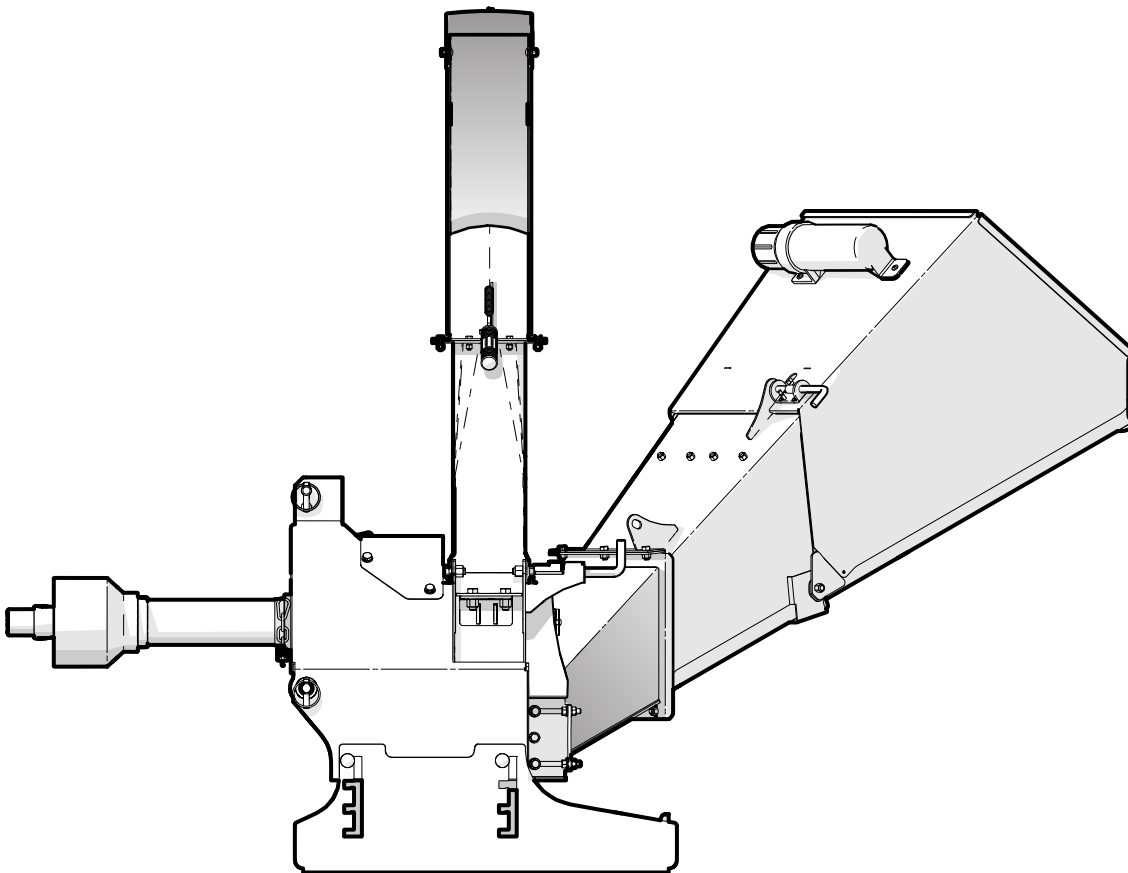


OPERATOR'S MANUAL

BXS Series 3PH SELF-FEED CHIPPER



Rev Dec-2019

WALLENSTEIN

1. Introduction

Congratulations on your choice of a Wallenstein BX Series 3 Point Hitch Wood Chipper to compliment your operation. This equipment has been designed and manufactured to meet the needs of a discerning timber or landscaping industry.

Safe, efficient and trouble free operation of your Wallenstein Wood Chipper requires that you and anyone else who will be using or maintaining the chipper, read and understand the Safety, Operation, Maintenance and Trouble Shooting information contained within the Operator's Manual.

This manual covers all variations of the Wallenstein BX Series 3-point Hitch Wood Chipper. Your particular model may vary from the illustrations shown depending on your options package.

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

Wallenstein Equipment Inc. • © 2019

This manual covers models:

BX36S

BX52S

BX72S

BX102S



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

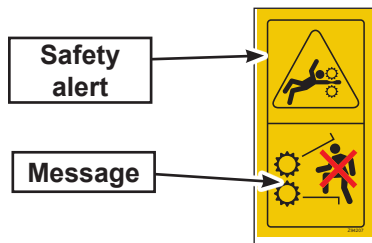
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2. Decal Information

As you begin to get familiar with your Wallenstein product, you will notice that there are numerous decals located on the machine. Here is a brief explanation of what they are for and how to read them. There are different types of decals for safety, information, and product identification.

Safety Decals are pictorial with a yellow background and generally 2 panel. The top panel shows the safety alert (the potential hazard) and the bottom panel shows the message (how to avoid the hazard).



Safety Notice Decals are pictorial with a blue background and generally rectangular with single or multiple symbols. The decal illustrates requirements for safe operation (safety equipment, housekeeping and so on). These decals are accompanied by detailed instructions in the owner's manual, with the decal illustrated alongside.

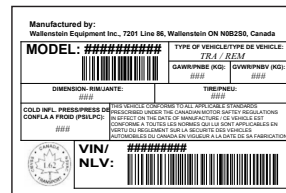


Informative Decals are generally pictorial with a white background and can vary to the number of panels.

The decal illustrates the function of a feature and is accompanied by detailed instructions in the owner's manual.



Product Decals are associated with the product and carry various messages such as model, serial number, and so on.



Maintenance Decals are associated with the product and carry various messages. They are generally pictorial. They may be round or rectangular, have a green background and can vary to the number of panels. The decal may illustrate the type maintenance and frequency in time between services. Decals are accompanied by detailed instructions in the owners manual, with the decal illustrated alongside.



For a complete illustration of decals and decal locations, download the parts manual for your model product at www.wallensteinequipment.com.

3. 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

WARRANTY VOID IF NOT REGISTERED

4. Delivery Inspection Report

WALLENSTEIN

BX S-Series 3 Point Hitch Wood 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 (dd/mm/yy)

<input checked="" type="checkbox"/>	Pre-delivery Inspection
Inspect for damage from shipping. Immediately contact the shipping company if damage is found.	
BX S-Series Wood Chipper	
	Check blade clearance and that rotor turns freely
	Check that discharge and deflector move freely
	Check that all fasteners are tight
	Check that lock pins align and move freely
	Check all grease points and lubricate pivot points
	Review operating and safety instructions in the Operator's Manual
Safety Checks	
	All Safety Decals Installed
	Guards and Shields Installed and Secured
	Check that the Slow Moving Vehicle sign is installed
	Check that retainers are installed through hitch points
	Review operating and safety instructions in the Operator's Manual

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 (dd/mm/yy)

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 (dd/mm/yy)

5. 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.

The BX52S is shown, however the serial plate location is the same for all BXS Series machines.

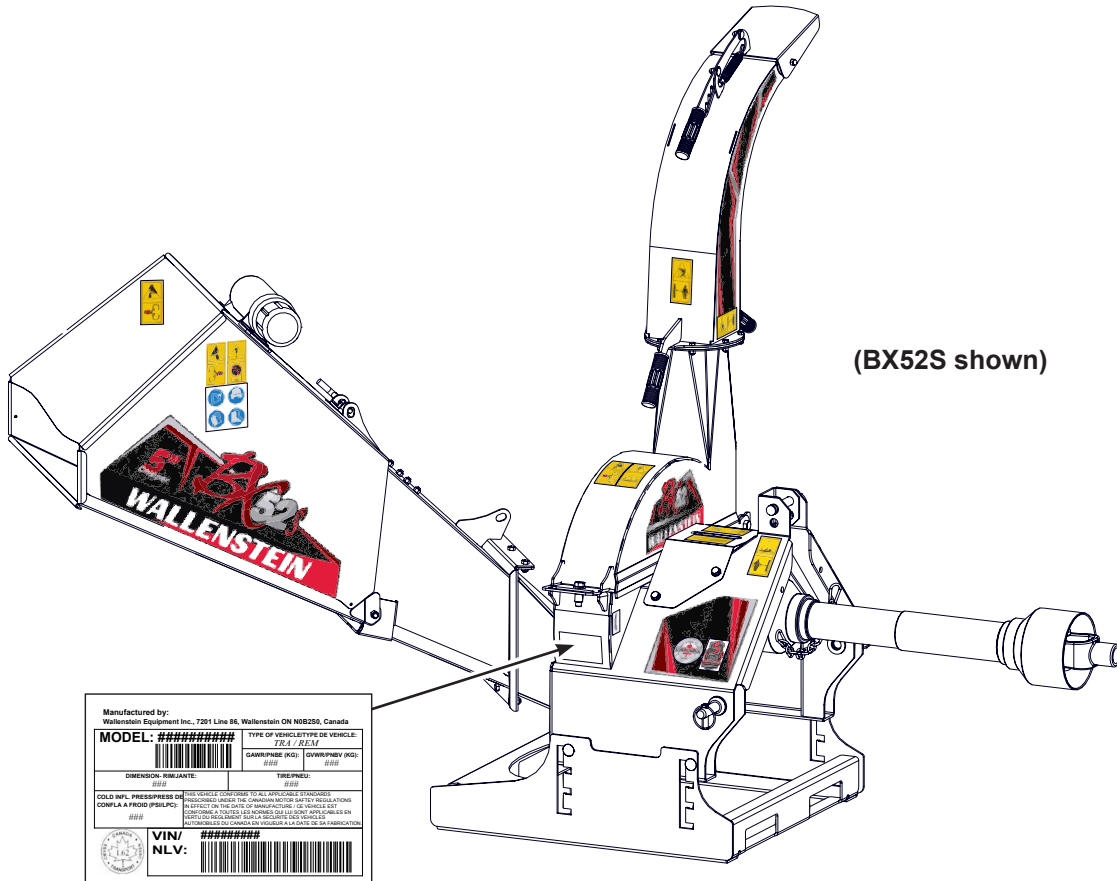


Fig. 1 – Serial Number Plate Location (Typical)

Record Product Information Here	
Model:	
Serial Number:	

6. Safety

6.1 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 Wood Processor 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.

