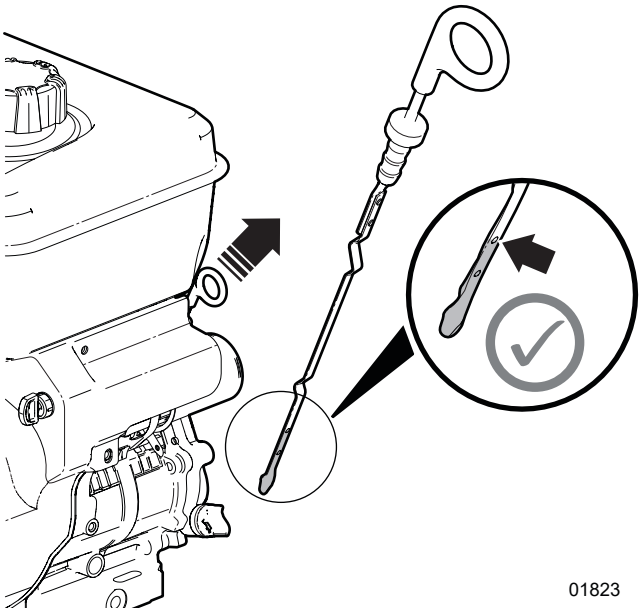


Figure 22–Check the engine oil level

6.4.6 Add Oil to the Engine

IMPORTANT! For more information about engine oil, see the engine manufacturer's manual and *Engine Oil on page 48.*

The engine has three oil-fill locations. See *Figure 23.*

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 29.*
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 the oil-fill cap and make sure that it is tight.

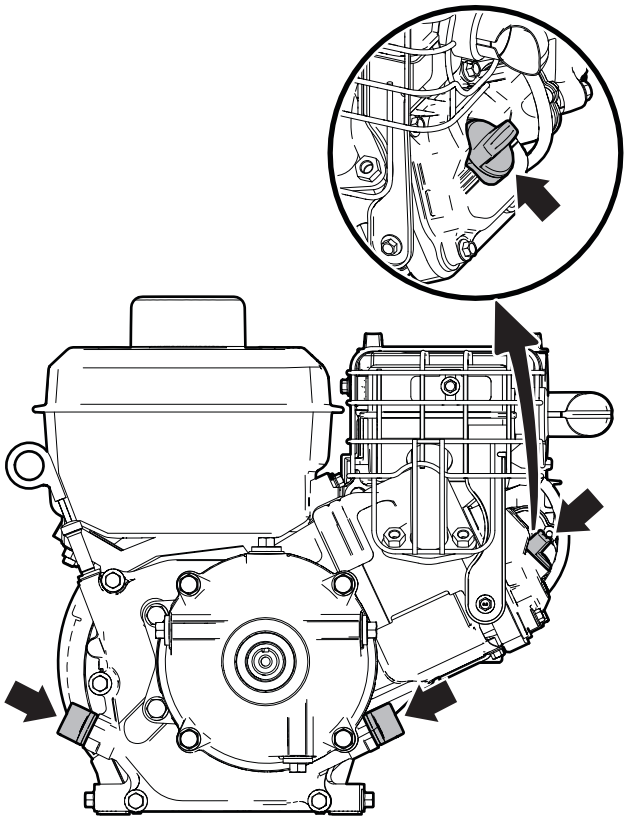


Figure 23–Engine oil-fill locations

6.4.7 Check the Reduction Unit Oil Level

IMPORTANT! For more information about engine oil, see the engine manufacturer's manual and *Engine Oil on page 48.*

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

The numbers in brackets refer to *Figure 24.*

1. Park the machine on level ground.
2. Stop the machine.
   For instructions, see *Stop the Machine on page 32.*
3. Remove the oil-level bolt (2) from the side of the reduction unit.
4. Look inside the oil-level bolt hole to check the oil level.
   The oil level is correct when the oil is at the bottom of the oil-level bolt hole.
5. Do one of the following:
   - If the oil level is correct, continue with step 6.
   - If the oil level is low, add oil.
     For instructions, see , *Add Oil to the Reduction Unit on page 31.*
6. Install the oil-level bolt (2) and make sure that it is tight.

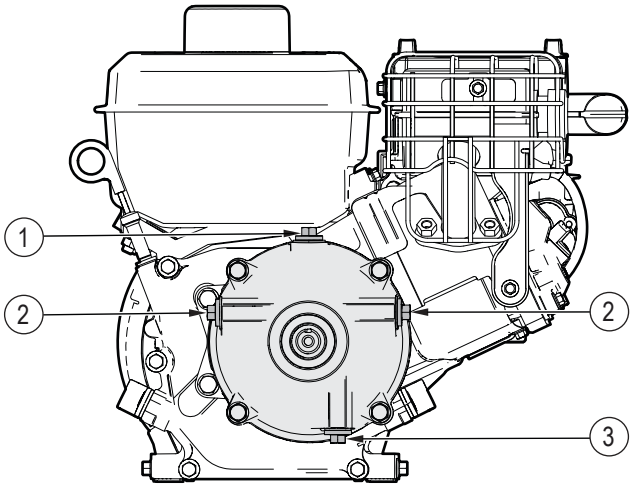


Figure 24–Check the reduction unit oil level

1. Oil-fill bolt
2. Oil-level bolt
3. Oil-removal bolt

6.4.8 Add Oil to the Reduction Unit

IMPORTANT! The reduction unit uses the same oil as the engine. For specifications, see the engine manufacturer's manual and *Engine Oil on page 48.*

The numbers in brackets refer to *Figure 24 on page 30.*

1. Check the reduction unit oil level to make sure that the oil level is low.
   For instructions, see *Check the Reduction Unit Oil Level on page 30.*
2. Remove the oil-level bolt (2) from side of the reduction unit.
3. Remove the oil-fill bolt (1) from the top of the reduction unit.
4. Use a clean funnel to slowly add the correct type and amount of oil.
   The oil level is correct when the oil comes out of the oil-level bolt holes (2).
5. Remove the funnel.
6. Clean the oil off the reduction unit.
7. Install the oil-level bolt (2) and make sure that it is tight.
8. Install the oil-fill bolt (1) and make sure that it is tight.

6.5 Start the Machine

WARNING!

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

WARNING!

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

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

W102

IMPORTANT! 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 20* and *Engine Operation Safety on page 27.*

1. Complete the tasks described in the *Pre-Start Checklist on page 26.*
2. Set up the machine.
   For instructions, see *Set Up the Machine on page 32.*
3. Move the choke control to the **Closed** position.
   If the engine is warm, the choke can be moved to the **Open** position.
4. Move the throttle control to the **Fast** position.
5. Firmly grip the starter-cord handle, pull the starter cord slowly until you feel resistance, and then pull it rapidly.
6. As the engine warms up, move the choke control to the **Open** position.
7. Wait a minimum of three minutes for the conveyor speed to increase.

6.6 Stop the Machine

IMPORTANT! Do not use the choke to stop the engine. If you use the choke to stop the machine it can cause damage to the engine.

1. Stop putting firewood onto the conveyor.
2. Wait until all the firewood is off the conveyor.
3. Move the engine throttle control to the **STOP** position to stop the engine and close the fuel shutoff valve.
4. Wait a minimum of one minute for all parts to stop moving.

6.7 Emergency Stop

1. Press the **emergency stop** button.
2. When it is safe to do so, move the engine throttle control to the **Stop** position.
3. Wait for all movement to stop.
   Do not let anyone start the machine until the emergency is resolved.

6.8 Set Up the Machine

WARNING!

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

W006

WARNING!

Do not adjust the conveyor angle while the machine is on or if there is firewood on the conveyor. Firewood can fall from the conveyor and cause serious injury. Stop the machine and remove all the firewood before you adjust the conveyor angle.

WARNING!

Do not move or turn the machine while it is on or if there is firewood on the conveyor. Firewood can fall from the conveyor and cause a serious injury. Stop the machine and remove all the firewood before you move or turn it.

For more information, see *Set up the machine on page 33.*

1. Select a work site and set up a safe work area.
   For more information, see *Work Site on page 11.*
2. Do one of the following:
   - Align the machine with a firewood processor. Park the machine so that firewood falls onto the conveyor.
   - Park the machine near the log splitter or firewood pile. Put the machine as close as possible to the firewood you are loading.
3. Turn the conveyor wheels to point the machine in the direction that you want to pile the firewood.
   For instructions, see *Adjust the Conveyor Position on page 36.*
4. Lower the trailer jack.
   For instructions, see *Lower the Trailer Jack on page 42.*
5. Block the machine wheels to prevent movement.
6. Disengage the hitch latch.
   For instructions, see *Hitch Latch on page 24.*
7. Unlock the conveyor.
   For instructions, see *Disengage the Conveyor Lock on page 37.*

8. Adjust the conveyor angle.
   For instructions, see *Adjust the Conveyor Angle on page 35.*
   Make sure that the conveyor is set to a safe working angle.
   For more information, see *Conveyor Angle Indicator on page 22.*
9. Make sure that all of the guards and shields are installed and the covers are closed.
10. Make sure that the emergency stop button is **off**.
    If the emergency stop button is **on** (pressed), turn it clockwise and pull.
    For more information, see *Emergency Stop Button on page 20.*

