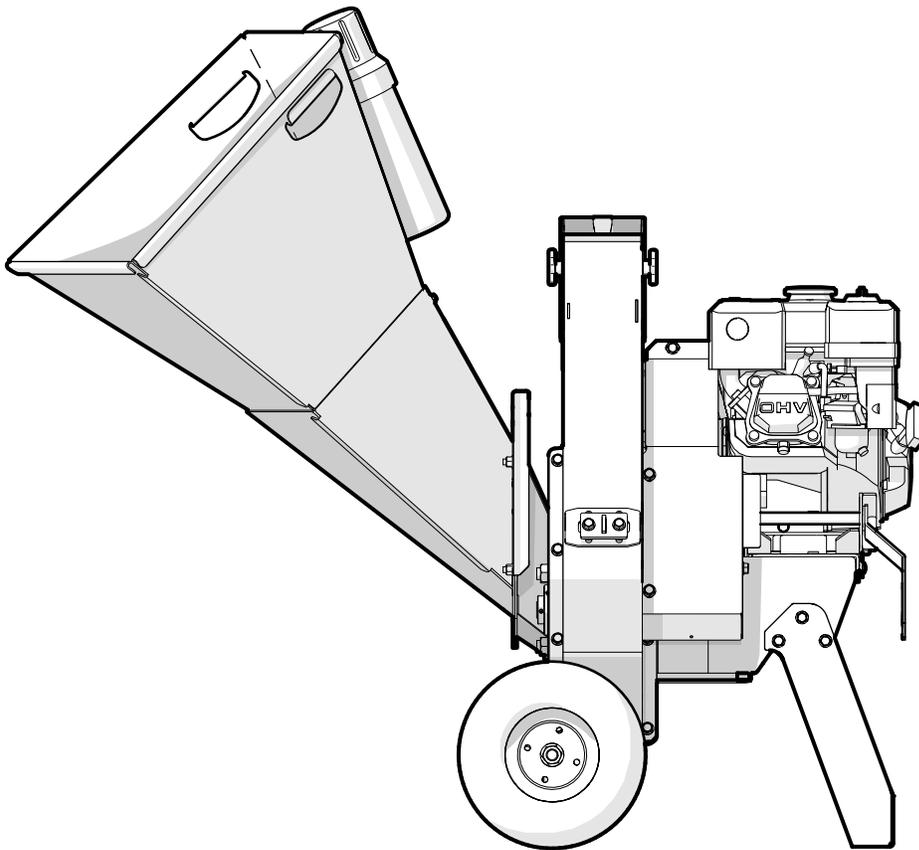


OPERATOR'S MANUAL

Serial number 1C3472 to 1C34423

BXC34 **CART CHIPPER**



Rev Mar-2020

Part Number: Z97110_En

WALLENSTEIN

1. Foreword

1.1 Introduction

Congratulations on choosing a Wallenstein **BXC34 Self-feed Cart Chipper!**

These machines are designed and manufactured to chip wood in a fast and efficient manner for homeowners and landscapers.

- The feed hopper moves the wood material into the rotor for chipping.
- The chipper rotor has two opposing blades that provide uniform chip size. A twig breaker in the rotor housing helps to break up smaller material as it moves through the machine.
- A powerful HONDA® gas engine provides power to the rotor through a V-belt clutch / brake drive system. The BXC drive system is designed to replace the traditional belt tensioning system. Features include longer belt life, and a braking clutch that quickly and safely stops the rotor when the drive is disengaged. The 3" (75 mm) positive, fail safe brake meets current European and U.S. requirements.
- Safe, efficient and trouble-free operation of the Wallenstein chipper is possible if all operators are aware of the safety, operation, and maintenance information contained within this manual.

Review all safety, operation and maintenance information contained in this manual.

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

WARNING!

Do not attempt to start or operate the machine without thoroughly reviewing this manual for safe and proper operation.

Always keep this manual with the machine.

W034

Wallenstein Equipment Inc. • © 2020



www.wallensteinequipment.com

Table of Contents

1. Foreword	2	7. Service and Maintenance.....	29
1.1 Introduction	2	7.1 Maintenance Safety	29
1.2 Delivery Inspection Report.....	4	7.2 Fluids and Lubricants.....	29
1.3 Serial Number Location	5	7.3 Maintenance Schedule	30
1.4 Types of Decals on the Machine	6	7.4 Grease Points	31
2. Safety	7	7.5 Drive Belt Replacement	32
2.1 Safety Alert Symbol	7	7.6 Rotor Blades – Checking	35
2.2 Signal Words	7	7.7 Rotor Blades – Changing.....	35
2.3 Why Safety is Important.....	7	7.8 Ledger Knife	36
2.4 Safety Rules	7	7.9 Twig Breaker.....	36
2.5 Equipment Safety Guidelines	8	8. Troubleshooting.....	37
2.6 Safe Condition	8	9. Specifications	38
2.7 Safety Training.....	8	9.1 Machine Specifications	38
2.8 Being Prepared.....	9	9.2 Common Bolt Torque Values.....	39
2.9 Refueling Safety	9	10. Product Warranty.....	40
2.10 Tire Safety	9	11. Index.....	41
2.11 Gas Engine Safety.....	10		
3.1 Safety Sign Locations	11		
3.2 Safety Sign Explanations.....	12		
3.3 Replacing Damaged Safety Signs	13		
3.4 Sign-Off Form	14		
4. Familiarization.....	15		
4.1 To the New Operator or Owner	15		
4.2 Operator Orientation	15		
4.3 Machine Components.....	16		
5. Controls	18		
5.1 Engine.....	18		
5.2 Hood Deflector.....	19		
5.3 Feed Chute Handholds.....	20		
5.4 Drive Engage Handle.....	20		
6. Operating Instructions	21		
6.1 Operating Safety	21		
6.2 Before Starting the Engine.....	21		
6.3 Pre-operation Checklist	22		
6.4 Machine Break-in Period	22		
6.5 Engine Oil Level Check	22		
6.6 Fuel Level Check	23		
6.7 Engine Air Cleaner.....	23		
6.8 Machine Set-up.....	23		
6.9 Starting the Engine	24		
6.10 Stopping the Engine	25		
6.11 Engaging Drive	25		
6.12 Chipping Operation.....	25		
6.13 Unplugging the Chipper	27		
6.14 Storage	28		

1.2 Delivery Inspection Report

WALLENSTEIN BXC34 Cart Chipper

To activate warranty, register your product online at:

<http://www.wallensteinequipment.com>

This form must be filled out by the dealer and signed by both the dealer and the customer at the time of delivery.

Customer's Name _____

Contact Name _____

Dealer Name _____

(_____) _____
Phone Number

Serial Number _____

_____/_____/_____
Delivery Date

I have thoroughly instructed the buyer on the equipment care, adjustments, safe operation and applicable warranty policy and reviewed the manuals.

Dealer's Rep. Signature _____

_____/_____/_____
Delivery Date

The product manuals have been received by me and I have been thoroughly instructed as to care, adjustments, safe operation and applicable warranty policy.

Owner's Signature _____

_____/_____/_____
Delivery Date

<input checked="" type="checkbox"/>	Pre-delivery Inspection
Inspect for damage from shipping. Immediately contact the shipping company if damage is found.	
BXC34 Cart Chipper	
	Check blade clearance and that rotor turns freely
	Check that discharge and deflector move freely
	Check engine and rotor sheaves are in alignment
	Check wheel lug nuts and all fasteners are tight
	Check drive belt tension
	Check cutting blade sharpness
	Check engine oil level
	Check drive lever engages
	Check safety flap in feed chute
	Review operating and safety instructions in the Operator's Manual
Safety Checks	
	All Safety Decals Installed
	Guards and Shields Installed and Secured
	Lock Pin on Hitch Tongue

1.3 Serial Number Location

Always give your dealer the serial number of your Wallenstein product when ordering parts or requesting service or other information. The Serial Number Plate location is shown in the illustration.

Please record the product Model and Serial Number in the space provided below for easy reference.

Record Product Information Here	
Model:	BXC34
Serial Number:	

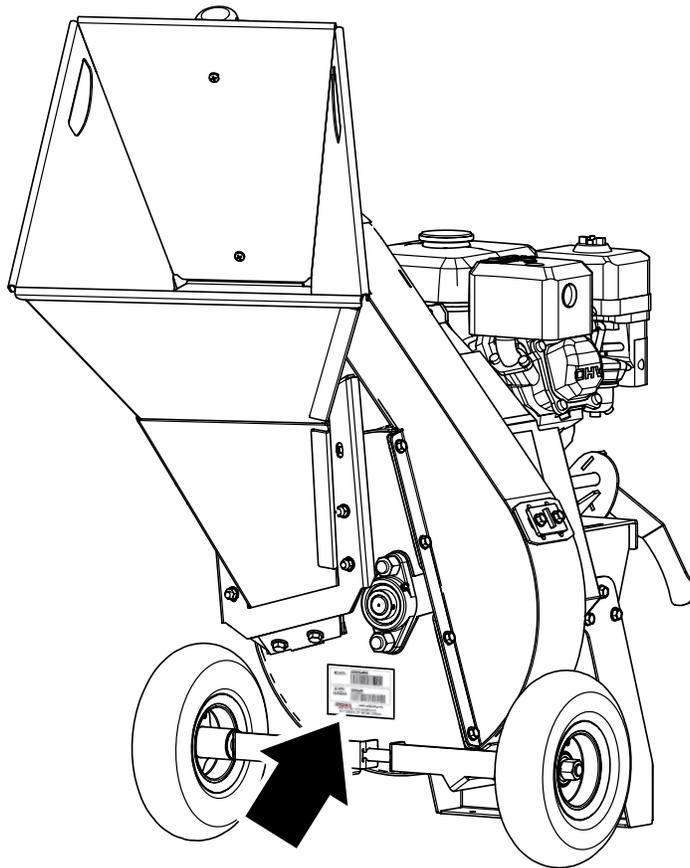


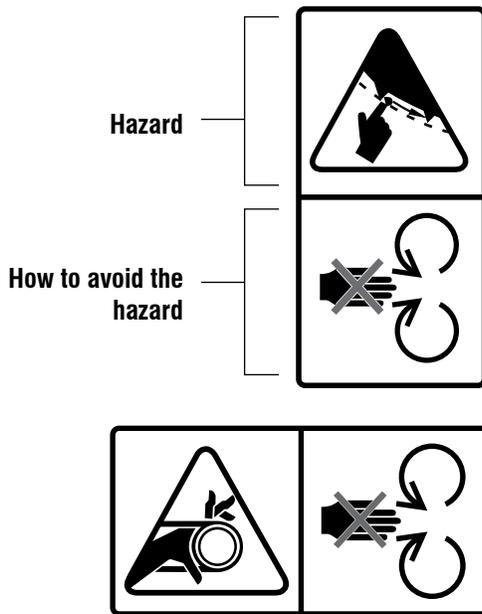
Fig. 1 – Serial Number Plate Location

1.4 Types of Decals on the Machine

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

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

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



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



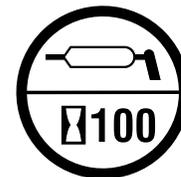
Informative Decals are generally pictorial with a white background and can vary in the number of panels. This type of decal provides additional information to the operator or explains the operation of a control.



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



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



See the section on safety signs for safety decal definitions. For a complete illustration of decals and decal locations, download the parts manual for your model product at www.wallensteinequipment.com.

2. Safety

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 Wallenstein Chipper-Shredder and in the manual.

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



2.2 Signal Words

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

DANGER –

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

WARNING –

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

CAUTION –

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

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

2.3 Why Safety is Important

Three Big Reasons:

- **Accidents Disable and Kill**
- **Accidents Cost**
- **Accidents Can Be Avoided**

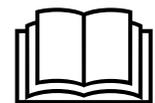
YOU are responsible for the SAFE operation and maintenance of your Wallenstein product. **YOU** must make sure that anyone who is going to use, maintain or work around the machine is familiar with the operating and maintenance procedures and related **SAFETY** information contained in this manual. This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

YOU are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** using this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions.

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

2.4 Safety Rules

- Provide operating instructions to all employees before allowing them to operate the machine.



- Read and understand ALL Safety and Operating instructions in the manual and follow them. The most important safety device on this equipment is a SAFE operator.
- Review safety related items annually with all personnel who will be operating or performing maintenance.

- Wear appropriate Personal Protective Equipment (PPE) when using this machine. This includes but is not limited to:
 - A hard hat
 - Heavy gloves
 - Hearing Protection
 - Protective shoes with slip resistant soles
 - Protective glasses, goggles or face shield
- Keep a first-aid kit available for use should the need arise and know how to use it.



- Inspect and secure all guards before starting.
- Keep a fire extinguisher available for use should the need arise and know how to use it.



- Never expect a person who has not read or understands all operation and safety instructions to operate the machine. An untrained operator is not qualified and exposes everyone to possible serious injury or death. It is the owner's responsibility to the operator to ensure familiarity and understanding of the machine.
- The operator must be a responsible, properly trained and physically able person familiar with machinery and trained in this equipment's operations. If elderly people are assisting with work, their physical limitations need to be recognized and accommodated.
- DO NOT risk injury or death by ignoring good safety practices. **Think SAFETY! Work SAFELY!**

2.5 Equipment Safety Guidelines

Operating machines safely is one of the main concerns in designing and developing Wallenstein equipment. However, accidents could occur that can be avoided by a few seconds of thought and a more careful approach to handling equipment.

- Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use. In some cases, certain illustrations in this manual may show an assembly with a safety shield removed for clarity. However, equipment should never be used in this condition.
- Replace any safety sign or instruction sign that is not readable or is missing. Location and explanation of safety signs start on *page 13*.
- Never consume alcoholic beverages or drugs while using this equipment. Alertness or coordination can be affected. Consult your doctor about using this machine while taking prescription medications.