6.2 Why is SAFETY important?

Three Big Reasons:

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

6.3 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.

 **NOTE:** *(plus text) – indicates an additional explanation for an element of information.*

6.4 General

YOU are responsible for the **SAFE** operation and maintenance of your Wallenstein Trailer Wood Processor. **YOU** must ensure that you and anyone else who is going to use, maintain or work around the Wood Processor be familiar with the operating and maintenance procedures and related **SAFETY** information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be used while using your Wallenstein Trailer Wood Processor.

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

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

6.5 Safety Do's and Don'ts

- **DO** give operating instructions to operators or employees before allowing them to operate the machine, and **REVIEW** annually thereafter.
- **DO** read and understand ALL Safety and Operating instructions in the manual and follow them. Most accidents can be avoided. The most important safety device on this equipment is a **SAFE** operator.
- **DO** review safety related items annually with all personnel who will be operating or performing maintenance.



- **DO** wear appropriate Personal Protective Equipment (PPE). This equipment includes but is not limited to the following:



- A hard hat
- Heavy gloves
- Hearing Protection
- Respirator or filter mask
- Protective shoes with slip resistant soles
- Protective glasses, goggles or face shield

- **DO** have a first-aid kit available for use should the need arise and know how to use it.



- **DO** read and understand all safety signs located on the machine before using, maintaining, adjusting or cleaning the grapple.
- **DO** inspect and secure all guards before starting.
- **DO** check cables, chains and chutes, that they are clear of debris prior to starting the machine.

6.6 Safe Condition

Always set the machine in a **Safe Condition** before performing any service, maintenance work, storage preparation, or hooking up.

Placing the machine in a Safe Condition involves performing the following:

- Disengage the PTO.
- Shut off the tractor engine.
- Make sure all components have stopped moving.
- Remove and retain ignition key.
- Block and chock the tractor wheels.
- Set rotor lock if required.
- Point discharge chute away from operator working area.
- Ensure the adjustable ski base is sitting on the ground

- **DO** have a fire extinguisher available for use should the need arise and know how to use it.



- **DO** think SAFETY! Work SAFELY!
- **DO NOT** expect a person who has not read and understood all use and safety instructions to operate the machine. An untrained operator is not qualified and exposes himself and bystanders to possible serious injury or death. It is the owners responsibility to the operator to ensure familiarity and understanding of the machine.
- **DO NOT** modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- **DO NOT** allow riders during transport.
- **DO NOT** risk injury or death by ignoring good safety practices.

6.7 Operating Safety

- Read and heed the safety signs on the 3 Point Hitch Wood Chipper. Clean or replace all safety signs if they cannot be clearly read and understood. They are there for your safety, as well as the safety of others. The safe use of this machine is strictly up to you, the operator.
- Study this manual to make sure you have all safety equipment attached. All things with moving parts are potentially hazardous. There is no substitute for a cautious, safe-minded operator who recognizes potential hazards and follows reasonable safety practices. The manufacturer has designed this 3 Point Hitch Wood Chipper to be used with all its safety equipment properly attached, to minimize the chance of accidents.
- Close and secure rotor cover before operating.
- Close and secure all guards, deflectors and shields before starting and operating.
- Read and understand operator's manual before starting. Review safety instructions annually.
- Use Personal protection equipment including hearing protection, hard hat, safety glasses, safety shoes, and gloves during assembly, installation, operation, adjustment, maintaining, repairing, removal, or moving of this equipment. Do not allow long hair, loose-fitting clothing, or jewelry to be around moving parts.
- Keep hydraulic lines and fittings tight, in good condition and free of leaks.
- Never place any part of your body where it would be in danger if movement of equipment should occur during assembly, installation, operation, maintenance, repairing, unplugging or moving.
- Turn machine off, stop and disable engine, remove and retain ignition key, set park brake and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging the chipper. Inspect machine for damaged or loose parts before resuming work.
- Do not run machine inside a closed building to prevent asphyxiation from engine exhaust.
- Use care when feeding material into chipper. Do not put metal, bottles, cans, rocks, glass or other foreign material into the wood chipper. If these materials enter the chipper, stop machine, turn engine off and remove ignition key before clearing the object.

- Never consume alcoholic beverages or use drugs which can impair alertness or coordination while operating this equipment. Consult your doctor about operating this machine while taking prescription medications.
- Do not allow riders on this machine at any time. There is no safe place for any riders.
- Never allow children or unauthorized people to operate or be around this machine.
- Keep children and persons unfamiliar with machine operation away. The operator should be a responsible, physically able person trained in equipment operation. If the elderly are assisting with work, their physical limitations need to be recognized and accommodated.
- Do not reach into rotor or feed hopper openings when the engine is running. Install and secure access covers before starting engine.
- 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.
- Do not move or transport chipper when the rotor is turning.
- Do not exceed a safe travel speed when transporting.
- Keep chipper resting on the ground during operation. Using the chipper while raised off the ground is dangerous and will result in damage to the machine, and potential personal injury.
- Never have the exit chute pointing towards the hopper or operator working area. Chips can come out of the chute with enough force to cause injury.

6.8 Equipment Safety Guidelines

Safety of the operator and bystanders 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. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury or death, study the following precautions and insist those working with you, or for you to follow them.

In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be used in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.

1. Replace any safety sign or instruction sign that is not readable or is missing. Location of such safety signs is indicated in this manual.
2. 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.
3. In addition to the design and configuration of this implement, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to Safety Messages and operation instruction in each of the appropriate sections of the tractor and machine manuals. Pay close attention to the Safety Signs affixed to the tractor and the machine.
4. 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..**

6.9 Safety Training

1. Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator or bystander.
2. In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of this equipment.
3. The best safety feature is an informed, careful operator—we ask you to be that kind of an operator. It is the operator's responsibility to read, understand and follow ALL safety and operation instructions in the manual. Accidents can be avoided.
4. Working with unfamiliar equipment can lead to careless injuries. Read this manual before assembly or using the machine to acquaint yourself with it. If this machine is used by any person other than yourself, or is loaned or rented, it is the machine owner's responsibility to make certain that prior to using, the operator:
 - 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
5. 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 use and safety instructions is not qualified to use the machine. An untrained operator exposes himself and bystanders to possible serious injury or death. If the elderly are assisting with the work, their physical limitations need to be recognized and accommodated.
6. Know your controls and how to stop the machine and the tractor quickly in an emergency. Read this manual thoroughly..

6.10 Maintenance Safety

Place the machine in a Safe Condition before performing any service, maintenance work or storage preparation. See *Safe Condition on page 9*

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.



- Make sure there is plenty of ventilation. Never operate the engine of the towing vehicle in a closed building. The exhaust fumes may cause asphyxiation.
- Before working on this machine, set the brake and turn the engine off.
- Never work under equipment unless it is blocked securely.
- Always use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance work. Use heavy or leather gloves when handling blades.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not be responsible for injuries or damages caused by use of unapproved parts and/or accessories.
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.



- Periodically tighten all bolts, nuts and screws and check that all electrical and fuel connections are properly secured.
- When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.

7. Safety Signs

the various safety signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

7.1 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

Think SAFETY! Work SAFELY!