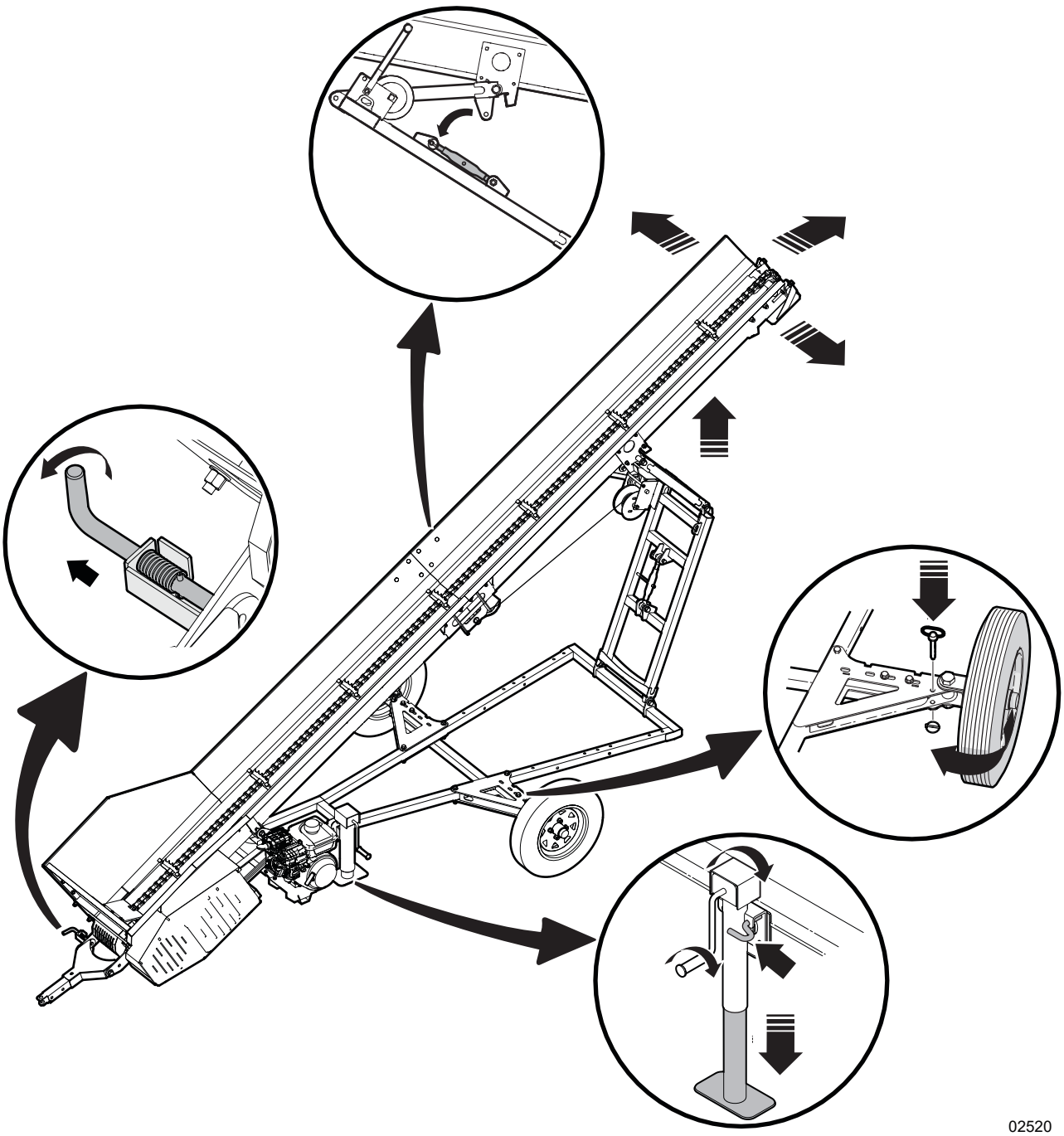


Figure 25–Set up the machine

6.9 Move Firewood

WARNING!

Do not adjust the conveyor angle while the machine is on or if there is firewood on the conveyor. Firewood can fall from the machine and cause serious injury. Stop the machine and remove all the firewood before you adjust the conveyor angle.

WARNING!

Do not move or turn the machine while it is on or if there is firewood on the conveyor. Firewood can fall from the machine and cause serious injury. Stop the machine and remove all the firewood before you move or turn it.

WARNING!

Stay away from the conveyor chain when the machine is on. The conveyor chain can entangle, pinch, or crush clothing, jewelry, hair, hands, or feet.

1. Set up the machine.
   For instructions, see *Set Up the Machine on page 32.*
2. Start the machine.
   For instructions, see *Start the Machine on page 31.*
3. Do one of the following:
   - Monitor the firewood that moves from the firewood processor onto the conveyor.
   - Put firewood onto the conveyor.
4. Monitor the conveyor while it moves the firewood to the selected location.
   Do not put too much firewood onto the conveyor at one time.

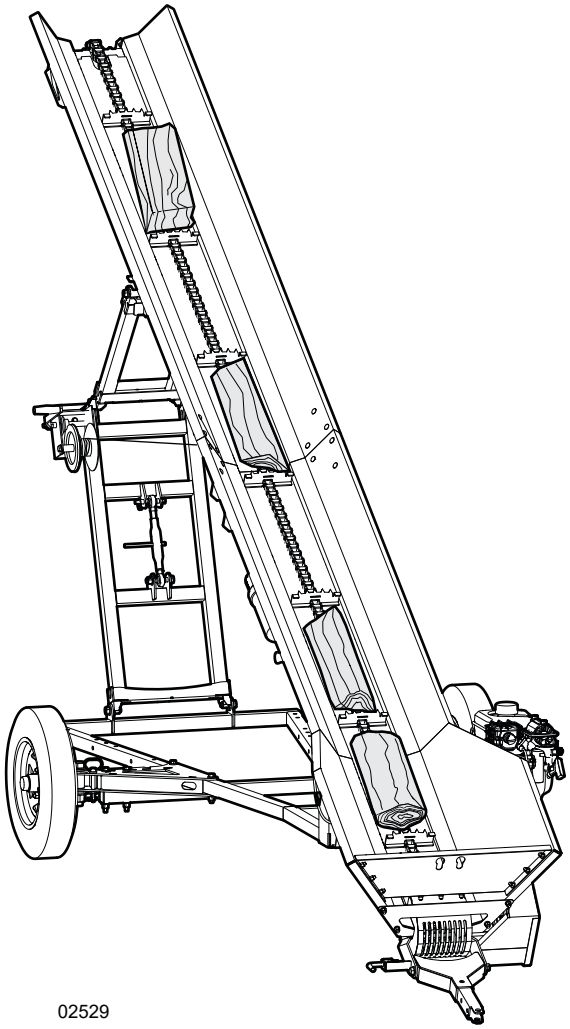


Figure 26–Move firewood

6.10 Adjust the Conveyor Angle

⚠ WARNING!

Do not adjust the conveyor angle while the machine is on or if there is firewood on the conveyor. Firewood can fall from the conveyor and cause serious injury. Stop the machine and remove all the firewood before you adjust the conveyor angle.

Use the hand winch to adjust the angle of the conveyor. The conveyor must be lowered for transport and storage.

1. Stop the machine.
   For instructions, see *Stop the Machine on page 32.*
2. Lower the trailer jack.
   For instructions, see *Lower the Trailer Jack on page 42.*
3. Block the machine wheels to prevent movement.
4. Do one of the following:
   For more information, see *Hand Winch on page 23.*
   - To lift the conveyor, turn the hand winch clockwise.
     The hand winch will make a clicking sound.
   - To lower the conveyor, turn the hand winch counterclockwise.
     The hand winch will not make a clicking sound.
5. Do one of the following:
   For more information, see *Conveyor Angle Indicator on page 22.*
   - To operate the machine, make sure that the conveyor angle is adjusted to a safe operating position.
   - To transport the machine, fully lower the conveyor.

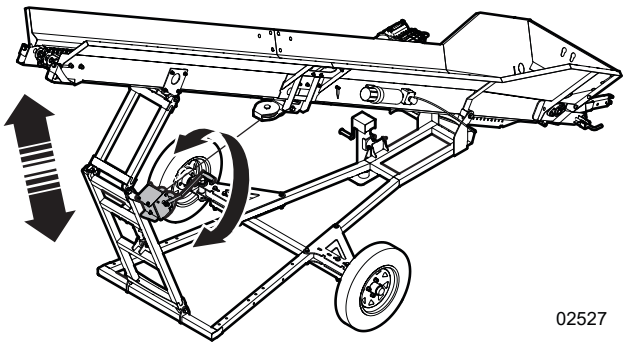


Figure 27 – Adjust the conveyor angle

6.11 Adjust the Conveyor Position

WARNING!

Do not move or turn the machine while it is on or there is firewood on the conveyor. Firewood can fall from the machine and cause serious injury. Stop the machine and remove all the firewood before you move or turn it.

You can turn the wheels 90-degrees to adjust the conveyor position.

1. Stop the machine.
   For instructions, see *Stop the Machine on page 32.*
2. Stow the trailer jack.
   For instructions, see *Stow the Trailer Jack on page 42.*
3. Remove the hitch pin and linchpin from each side of the wheel axle.
   For more information, see *Conveyor Wheels on page 24.*
4. Do one of the following:
   - Turn the wheels to the perpendicular position to move the conveyor to the side.
   - Turn the wheels to the parallel position to move the conveyor forward or rearward.
5. Install the hitch pin and linchpin in each axle to make the connection safe.
   Make sure that the wheels cannot pivot on the axle.
6. Move the conveyor to the position you want.
7. Lower the trailer jack.
   For instructions, see *Lower the Trailer Jack on page 42.*
8. Block the machine wheels to prevent movement.

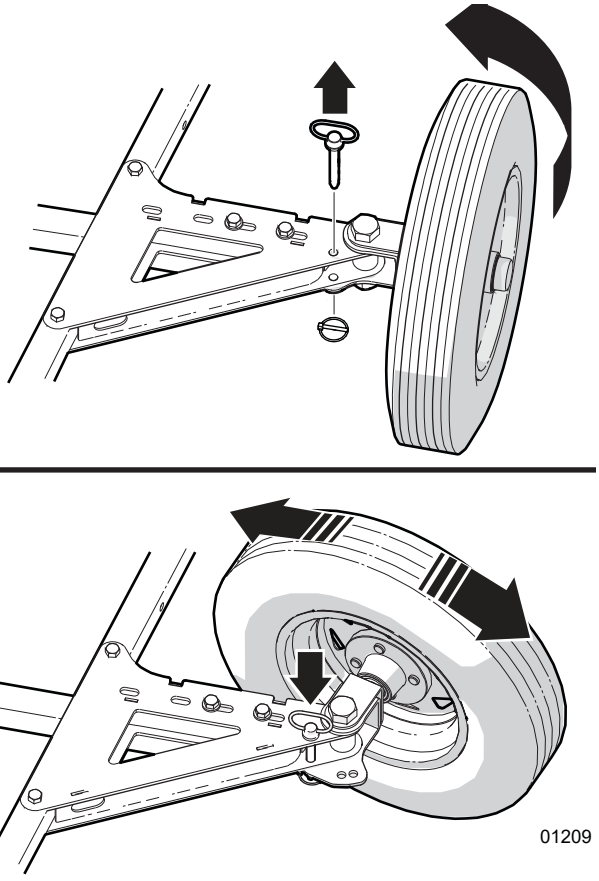


Figure 28–Turn the wheels

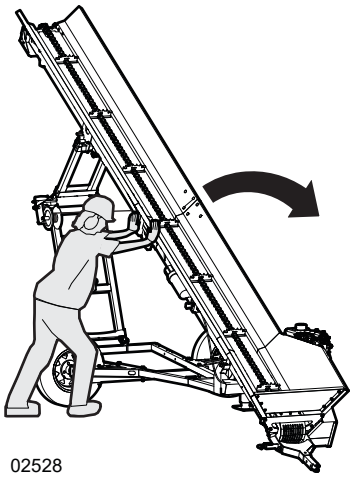


Figure 29–Turn the conveyor

6.12 Conveyor Safety

The conveyor lock keeps the conveyor from being lifted or lowered. The conveyor lock must be engaged for transport or storage.