- Do not modify the equipment in any way. Unauthorized modification may result in serious injury or death and may impair the function and life of the equipment. Unapproved modifications void warranty.
- Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely is in question – **DO NOT TRY IT.**

2.6 Safe Condition

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

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

SAFE CONDITION

- Disengage the drive.
- Shut off engine.
- Make sure all moving parts have stopped.
- Remove spark plug cable.
- Turn fuel valve off.
- Block or chock wheels.

2.7 Safety Training

- Train all new personnel and review instructions frequently with existing workers. Be certain only a properly trained and physically able person will use the machinery. A person who has not read and understood all instructions is not qualified to use the machine. An untrained operator can cause possible serious injury or death.
- If this machine is used by any other person, loaned or rented, it is the owner's responsibility to make certain that prior to using, every operator:
 - knows the meaning of all safety decals
 - reads and understands the owner's manual
 - is instructed in safe and proper use of the equipment
 - understands and knows how to perform the Safe Condition procedure

2.8 Being Prepared

- Never use the machine until the operators have been adequately trained in the safe operation of the machine and have read and completely understand:
 - safety, operation and feature sections of this manual
 - the safety signs on the machine.
 - engine operator's manual
 - how to place the machine in a safe condition
- PPE is recommended during assembly, installation, operation, adjustment, maintenance, repair, removal, cleaning, and transport. Do not allow long hair, loose fitting clothing or jewelry around equipment.
- Prolonged exposure to loud noise may cause permanent hearing loss! Power equipment with or without equipment attached can often be noisy enough to cause permanent, partial hearing loss.
- Always wear hearing protection if the noise in any area you work in exceeds 80 dB.
 - Noise over 85 dB on a long-term basis can cause severe hearing loss.
 - Exposure to noise over 90 dB over a long-term basis may cause permanent, total hearing loss.
 - Hearing loss from loud noise (from engines, chainsaws, radios, and other such sources close to the ear) is cumulative over a lifetime, without hope of natural recovery.
- Clear working area of stones, branches or hidden obstacles that might be hooked or snagged, causing injury or damage.
- Determine where chips will be piled and ensure it does not interfere with safe operation of the machine
- Be aware of overhead hazards: branches, cables, electrical wires.
- Use this machine only in daylight or good artificial light.
- Perform the **Pre-operation Checklist** procedure before starting work (see page 22).



2.9 Refueling Safety

- Handle fuel with care. It is highly flammable.
- Allow engine to cool for 5 minutes before refueling. Clean up spilled fuel before restarting engine.
- Do not refuel the machine while smoking or fuel up near open flame or sparks.
- Fill fuel tank outdoors.
- Prevent fires by keeping machine clean of accumulated trash, grease and debris.
- Be sure to stop the engine prior to refueling.
- Do not overfill the fuel tank.
- If fuel is spilled, wipe it away carefully and wait until the fuel has dried before starting the engine.
- After refueling, make sure that the fuel cap is secured to prevent spillage.



2.10 Tire Safety

- Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.
- Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
- Have a qualified tire dealer or repair service perform required tire maintenance.
- When replacing worn tires, make sure they meet the original tire specifications. Never undersize.

2.11 Gas Engine Safety

 **CAUTION!**

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

W019

- **DO NOT** operate engine in an enclosed area. Exhaust gases contain carbon monoxide, which is an odorless and deadly gas.
- **DO NOT** place hands or feet near moving or rotating parts.
- **DO NOT** store, spill, or use gasoline near an open flame, or devices such as a stove, furnace, or water heater which use a pilot light or devices which can create a spark.
- **DO NOT** refuel indoors where area is not well ventilated. Outdoor refueling is preferred.
- **DO NOT** refuel while engine is running. Allow engine to cool for 5 minutes before refueling. Store fuel in approved safety containers.
- **DO NOT** remove fuel tank cap while engine is running.
- **DO NOT** operate engine if gasoline is spilled. Move machine away from the spill and avoid creating any ignition until gasoline has evaporated.
- **DO NOT** smoke while filling fuel tank.
- **DO NOT** choke carburetor to stop engine. Whenever possible, gradually reduce engine speed before stopping.
- **DO NOT** run engine above rated speeds. This may result in injury.
- **DO NOT** tamper with governor springs, governor links or other parts which may increase the governed speed.
- **DO NOT** tamper with the engine speed selected by the original equipment manufacturer.
- **DO NOT** check for spark with spark plug or spark plug wire removed.
- **DO NOT** crank engine with spark plug removed. If engine is flooded, crank until engine starts.
- **DO NOT** strike flywheel with a hard object or metal tool as this may cause flywheel to shatter in operation. Use proper tools to service engine.
- **DO NOT** operate engine without a muffler. Inspect periodically and replace, if necessary. If engine is equipped with a muffler deflector, inspect periodically. Replace if necessary, with correct deflector.
- **DO NOT** operate engine with an accumulation of grass, leaves, dirt or other combustible materials in the muffler area.

- **DO NOT** use this engine on any forest covered, brush covered, or grass covered unimproved land unless a spark arrester is installed on the muffler. The arrester must be maintained in effective working order by the operator. In the state of California, the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal land.
- **DO NOT** touch hot muffler, cylinder or fins because contact may cause burns.
- **DO NOT** run engine with air cleaner or air cleaner cover removed.

Be sure to:

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

3. Safety Signs

3.1 Safety Sign Locations

The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, or function related to that area, that requires your SAFETY AWARENESS.

Safety sign explanations begin on *page 13*.

Think SAFETY! Work SAFELY!

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

New safety signs are available from your authorized dealer.

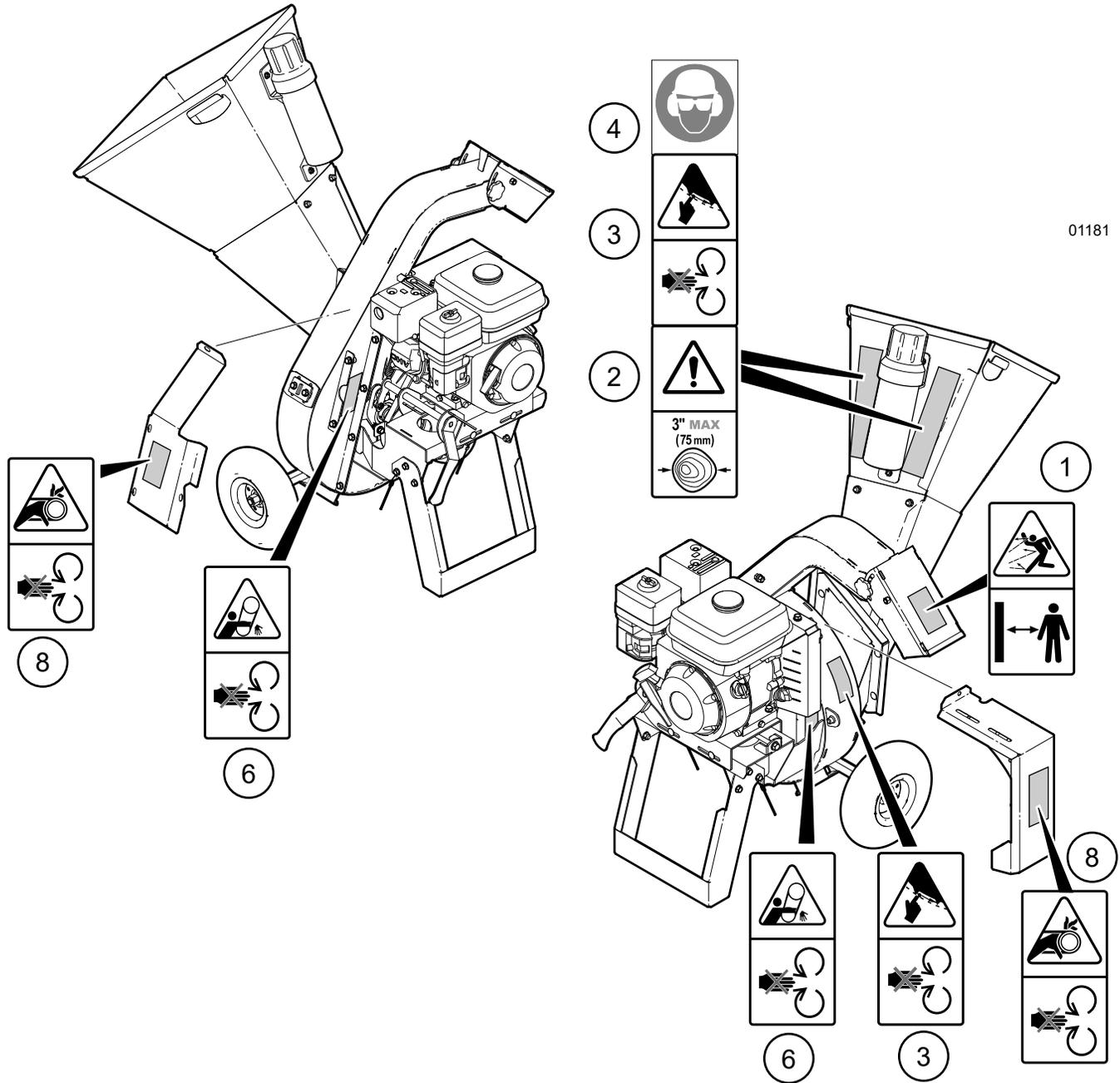


Fig. 2—Safety Decals

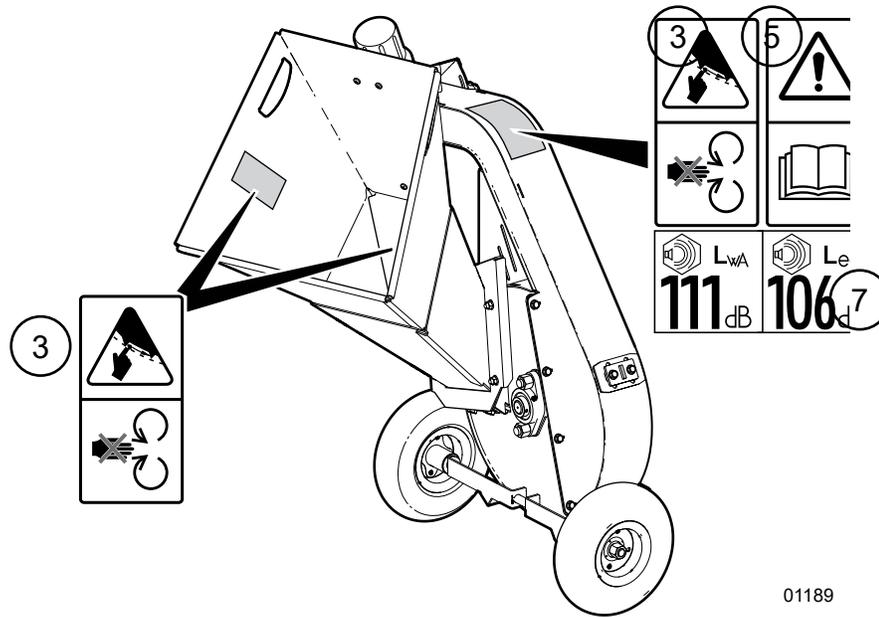


Fig. 3—Safety Decals

3.2 Safety Sign Explanations

1. Caution



Risk of injury from flying objects.

Stay clear of material discharge chute. Machine can expel wood chips fast enough to cause injury. Do not point discharge at people, animals, or buildings.

2. Caution



Risk of personal injury or equipment damage.

Do not put material larger than 3" (75 mm) diameter into the chipper. Attempting to chip anything larger could stall the engine, damage the machine, or cause personal injury.

3. Warning



Risk of serious injury. Keep hands and feet out of inlet and discharge openings while machine is operating.

Wait for all moving parts to come to a complete stop before clearing obstructions.

4. Caution



Personal Protective Equipment (PPE) is required when operating this machine. Failure to wear PPE can result in personal injury.

5. Caution



Refer to the operator's manual for important safety information.

Understand ALL operating instructions in the manual and understand ALL safety signs located on the machine. The most important safety device on this equipment is an informed operator.

6. Warning



Risk of serious injury or death if hands or limbs are caught in rotating parts.

Do not operate machine without shields in place. If shield is removed, replace it before operating machine.

7. Caution



Machine is extremely loud in operation. Hearing protection is required, or permanent damage can occur. Lwa is sound power level. Leq is the average sound level.

8. Caution



Rotating parts are exposed or under a guard. Do not attempt to reach in this area when machine is operating. Keep hands, loose clothing, and long hair away. Serious injury can result.

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

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

3.3 Replacing Damaged Safety Signs

- Always replace safety signs that are missing or have become illegible. Replacement safety signs are available from your authorized distributor, dealer parts department, or the factory.
- Always keep safety signs clean and legible.
- Parts replaced that had a safety decal on them must also have the safety sign replaced.

Installation area must be clean and dry. Make sure the surface is free of grease or oil. Ambient temperature must be above 50 °F (10 °C).

 **NOTE:** *Determine exact position before removing the backing paper on the decal.*

1. Peel the decal off the backing sheet.
2. Align the decal with an edge on the machine if possible.
3. Starting on one edge, carefully press the center of the exposed sticky backing in place, smoothing it out as you work from one side to the other.
4. Use a squeegee, credit card or similar edge to smooth it out. Work from one end of the decal to the other end.

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

4. Familiarization

4.1 To the New Operator or Owner

It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the machine. Follow all safety instructions. Untrained operators are not qualified to use the machine.

1. Review control location, function and movement directions.
2. Move the unit to a large open area to allow the operator to become familiar with control function and machine response. When a new operator is familiar and comfortable with the machine, they can proceed with the work.
3. Do not allow untrained operators to use the machine. They can endanger themselves and others or damage property and the machine.