7.1.1 Model BX36S

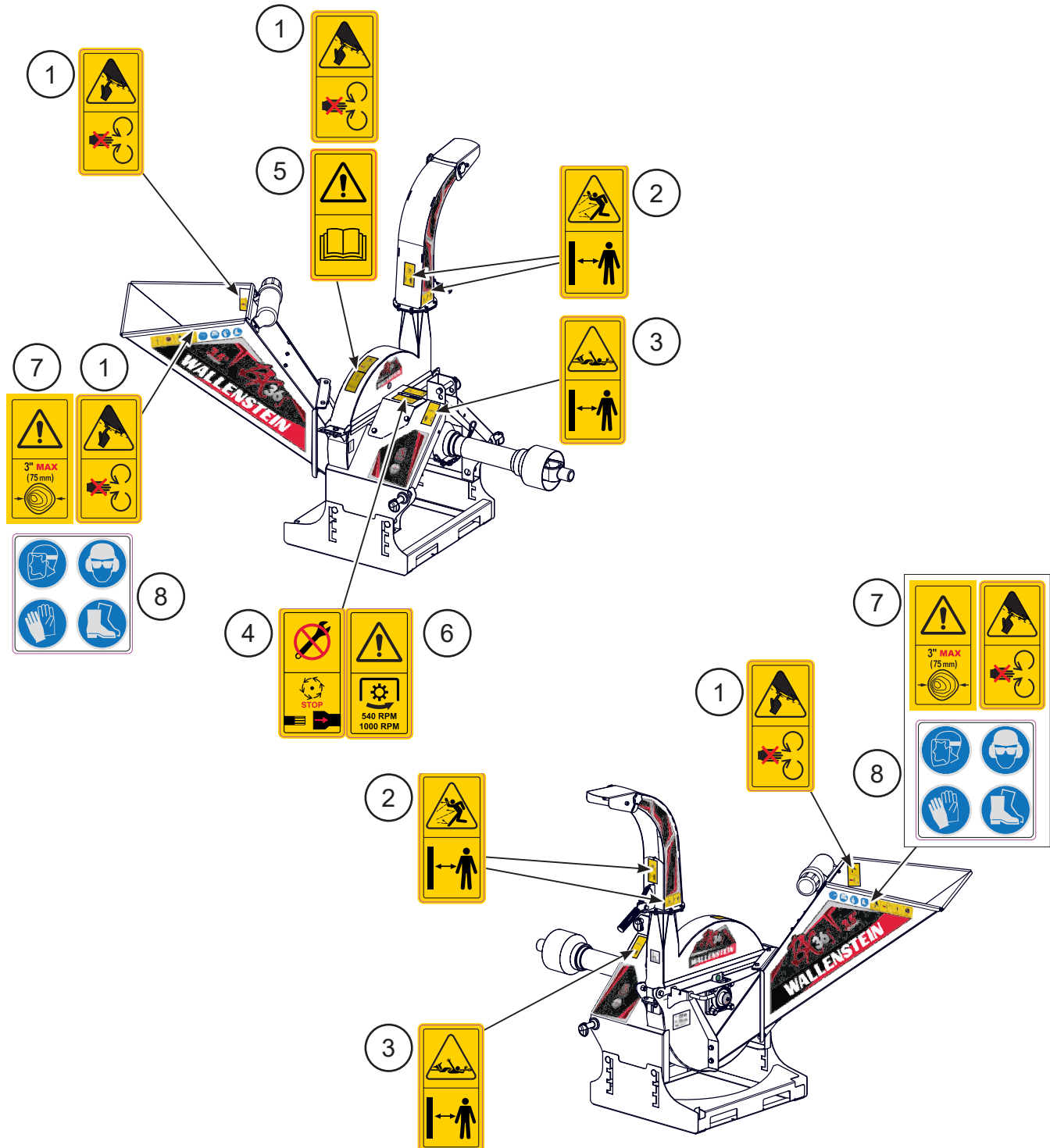


Fig. 2– BX36S Safety Decals

BX36S Safety Sign Explanations



Caution

1. Keep hands and feet out of inlet and discharge openings while machine is operating to avoid serious personal injury. Wait for all moving parts to come to a complete stop before clearing obstructions.



Caution:

2. Flying objects. Be aware of and 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.



Caution:

3. Rotating driveline, entanglement danger present. Keep hands, loose clothing, and long hair away from driveline while it is rotating.



Caution:

4. When performing any maintenance on the chipper ensure you stop and disengage the PTO. Potential for serious injury or death if the PTO is not stopped and disengaged.



Caution

5. Read and understand ALL **safety and operating instructions** in the manual. Read and understand ALL **safety decals** located on the machine. The most important safety device on this equipment is an informed SAFE operator.



Caution:

6. Ensure the drive line is rotating in the proper direction at the rated RPM.



Caution:

7. Maximum material size.



8. Always wear appropriate Personal Protective Equipment (PPE) when operating this machine.

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.

7.1.2 Models BX52S, BX72S, and BX102S

The BX52S is illustrated. Decal locations are the same for the BX72S and BX102S models.

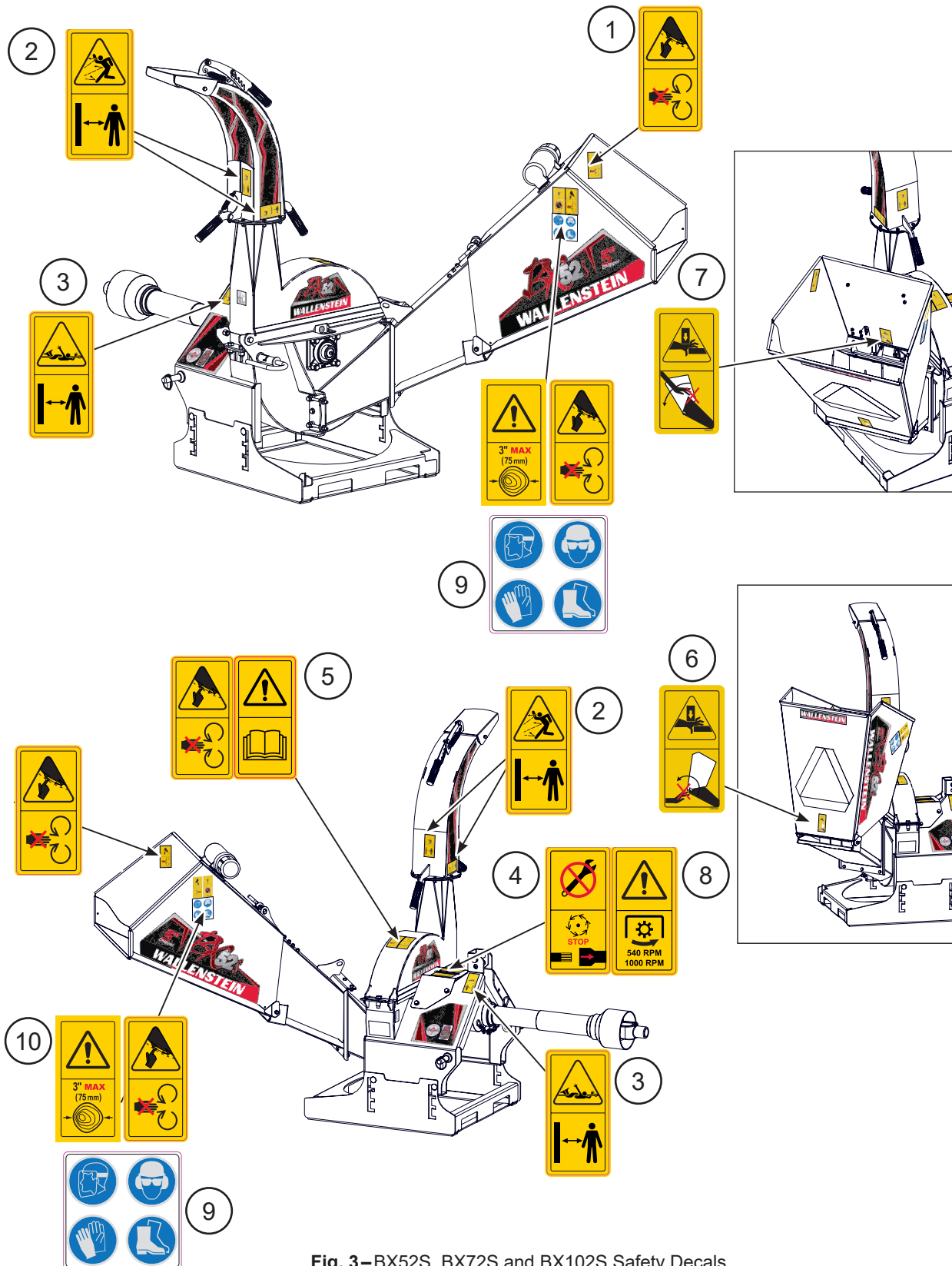


Fig. 3–BX52S, BX72S and BX102S Safety Decals

BX52S, BX72S and BX102S Safety Sign Explanations



Caution

1. Keep hands and feet out of inlet and discharge openings while machine is operating to avoid serious personal injury. Wait for all moving parts to come to a complete stop before clearing obstructions.



Caution:

2. Flying objects. Be aware of and 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.



Caution:

3. Rotating driveline, entanglement danger present. Keep hands, loose clothing, and long hair away from driveline while it is rotating.



Caution:

4. When performing any maintenance on the chipper ensure you stop and disengage the PTO. Potential for serious injury or death if the PTO is not stopped and disengaged.



Caution

5. Read and understand ALL **safety and operating instructions** in the manual. Read and understand ALL **safety decals** located on the machine. The most important safety device on this equipment is an informed SAFE operator.



Caution:

6. Pinch point hazard. When lowering or raising the hopper into position, be aware of pinch points and keep clear of them to avoid injury.



Caution:

7. Pinch point hazard. When lowering or raising the hopper into position, be aware of pinch points and keep clear of them to avoid injury.



Caution:

8. Ensure the drive line is rotating in the proper direction at the rated RPM.



9. Always wear appropriate personal protective equipment when operating this machine.



Caution:

10. Maximum material size.

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.