6.12.1 Engage the Conveyor Lock

1. Stop the machine.
   For instructions, see *Stop the Machine on page 32.*
2. Lower the machine fully.
   For instructions, see *Adjust the Conveyor Angle on page 35.*
3. Align the toplink with the conveyor lock-plate.
4. Put the hitch pin through the toplink and the conveyor lock-plate.
5. Install the linchpin through the hitch pin.

6.12.2 Disengage the Conveyor Lock

1. Stop the machine.
   For instructions, see *Stop the Machine on page 32.*
2. Remove the linchpin from the hitch pin.
3. Remove the hitch pin from the toplink and the conveyor lock-plate.
4. Align the toplink with the folding-frame lock-plate.
5. Install the hitch pin through the toplink and the folding-frame lock-plate.
6. Install the linchpin through the through the hitch pin.

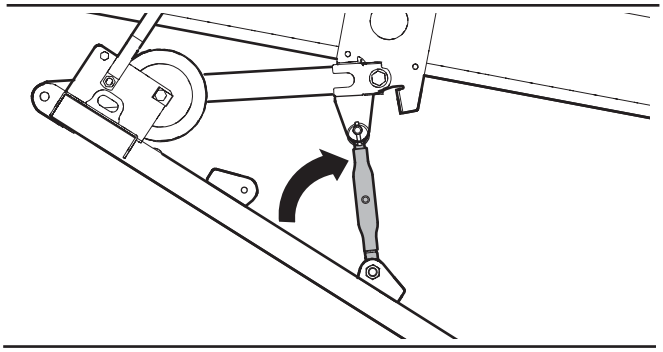


Figure 30 – Engage the conveyor lock

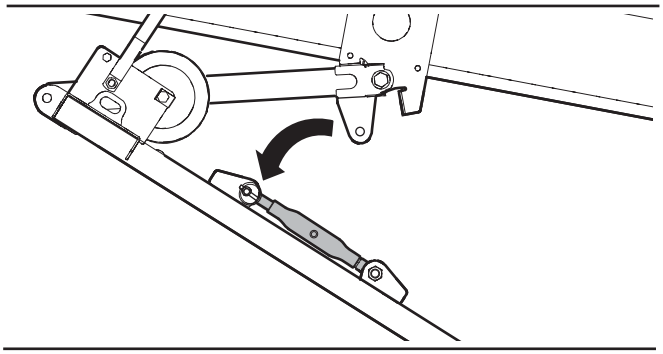


Figure 31 – Disengage the conveyor lock

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.

The machine is not intended for use or transport on public roadways. Therefore, it does not include the necessary lights, reflectors, and markings.

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

For specific requirements, contact your local transportation authority.

7.1 Transport Safety

- Make sure that the machine is safely attached to the tow vehicle with a retainer through the hitch.
- Do not let people ride on the machine.
- Do not exceed a safe travel speed. Decrease your speed for rough terrain and around corners.
- Plan your route to avoid heavy traffic.
- Do not transport or move the machine with the engine on.
- Make sure that the fuel tank cap is on and tight.
- Examine the wheel rims for damage, and torque the wheel lug nuts to the correct specifications. For more information, see *Lug Nut Torque on page 63.*
- Examine the tires for cuts or damage.
- Make sure that the tires are filled to the specified pressure. For the correct tire pressure, see the tire sidewall.
- Examine the axle dust caps for leaks and damage. Replace a dust cap that leaks or is damaged.
- Make sure that the tow vehicle has the correct hitch (clevis hitch).
- Make sure that the trailer jack is stowed.
- Make sure that all of the guards and shields are installed and the covers are closed.
- Remove all debris from the machine.
- After the machine is ready for transport, do a circle check to make sure that everything is safe.

7.2 Prepare the Machine for Transport

1. Stop the machine.
   For instructions, see *Stop the Machine on page 32.*
2. Lower the conveyor fully.
   For instructions, see *Adjust the Conveyor Angle on page 35.*
3. Lock the conveyor.
   For instructions, see *Engage the Conveyor Lock on page 37.*
4. Engage the hitch latch.
   For instructions, see *Hitch Latch on page 24.*
5. If necessary, turn the wheels to the parallel position.
   For instructions, see *Adjust the Conveyor Position on page 36.*
6. If necessary, adjust the axle position.
   For instructions, see *Adjust the Axle Position on page 43.*
7. Attach the machine to a tow vehicle.
   For instructions, see *Connect to a Clevis Hitch on page 40.*

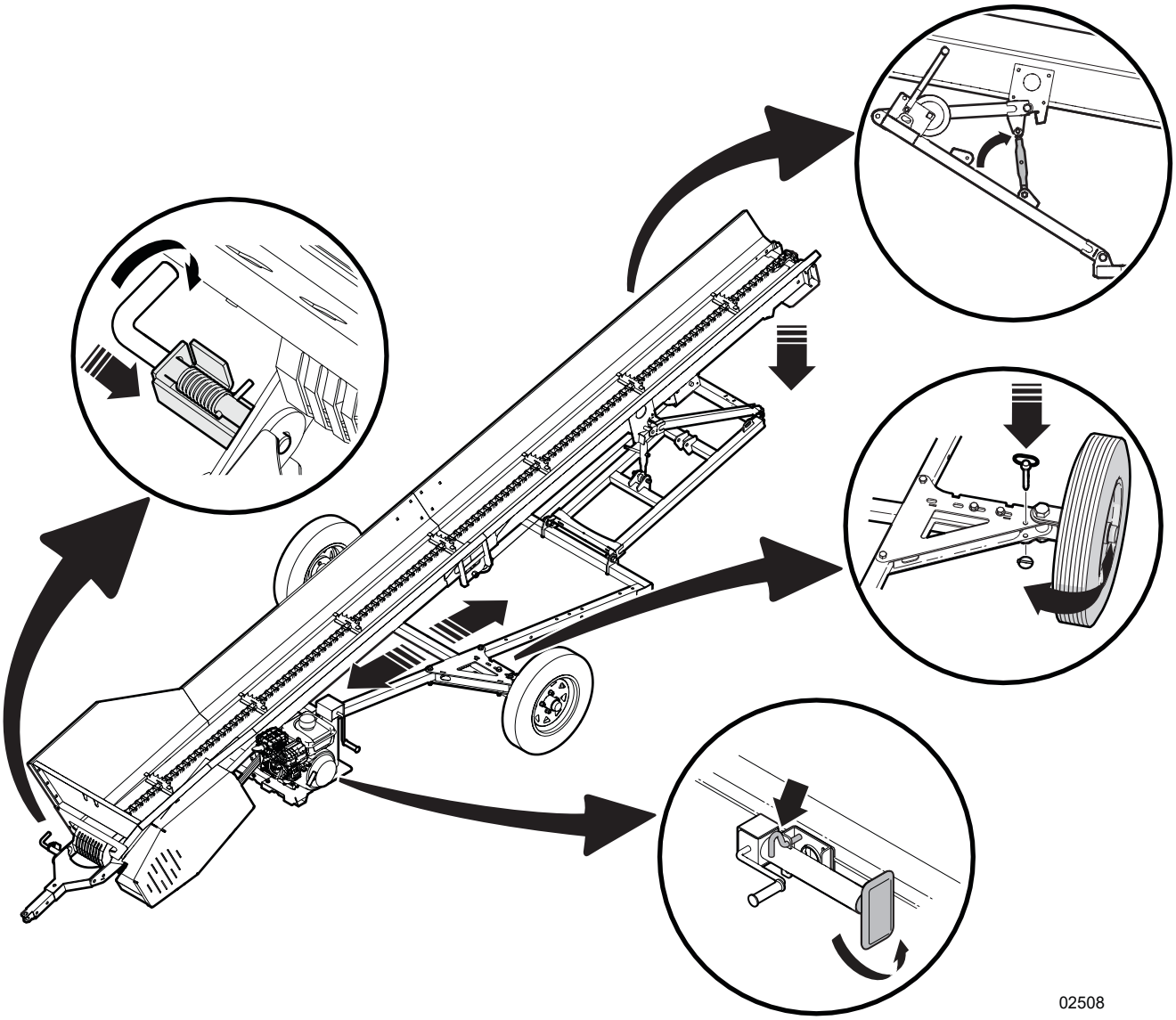


Figure 32 – Transport position

7.3 Clevis Hitch

The clevis hitch is standard equipment on the machine.

7.3.1 Connect to a Clevis Hitch

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

1. Reverse the tow vehicle to the machine. Stop approximately 1 ft (30 cm) away from the hitch.
2. Align the hitch with the tow vehicle draw bar.
3. Insert the hitch pin through the hitch and draw bar.
4. Install the snap-lock pin through the hitch pin to make the connection safe.
5. Stow the trailer jack.
   For instructions, see *Stow the Trailer Jack on page 42.*

7.3.2 Disconnect from a Clevis Hitch

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

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

1. Stop the tow vehicle in a location where it and the machine are on dry, level ground. Stop the engine and apply the parking brake.
2. Lower the trailer jack.
   For instructions, see *Lower the Trailer Jack on page 42*.
3. Remove the snap-lock pin from the hitch pin.
4. Remove the hitch pin from the hitch and draw bar.
5. Use the hitch handle to move the machine away from the tow vehicle draw bar.
6. Install the hitch pin through hitch, and then install the snap-lock pin through the hitch pin.
7. Slowly, drive the tow vehicle forward away from the machine.
8. Stop the tow vehicle and apply the parking brake.
9. Slowly, drive the tow vehicle forward until the draw bar is clear of the hitch.
10. Stop the tow vehicle and apply the parking brake.
11. Use the jack to lower the machine until it is level with the ground.
12. Install the hitch pin through hitch. Install the snap-lock pin through the hitch pin.

7.4 Ball-Mount Hitch

WARNING!

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

W103

This section applies to machines with the ball-mount hitch coupler accessory.

To purchase a ball-mount hitch coupler accessory, contact your local Wallenstein dealer or go to WallensteinEquipment.com.

7.4.1 Install a Ball-Mount Hitch Coupler

1. If necessary, remove the two bolts and two nuts from the hitch coupler.
2. Put the hitch coupler over the clevis hitch. Align the bolt holes with the trailer tongue bolt holes.
3. Install the two bolts and two nuts through the hitch coupler and the trailer tongue.
4. Use a calibrated torque wrench to tighten the two bolts to the correct torque. For bolt torque specifications, see *Bolt Torque on page 62*.

7.4.2 Remove a Ball-Mount Hitch Coupler

1. Remove the two bolts and two nuts that attach the hitch coupler to the machine.
2. Remove the hitch coupler from the machine.
3. Install the two bolts and two nuts in the hitch coupler to prevent them from getting lost.