IMPORTANT! Make sure all operators understand how to put the machine in a safe service position before servicing or repairing. See *page 7*.

4.2 Operator Orientation

IMPORTANT! When describing controls, the directions for left-hand, right-hand, backward and forward as mentioned throughout this manual, are determined when standing at the feed hopper with hands placed in the handholds.

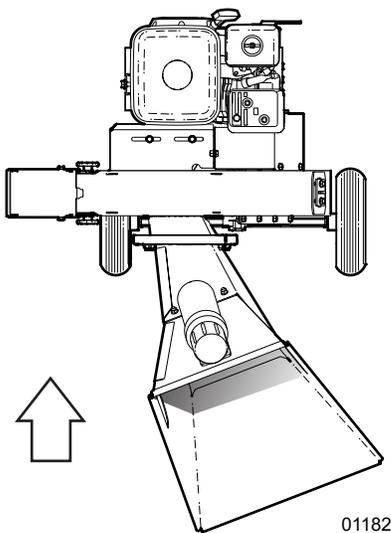
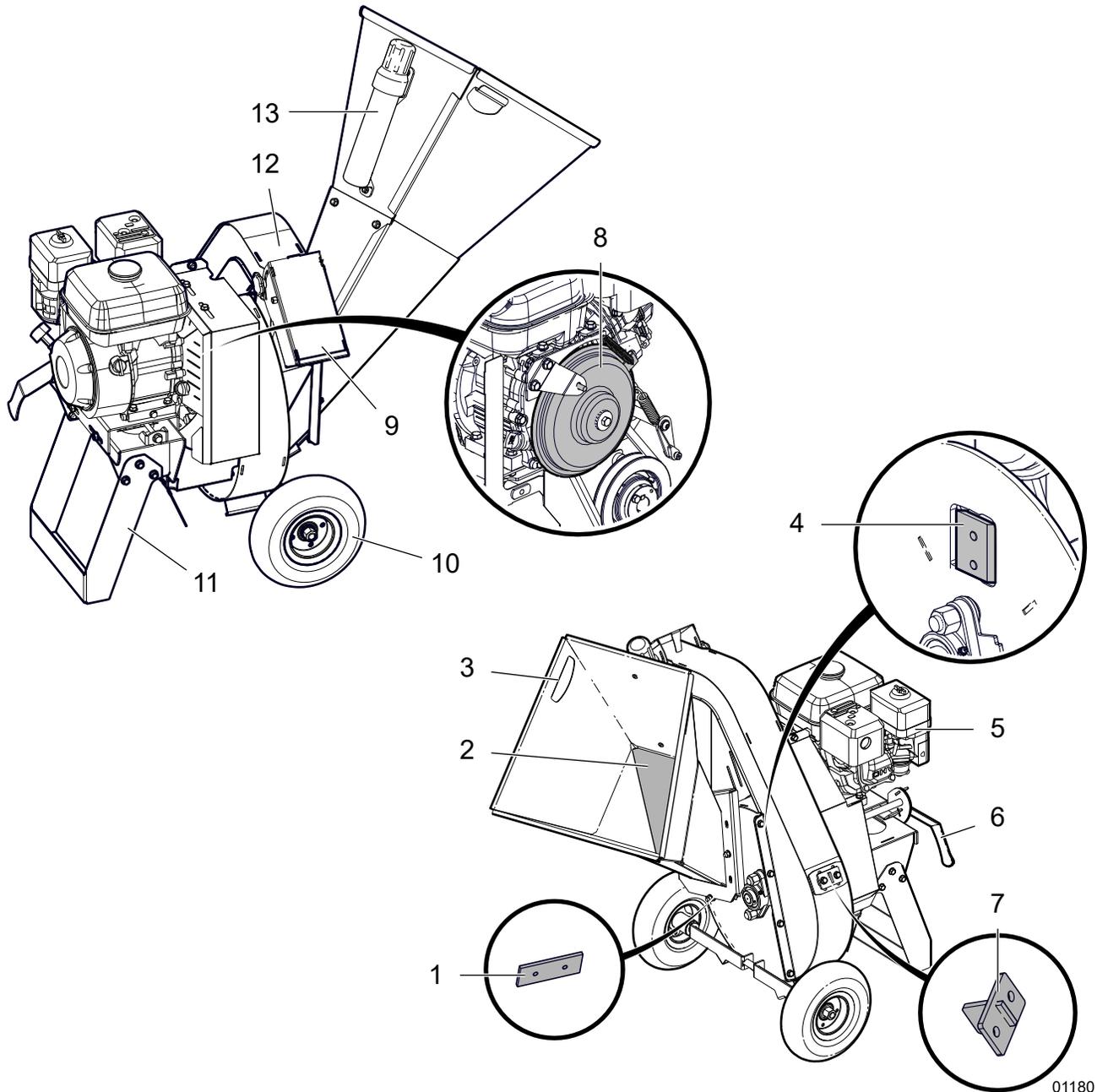


Fig. 4—Direction of Forward Travel

4.3 Machine Components

The Wallenstein Shredder rotor has blades for chipping wood and brush. The chipper rotor is designed with two blades to provide uniform chip size. A chop-block in the shredder compartment shreds the material as it moves through the machine.

A gas engine provides power to the rotor through a V-belt drive system. A braking clutch on the engine stops the rotor when the drive is disengaged.



01180

Fig. 5—BXC34 Components

- | | | |
|----------------------------|------------------------------|------------------------------------|
| 1. Ledger Knife | 6. Drive Engage Lever | 11. Front Support Leg |
| 2. Feed Hopper Safety Flap | 7. Twig Breaker | 12. Discharge Chute |
| 3. Feed Hopper Handholds | 8. Brake / Clutch | 13. Manual Tube (Operators, Engine |
| 4. Rotor Blade | 9. Hood Deflector | Manuals) |
| 5. Honda® GX200 Engine | 10. 4.10-3.50-4NHS LRB Tires | |

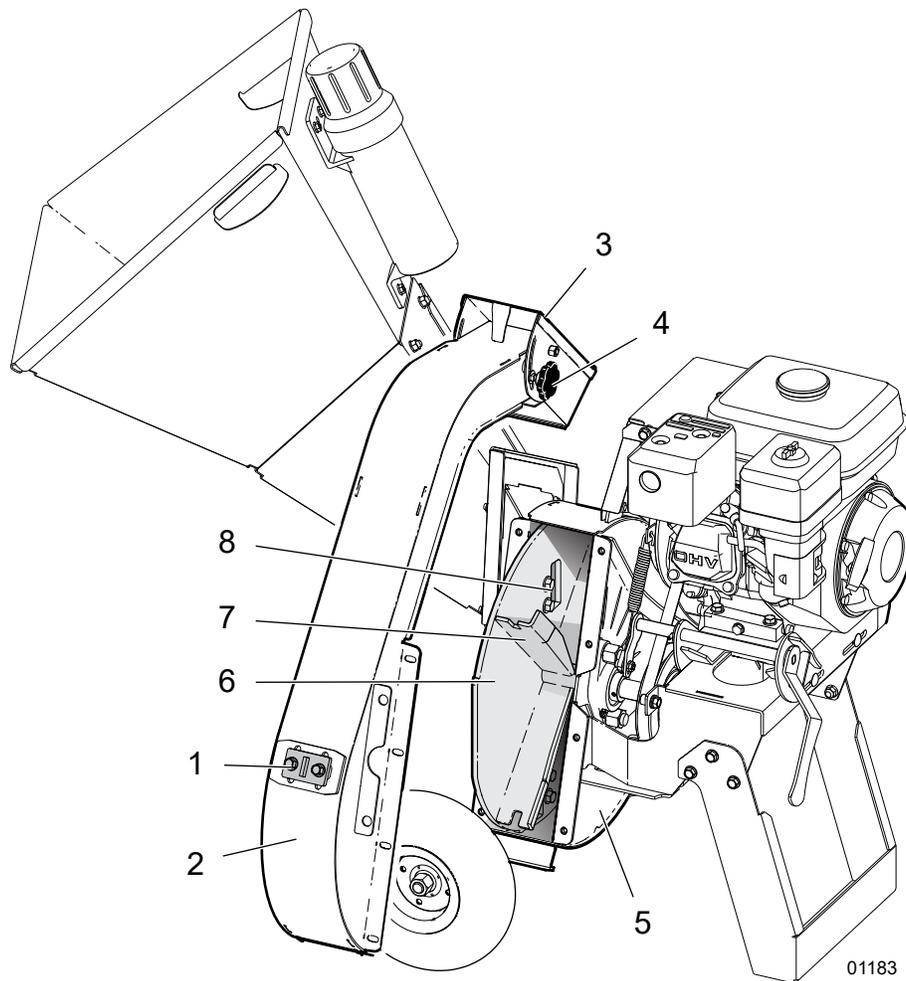


Fig. 6—BXC34 Components

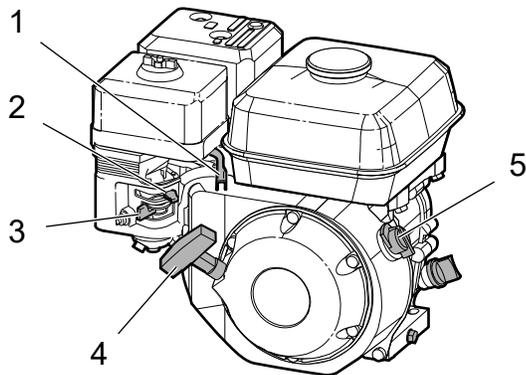
- | | |
|--------------------|------------------|
| 1. Twig Breaker | 5. Rotor Housing |
| 2. Upper Housing | 6. Rotor |
| 3. Deflector Chute | 7. Rotor Paddle |
| 4. Hand Knob | 8. Rotor Knife |

5. Controls

IMPORTANT! Before starting work with the chipper, become familiar with the location and function of all controls.

5.1 Engine

Refer to the engine manual that came with this product for further explanation on engine controls.



00189

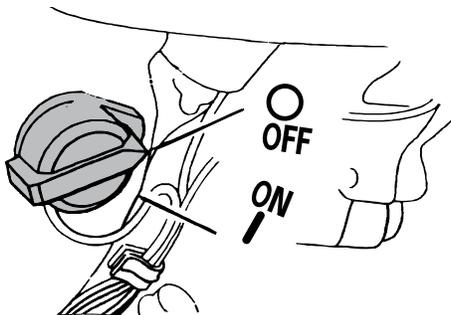
Fig. 7—Engine Controls

1. Throttle Lever
2. Ignition Switch
3. Oil Level Check
4. Oil Drain Plug
5. Starting Rope
6. Fuel Valve Lever
7. Choke Lever

5.1.1 Ignition Switch

This rotary switch controls the ignition system.

- The engine operates in the ON position. Before starting the engine, turn the switch to ON.
- Turn it counterclockwise to OFF to stop the engine.



00187

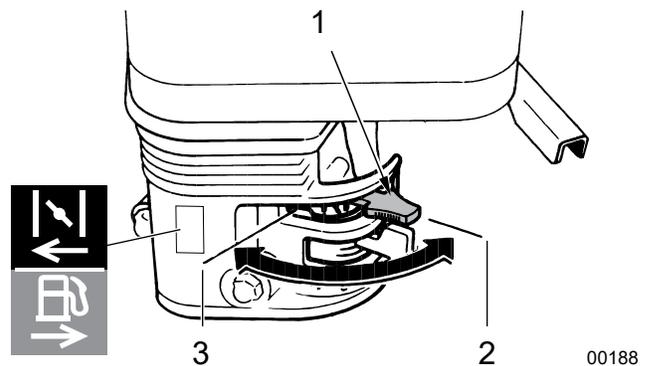
Fig. 8—Ignition Switch

- **OFF** – In the OFF position, there is no power to the engine. Turn the switch fully counterclockwise to shut the engine off.
- | **ON** – The engine operates in the ON position. Turn the switch to ON before attempting an engine start.

5.1.2 Choke Lever

The choke lever opens and closes the choke valve in the carburetor.

- Place the choke lever in the CLOSED position (3) when starting a cold engine.
- Move the choke lever to the OPEN position (2) after the engine starts. When restarting a warm engine, leave the lever in the OPEN position.



00188

Fig. 9—Choke Lever

1. Choke Lever
2. Choke Open Position
3. Choke Closed Position

5.1.3 Fuel Shut-off Valve

The engine is equipped with a valve between the fuel tank and the carburetor.

- Slide the fuel valve lever toward the block (2) to turn fuel ON, and away (3) to turn OFF.
- Turn the fuel OFF when not in use or when transporting.

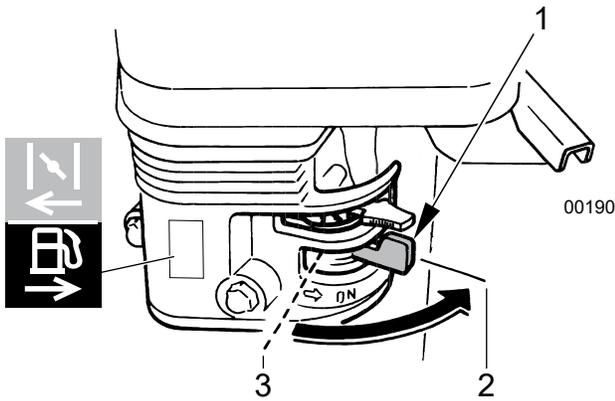


Fig. 10–Fuel Valve Lever

1. Fuel Shut-off Valve Lever
2. ON Position
3. OFF Position

5.1.4 Throttle Lever

This lever controls the engine speed. Move the lever side to side to increase or decrease engine rpm. Always operate the chipper with the throttle lever in the MAX position.