7.2 Replace Damaged Safety Signs

1. Keep safety signs clean and legible at all times.
2. Replace safety signs that are missing or have become illegible.
3. Parts that were replaced with a safety decal on them must also have the safety sign replaced.
4. Replacement safety signs are available from your authorized Distributor or Dealer Parts Department or the factory.

7.3 How to Install Safety Signs

1. Be sure that the installation area is clean and dry.
2. Be sure temperature is above 50 °F (10 °C).
3. Determine exact position before removing the backing paper.
4. Remove the smallest portion of the split backing paper.
5. Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
6. Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
7. Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

8. Familiarization

8.1 To the New Operator or Owner

Wallenstein BX Series Wood Chippers are designed to chip and chop scrap lumber, small trees, brush, limbs and other wood debris. The chipped material is fine enough to be composted or used in a variety of ways.

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 exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the work site. Untrained operators are not qualified to use the machine.

Many features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully to learn how to use the chipper safely and how to set it to provide maximum field efficiency. By following these instructions in conjunction with a good maintenance program, your BX Wood Chipper will provide many years of trouble-free service.

IMPORTANT! Make sure all operators understand how to place the machine in a Safe Condition before working with this machine. See page 9.

8.2 Operator Orientation

IMPORTANT! The directions for left-hand, right-hand, backward and forward mentioned throughout this manual are determined when facing the chipper chute.

8.3 Machine Components

The Wallenstein BX Series wood chipper is designed for chipping wood in a fast and efficient manner.

Major components of the BX base model chippers are illustrated here. Please review this section, many of the component descriptions here are used throughout the manual to explain function and safety.

For a detailed parts breakdown, see your dealer or visit the Wallenstein website to download the Parts Manual.

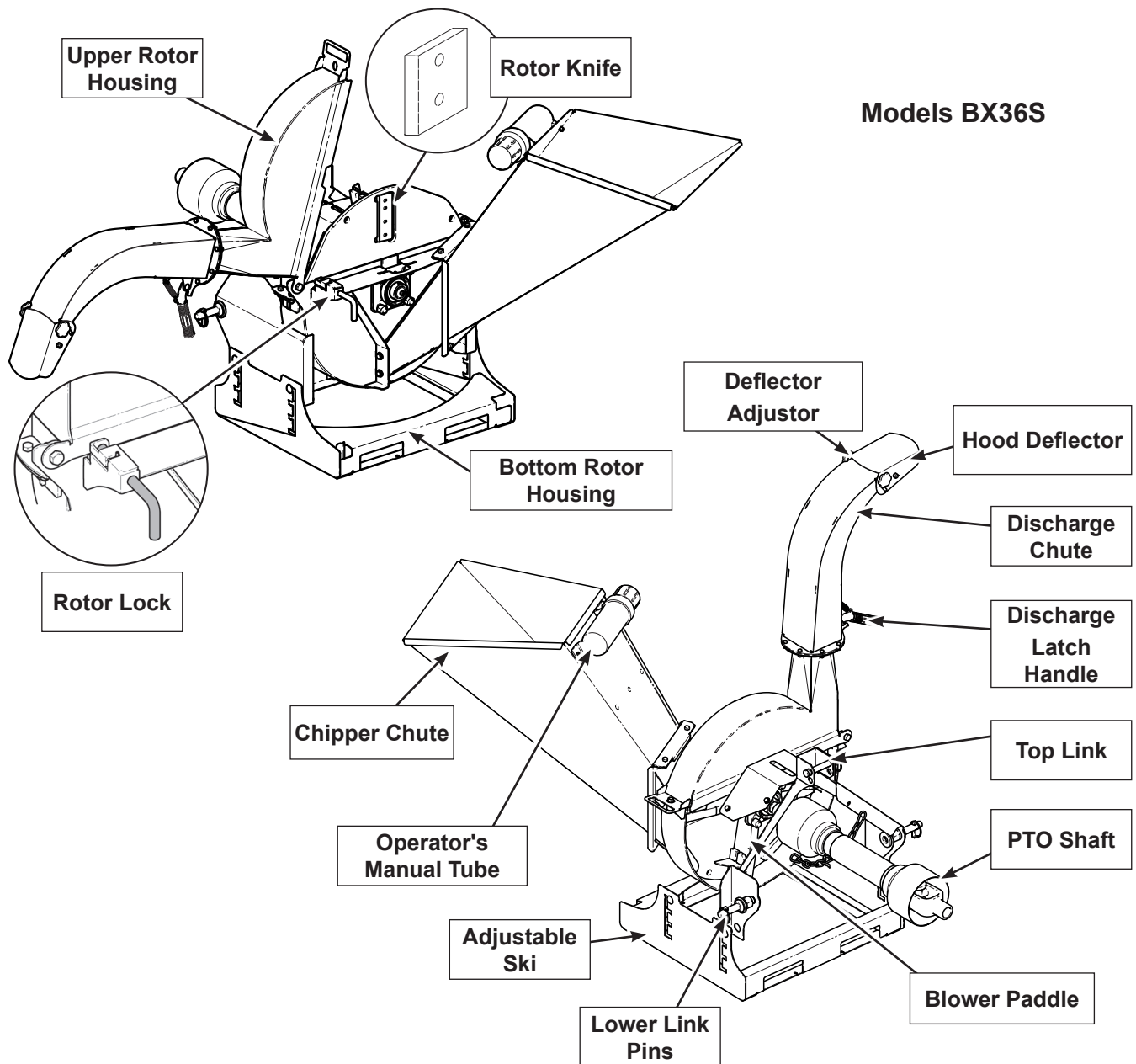


Fig. 4—BX36S Machine Components

Models BX52S, BX72S and BX102S

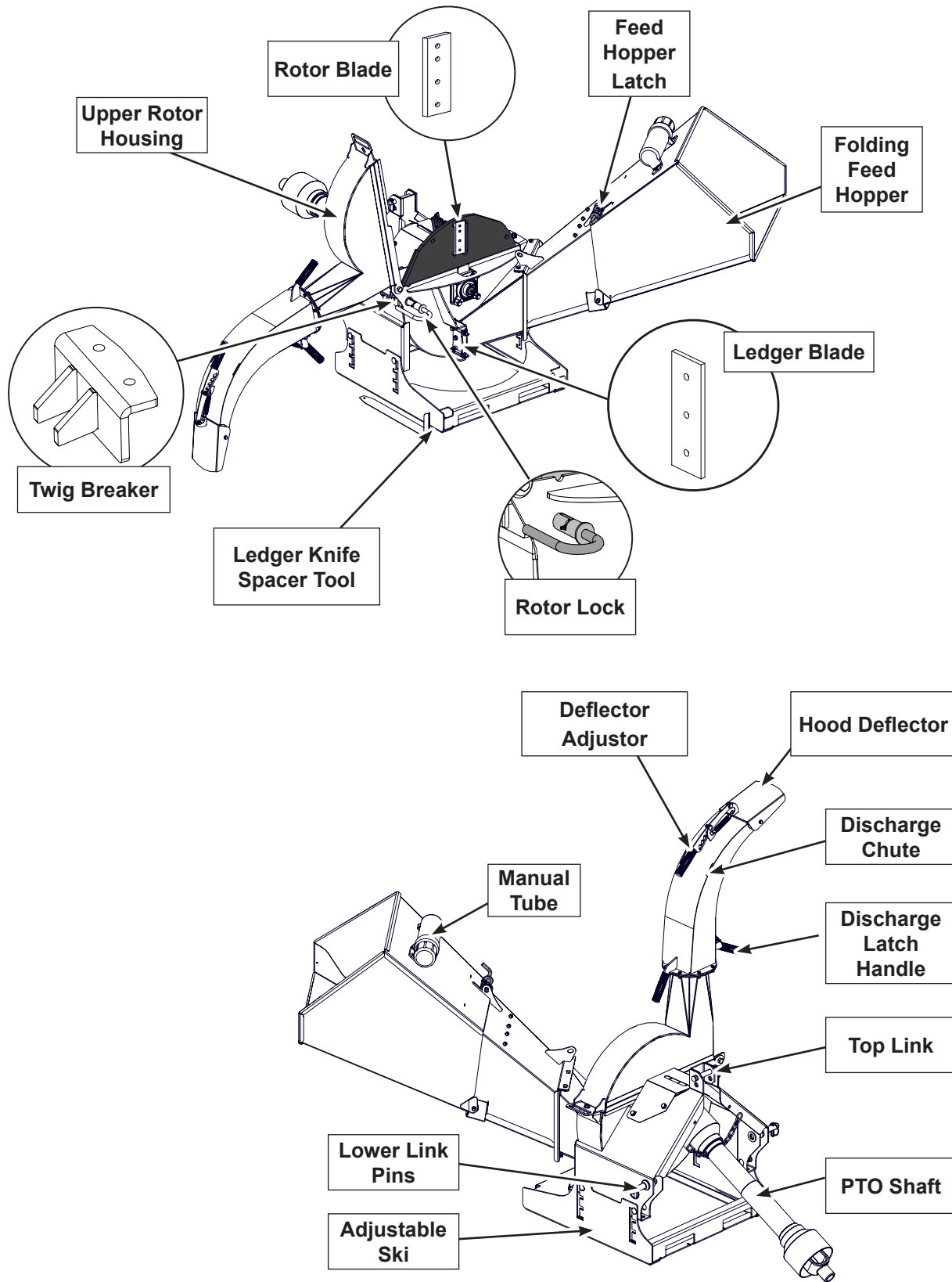


Fig. 5–BX52S, BX72S, BX102S Machine Components

9. Sizing PTO Shaft

IMPORTANT! The PTO shaft that came with your machine may need to be shortened. A longer shaft is supplied because tractor lift arms vary in length.