7.4.3 Connect to a Ball-mount Hitch

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

1. Reverse the tow vehicle to the machine. Stop approximately 1 ft (30 cm) away from the hitch coupler. If a back-up camera is not available, have another person guide you.
2. Use the trailer jack to lift the trailer tongue until the hitch coupler is higher than the ball-mount hitch.
3. Remove the pin from the hitch-coupler latch. Lift the latch to the vertical (unlocked) position.
4. Slowly, reverse the tow vehicle until the ball-mount hitch is below the hitch coupler.
5. Stop the tow vehicle and apply the parking brake.
6. Use the trailer jack to lower the machine and attach the hitch coupler to the ball-mount hitch.
7. Lower the hitch-coupler latch to the locked position. Install a pin through the latch to hold the hitch coupler on the ball-mount hitch.
8. Stow the trailer jack.
   For instructions, see *Stow the Trailer Jack on page 42.*
9. Cross the two safety chains below the trailer tongue, and then attach them to the tow vehicle (one on each side of the ball-mount hitch).

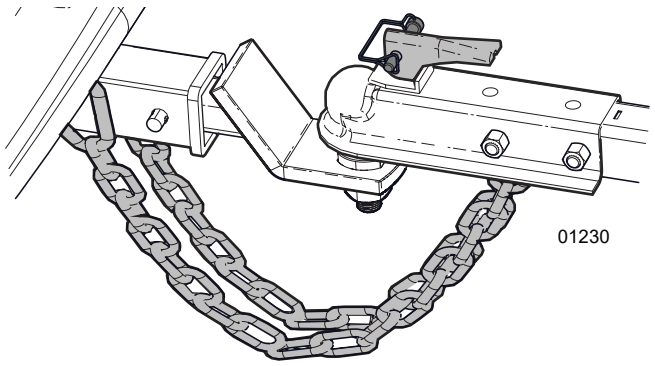


Figure 33– Ball-mount hitch connection

7.4.4 Disconnect from a Ball-Mount Hitch

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

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

1. Stop the tow vehicle in a location where it and the machine are on dry, level ground. Stop the engine and apply the parking brake.
2. Lower the trailer jack.
   For instructions, see *Lower the Trailer Jack on page 42*.
3. Remove the two safety chains from the tow vehicle and stow them safely on the machine.
4. Remove the pin from the hitch-coupler latch. Lift the latch to the vertical (unlocked) position.
5. Use the trailer jack to lift the trailer tongue until the hitch coupler is higher than the ball-mount hitch.
6. Slowly, drive the tow vehicle forward until the ball-mount hitch is clear of the hitch coupler.
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. Lower the hitch-coupler latch to the locked position. Install the pin through the latch.

7.5 Trailer Jack

WARNING!

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

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

7.5.1 Lower the Trailer Jack

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

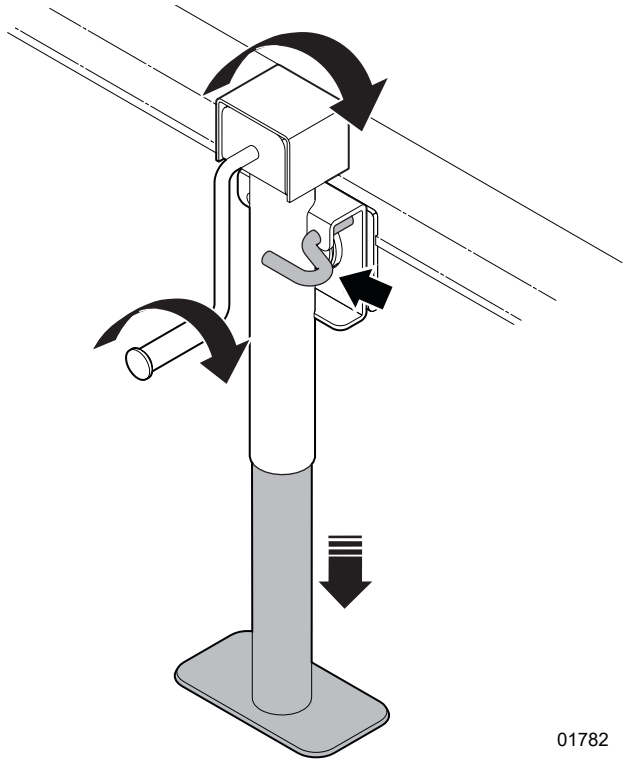


Figure 34– Trailer jack in the lowered position

7.5.2 Stow the Trailer Jack

1. Support the machine to remove weight from the trailer jack. Attach the machine to a tow vehicle or support the trailer tongue with blocks.
2. Turn the handle counterclockwise to retract the base.
3. Pull the pin out of the bracket.
4. Turn the trailer jack to the horizontal position.
5. Insert the pin through the bracket to hold the trailer jack in the horizontal position.

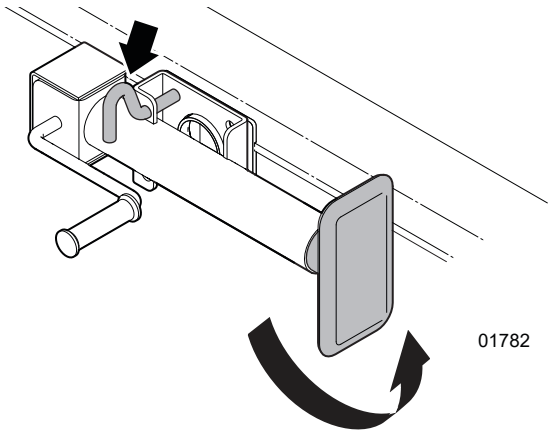


Figure 35– Trailer jack in the stowed position

7.6 Adjust the Axle Position

IMPORTANT! If you adjust the axle position, make sure that the axles, spanner bars, and axle bar are correctly installed and the fasteners are torqued to the correct specifications.

To tow the machine safely, it could be necessary to adjust the tongue weight. If the tongue weight is not set correctly, it can cause the machine to sway while being towed or cause the machine to lift the tow vehicle's hitch.

The base frame has five axle settings that can be used to adjust the tongue weight. See the following table for each axle setting and its related tongue weight:

Axle Setting	Tongue Weight	
	CT16B	CT24B
1	72 lb (33 kg)	Do not use.
2	159 lb (72 kg)	Do not use.
3	187 lb (85 kg)	Do not use.
4	207 lb (94 kg)	16 lb (7 kg)
5	212 lb (96 kg)	34 lb (15 kg)

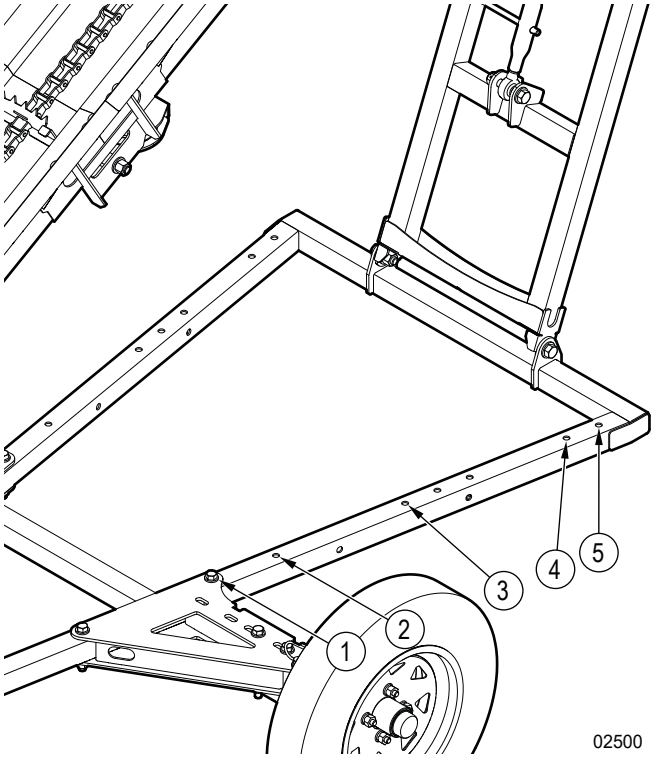


Figure 36 – Axle settings for adjusting the tongue weight

7.6.1 Set the Axle Position

The numbers in brackets refer to *Figure 37.*

1. Set the machine to a safe condition.
   For instructions, see *Safe Condition on page 9.*
2. On each side of the machine, remove the two fasteners (6) that attach the axle bar (4) to the axle (3).
3. On one side of the machine, remove the two axle fasteners (1) that attach the axle to the base frame (5).
4. Align the axle and spanner bar (2) with one of the approved axle settings for your machine. See *Figure 36.*
5. Install the two axle fasteners through the axle and base frame.
6. Do steps 3 to 5 again on the other side of the machine. Make sure that the axle is moved to the same setting on each side of the machine.
7. Use a calibrated torque wrench to torque the axle fasteners to **80 lbf•ft (110 N•m)**.
8. Align the axle bar with the left and right axles. Install the four axle bar fasteners.
9. Use a calibrated torque wrench to torque the axle bar fasteners to **80 lbf•ft (110 N•m)**.

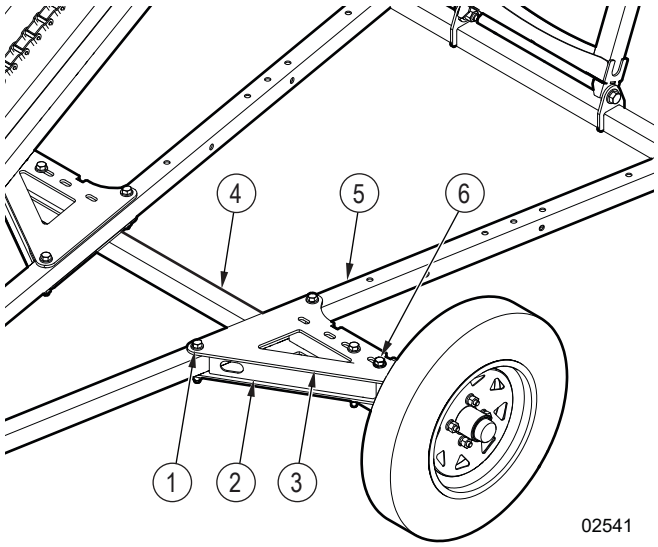


Figure 37 – Axle components (left side)

1. Axle fastener (1 of 2)
2. Spanner bar
3. Axle
4. Axle bar
5. Base frame
6. Axle bar fastener (1 of 2)

8. Storage

At the end of the season or when the machine is not going to be used for an extended length of time, store the machine correctly to prevent damage.