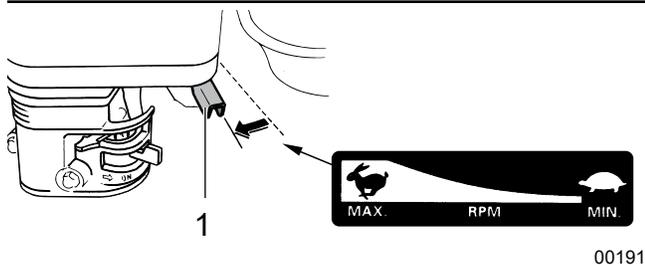


Fig. 11–Throttle Lever Positions

1. Throttle Lever

5.1.5 Recoil Starter

Pull the starter grip out lightly until resistance is felt, then pull briskly in the direction of the arrow as shown below. Return the starter grip gently.

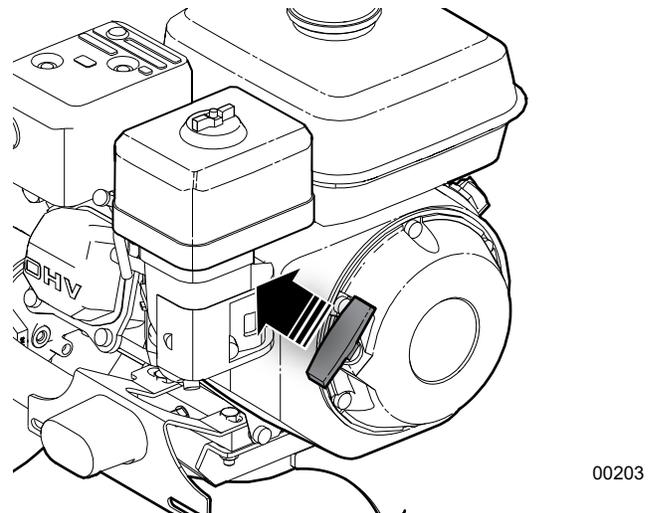


Fig. 12–Recoil Starter

5.2 Hood Deflector

The discharge chute is equipped with a hood deflector on the end of the chute to direct the chips exactly where desired. The deflector is held in position by two spin knobs.

1. Loosen the two hand knobs and move the deflector into position as required.
2. Tighten up the knobs to lock the deflector into position.

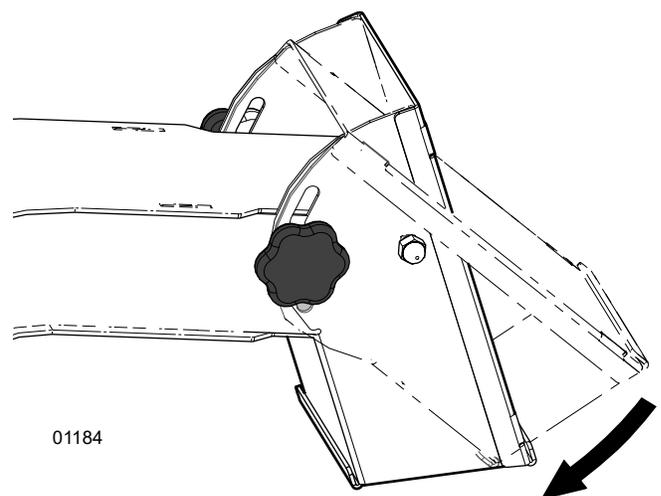


Fig. 13–Hood Deflector

5.3 Feed Chute Handholds

To move the chipper, use the handholds on the side of the feed hopper. The machine is balanced to make it easy to move.

Make sure the chipper is sitting firmly on the ground during operation.

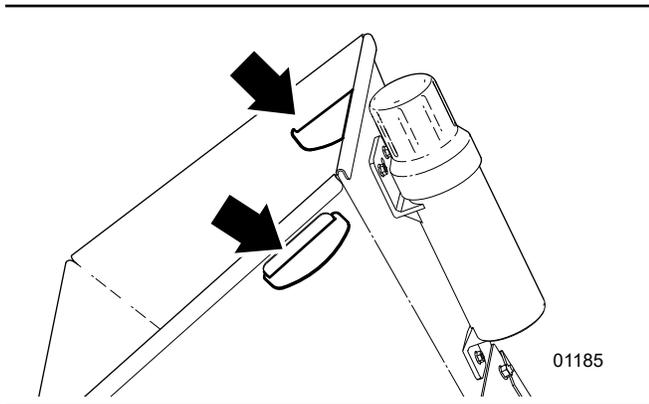


Fig. 14—Feed Chute Handholds

5.4 Drive Engage Handle

The drive engage handle activates the rotor drive system to start the rotor turning for chipping. A reliable brake / clutch system controls power from the engine to the rotor.

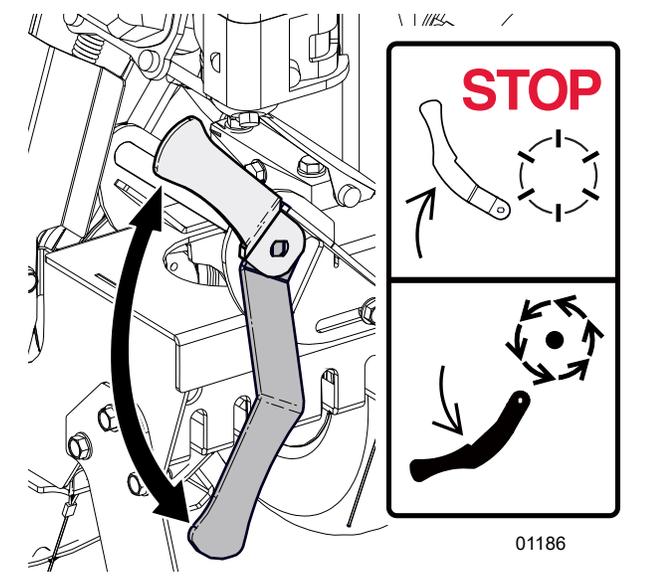


Fig. 15—Drive Engage Handle

Drive Position

To engage the rotor, slowly push the handle down. Spring tension locks the handle into drive position and the rotor begins to spin up to speed.



NOTE: Engaging the drive too quickly can stall the engine.

Stop Position

To stop the rotor, pull the handle up. Spring tension locks the handle into the STOP position. The rotor will then stop moving within 5 seconds.



IMPORTANT! Be aware once the rotor is disengaged, the clutch brake automatically engages.

6. Operating Instructions

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

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

6.1 Operating Safety

- Do not reach into rotor or feed hopper openings when the machine is running. Install and secure access covers before starting engine.
- Do not operate machine inside a closed building to prevent asphyxiation from engine exhaust.
- Do not move or transport chipper when the rotor is turning.
- Keep the working area clean and free of debris to prevent tripping. Operate only on level ground.
- Do not point discharge at people, animals or buildings. Rotor can expel wood chips fast enough to cause injury.
- Be aware of the size and shape of the material being fed into the chipper. Crotchety branches can move in unpredictable ways and could cause injuries. Large curved pieces should be cut into smaller straighter sections.
- Never stand, sit or climb onto any part of the chipper while it is running.
- Place chipper in a Safe Condition before servicing, adjusting, repairing, or unplugging.
- Use care when feeding material into chipper. Do not put metal, bottles, cans, rocks, glass or other foreign material into wood chipper. If foreign material enters chipper, inspect machine for damaged or loose parts before resuming work.

CAUTION!

Do not risk injury by working in an unsafe situation. Take steps to make the machine safe to work on before performing any maintenance or service procedure.

Follow steps listed to put the machine in a Safe Condition.

W049

SAFE CONDITION

- Disengage the drive.
- Shut off engine.
- Make sure all moving parts have stopped.
- Remove spark plug cable.
- Turn fuel valve off.
- Block or chock wheels.

6.2 Before Starting the Engine

1. Check the engine oil level. See *page 22*.
2. Check the fuel level. See *page 23*.
3. Check the engine air cleaner. See engine manual.
4. Review the Safety Rules on *page 7*.
5. Clear the area of bystanders, especially small children.
6. Make sure each operator is trained and familiar with the set up and operation of the wood chipper.
7. Perform the Pre-operation Checklist.
8. Survey the work site and place the chipper in a clear, level work area.

6.3 Pre-operation Checklist

Check the following each time the chipper is used:

Pre-operation Checklist	✓
Check the rotor main shaft bearings have been lubricated. See <i>page 31</i> .	
Check the tension and alignment of the drive belt. Adjust as required. See <i>page 35</i> .	
Check the rotor housing and discharge chute. Remove any blockages, twine, wire or other material that has become entangled.	
Check the condition and clearance of the twig breaker, rotor blades and ledger knife. Adjust or replace as required. See <i>page 30</i> .	
Check and ensure that all covers, guards and shields are in place, secured, and can function as designed.	
Check and tighten all fasteners. Make sure the equipment is in good condition.	
Check that appropriate equipment for personal protection is available and being used.	
Check that jewelry, loose-fitting clothing are not worn. Make sure long hair is tied back.	

6.4 Machine Break-in Period

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

After 1–5 hours:

1. Torque all fasteners and hardware.
2. Check condition of rotor bearings.
3. Check the condition and clearance of the knives, chop-block and stationary blades. Adjust or replace as required.
4. Check drive belt tension and pulley alignment.
5. Check the condition of the hopper flap in the shredder feed hopper. The hopper flap must move freely back into position to ensure the safety of the operator by preventing wood from flying out.
6. Check for entangled material. Remove all entangled material before resuming work.
7. Check engine fluid levels. Top up as required.

After 10 hours:

8. Repeat all previous steps.
9. Perform all the checks in the Pre-operation Checklist.

After 20 hours:

10. Change engine oil. Refer to engine manufacturer's manual included in the manual tube.

6.5 Engine Oil Level Check

Check engine oil level before each use. Check with the machine parked on level ground and the engine stopped.

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

1. Remove the oil level dipstick and wipe it clean.
2. Fully insert the oil level dipstick, then remove it to check the oil level. **The proper level is when the oil is visible at the full (upper) mark on the dipstick.**
3. If the oil level is low, add oil until the level is at the full mark. **SAE 10W-30 or 5W-30 is recommended for general use.** Refer to the engine owner's manual included in the manual tube for further information on engine oils.
4. Reinstall the oil level dipstick.

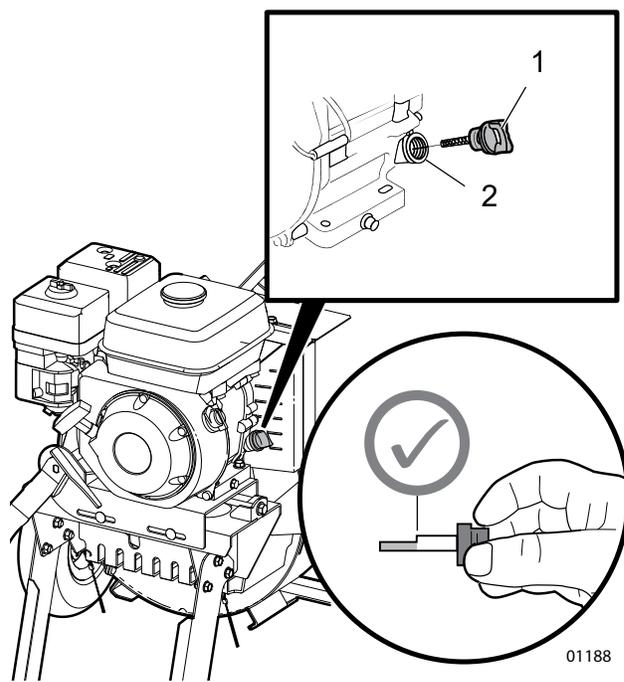


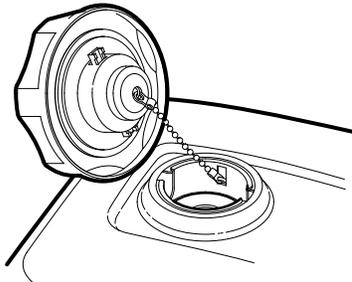
Fig. 16—Engine Oil Level check

1. Oil Level Dipstick
2. Oil Filler

6.6 Fuel Level Check

Check the fuel level before each use. Starting with a full tank helps to eliminate or reduce operating interruptions for refueling.

The fuel tank is located on the engine. Avoid running the tank dry.



00198

Fig. 17 – Fuel Filler Cap

6.6.1 Refueling

Fuel tank capacity: **0.95 US gal (3.6 L).**

! WARNING!



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

W027

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

For fuel specification, see *Fluids and Lubricants on page 29*. Refer to the engine manual for additional information on fuels.

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

6.7 Engine Air Cleaner

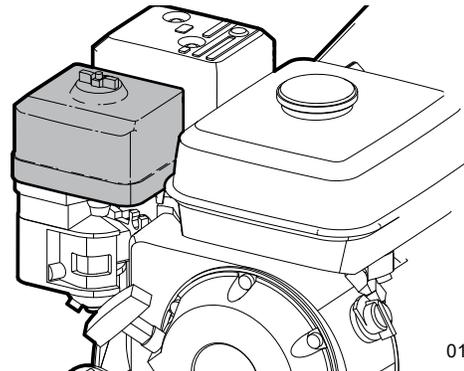
A dirty air filter can restrict air flow to the carburetor, reducing engine performance. If the engine is operated in very dusty areas, clean the air filter more often than specified.

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

Inspection

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

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



01187

Fig. 18 – Engine Air Cleaner

6.8 Machine Set-up

! CAUTION!

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

W006

! CAUTION!

Do not use chipper/shredder on uneven ground. Machine may tip over resulting in personal injury or damage to the machine. Chipper/shredder must be resting on the level and stable ground during operation.