The PTO shaft must be free to telescope and not bottom out when going through its working range. It should never completely collapse in use. There should always be 2" (50 mm) of space for retract.

If the shaft bottoms out, the bearings on both ends can be overloaded and could fail causing damage or injury.

WARNING!

Avoid the risk of personal injury or machine damage! Read the operator's manual before using the equipment. Carefully read all safety messages in the manual and follow all safety signs on the machine.

CAUTION!

Wear suitable eye protection when cutting steel tubes.

1. Remove the PTO shaft and mount the attachment on the tractor three-point hitch.
2. Start the tractor and raise the three-point hitch up off the ground until the machine's input shaft is level with the tractor PTO output shaft. **This is the shortest distance between the input and output shafts.**
3. Make sure tractor is shut off with parking brake applied.
4. Pull the PTO shaft apart and place one end on the tractor *output* spline. Place the other on the implement *input*.

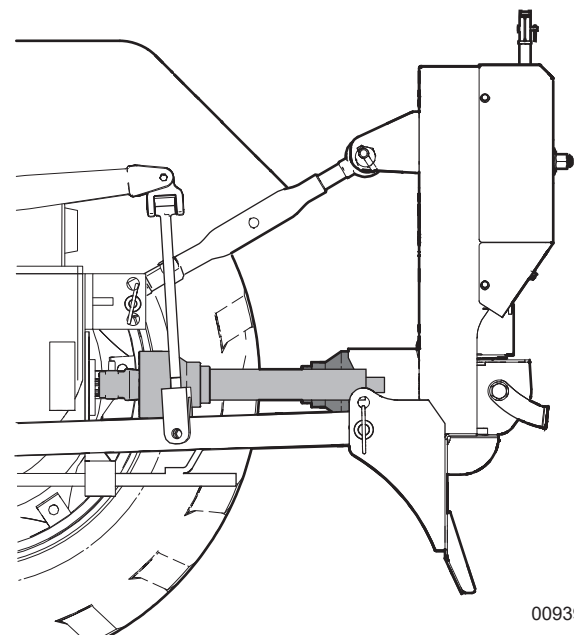


Fig. 6 – Input shaft and output shaft

5. Lift the shaft ends up so that they are as parallel to each other as possible. Support them with blocking or tie them together. If the shafts are too long or there is not enough room, see Alternate Method on page 4.

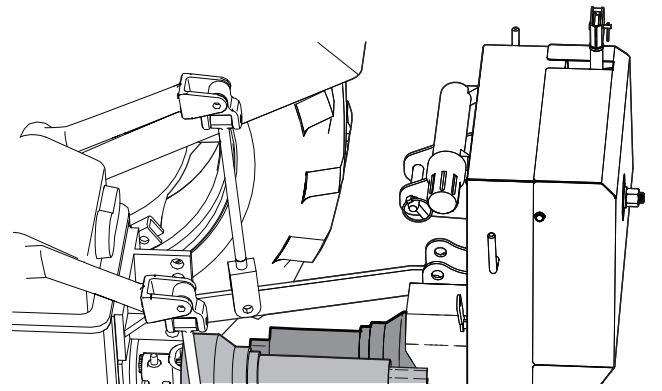


Fig. 7 – Lift shaft ends up parallel

6. Using a straight edge, transfer a mark from the end of one tube section to the other section as shown.

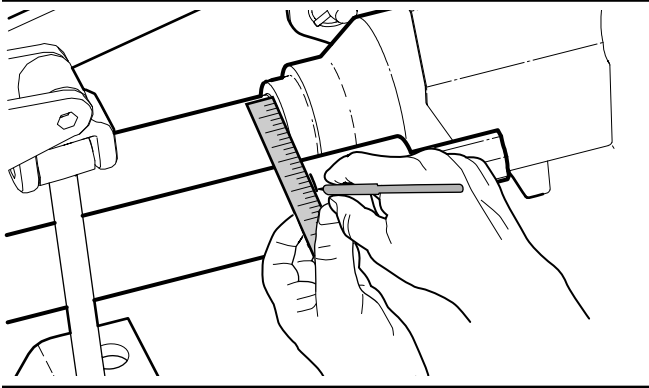


Fig. 8 – Transferring the mark

7. Add 2 inches (50 mm) to that measurement and place a second mark on the outer plastic tube. This is where the plastic shielding needs to be cut off.

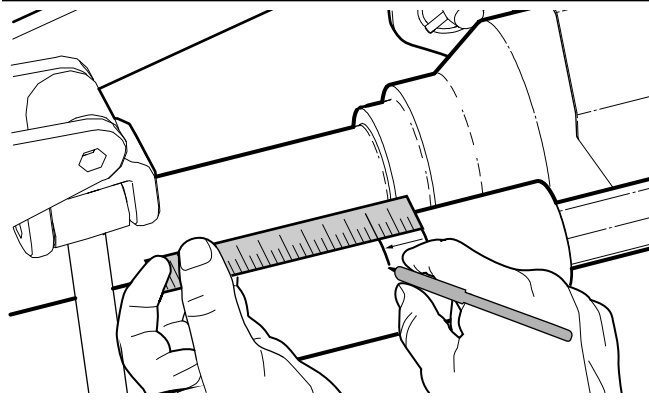


Fig. 9 – Place mark to cut plastic tube

8. Cut the plastic tube off at the mark, leaving the steel shaft inside.

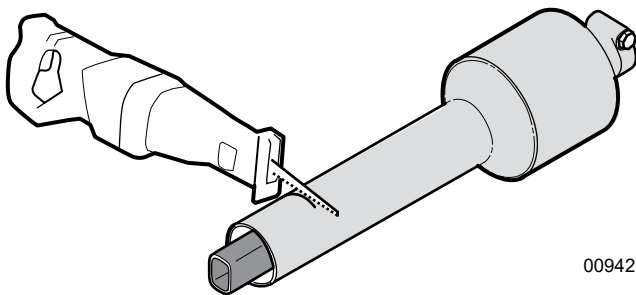


Fig. 10 – Cut plastic tube at the mark

9. Using the cut-off length of plastic tube as a guide, mark the steel tube. Align the end of the plastic tube with the end of the steel shaft.

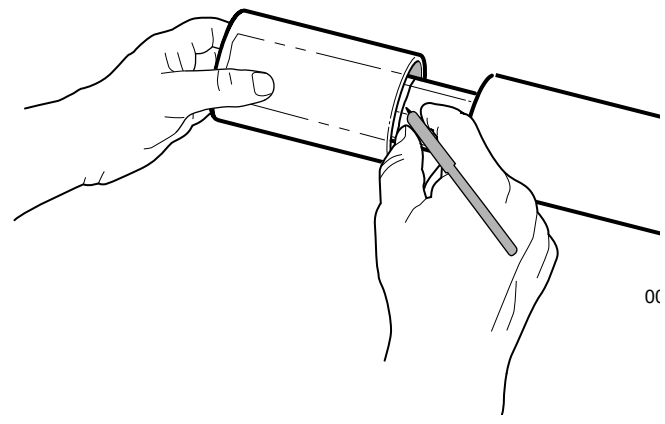


Fig. 11 – Marking steel tube.

10. Cut the steel tube off at the mark.
11. Repeat this process for **BOTH** PTO shaft halves. Use the cut-off length of plastic tube to mark the remaining cuts.



Place the end of the steel shaft to be cut off in a vice so it is easier to control your cut.

12. Remove the burrs from the edges of the steel shaft that were cut. Clean the steel shaft halves.
13. Grease the inner tube so the tube halves slide together easier.

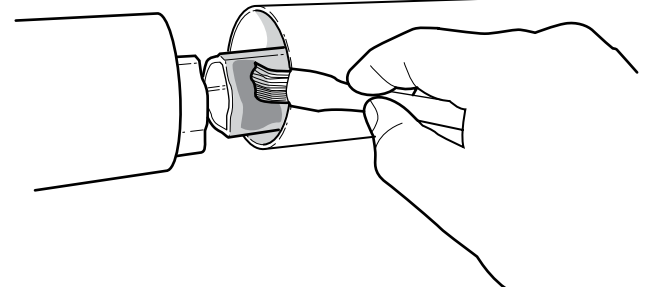


Fig. 12 – Grease the inner tube

14. Assemble the two halves of the PTO shaft.
15. Make sure the shaft can telescope freely before installing. If it does not, separate the two parts and inspect for burrs or cuttings on the shaft ends.

IMPORTANT! The two halves of the PTO shaft should overlap at least 6" (150 mm).

9.1 Alternate Method

This method can be used if the two ends of the PTO shaft cannot be put close enough together to measure.

1. Install the attachment on the tractor. Lift the attachment up so that the tractor output is level with implement input shaft.
2. Take the PTO shaft that came with your machine, fully collapse it, and measure the distance between the locking yokes. Call this measurement 'A'.