For reference, see *Figure 38 on page 45*.

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

⚠ CAUTION!

Store the machine away from furnaces, stoves, water heaters, or other appliances that have a pilot light or other ignition source. A pilot light or other source of ignition can ignite fuel vapors.

W123

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, if possible.
- If necessary, support the machine with blocks for stability.

8.2 Put the Machine in Storage

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

1. Set the machine to a safe condition.
   For instructions, see *Safe Condition on page 9.*
2. Check all of the moving parts and remove all entangled material.
3. Clean the machine.
   For instructions, see *Clean the Machine on page 59*
4. Start the machine, let it run for a few minutes to remove any moisture, and then stop the machine.
5. Do step 1 again.
6. Examine the machine fully, including internal components. Replace or repair any worn or damaged components.
7. Paint scratches and dents to prevent rust.
8. Do one of the following:
   - If the machine will be in storage for one to three months, add stabilizer to the engine fuel, and then operate the engine for a minimum of three minutes to move the stabilizer through the engine.
   - 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 deposits in the engine.
     For more information, see *Engine Fuel on page 48*.
     For instructions, see *Replace the Engine Fuel on page 46*.
9. Park the machine in the storage location.
10. Disconnect the tow vehicle.
    For instructions, see *Disconnect from a Clevis Hitch on page 40.*
11. Adjust the trailer jack to make the machine as level as possible.
    If the machine must be on soft ground, put boards or plates under the trailer jack to increase the surface area.
12. Block the machine wheels to prevent accidental movement and increase the wheel bearing life.
13. If the machine must be stored outdoors, cover the machine with a waterproof tarp.
    The machine should be stored indoors, if possible.

8.3 Remove the Machine from Storage

1. Complete the *Pre-Start Checklist on page 26.*
2. Complete the necessary maintenance.
   For maintenance requirements, see the *Maintenance Schedule on page 49.*

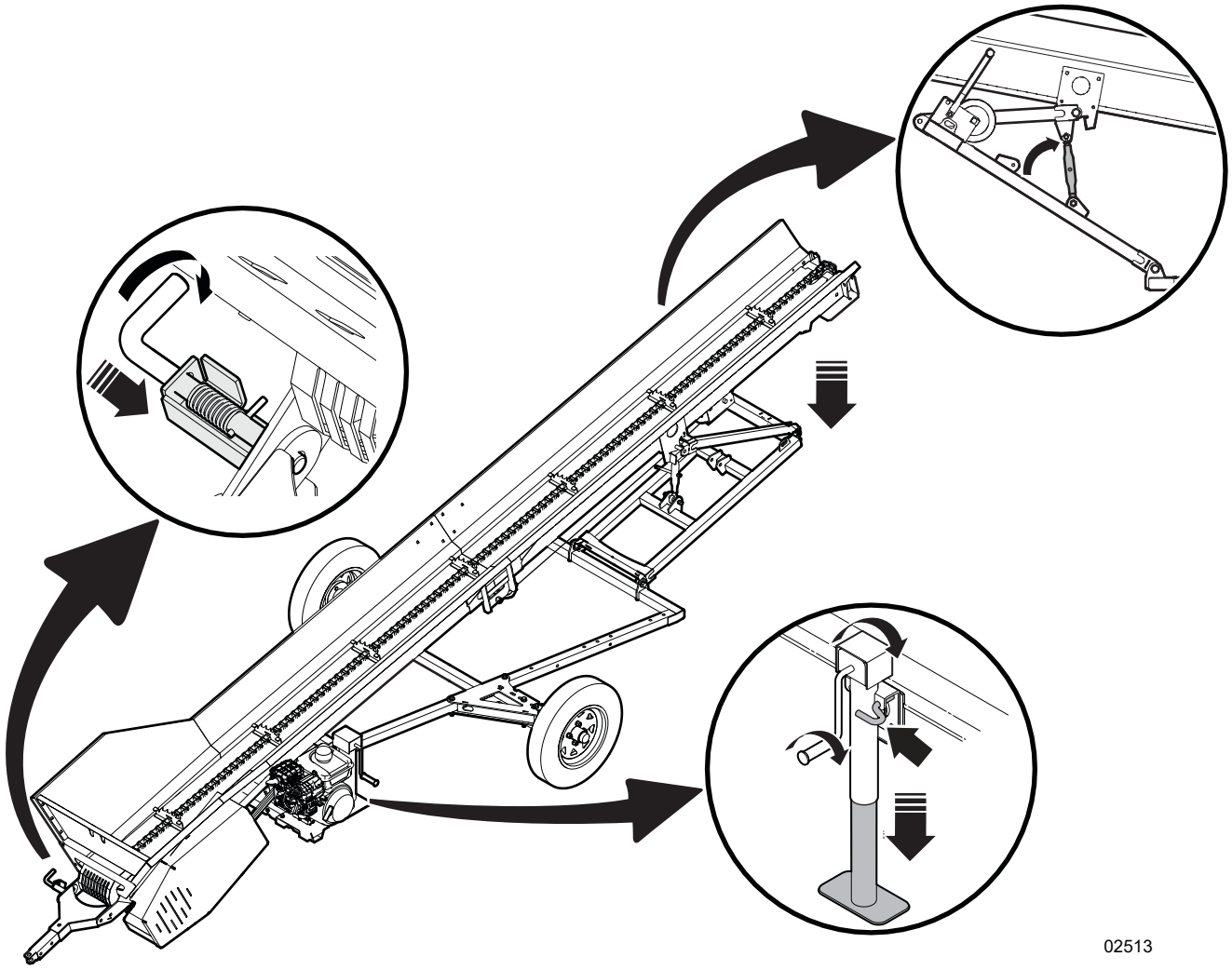


Figure 38 – Storage position

8.3.1 Replace the Engine Fuel

WARNING!

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

W027

WARNING!

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

W116

CAUTION!

Fuel vapors are very toxic. 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.

W117

1. Stop the machine.
   For instructions, see *Stop the Machine on page 32.*
2. Wait for the engine and fluids to cool.
3. Remove the current fuel from the engine.
   Operate the machine until the fuel tank is empty or drain the fuel tank and properly dispose of the fuel.
4. Add new fuel to the engine.
   For instructions, see *Add Fuel to the Engine on page 29*.
5. Carefully remove any spilled fuel, and then wait until any remaining fuel dries.
6. Tighten the fuel cap.
7. Start the machine.
   For instructions, see *Start the Machine on page 31.*
8. Wait five to 10 minutes for the fuel to go through the engine.
9. Stop the machine.
   For instructions, see *Stop the Machine on page 32.*

9. Service and Maintenance

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

9.1 Service and Maintenance Safety

⚠ WARNING!

Before you start service or maintenance work:

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

W041

⚠ WARNING!

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

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

W101

⚠ WARNING!

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

W110

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

SAFE CONDITION

1. Stop the machine.
   For instructions, see *Stop the Machine on page 32*.
2. Wait for all moving parts to stop.
3. Disconnect the engine spark-plug wire and keep it away from the spark plug.
4. Lower the conveyor fully.
   For instructions, see *Adjust the Conveyor Angle on page 35.*
5. Lock the conveyor.
   For instructions, see *Engage the Conveyor Lock on page 37.*

- Follow 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 working condition and correct for the task. Make sure that you know how to use the tools before you use them.
- Only operate the engine in a location that has good air flow. Engine exhaust gases contain carbon monoxide (an odorless gas) that can cause asphyxiation.
- Do not work under equipment unless it is safely supported with blocks.
- Do not do service or maintenance work alone. Always have a minimum of two people in case an emergency situation occurs.
- Keep a fire extinguisher and first aid kit available at all times.
- When service or maintenance is complete, do the following:
  - Replace all guards and shields, and close the covers.
  - Torque the fasteners to the correct specifications.
  - Make sure that all the electrical, hydraulic, and fuel connections are connected in a safe working condition.
- Do not use gasoline or diesel fuel to clean parts. Use the correct cleaning product.
- When replacement parts are necessary, use genuine factory replacement parts to restore your machine to the original specifications. The manufacturer cannot be responsible for injuries or damages caused by use of unapproved parts and/or accessories.

9.2 Fluids and Lubricants

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

9.2.1 Lubricant Handling and Storage

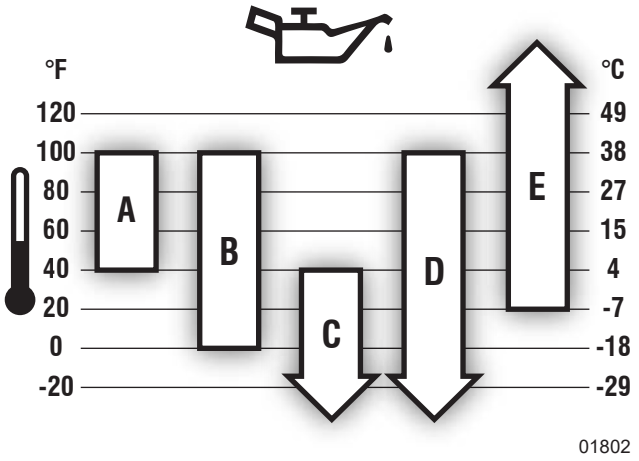
For optimum machine efficiency, use clean lubricants and clean containers to handle all lubricants. Store lubricants in an area that is protected from dust, moisture, and other contaminants.

9.2.2 Engine Oil

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

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

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



A	**SAE 30** – Below 40 °F (4 °C) the use of SAE 30 results in hard starting.
B	**10W-30** – Above 80 °F (27 °C) the use of 10W-30 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).

For instructions, see *Replace the Engine Fuel on page 46*.

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 Rust Protection Oil

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

9.3 Maintenance Schedule

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

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

Task	8 hours or daily	50 hours or annually	100 hours or annually	200 hours or annually	Annually	600 hours or every three years	Reference
Check the engine oil level and quality.	●						See *page 29.*
Check the reduction unit oil level and quality.	●						See *page 30.*
Check the engine fuel level.	●						See *page 28.*
Clean the engine around the muffler and controls.	●						N/A[1].
Check that all the fasteners are torqued to the correct specifications.	●						See *page 62.*
Check that the wheel lug nuts are torqued to the correct specifications.	●						See *page 63.*
Remove all debris and entangled material.	●						N/A.
Check the drive belt operation.	●						See *page 54.*
Clean the engine air-intake grille.	●						N/A.
Check the conveyor chain tension.		●					See *page 58.*
Lubricate pivot points and hinges.		●					See *page 52.*
Grease the machine.		●					See *page 51.*
Check the tire pressure.			●				See the tire sidewall.
Clean the machine.			●				See *page 59.*
Check the drive belt tension.			●				See *page 55.*
Change the reduction unit oil.			●				See the engine manual.
Service the engine exhaust system.			●				See the engine manual.
Clean the engine air filter.[2]				●			See *page 53.*
Change the engine oil and replace the oil filter.				●			See the engine manual.
Check the valve clearance.					●		See the engine manual.
Replace the engine spark plug.					●		See the engine manual.
Service the fuel system.					●		See the engine manual.
Service the engine cooling system.[2]					●		See the engine manual.
Replace the engine air filter.[3]						●	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.
3 Every third air filter change, replace the air safety filter.