W038

1. Position the chipper at the work site close to the brush pile.
2. Ensure that the machine is resting on the ground and is level and stable, and the work area is free of debris.
3. If the machine is attached to a lawn tractor, apply the brakes and chock the wheels.
4. Ensure the feed hoppers are free of debris (to prevent jamming at start up).
5. Position the discharge chute as required, pointing away from people or animals.

6.9 Starting the Engine

! CAUTION!

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

W019

! WARNING!

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

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

W072

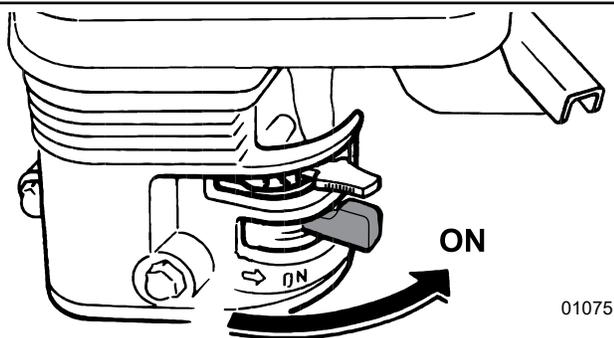
! CAUTION!



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

W016

1. Slide the fuel valve lever toward the block to turn fuel ON.



01075

Fig. 19 – Fuel Valve Lever

2. If the engine is cold, close the choke (push choke lever to the left). To start a warm engine, leave the choke open (lever pushed to the right).

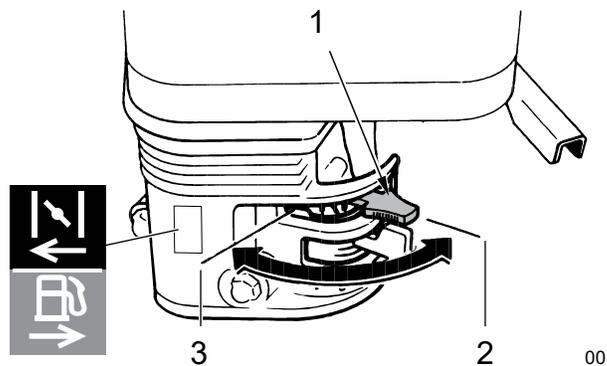
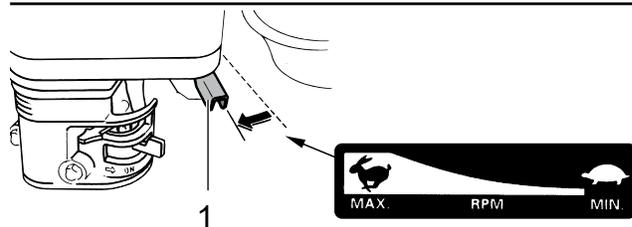


Fig. 20 – Choke Lever

1. Choke Lever
2. Choke OPEN
3. Choke CLOSED

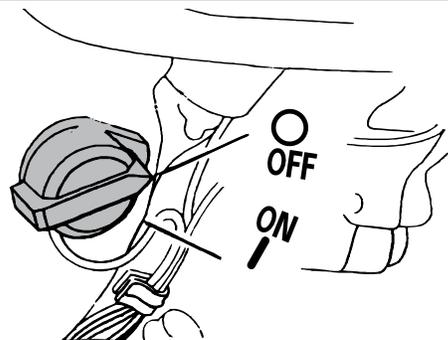
3. Move the throttle lever away from the MIN. position, about 1/3 of the way toward the MAX position.



00191

Fig. 21 – Engine Throttle (1)

4. Turn the engine ignition switch ON.



00187

Fig. 22 – Ignition Switch

5. Pull the starter grip out lightly until resistance is felt, then pull briskly in the direction of the arrow as shown below. Return the starter grip gently.

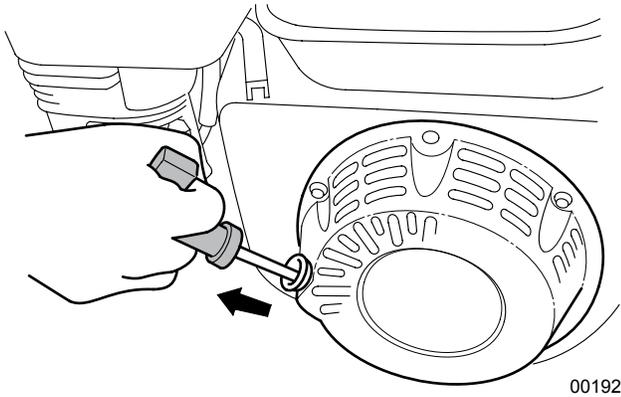


Fig. 23—Recoil Starter

IMPORTANT! Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.

- 6. Leave the engine operating at low throttle for a few minutes to allow it to warm up. Gradually push the choke control lever open (to the left) as the engine warms.

IMPORTANT! Engine should be warmed up before putting to work.

- 7. Once the engine is warmed, increase the throttle setting to MAX before beginning.

6.10 Stopping the Engine

To stop the engine in an emergency, turn the ignition switch OFF. Correct fault situation before restarting.

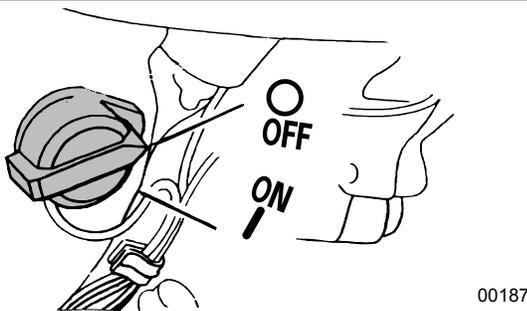


Fig. 24—Ignition Switch

Under normal conditions, use the following procedure:

1. Stop loading material onto the splitter bed.
2. Decrease engine speed to MIN.
3. Turn the ignition switch OFF.

6.11 Engaging Drive

The clutch lever engages / disengages the drive system.

IMPORTANT! Make sure rotor housing and hoppers are clear before engaging clutch. Engage slowly. Engaging the drive too quickly may cause the engine to stall.

- Push the lever down to engage the chipper drive system.

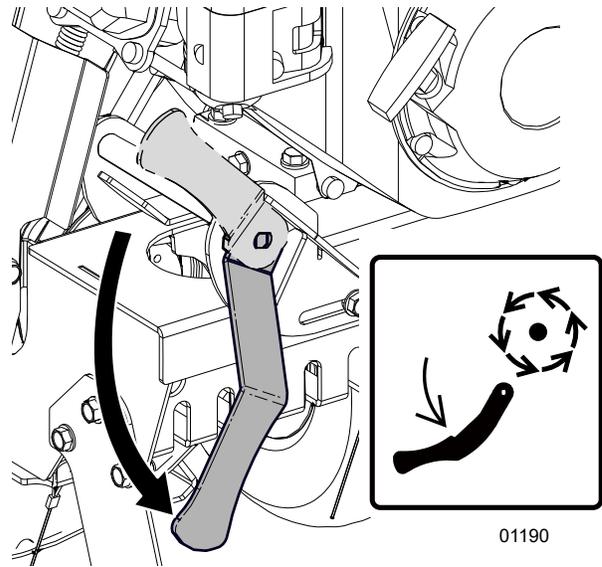


Fig. 25—Engaging Drive System

6.12 Chipping Operation

CAUTION!

Risk of injury from ejected wood chips. Chipper rotor can expel wood chips fast enough to cause injury or damage.

Direct chute discharge away from work area, people, animals, and objects.

W024

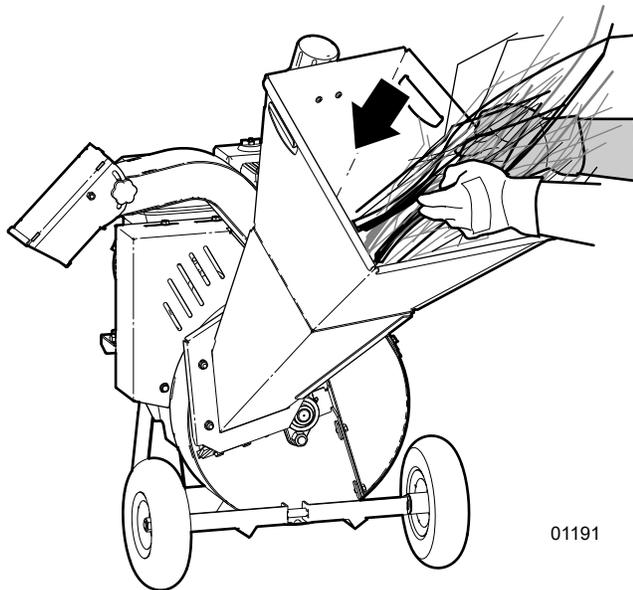
WARNING!

Never reach into the feed hopper. Doing so risks hands getting caught. Use a stick or branch to push in any material that does not move on its own.

If jammed, stop the engine, wait for the rotor to stop, then clear the jam.

W004

- When the rotor is up to speed, carefully slide the material into the chipper feed hopper and into the rotor. The rotor will tend to draw the material through.
- Feed the material into the hopper at a slow, steady rate.
- If the rotor begins to slow down, stop feeding material. Let the rotor get back up to speed, then continue.
- Do not reach into the chipper feed hopper further than the hopper opening.
- Use a stick or branch to push any material in that does not move on its own.



01191

Fig. 26—Chipper Feed Hopper



Some Helpful Tips:

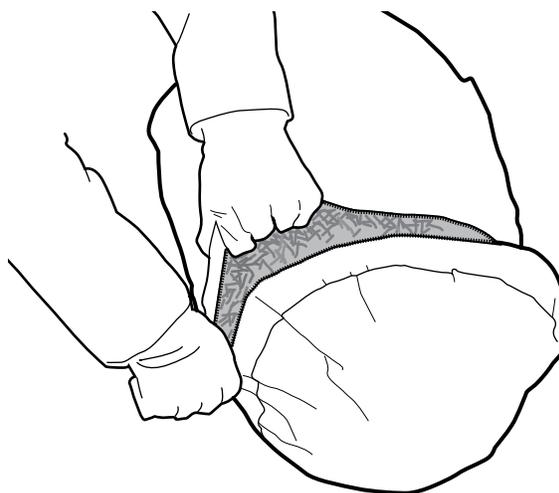
- Delimb branches that are greater than 1" (2-1/2 cm) before you feed them into the hopper. This can prevent the tree from jamming in the feed hopper.
- Place the chipper in-line with material so it can be fed straight into the feed hopper. Loading is easier and material handling is limited, preventing slipping or tripping.
- Use a stick or branch to push in any material that does not move on its own.

6.12.1 Collector Bag (Option)

A mulch collector bag can be attached to the discharge chute.

The mulch bag holds 2.7 ft³ (28 L) of material and is made of a mildew-resistant, synthetic material. The porous fabric allows air from the rotor to pass through without restricting collection of the chips.

- Adjust the deflector up and slip the collector bag over the end of the discharge chute.
- Use the strap on the end of the bag to attach and secure it to the chute.
- When full, loosen the strap and remove the bag from the chute. Unzip the bottom of the bag to empty it.



00229

Fig. 27—Emptying Collector Bag

- Zip up the end of the bag and re-attach it to the discharge chute.

6.12.2 Moving the Chipper

The chipper is designed to be moved easily by leaning it back on its wheels using the handholds in the shredder intake chute.

- Disengage the clutch and shut the engine down before moving.

IMPORTANT! The engine manufacturer recommends turning the engine off before tilting the chipper. Tilting it can cause a low oil level situation.

- Lean the chipper back onto its wheels and reposition.

IMPORTANT! When moving the chipper, avoid sharp turns. Abrupt turns could damage the tires.

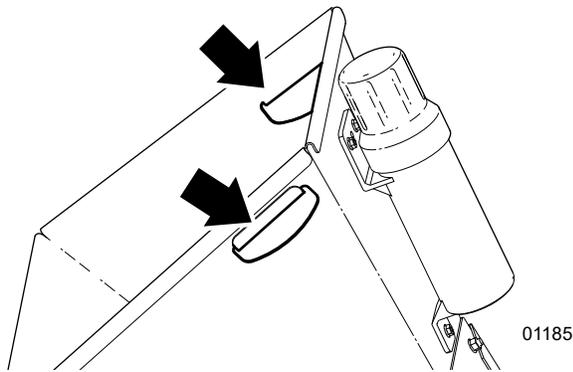


Fig. 28—Feed Chute Handholds

6.13 Unplugging the Chipper

Although the machine is designed to handle a wide variety of material without any problem, occasionally it could plug up. If that happens, follow this procedure to clear it:

1. Disengage the drive, turn the engine off and wait for all moving parts to stop.
2. Pull material out of the chipper feed hopper. Make sure nothing is jammed or wedged between the input opening and the rotor.
3. Pull the material out of the discharge chute. Use a stick to poke loose any material jammed into the discharge chute.
4. Start the engine, engage the drive system and check to see if the jam is cleared. **If the jam did not clear, proceed to Step 5.**
5. Disengage the drive, turn the engine off and wait for all moving parts to stop.
6. Remove the upper rotor housing.
7. Remove material from inside the rotor compartment.

CAUTION!

Avoid reaching into rotor compartment. Rotor chipper blades are very sharp. If reaching inside is necessary, use extreme care.