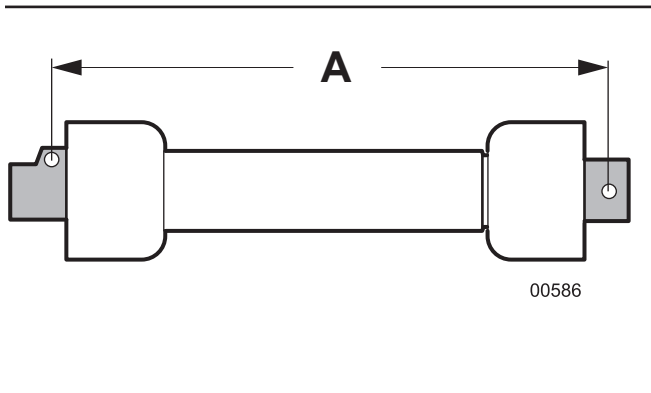


Fig. 13—Measurement A

3. Measure the distance between the grooves for the locking collars on each input. Subtract 2 inches (50 mm) from this measurement. Call this measurement 'B'.

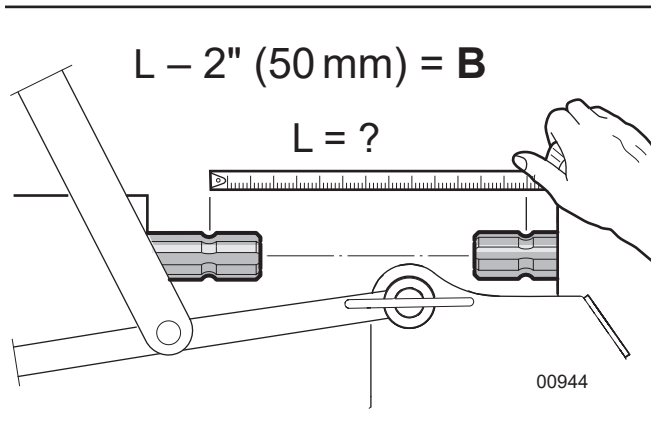


Fig. 14—Measurement B

4. If the collapsed length **A** is longer than measurement **B** from Step 3, the PTO shaft must be shortened.
5. Subtract **B** from the uncut PTO shaft measurement **A**. ($A - B$)

The result is how much **BOTH** halves of the PTO shaft need to be shortened. Call this value **C**.

$$A - B = C$$

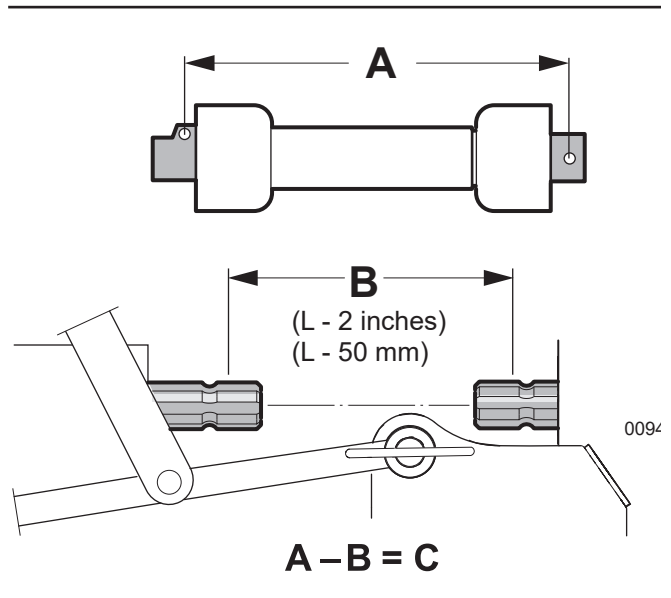


Fig. 15—C = Cut Length

6. Pull the PTO shaft apart, then measure and cut the length **C** from both the outer plastic covers and the inner metal tubes.

Tip: Use the cut off piece of outer shielding to mark the inner tube. Leave the steel center tubes longer than the plastic outer tubes, otherwise they can be harder to put back together.

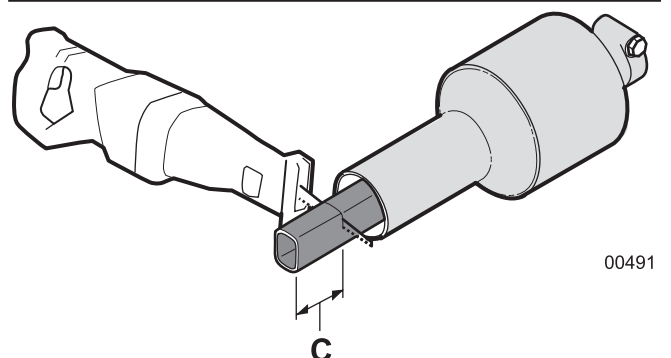


Fig. 16—Cut off the Length C from both PTO Shaft halves

9.2 Installing PTO Shaft

The implement must be mounted to the tractor, and fully lowered to the ground. Make sure tractor is shut off with parking brake applied.

Check to make sure the shielding on the PTO shaft is in good condition and able to turn freely, independent of the PTO shaft.

Make sure the PTO yoke ends are clean. Adding a small amount of lubricant on the splines can help them slide on.

1. Install the PTO shaft on the implement. Press the locking pin button and push the shaft end onto the input PTO. Connect the safety chain to the implement so that the shielding does not turn during operation.

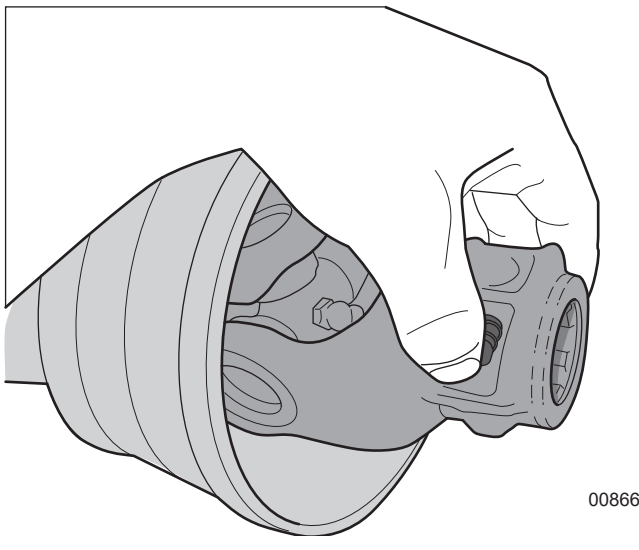


Fig. 17—Locking Pin Button

2. Slide out the end of the PTO shaft up to the tractor output PTO, aligning the two shaft splines. Press the locking pin button and push the shaft end onto output PTO.

3. Once started, slide the shaft all the way on. You might hear a click and your button should retract to the original position.
4. To check that the shaft lock is fully seated, pull back on the shaft with your hands off the button.
5. Start the tractor and raise / lower the attachment to check clearances. A correctly sized shaft should never bottom out or come apart.
6. Check the rotation direction. A decal on the machine indicates correct rotation.





10. Attaching Chipper to Tractor

The BX36S, BX52S and BX72S are Category One, 3-point hitch, and are quick hitch and iMatch™ compatible.

BX102S is Category Two, 3-point hitch only, and is also quick hitch and iMatch™ compatible.

For maximum life and safety, connect PTO shaft with machine as level as possible when the chipper is in the lowered (working) position.

 **NOTE:** Be sure the telescoping portion of the shaft is greased and free of dirt.

 **NOTE:** The lower ski is adjustable. Ski adjustment may be required to help make the PTO connection as level as possible. See Machine Set-up on page 29.

The BX Series chippers feature clevis style (3-position) lower link attachment points. To use the center attachment point, a 7/8 in diameter pin is required (not supplied). Use the existing bolt in implement pin for the inside or outside points.

10.1 Procedure

1. Clear the area of bystanders, especially small children.
2. Make sure there is enough room and clearance to safely reverse the tractor to the chipper.