9.4 Grease Points

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

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

For grease specifications, see *Grease on page 48*.

- Use a clean cloth to clean each grease fitting before you apply grease. This prevents grease and dirt from getting inside the component.
- Use a hand-held grease gun to apply **one pump** of grease to each grease point.
- If a grease fitting is damaged, replace it immediately.
- If a grease fitting does not accept grease:
  a. Remove the grease fitting.
  b. Clean the passageway behind the grease fitting.
  c. Clean the grease fitting thoroughly or get a new grease fitting.
  d. Install the grease fitting.

9.4.1 Grease Fitting Locations

Item	Location	Frequency	Number of Locations
1	Conveyor bearings	50 hours or annually	2

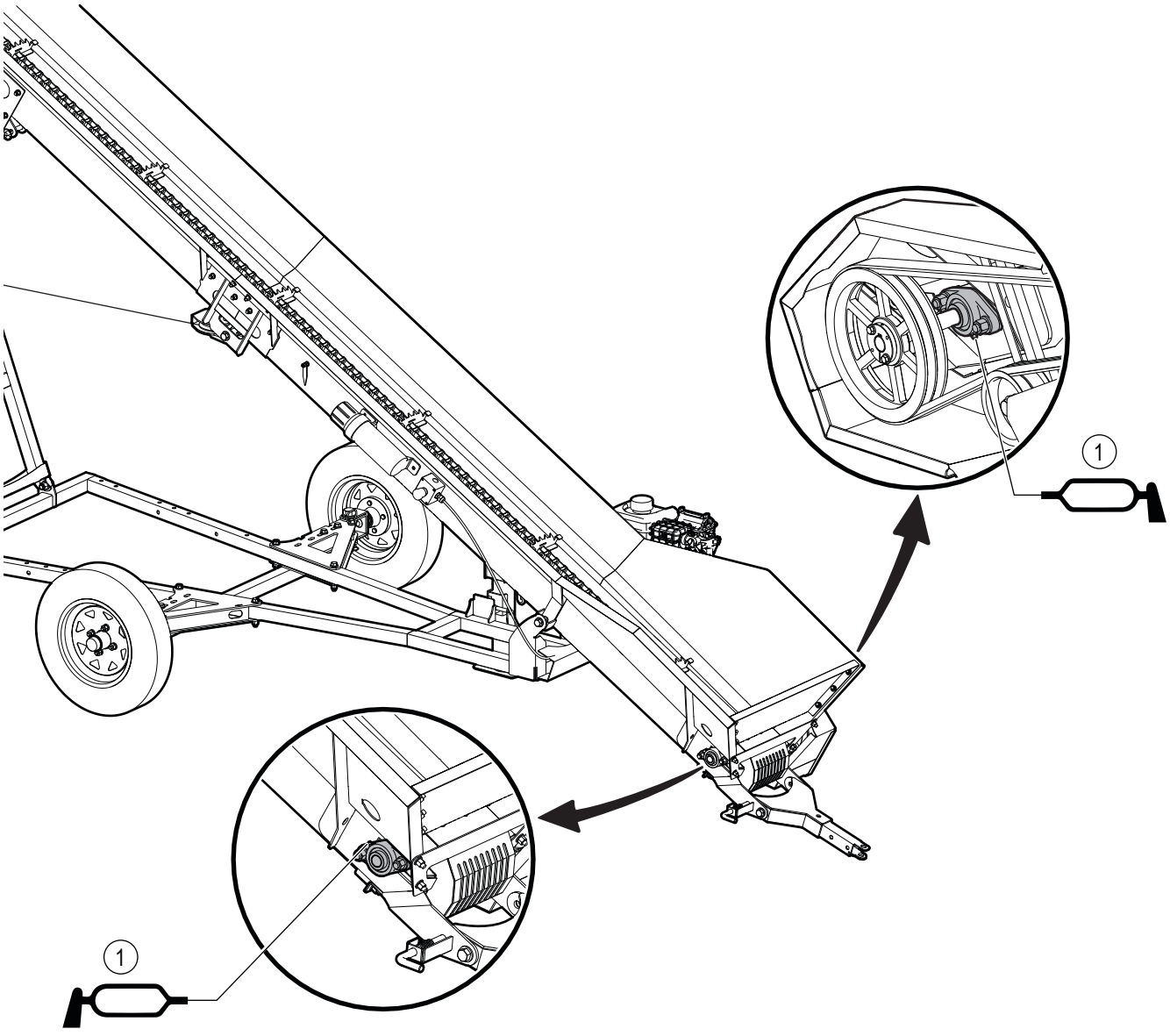


Figure 39–Grease fitting locations

9.4.2 Hinge and Pivot Point Locations

IMPORTANT! Do not get oil or grease on the winch friction discs. The winch brake system will not work correctly if there is oil or grease on the friction disks.

Hinge and pivot points can rust and become difficult to move without the correct maintenance. Apply a small amount of rust-protection oil to the following locations:

Item	Location	Frequency	Number of Locations
1	Hand winch	100 hours or annually	2

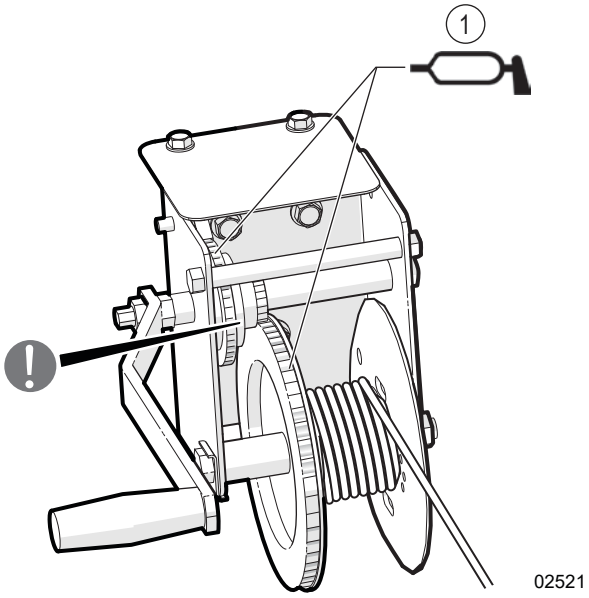


Figure 40–Hand winch

9.5 Engine Maintenance

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

9.5.1 Engine Maintenance 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

For more information, see *Engine Operation Safety on page 27.*

- Remove the wire from the spark plug before servicing the engine or equipment to prevent the engine from starting.
- Examine the muffler on a regular basis to make sure that it operates effectively. Repair or replace a muffler that is worn or leaks.
- Before storage, replace fuel that contains ethanol with an alkylate or appropriate engineered fuel to prevent the buildup of deposits.
- Check the fuel lines and fittings frequently for cracks or leaks. Replace fuel lines or fittings that are damaged.
- Store fuel away from all wood material.
- Do not check for a spark with the spark plug or spark plug wire removed.
- Do not hit the flywheel with a hard object or metal tool. This can cause the flywheel to shatter during operation. Use the correct tools to service the engine.
- Do not touch a hot muffler, cylinder, or fins. Contact can cause burns.

9.5.2 Clean the Engine Air Filter

IMPORTANT! If you operate the engine without an air filter, or with a damaged air filter, dirt can get into the engine. This can cause rapid engine wear and damage that is not covered by warranty.

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

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

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

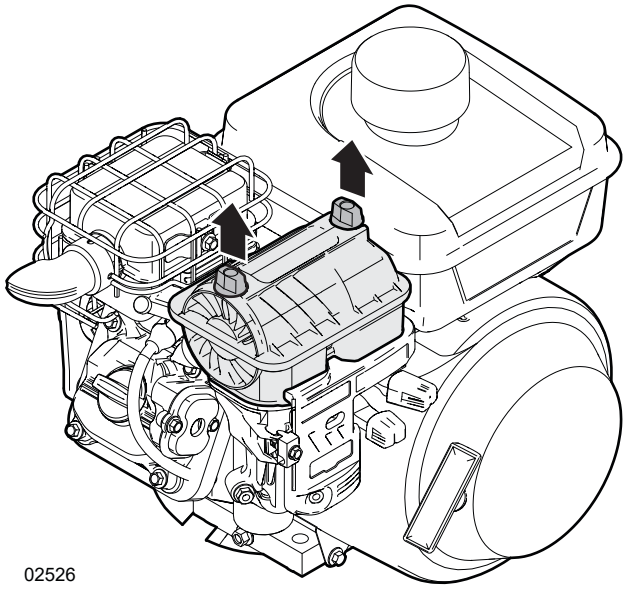


Figure 41–Engine air filter

9.6 Drive Belt Maintenance

WARNING!

Wait for hot machine components to cool before you work on the machine. Hot machine components can cause serious burns or start a fire. Do not touch hot machine components. Use a no-touch thermometer to measure the temperature.

WARNING!

Do not operate the machine with any of the guards or shields removed. The machine is shown with guards or shields removed for illustrative purposes only.

W001

9.6.1 Replace the Drive Belt

The numbers in brackets refer to *Figure 42.*

1. Remove the drive-belt guard fasteners and the guard.
2. Remove the tension-sheave fastener (5) and the sheave (4).
3. Remove the drive belt (2).
4. Install a new drive belt on the conveyor sheave (1) and the engine clutch flywheel (6).
5. Align the tension sheave (4) with the tension-sheave bracket (3) and install the fastener (5).
6. Align the drive belt.
   For instructions, see *Align the Drive Belt on page 55.*
7. Set the drive belt tension.
   For instructions, see *Set the Drive Belt Tension on page 55.*
8. Use a calibrated torque wrench to torque the tension sheave fastener to **160 lbf•ft (215 N•m)**.
9. Install the drive-belt guard and the fasteners.
10. Use a calibrated torque wrench to torque the fasteners to **19 lbf•ft (25 N•m)**.