W003

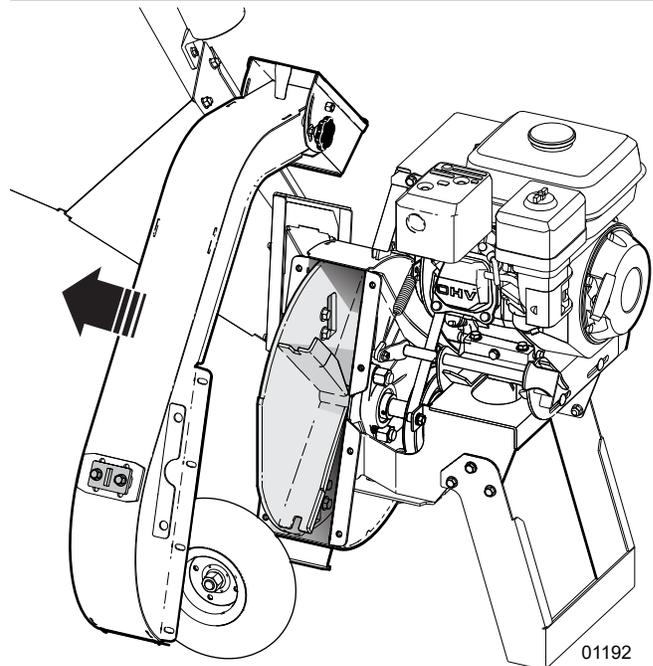


Fig. 29—Remove Upper Rotor Housing

8. Clean out the discharge and rotor.

**WARNING!**

Machine shown with guards removed for illustrative purposes only. Never operate machine with guards removed.

W001

9. If required, rotate the rotor **very carefully** and slowly by hand to be sure there is nothing jammed between the rotor and stationary blades. **Do not reach into the rotor housing if the rotor is moving.**
10. Install and secure rotor cover.
11. Start the engine. Engage the drive system and make sure material is cleared before resuming work.

6.14 Storage

After the season's use or when the chipper is not going to be used for a period, place the machine in storage.

IMPORTANT! Review the engine owner's manual to prepare the engine for storage.

- Clear out any debris from the machine.
- Wash the machine then operate it for few minutes to dry out the moisture from the inside.
- If storing for long periods, add fuel stabilizer to the fuel tank. Run the engine for 2–3 minutes so the stabilizer gets into the fuel system. Turn fuel valve off. Consult the engine owner's manual for specific information relating to engine storage.
- Thoroughly inspect the chipper. Check condition of the drive belt and pulley. Replace or repair worn or damaged parts.
- Store the unit in a dry, level area away from human activity. Do not let children play on or around the stored machine.
- If the chipper cannot be stored inside, cover it with a waterproof tarp.

Removing from Storage

When removing this machine from storage, follow the Pre-operation Checklist on page 22.

7. Service and Maintenance

7.1 Maintenance Safety

Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.

- Follow good shop practices:
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.
- Never operate the machine or the towing vehicle inside of a closed building. Make sure there is plenty of ventilation. Exhaust fumes may cause asphyxiation.
- Before servicing or repairing this machine, make sure it is safe to work on. See Safe Condition *page 7*.
- Allow engine and components to cool before performing maintenance. Hot components can cause burns to exposed skin.
- Never work underneath equipment unless it is securely blocked or supported.
- When performing any service or maintenance work, always use appropriate personal protection equipment.
- Where replacement parts are necessary, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer is not responsible for injuries or damages caused by use of unapproved parts or accessories.
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.
- Inspect and tighten all bolts, nuts and screws and check that all electrical and fuel connections are properly secured to ensure chipper is in a safe working condition.
- After completing a service procedure, make sure all safety shields and devices are reinstalled.
- When performing maintenance on this equipment always have at least two workers present. Do not work alone in case an emergency should arise.
- When cleaning any parts, do not use gasoline. Use a regular cleanser.
- Always use proper tools in good condition.

WARNING!

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

W033

WARNING!

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

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

W041

IMPORTANT! Refer to the engine manufacturer's manual for maintenance and service information.

7.2 Fluids and Lubricants

1. Engine Oil

SAE 10W-30 motor oil is recommended for general use. Refer to the engine manufacturer's manual for additional information on engine oils.

2. Grease

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

3. Engine Fuel

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). Refer to the engine manufacturer's manual for additional information on engine fuels.

4. Storing Lubricants

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

7.3 Maintenance Schedule

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

As Required	
Visually check drive belt tension.	
Remove entangled material from chipper.	
Check that all fasteners are tight.	

Every 8 hours or Daily	
Check engine oil level.	
Check fuel level.	
Perform Pre-operation check.	See <i>page 22</i>
Periodically inspect rotor blades, ledger knife, and twig breaker.	—

Every 50 hours or Annually	
Clean engine air filter.	See engine manual
Check drive belt tension and sheave alignment.	See <i>page 32</i>
Check rotor blade sharpness.	See <i>page 35</i>
Check ledger knife sharpness.	See <i>page 36</i>
Check twig breaker.	See <i>page 41</i>

Every 100 hours or Annually	
Change engine oil.	See engine manual
Change engine air filter.	See engine manual
Clean machine. Remove debris and entangled material.	—
Change fuel filter.	See engine manual
Grease rotor bearings.	See <i>page 31</i>

7.4 Grease Points



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

IMPORTANT! Use a hand-held grease gun for all greasing. Pump one shot of grease per fitting.

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

- Wipe grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.
- If fittings do not take grease, remove and clean them thoroughly. Replace grease fittings as necessary.

Location	Every 100 hours of operation or annually
1	Rotor bearings, one shot per side.

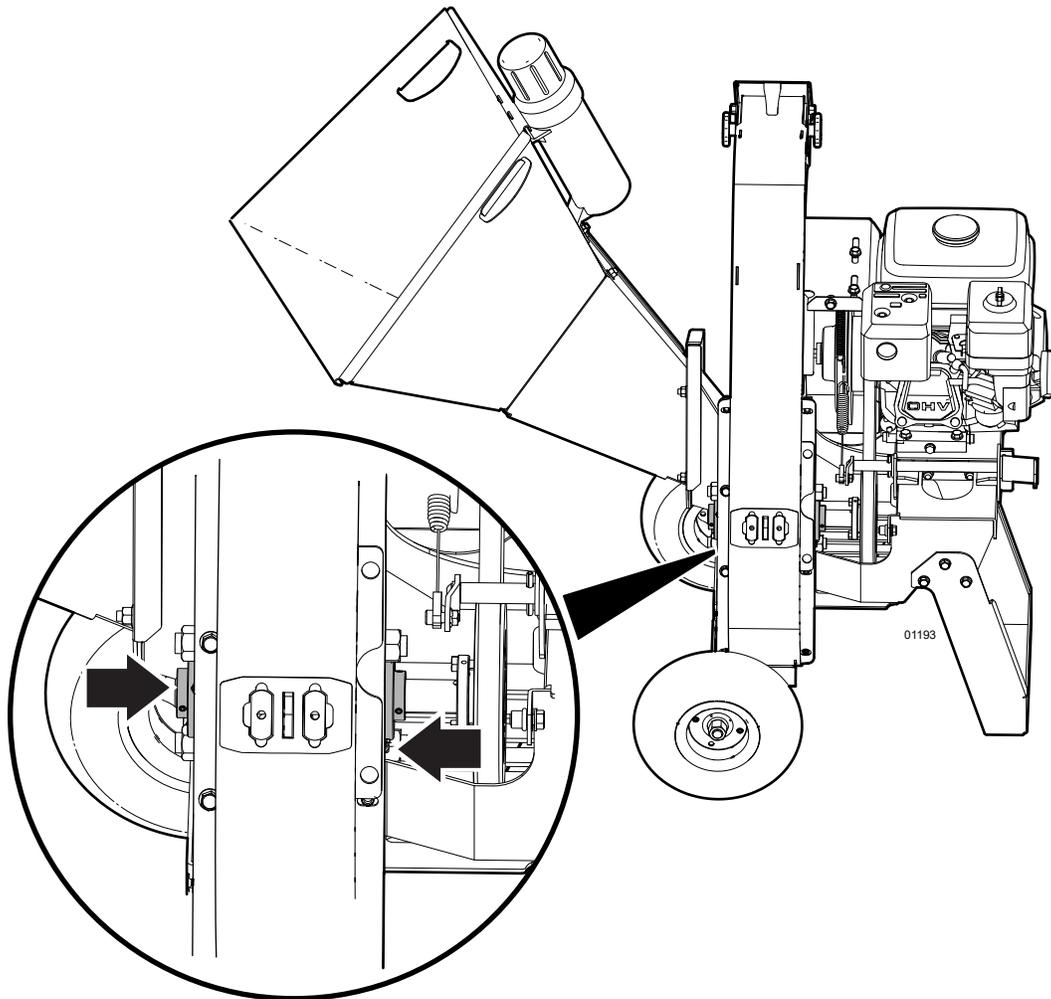


Fig. 30 – Rotor Bearing Grease Points

7.5 Drive Belt Replacement

The clutch on the engine shaft has an internal brake. When engaged, it brakes the engine pulley to stop the belt drive and rotor plate pulley. When the belt is in disrepair or loose, the ability to stop the rotor quickly may be affected. It is important to periodically check belt tension and condition. **Frayed, cracked or worn drive belts should be replaced.**

IMPORTANT! If changing or removing drive belt, always set correct belt tension. Make sure engine and rotor sheaves align properly.

Check drive belt tension every 100 hours of operation.

Make sure the engine is off and components are cool to touch beforehand.

1. Remove the drive belt shield.
2. Loosen the four bolts (1) that hold the engine mount to the main frame.
3. Turn the belt tensioning bolt (2) counterclockwise to loosen the belt. Slide the engine back and remove the belt.

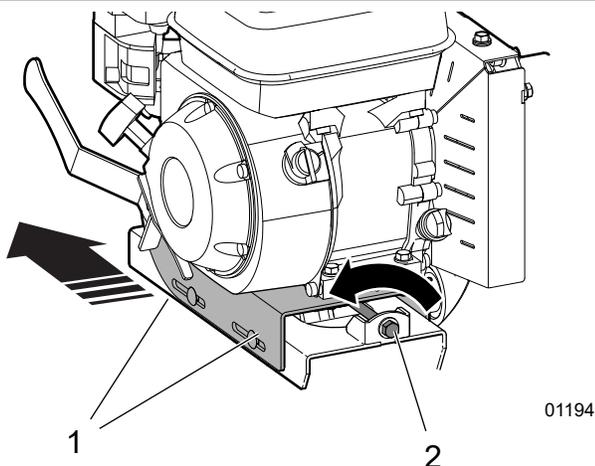


Fig. 31—Engine Mount

1. Engine Mount Bolts
2. Belt Tension Adjuster

4. Install the new belt, slide the engine forward, and set correct drive belt tension. See *Tensioning Drive Belt* to follow.

IMPORTANT! Check sheave alignment after changing the drive belt.

7.5.1 Drive Belt, Tensioning

Drive belt deflection should be no more than 1/4"–3/8" (6 mm–10 mm).

For accurate measurement use a drive belt tension gauge. If one is not available, the following method can be used.

1. Push on the drive belt by hand to check its deflection. Correct belt deflection is 1/4"–3/8" (6 mm–10 mm).

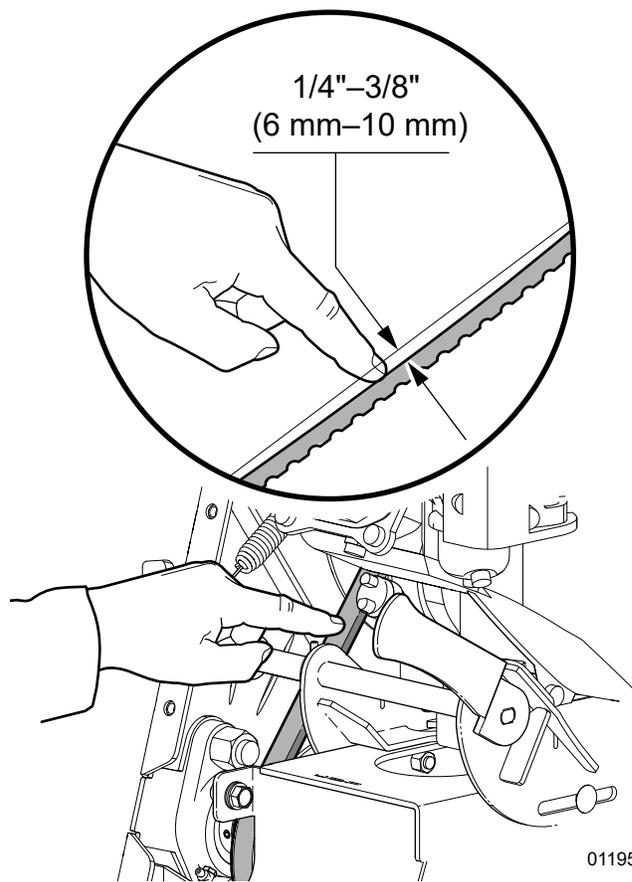


Fig. 32—Checking Drive Belt Tension

2. If the belt requires adjustment, loosen (do not remove) the four bolts that hold the engine mount to the main frame.

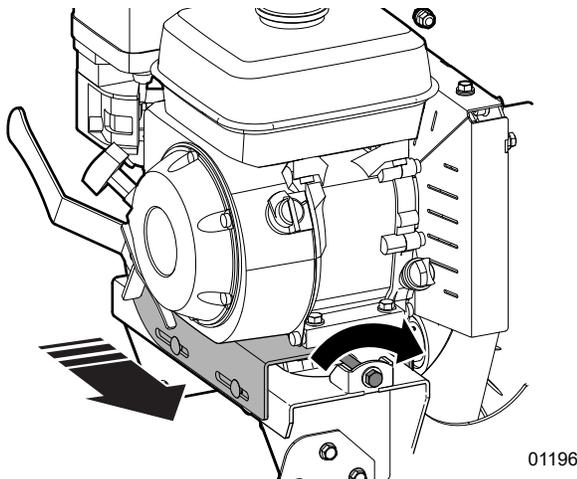


Fig. 33—Drive belt Tension Adjustment

3. Pull the engine back to snug up the belt, then tighten the bolts on the opposite side from the belt.
4. Turn the belt tension adjuster bolt clockwise to tighten the belt. Turn it counterclockwise to loosen the belt. Check and adjust belt tension accordingly. Be aware of belt alignment when adjusting belt tension. See *Drive Belt Alignment* to follow.
5. Recheck belt tension. Once set correctly, tighten up all four engine mount bolts. Re-install the belt shield.
6. Recheck belt tension after 10 hours of operation.