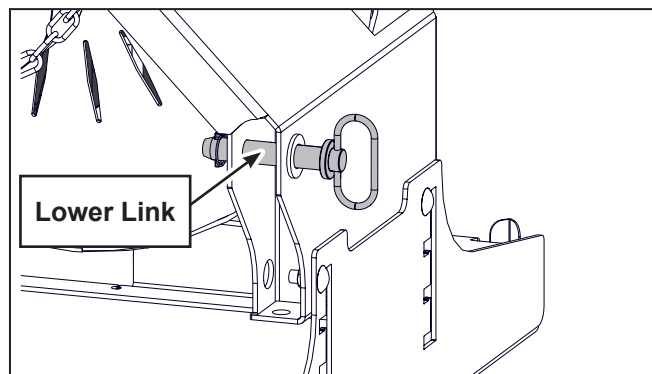


Fig. 18– Clevis style lower link

3. Place the tractor arms in their full sway position.

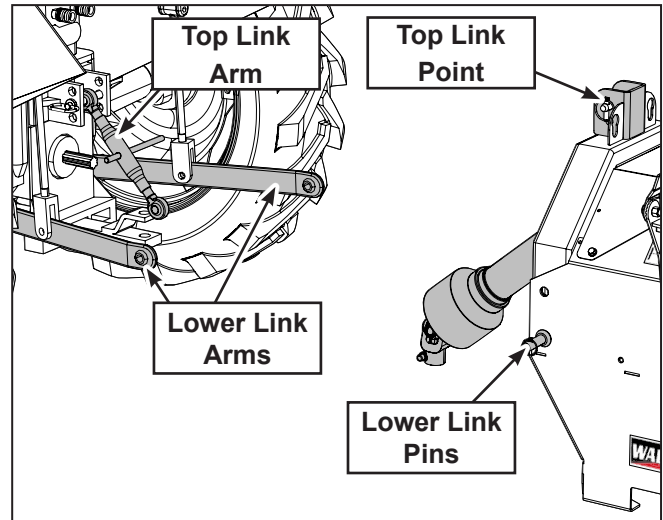


Fig. 19– Clevis style lower link

4. At the slowest speed possible, back the tractor up towards the chipper with the tractor “square” to the chipper.
5. Engage the tractor park/lock brake, dismount the tractor and inspect the link and pin alignment (vertical and horizontal).
6. Raise or lower the lower link arms to align them to the pins on the chipper.
7. Return to tractor, make any necessary adjustments (up / down).
8. Slowly back up the tractor until the lower arm holes are lined up with the link pins.
9. Engage the tractor park/lock brake, dismount the tractor, make any final adjustments, and slide the left and right lower arm holes onto the link pins.
10. Install the retainers on the link pins.
11. Remove the top pin and install the top link.
12. Use the turnbuckle to align the top link. Insert the pins and install the retainers.
13. Return the turnbuckle to its original length and lock.

14. Engage the tractor park/lock brake, dismount the tractor, make any final adjustments, and slide the left and right lower arm holes onto the link pins.

15. Install the retainers on the link pins.

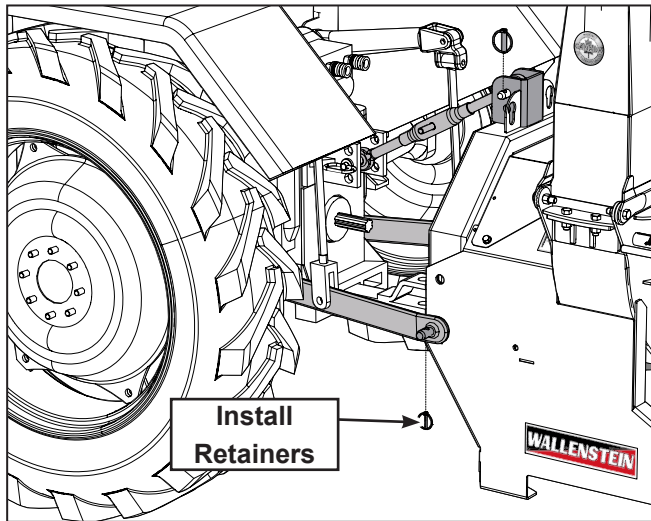


Fig. 20 – Install retainers on link pins

16. Remove the top pin and install the top link.

17. Use the turnbuckle to align the top link. Insert the pins and install the retainers.

18. Return the turnbuckle to its original length and lock.

19. Install the PTO drive line.

IMPORTANT! Ensure correct PTO shaft length (see *PTO Shaft Connection* on page 21).

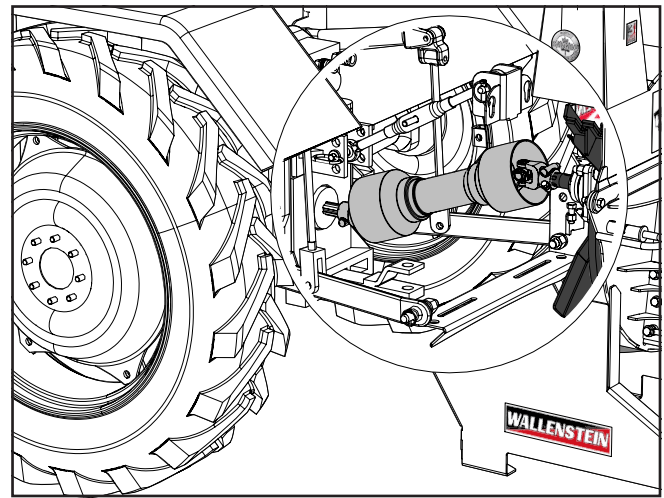


Fig. 21 – PTO Shaft

20. Slide the collar back on the yoke, align the splines and slide the yoke on the tractor.

21. Release the collar and make sure the locking pin clicks into position.

11. Controls

Please review this section to familiarize yourself with the location and function of each control before starting. Familiarizing yourself with the controls will enable you to take advantage of all the features available on the BX Chipper and apply them as conditions demand.

11.1 Discharge Chute

Model BX36S

The discharge chute is designed with a spring-loaded latch handle that allows the chute to be positioned 360° then locked into position with the latch.

1. Lift the latch handle until the chute lock pin disengages.
2. Use the latch handle to position the chute as required.
3. Release the latch handle and lock the chute into position at the next nearest lock point.

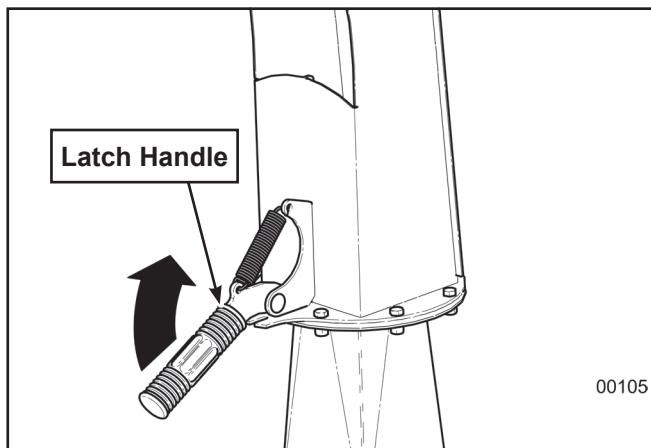


Fig. 22—Adjusting discharge chute

Models BX52S, BX72S, and BX102S

The discharge chute is designed with a spring-loaded latch handle that allows the chute to be positioned 270° then locked into position with the latch.

1. Push down on the latch handle until the chute lock pin disengages.
2. Use the latch and grip handles to position the chute as required.
3. Release the latch handle and lock the chute into position at the next nearest lock point.

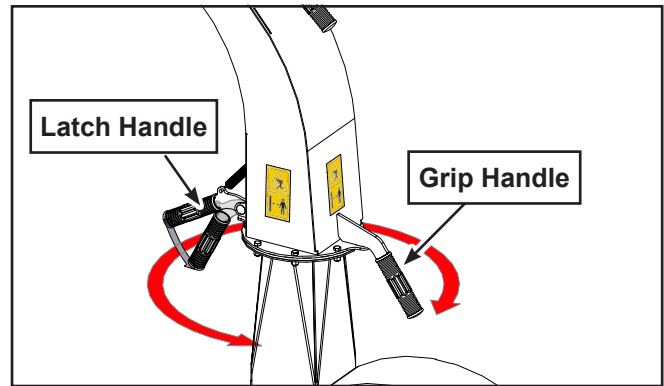


Fig. 23—Adjusting discharge chute

11.2 Hood Deflector

Model BX36S

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 place by clamping bolts on each side.

1. Loosen the clamping bolts on each side.
2. Move the deflector to desired position and tighten the manual clamps.

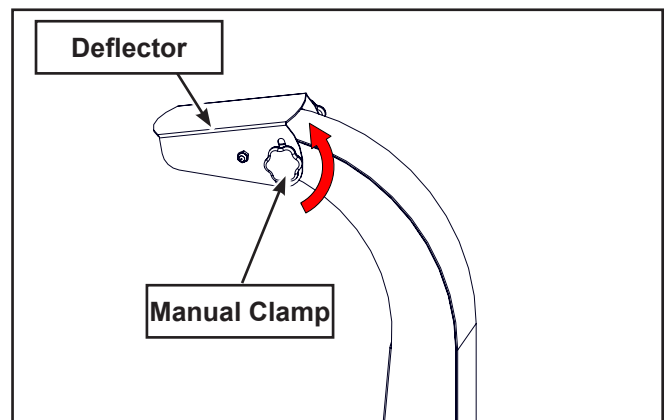


Fig. 24—BX36S Hood Deflector

Model BX52S

The discharge chute is equipped with a spring tensioned hood deflector on the end of the chute to direct the chips exactly where desired.

1. Lift and push forward the adjuster grip handle and move the deflector into position as required.
2. Lock the deflector into position by pulling back and down.

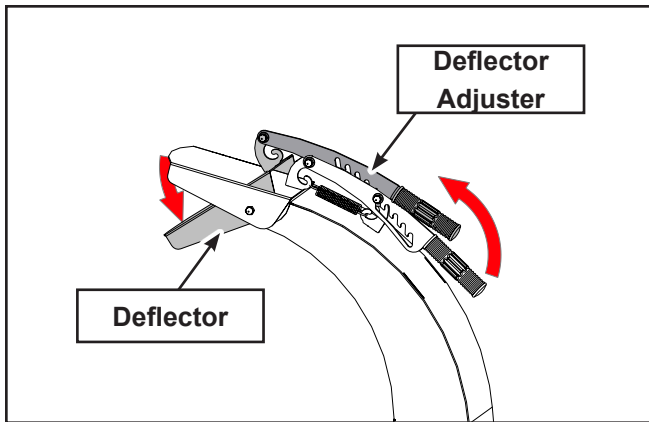


Fig. 25–BX52S Hood Deflector

Models BX72S and BX102S

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 a slotted position handle.