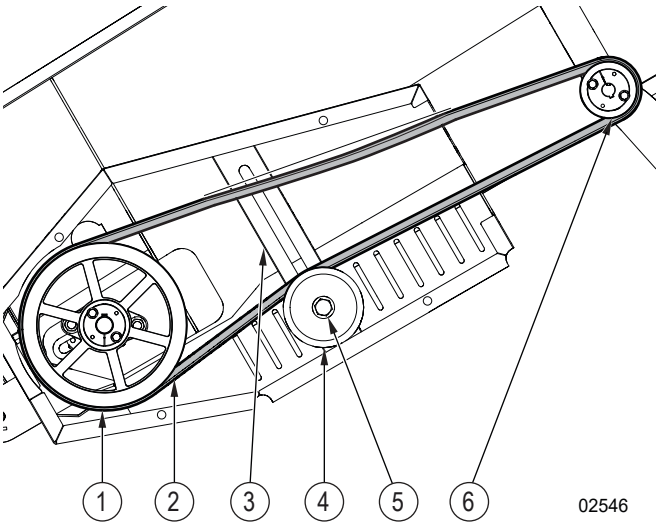


Figure 42– Conveyor drive belt

1. Conveyor sheave
2. Drive belt
3. Tension-sheave bracket
4. Tension sheave
5. Tension-sheave fastener
6. Engine clutch flywheel

9.6.2 Set the Drive Belt Tension

A drive-belt tension gauge, ruler, or tape measure is necessary for this procedure. A drive-belt tension gauge is the most accurate tool.

Check the drive belt tension after every 100 hours of operation.

1. Press on the top centre of the drive belt and measure the distance it moves. See *Figure 43*.
2. Do one of the following:
   - If the drive belt movement measures **between 1/2" (12 mm) and 3/4" (19 mm),** the drive belt tension is correct. You do not need to set the drive belt tension.
   - If the drive belt tension is not correct, continue with the following steps to set the drive belt tension.
3. Loosen (do not remove) the tension-sheave fastener.
4. Move the tension sheave on the tension-sheave bracket to set the drive belt tension.
5. Do steps 1, 2, and 4 again, until the drive belt tension is correct.
6. Tighten the tension-sheave fastener.
7. Do step 1 again.
8. Do one of the following:
   - If the belt tension is correct, continue with step 9.
   - If the belt tension is not correct, do steps 3 to 7 again.
9. Align the drive belt.
   For instructions, see *Align the Drive Belt on page 55.*.
10. Use a calibrated torque wrench to torque the tension sheave fastener to **160 lbf•ft (215 N•m)**.
11. Check the drive belt tension again after 10 hours of operation.

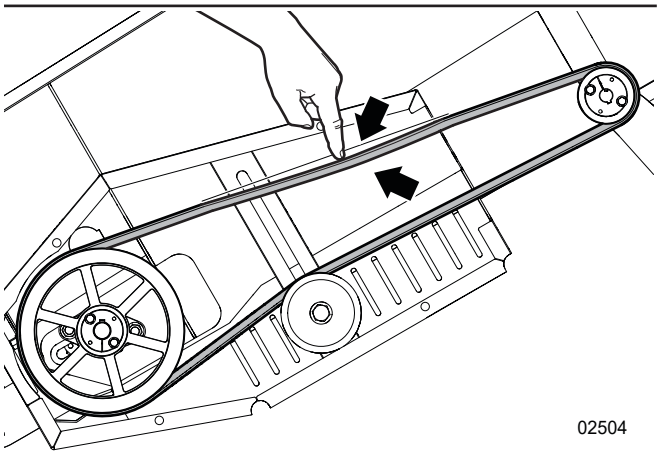


Figure 43–Check the drive belt tension

9.6.3 Align the Drive Belt

A laser alignment tool or 60" (152 cm) straight edge is necessary for this procedure. A laser alignment tool is the most accurate.

Check the drive belt alignment after every 8 hours of operation.

The maximum misalignment is 1/32" (1 mm).

1. Put a straight-edge tool across the face of the conveyor sheave. Point the opposite end of the straight-edge toward the engine clutch flywheel.
   Make sure that the straight-edge is parallel with the face of the conveyor sheave. See *Figure 44.*
2. Do one of the following:
   - If the edge of the engine clutch flywheel aligns with the straight-edge, the drive belt is aligned. The following steps are not necessary. See *Figure 44.*
   - If the edge of the engine clutch flywheel is parallel to the straight-edge tool, but is not aligned with the conveyor sheave, align the conveyor sheave. See *Figure 46 on page 56.*
     For instructions, see *Align the Conveyor Sheave on page 56.*
   - If the edge of the engine clutch flywheel is not parallel (is on an angle) to the straight-edge tool, align the engine clutch. See *Figure 47 on page 57*.
     For instructions, see *Align the Engine Clutch on page 57.*
3. Do steps 1 and 2 again to make sure the drive belt is aligned.

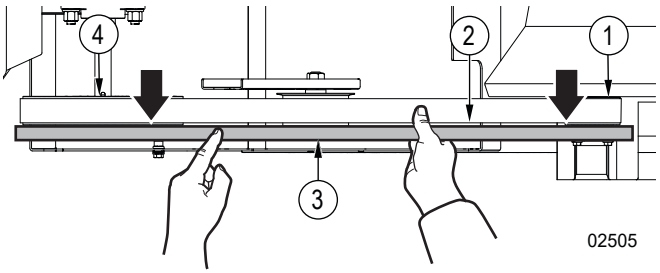


Figure 44–Check the drive belt alignment

1. Clutch flywheel
2. Point of alignment
3. Straight edge
4. Conveyor sheave

9.6.4 Align the Conveyor Sheave

The conveyor sheave can become loose on the shaft and cause drive-belt misalignment.

The numbers in brackets refer to *Figure 45.*

1. Remove the set screw (1) from the sheave (6).
   Put the set screw aside. It is necessary for assembly.
2. Remove the sheave bolts (5).
3. Thread the sheave bolts into the puller holes (4) on the sheave hub (2).
4. In an even pattern, turn each of the bolts clockwise in 1/4 turn increments.
5. Do step 4 until there is space between the sheave hub and the sheave, and they can move on the shaft.
6. Lightly tap the sheave hub with a small rubber mallet to move it on the shaft and align the drive belt.
7. Check the drive belt alignment.
   For instructions, see *Align the Drive Belt on page 55.*
8. Do one of the following:
   - If the belt alignment is correct, continue with step 9.
   - If the belt alignment is not correct, do steps 6 to 8.
9. Remove the sheave bolts from the puller holes.
   Turn them counterclockwise in 1/4 turn increments.
10. Install the sheave bolts in the sheave hub.
11. Do step 4 until the sheave bolts are tight.
12. Install and then tighten the set screw.
13. Do step 6 again.
14. Do one of the following:
    - If the belt alignment is correct, continue with step 15.
    - If the belt alignment is not correct, do steps 1 to 14.
15. Use a calibrated torque wrench to torque the two sheave bolts to **9 lbf•ft (12 N•m)**.
16. Check the drive belt tension.
    For instructions, see *Set the Drive Belt Tension on page 55.*

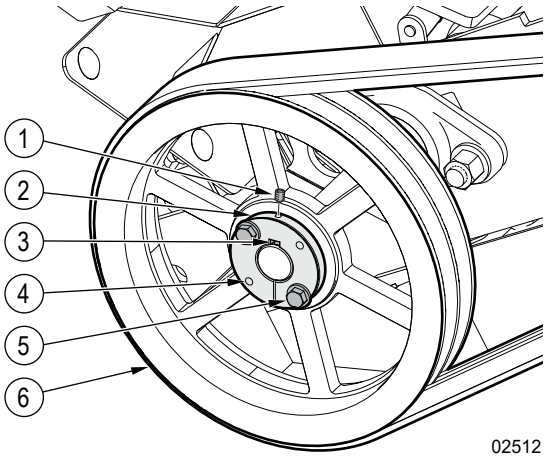


Figure 45–Conveyor sheave

1. Set screw
2. Sheave hub
3. Shaft key
4. Puller hole (1 of 2)
5. Sheave bolt (1 of 2)
6. Sheave

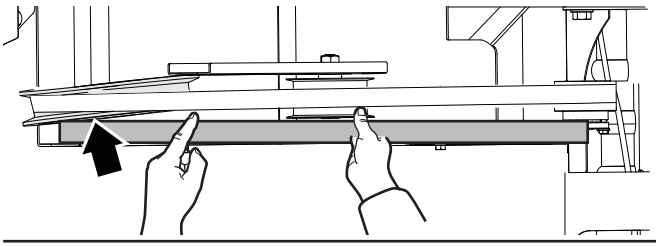


Figure 46–Align the conveyor sheave

9.6.5 Align the Engine Clutch

The engine mount can move and cause drive-belt misalignment.

1. Loosen (do not remove) the four engine mount bolts. See *Figure 48.*
2. Turn the engine a small amount to adjust the clutch and align the belt.
3. Check the drive belt alignment.
   For instructions, see *Align the Drive Belt on page 55.*
4. Do one of the following:
   - If the belt alignment is correct, continue with step 5.
   - If the belt alignment is not correct, do steps 2 to 4 again.
5. Tighten the four engine mount bolts.
6. Do steps 3 and 4 again.
7. Do one of the following:
   - If the belt alignment is correct, continue with step 8.
   - If the belt alignment is not correct, do steps 1 to 4 again.
8. Use a calibrated torque wrench to torque the four engine mount bolts to **19 lbf•ft (25 N•m)**.
9. Check the drive belt tension.
   For instructions, see *Set the Drive Belt Tension on page 55.*

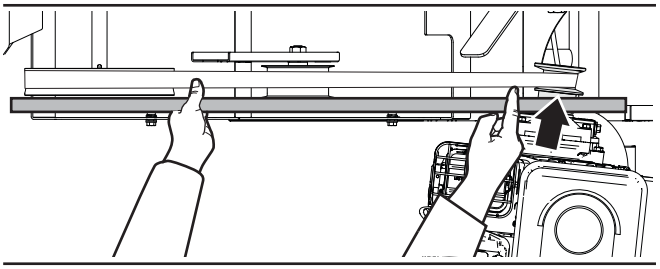


Figure 47 – Align the engine clutch

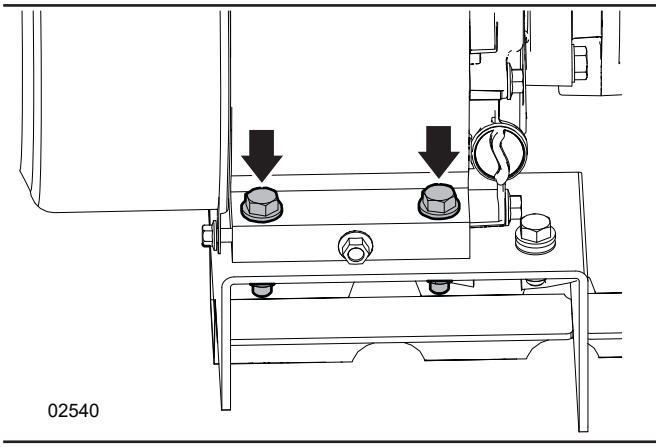


Figure 48 – Engine mount bolts (2 of 4)

9.7 Conveyor Chain Maintenance

WARNING!