7.5.2 Drive Belt Alignment

Observe drive belt alignment every 8 hours of operation.

For accurate measurement use a laser alignment tool. If one is not available, the following method can be used.

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

Place a straight edge along the back face of the rotor sheave and compare the gap along the belt. The gap between the drive belt along the length of the straight edge must be equal. Adjust accordingly.

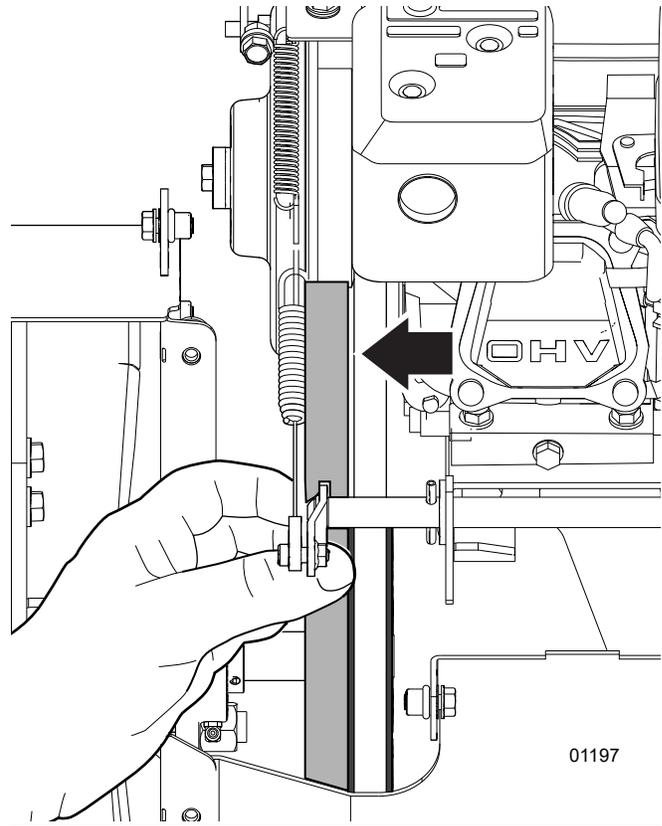


Fig. 34—Sheave Alignment

If the gap is not even along the length of the belt, determine whether the engine is square to the chipper frame. It may also be that the rotor sheave has moved in or out on the shaft. Belt misalignment can be corrected two different ways:

- Engine mount alignment
- Rotor sheave alignment

Engine Mount Alignment

After changing the drive belt, the angle of the engine mount could shift resulting in poor belt alignment.

1. First, make sure the bolts fastening the engine to the mount are tight. Make sure the engine is square to the base and the bolts are properly torqued.

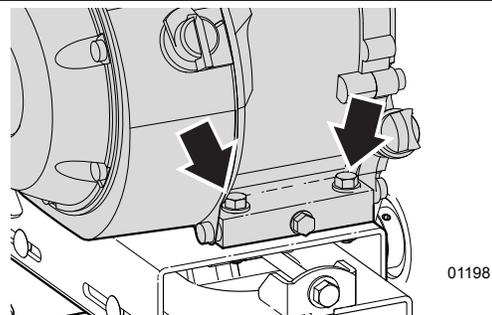


Fig. 35—Engine Mount Bolts

2. If the engine is sitting squarely on the mount, loosen the four mounting bolts.

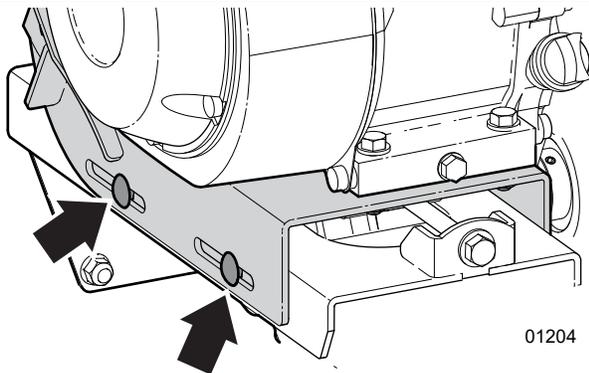


Fig. 36—Engine Base

3. Twist the engine to one side or the other on the base to adjust engine position. Recheck belt/sheave alignment. Repeat as necessary for the best result.
4. Recheck belt tension and adjust if required. Tighten the engine mount bolts.

Rotor Sheave Alignment

If the rotor sheave loosens on the shaft, it can become misaligned with the engine clutch, resulting in poor belt alignment.

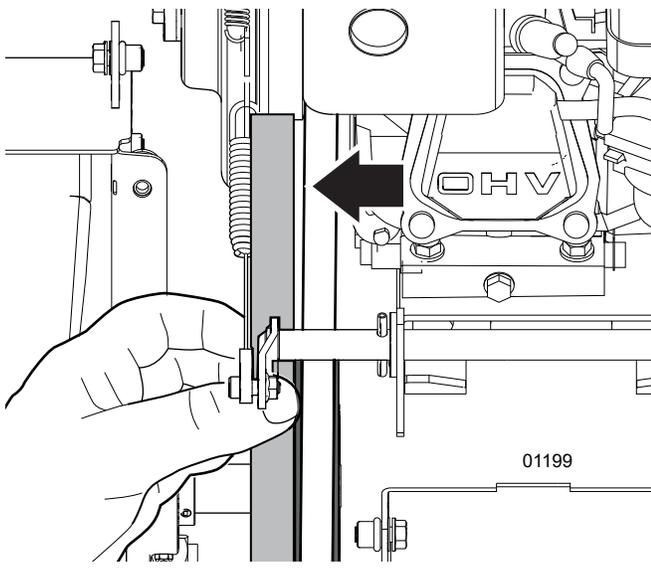
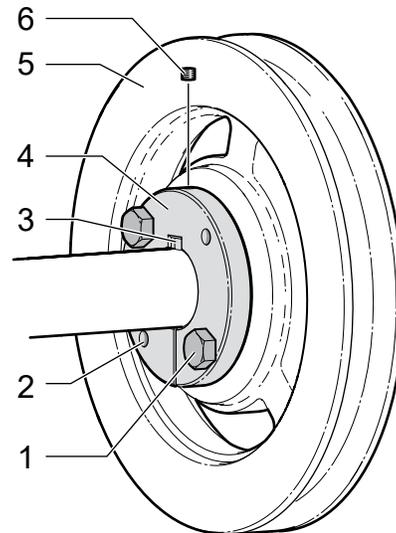


Fig. 37—Rotor Sheave Misalignment

1. Remove the drive belt.
2. Remove the set screw from the sheave (5).
3. Remove the sheave bolts (1) and thread them into the puller holes on the sheave hub (2).



01178

Fig. 38—Rotor Sheave

- | | |
|--------------------------|---------------|
| 1. Sheave Bolts | 4. Sheave Hub |
| 2. Threaded Puller Holes | 5. Sheave |
| 3. Shaft key | 6. Set Screw |
4. Turn in the bolts evenly in 1/4-turn increments to pull the hub and the sheave slightly apart so they can move on the shaft.
 5. Lightly tap the sheave hub with a block of wood to move it in or out on the shaft so it is re-aligned with engine clutch sheave. Confirm with the straight edge along the face of the engine clutch and rotor sheave.
 6. Once aligned, insert the hub bolts and snug them up to the sheave. Recheck alignment.
 7. Tighten hub bolts evenly in 1/4-turn increments until firmly seated. Install and tighten the set screw.
 8. Re-check the alignment again with the straight edge once the bolts are tight. Re-check belt tension.
 9. Reinstall the guard.

7.6 Rotor Blades – Checking

Observe rotor blade performance daily. Check sharpness every 50 hours.

The rotor is equipped with two opposing blades. The rotor blades shear material off as they rotate past the stationary ledger knife. Keep the blades sharp for optimum performance. Sharp blades reduce the amount of power required during operation. Periodic inspection is recommended.

NOTE: Check the sharpness of the knives more frequently if processing material with a lot of sand, soil or grit in it. Reverse or sharpen the knives if performance diminishes. If sharpening or replacing a blade, do the opposing one as well.

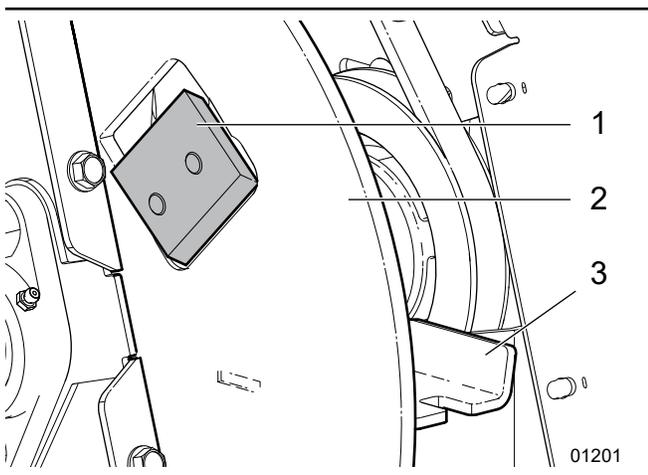


Fig. 39–Rotor

1. Rotor Blade
2. Rotor
3. Rotor Paddle

! WARNING!

Machine shown with guards removed for illustrative purposes only. Never operate machine with guards removed.

W001

Remove the blades from the rotor to sharpen them. Always sharpen the blade edge at a 45° angle to provide the best cutting effect as the rotor turns.

7.7 Rotor Blades – Changing

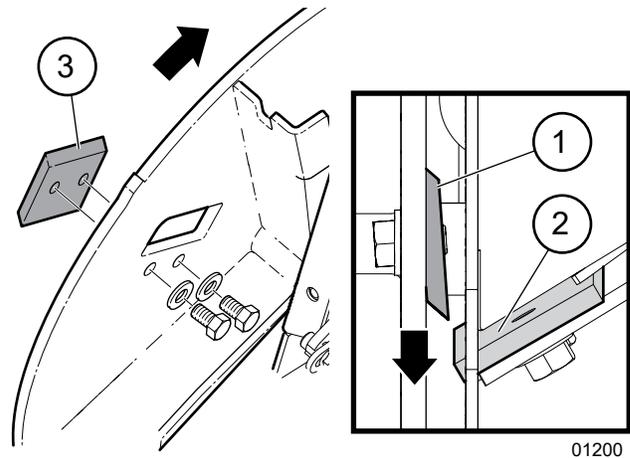


Fig. 40– Sharpening / Changing Rotor Blades

1. Rotor Blade
2. Ledger Knife
3. Rotor Blade Leading Edge

Procedure

1. Open the rotor housing to manually rotate the rotor plate so one of the blades is accessible.

NOTE: Rotating the rotor requires lifting the clutch lever off the brake position slightly. Brake should be re-engaged to lock rotor before attempting to loosen bolts.

2. Release the clutch lever so the brake engages to lock the rotor. Remove the bolts and the blade.
3. Lift the clutch lever off the brake position slightly to rotate the rotor and remove the other rotor handle.
4. If sharpening the blades, sharpen both evenly. Sharpen or rotate each in the same manner. If a blade needs to be replaced, replace both blades.

IMPORTANT! Treat both blades equally to keep the rotor balanced as it turns.

5. Install the blades with the leading edge out. Apply blue Loctite® to the bolt threads and torque-tighten bolts to **33 lbf•ft (45 N•m)**.

7.8 Ledger Knife

Observe ledger knife performance daily. Check sharpness every 50 hours.

The ledger knife is bolted inside the lower rotor housing assembly. As the rotor turns, material fed into the chipper is sheared off at the ledger knife by the rotor blades. Sharp knives provide optimum performance and reduce the amount of power required during operation. Periodic inspection is recommended.

When the corner of the ledger knife facing the rotor blade rounds over, the blade can be removed and re-installed with a different corner facing the rotor blade. Once all four corners have been rounded, remove the knife to sharpen or replace it. Sharpen the edge at 90°.

 **NOTE:** A Clearance Setting Gauge is available from your dealer.

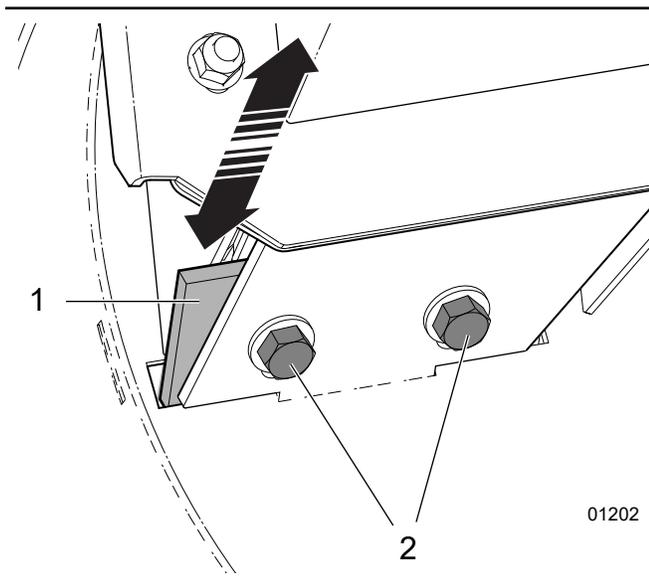


Fig. 41—Ledger Knife in Lower Rotor Housing

1. Ledger Knife
2. Mounting Bolts / Washers

7.8.1 Ledger Knife, Adjusting Clearance

 **NOTE:** If the ledger knife is worn enough that the proper clearance cannot be set, it should be replaced.

1. Remove the bolts that hold the ledger knife to the mount.
2. Carefully remove the knife. Pull it out and up slightly to the side to clear the tire.
3. Rotate the blade and replace, or replace with new or re-sharpened blade.
4. Hand tighten the bolts.
5. Set the clearance between the ledger and rotor blades. **The clearance between the rotor blades and the ledger knife should be kept at 1/32–1/16" (.76–1.52 mm) to obtain the best performance.** Make sure you set the ledger knife square with the rotor blades.
6. Apply blue Loctite® to the bolt threads and install the ledger knife. Torque-tighten bolts to **33 lbf•ft (45 N•m)**.