Make sure that the machine is in a safe condition and the conveyor chain stops before you set the conveyor chain tension. When the conveyor chain moves it can entangle, pinch, or crush clothing, jewelry, hair, hands, or feet.

WARNING!

Wait for hot machine components to cool before you work on the machine. Hot machine components can cause serious burns or start a fire. Do not touch hot machine components. Use a no-touch thermometer to measure the temperature.

9.7.1 Set the Conveyor Chain Tension

1. Pull on the top centre of the conveyor chain and measure the distance it moves. See *Figure 49.*
2. Do one of the following:
   - If the conveyor chain movement measures **4" (10 cm)** for a 16 ft conveyor, or **6" (15 cm)** for a 24" conveyor, then the conveyor chain tension is correct. You do not need to set the conveyor chain tension.
   - If the conveyor chain tension is not correct, continue with the following steps to set the conveyor chain tension.
3. Loosen (do not remove) the upper conveyor-trough bolts (two on each side). See *Figure 50.*
4. Use the conveyor-chain tension bolts (one on each side) to set the conveyor chain tension.
5. Do steps 1, 2, and 4 again, until the conveyor chain tension is correct.
6. Tighten the upper conveyor-trough bolts.
7. Do step 1 again.
8. Do one of the following:
   - If the chain tension is correct, continue with step 9.
   - If the chain tension is not correct, do steps 3 to 7 again.
9. Use a calibrated torque wrench to torque the four upper conveyor-trough bolts to **52 lbf•ft (70 N•m)**.
10. Check the conveyor chain tension again after 10 hours of operation.

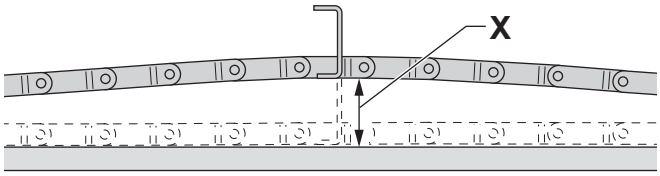


Figure 49 – Check the conveyor chain tension

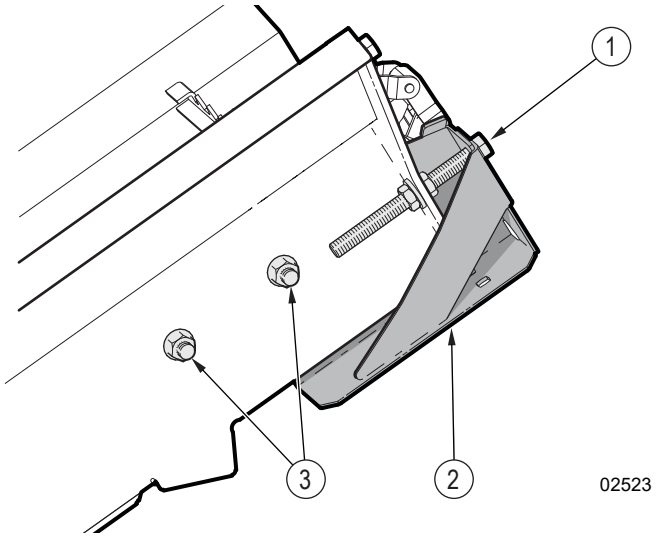


Figure 50 – Set the conveyor chain tension

1. Conveyor-chain tension bolt (1 of 2)
2. Tension-adjustment plate (1 of 2)
3. Upper conveyor-trough bolts (2 of 4)

9.8 Tire Maintenance

⚠ WARNING!

Failure to follow the proper procedures when mounting a tire on a wheel or rim can produce an explosion, which can result in serious injury or death. Do not attempt to mount a tire unless you have the correct equipment and experience. Have a qualified tire dealer or repair service perform tire maintenance.

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

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

- Tighten the wheel lug nuts to the correct torque daily. For torque specifications, see *Lug Nut Torque on page 63*.
- Check the tire pressure before towing the machine on a roadway. See the tire sidewall for the correct pressure.

9.9 Clean the Machine

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

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

- **The product identification plate.**
- **Bearings.**
- **Electrical components, including the emergency stop button and electrical cables.**

A pressure washer can damage these components.

1. Use a hose or pressure washer and mild detergent to remove dust, dirt, and debris.
2. Use a clean, soft cloth, that is dampened with water to remove dirt from the product identification plate.
3. Start the machine.
   For instructions, see *Start the Machine on page 31*.
4. Let the engine run for a few minutes to dry.
5. Stop the machine.
   For instructions, see *Stop the Machine on page 32*.
6. Apply grease to the areas where the pressure washer could have possibly removed it.
   For instructions, see *Grease Points on page 50*.

10. Troubleshooting

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

The following table lists some of the problems that can occur and gives possible causes and solutions.

If you find a problem that is difficult to solve, even after reading this information, please contact your local dealer, the distributor, or Wallenstein Equipment. When you contact someone, please have the serial number of your product available. To find the serial number on your machine, see *Serial Number Location on page 5*.

Problem	Possible cause	Solution
The conveyor chain does not move, but the sprocket is turning.	The conveyor chain is loose.	Set the conveyor chain tension or the distance between the sprockets. See *page 58.*
	The sprocket is worn.	Replace the sprocket.
	The sprocket is not the correct size.	Replace the sprocket.
The conveyor chain does not move and the sprocket does not turn.	The chain is frozen to the conveyor trough.	Remove the ice from the conveyor trough and chain.
	There is a blockage in the conveyor trough.	Remove the blockage.
	The sprocket is loose or stuck to one side.	Tighten the set screw or center the sprocket.
The machine is making unusual noises.	The sprocket or conveyor chain is worn.	Replace the sprocket or conveyor chain.
	The drive belt is loose or worn.	Set the drive belt tension or replace the drive belt. See *page 54.*
	The conveyor sheave is misaligned.	Align the conveyor sheave. See *page 56.*
The conveyor chain links or the sprocket teeth are excessively worn.	The sprocket is not centered correctly.	Center the sprocket.
	The chain is being pushed to one side.	Remove the blockage that is pushing on the conveyor chain.
The drive belt slips when starting the machine.	The drive belt is loose.	Set the drive belt tension. See *page 55.*
	The drive belt is not the correct size.	Replace the drive belt. See *page 54.*
	The drive belt is wet.	Dry the drive belt.
	The chain is frozen to the conveyor trough.	Remove the ice from the conveyor trough and chain.
	There is a blockage in the conveyor trough.	Remove the blockage.
The drive belt slips when the machine is operating.	The drive belt is loose.	Set the drive belt tension. See *page 55.*
	There is oil, grease, or other debris on the conveyor sheave.	Clean the conveyor sheave.
	There is too much material on the conveyor.	Remove material or increase the engine speed.
The drive belt is worn.	The drive belt is not the correct size.	Replace the drive belt. See *page 54.*
	The drive belt is set too tight.	Set the drive belt tension. See *page 55.*
The engine does not start.	The chain is frozen to the conveyor trough.	Remove the ice from the conveyor trough and chain.
	There is a blockage in the conveyor trough.	Remove the blockage.
	The emergency stop button is on.	Reset (turn off) the emergency stop button. Turn the button clockwise and pull. See *page 20.*
	There is not enough fuel in the tank.	Add fuel to the engine. See *page 29.*
	There is a problem with the engine.	See the engine manufacturer's manual.

11. Specifications

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

For available accessories, go to WallensteinEquipment.com

11.1 Machine Specifications[1]

Parameter	CT16B	CT24B
Trough length	16' (4.9 m)	24' (7.3 m)
Trough width	8" (20 cm) at the rear, 20" (51 cm) at the front	
Trough depth	7" (18 cm)	
Engine	Vanguard® 5 hp (169 cc)	
Maximum pile height	8.5' (259 cm)	13.5' (4.1 m)
Conveyor chain type	662 heavy conveyor pintle chain	
Conveyor chain drive	Engine direct-drive and sprocket	
Conveyor chain cleat type	2" (5 cm), high serrated	
Tires	5.30-12	
Hitch	Clevis hitch	
Total weight	880 lb (399 kg)	1040 lb (472 kg)
Dimensions (lifted)	180" x 70" x 119" (457 cm x 178 cm x 302 cm)	260" x 74" x 174" (660 cm x 188 cm x 442 cm)
Dimensions (lowered)	212" x 70" x 63" (538 cm x 178 cm x 160 cm)	307" x 74" x 83" (780 cm x 188 cm x 211 cm)

1 Specifications are subject to change without notice.

11.2 Bolt Torque

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

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

☞ Bolt grades are identified by the marks on top of the bolt head.

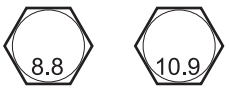
These bolt torque specification tables provide the correct torque settings for common bolts and capscrews. Tighten all bolts to the torque that is specified in the table, unless otherwise indicated. Check the bolt tightness periodically.

Imperial Bolt Torque Specifications

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

Metric Bolt Torque Specifications

Bolt Diameter	Torque			
	Gr. 8.8		Gr. 10.9	
	lbf•ft	N•m	lbf•ft	N•m
M3	0.4	0.5	1.3	1.8
M4	2.2	3	3.3	4.5
M6	7	10	11	15
M8	18	25	26	35
M10	37	50	52	70
M12	66	90	92	125
M14	83	112	116	158
M16	166	225	229	310
M20	321	435	450	610
M30	1,103	1,495	1,550	2,100



11.3 Lug Nut Torque

⚠ WARNING!

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

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

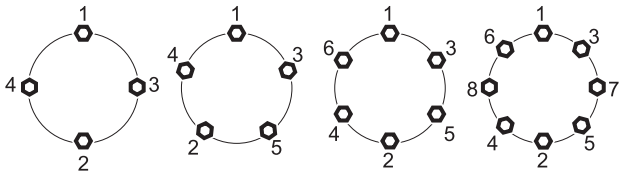
Tighten wheel lug nuts to the correct torque before the first use and after each wheel removal. After a wheel is installed, check and torque the lug nuts after the first 10 miles (16 km), 25 miles (40 km), and 50 miles (80 km). Check the lug nut torque periodically thereafter.

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

Lug Nut Torque Specifications

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

Lug nut torque pattern:



4 bolts 5 bolts 6 bolts 8 bolts

12. Warranty

LIMITED WARRANTY

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

Five Years for Consumer Use

Two Years for Commercial/Rental Use

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

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

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

This warranty does not cover the following:

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

rev. Nov-2018

13. Index

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