7.9 Twig Breaker

The Twig Breaker is bolted onto the discharge chute. As the discharge paddles pass around by the twig breaker, material is further broken up as it exits the discharge chute.

When inspecting the twig breaker, look for damage such as gouges, a bent, or missing tooth. A damaged twig breaker should be replaced.

If the twig breaker tooth is showing wear, remove it and rotate it around to wear on the other side.

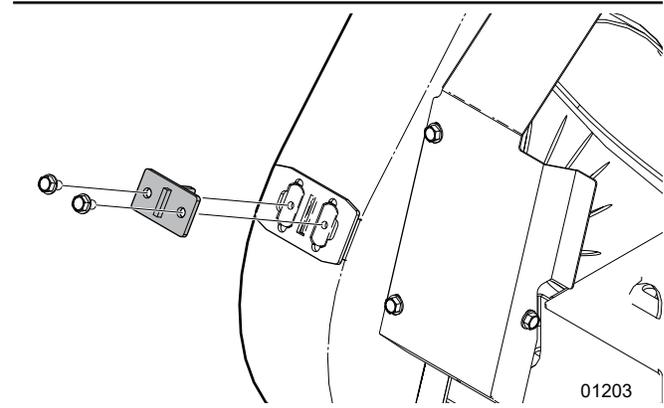


Fig. 42—Twig Breaker

8. Troubleshooting

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

If a problem persists after reading through the Troubleshooting section, contact the local dealer, distributor or Wallenstein Equipment. Have the serial number ready.

Engine related issues

Refer to the engine owner's manual included in the manual tube.

Problem	Cause	Solution
Rotor does not turn.	Obstructed discharge.	Clear debris from discharge chute.
	Rotor plugged.	Inspect and clear chipper hopper lower rotor housing and rotor.
	Loose belt.	Follow tension adjustment procedure and tighten belt.
	Brake clutch spring broken.	Remove belt shield and inspect.
	Broken belt.	See belt replacement procedure <i>page 32</i> .
Material feeding in too slow.	Engine or rotor speed too low.	Set throttle to increase rotor rpm.
	Blades or knives are dull or clearance incorrect.	Check rotor and ledger knives. Rotate, sharpen or replace.
	Rotor blade knife edge angle incorrect.	Re-sharpen rotor knives to specified 45° angle and check that blade is installed properly.
	Collector bag full.	Detach bag and empty.
	Obstructed discharge.	Clear debris from discharge chute or material screen.
Unusual machine vibration while operating.	Broken or missing ledger knife.	Inspect. Replace if damaged or missing.
	Rotor may be bent.	Check for rotor wobble. Replace rotor.
Machine requires excessive power or stalls.	Obstructed discharge.	Clear debris from discharge
	Clutch being engaged too quickly.	Engage clutch slowly. Make sure rotor housing and hoppers are clear before engaging.
	Collector bag full.	Detach and empty bag.
	Feeding in too much material.	Feed smaller amounts.
	Feeding material too quickly.	Feed larger material slowly.
	Rotor plugged.	Inspect and clear chipper hopper lower rotor housing and rotor.
	Space between rotor blade and ledger knife too large.	Use ledger gauge tool to check clearance. See <i>page 36</i> .
	Dull blades.	Check rotor blade and ledger knife. Rotate, sharpen or replace. See <i>page 36</i> .
	Engine problem.	Refer to engine manufacturer's manual.
Noisy drive belt, premature wear.	Drive belts loose or worn.	Inspect drive belts. Adjust tension or replace if needed. See <i>page 35</i> .
	Wrong replacement belt.	Inspect drive belts. Replace. See <i>page 32</i> .
	Rotor plugged.	Inspect and clear chipper hopper, lower rotor housing, and rotor.
	Rotor bearings.	Check and replace if required.
Poor Chip Quality.	Dull blades.	Check rotor and ledger knives. Rotate, sharpen or replace. See <i>page 35</i>
	Drive belts loose or worn.	Inspect drive belts. Adjust or replace if needed. See <i>page 32</i> .
	Poor quality material.	Material is small or rotting. Mix with higher quality material.
	Knife clearance incorrect.	Check and adjust as required. See <i>page 35</i> .

9. Specifications

9.1 Machine Specifications¹

Model	BXC34B
Engine	Honda® GX200
Horsepower	5.5 hp (4.1 kW) @ 3600 rpm
Drive System	Brake-Clutch with Belt Drive
Number of Rotor Blades	2 Offset
Chipper Hopper Opening:	18" x 18" (46 cm x 46 cm)
Chipper Housing Opening:	4" x 4" (10 cm x 10 cm)
Rotor Diameter:	17" (43 cm)
Blade Type	Hardened Tool Steel
Rotor Specifications	28 lb (13 kg) 17 in (43 cm)
Feeding System	Manual – Chipper and Shredder Hopper
Chipper Capacity	3 in (8 cm) Max Diameter Material
Discharge	Blower with Positional Deflector
Tires	4.10 X 3.5 Rubber
Dimensions Length x Width x Height	49" x 35" x 44" (124 cm x 89 cm x 112 cm)
Weight	213 lb (97 kg)
Accessories	Garden Trailer Hitch
	Mesh Bag 2.7 ft ³ (28 L)
	Ledger Clearance Setting Gauge

¹ Specifications subject to change without notice

9.2 Common Bolt Torque Values

Checking Bolt Torque

The tables shown give correct torque values for various bolts and capscrews. Tighten all bolts to the torque values specified in the table, unless indicated otherwise. Check tightness of bolts periodically.

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

IMPORTANT! Torque figures indicated in the table are for non-greased or non-oiled threads. Do not grease or oil threads unless indicated otherwise. When using a thread locker, increase torque values by 5%.

 **NOTE:** Bolt grades are identified by their head markings.

Imperial Bolt Torque Specifications						
Bolt Diameter	Torque Value					
	SAE Gr. 2		SAE Gr. 5		SAE Gr. 8	
	lbf•ft	N•m	lbf•ft	N•m	lbf•ft	N•m
1/4"	6	8	9	12	12	17
5/16"	10	13	19	25	27	36
3/8"	20	27	33	45	45	63
7/16"	30	41	53	72	75	100
1/2"	45	61	80	110	115	155
9/16"	60	95	115	155	165	220
5/8"	95	128	160	215	220	305
3/4"	165	225	290	390	400	540
7/8"	170	230	420	570	650	880
1"	225	345	630	850	970	1320



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



10. Product Warranty



WARRANTY

Effective on products retailed on or after January 1, 2015.

**Register your product online at www.wallensteinequipment.com
within 30 days of purchase to activate warranty.**

This product is warranted to be free of defects in materials and workmanship under normal use and service, for a period of

**Five Years for Consumer
Two Years for Commercial / Rental**

from the date of purchase, when operated and maintained in accordance with the Operating and Maintenance Instructions supplied with this unit. Warranty is limited to the repair of the product and/or replacement of parts.

This warranty does not cover the following items:

- 1) Machines or parts lost or damaged during shipment.
- 2) Normal maintenance or adjustments after initial pre-service and set up is completed.
- 3) Normal replacement of service items.
- 4) Accessory items / parts not supplied by Wallenstein Equipment Inc.
- 5) Damages resulting from:
 - misuse, negligence, accident, theft or fire
 - use of improper or insufficient fuel, fluids or lubricants
 - use of parts or after market accessories other than genuine Wallenstein Equipment Inc. 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 Wallenstein dealer or distributor

Engines are covered by the manufacturer of the engine and covered by the warranty period specified by that manufacturer.

Engine warranty must be registered at the engine manufacturer's website. For service, contact your local engine dealer.

Under no circumstances will the manufacturer be liable for any consequential damage or expense of any kind, including loss of profits. The manufacturer is under no circumstances liable for tow vehicle of any kind. The manufacturer is not liable for the maintenance of the product.

This warranty is extended only to the original purchaser and is not transferable. Warranty is void if repairs are attempted by anyone other than a Wallenstein Authorized Service Centre.

If a difficulty develops with the product, contact the local dealer from which you purchased the unit. Only Wallenstein authorized dealers are authorized to make repairs to the product or affect the replacement of defective parts, which will be done at no charge within a reasonable time after the receipt of the product. Unit or parts shall be returned at the customer's expense to the Authorized Service Center. Damage in transit is not covered by warranty. Include the original purchase receipt with any claim (keep a copy of the receipt for your files).

The distributor's liability under warranty is limited to the repair of the product and/or replacement of parts and is given to the purchaser in lieu of all other remedies including incidental and consequential charges. There are no warranties, expressed or implied, other than those specified herein.

Wallenstein Equipment Inc.
7201 Line 86, Wallenstein ON Canada N0B 2S0
Phone: 519-699-9283 Fax: 519-699-4146 Attention Warranty Dept.
Email: warranty@wallensteinequipment.com

Revised Aug-2018

WARRANTY VOID IF NOT REGISTERED

11. Index

A		L	
Air Cleaner Inspection.....	23	Ledger Knife.....	36
B		Adjusting.....	36
Before Starting the Engine.....	21	Lubricants.....	29
Break-in.....	22	M	
C		Machine Components.....	16
Chipping Operation.....	25	Machine Set-up.....	23
Choke Lever.....	18	Maintenance Decals.....	6
Collector Bag.....	26	Maintenance Schedule.....	30
Common Bolt Torque Values.....	39	Moving the Chipper.....	27
Controls.....	18	O	
Drive Engage Handle.....	20	Operating Instructions	
Engine Controls.....	18	Before Starting the Engine.....	21
Feed Chute Handholds.....	20	Chipping Operation.....	25
D		Engaging Drive.....	25
Decals on the machine, types.....	6	Engine Air Cleaner Inspection.....	23
Delivery Inspection Report.....	4	Engine Oil Level Check.....	22
Drive Belt		Fuel Level Check.....	23
Alignment.....	33	Machine Break-in Period.....	22
Tensioning.....	32	Machine Set-up.....	23
Drive Engage Handle		Operating Safety.....	21
Drive Position.....	20	Pre-operation Checklist.....	22
Stop Position.....	20	Safety Rules.....	21
E		Starting the Engine.....	24
Engaging Drive.....	25	Stopping the Engine.....	25
Engine.....	29	Storage.....	28
Engine Air Cleaner.....	23	Unplugging the Chipper.....	27
Engine Controls		Operating Safety.....	21
Choke Lever.....	18	Operator Orientation.....	15
Fuel Shut-off Valve.....	19	P	
Ignition Switch.....	18	Personal Protective Equipment (PPE).....	8
Recoil Starter.....	19	Pre-operation Checklist.....	22
Throttle Lever.....	19	Product Warranty.....	40
Engine Fuel.....	29	R	
Engine Mount Misalignment.....	33	Refueling.....	23
Engine Oil.....	29	Refueling Safety.....	9
Engine Oil Level Check.....	22	Removing from Storage.....	28
Equipment Safety Guidelines.....	8	Replacing Damaged Safety Signs.....	13
F		Rotor Blades.....	35
Familiarization.....	15	Changing.....	35
Machine Components.....	16	Rotor Sheave Misalignment.....	34
Operator Orientation.....	15	S	
To the New Operator.....	15	Safe Condition.....	8, 21
Fluids.....	29	Safety	
Fuel Level – Checking.....	23	Being Prepared.....	9
Fuel Shut-off Valve.....	19	Gas Engine Safety.....	10
G		Maintenance Safety.....	29
Gas Motor Safety.....	10	Refueling Safety.....	9
Grease Points.....	31	Replacing Damaged Safety Signs.....	13
Grease Type.....	29	Safe Condition.....	8
I		Safety Alert Symbol.....	7
Ignition Switch.....	18	Safety Rules.....	7
Informative Decals.....	6	Signal Words.....	7
		Tire Safety.....	9
		Why Safety is Important.....	7

Safety Alert Symbol.....	7
Safety Notice Decals.....	6
Safety Rules.....	7, 21
Safety Sign Explanations.....	12
Safety Sign Locations.....	11
Safety Signs.....	11
Locations.....	11
Safety Sign Explanations.....	12
Safety Training.....	8
Serial Number Location.....	5
Service and Maintenance	
Drive Belt Tension.....	32
Grease Points.....	31
Ledger Knife – Checking.....	36
Maintenance Schedule.....	30
Rotor Blades – Changing.....	35
Rotor Blades – Checking.....	35
Sheave Alignment.....	33
Twig Breaker.....	36
Sign-off form.....	14
Specifications.....	38
Common Bolt Torque Values.....	39
Machine Specifications.....	38
Starting the Engine.....	24
Stopping in an Emergency.....	25
Storage.....	28
Removing from Storage.....	28

T

Throttle Lever.....	19
Troubleshooting.....	37
Engine related issues.....	37
Twig Breaker.....	36

U

Unplugging the Chipper.....	27
Upper Rotor Housing, Opening.....	27

WALLENSTEIN