1. Grasp the handle and lift slightly to clear the handle cogs
2. Move the deflector with the handle as required
3. Lock the deflector into position by lowering the handle into one of the slots.

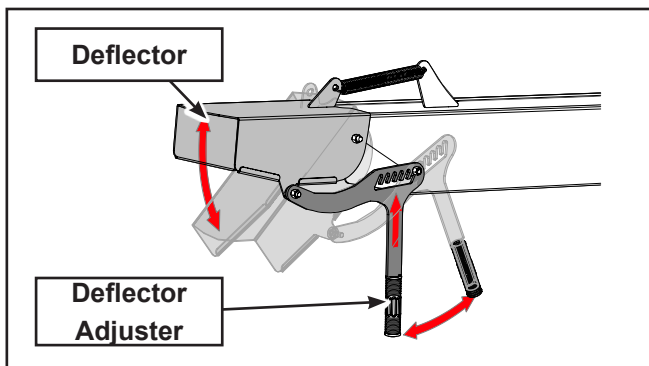


Fig. 26–BX72S, BX102S Hood Deflector

12. Operation

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

Although the BX Series 3-point hitch wood chippers are easy to use, each operator should review this section to become familiar with the detailed safety and operating procedures.

12.1 Be Prepared

- Review the Safety Rules on page 8.
- Clear the area of bystanders, especially small children.
- Each operator must be trained and familiar with the set up and operation of the Wood Chipper and its components.
- Review the Machine Components (see page 19)
- Review and follow the Pre-Operation Checklist (see page 31).
- Review operation and function of the controls (see page 9).
- Survey the work site, move to a clear, level work area and position at the work site. Do not start the chipper until it is in position.
- Set up the machine (see page 29).
- Each person must wear appropriate **Personal Protective Equipment (PPE)** whenever operating the Wood Chipper or working in the vicinity. The PPE list includes but is not limited to:
 - Safety shoes with slip resistant soles.
 - Safety goggles or face shield.
 - Hearing protection.
 - Heavy or leather gloves



Always Wear Personal Protection Equipment

12.2 Machine Set-up

Make sure:

- The chipper is attached to the tractor 3-point hitch.
 - PTO shaft is installed.
 - Hydraulic hoses are connected.
1. Position the tractor and wood chipper at the work site.



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

W006

2. Set the tractor brake and block / chock the wheels.
3. Lower the chipper, ensure that the machine is resting on the ground and is level and stable.
4. While holding the feed hopper, release the latch pin from the feed hopper pin tab, and carefully lower the feed hopper (all models except the BX36S Series).

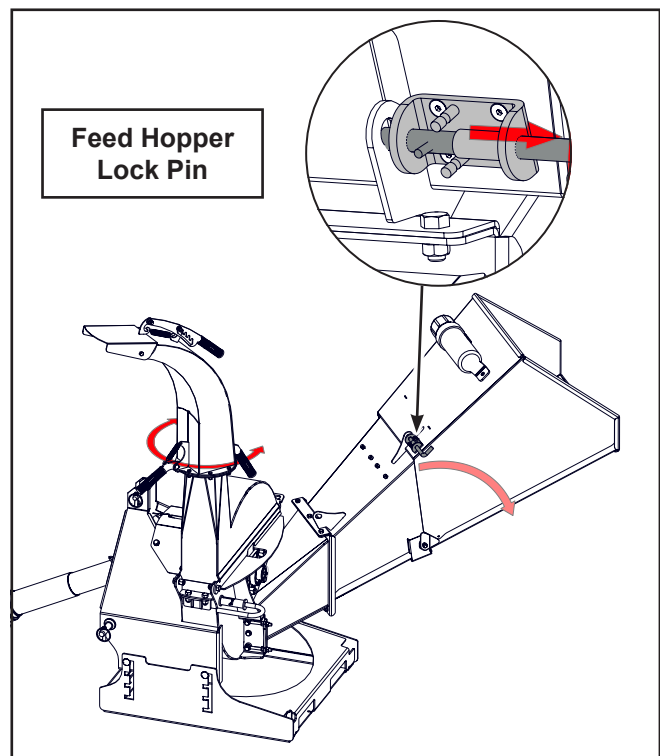



Fig. 27–Feed hopper lock pin on BX52S, BX72S, BX102S

 **NOTE:** When lowering the feed hopper, be aware of a pinch point between the hopper and the sub chute.



5. With the feed table in position, engage the spring loaded latch pin to secure the hopper.
6. Turn the discharge chute to the desired position and adjust the deflector as required.

IMPORTANT! The chipper must be resting on the ground during operation. Using the chipper with it raised up off the ground is dangerous and will result in damage to the machine.

12.3 Adjust Ski Height

The ski can be adjusted up to 6.0 in (150 mm) if required, to help align the PTO when attaching the chipper to the tractor. The PTO shaft should be as level as possible when the chipper is in the lowered (working) position.

IMPORTANT! Do not adjust ski height for user comfort. Damage to the PTO may occur if the angle becomes too severe.

1. Raise the chipper.
2. Loosen the 4 nuts and bolts.
3. Lower the ski to the best position for the PTO connection.
4. Tighten the nuts and bolts according to the Torque Chart (at the back of the manual).

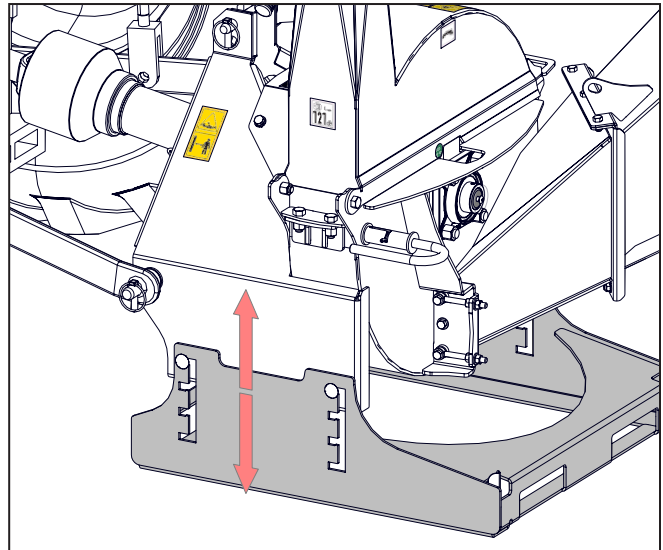


Fig. 28 – Adjust ski height

12.4 Machine Break-In

Although there are no operational restrictions on the Wood Chipper when used for the first time, it is recommended that the following mechanical items be checked.

Place the machine in the **Safe Condition** before checking any components. (See *Safe Condition on page 9*).

After operating for 1 hour:

- Torque all fasteners and hardware.
- Check condition of rotor bearings.
- Check the condition and clearance of the twig-breaker, rotor and stationary blades. Adjust or replace as required.
- Check for entangled material. Remove all entangled material before resuming work.
- Lubricate all grease fittings.

After operating for 10 hours:

- Repeat steps 1 through 6 listed above.
- Go to the normal servicing and maintenance schedule as defined in the Maintenance Section.

12.5 Pre-Operation Checklist

Efficient and safe operation of the Wallenstein 3 Point Hitch Wood Chipper requires that each operator read and understand the using procedures and all related safety precautions outlined in this section. A pre-operation checklist is provided for the operator. It is important for both the personal safety and maintaining good mechanical condition that this checklist is followed.

Before operating the Wood Chipper and each time thereafter, the following areas should be checked:

Pre-operation Checklist	✓
Check and lubricate the machine per the schedule outlined in the Maintenance Section.	
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 and stationary blades. Adjust or replace as required.	
Check that all bearings turn freely. Replace any that are rough or seized.	
Check and ensure that all covers, guards and shields are in place, secured and functioning as designed.	
Check all fasteners and tighten, and ensure your equipment is working and in good repair.	
Check that personal protection equipment including hard hat, safety glasses, safety shoes, safety vest, hearing protection and gloves are being used and in good repair.	
Check that all loose fitting clothing or jewelry is not worn and loose long hair is tied back.	

12.6 Starting Procedure

After following all operating safety and preparation procedures, the chipper is now ready to operate.

1. Ensure all the chipper access covers are secured
2. Inspect hydraulic connectors for positive connection.
3. Start tractor and engage the PTO.
4. Increase engine speed to approximately half throttle.
5. Ensure machine is stable, with no unusual vibration and proceed with work.

12.7 Stopping



Be aware. Rotor continues to turn for a few revolutions after the PTO is disengaged. Wait for all parts to stop moving before opening any machine access.

W005

1. Stop feeding material into the hopper.
2. Place the feed control bar in neutral position.
3. Slow engine speed.
4. Place tractor hydraulic lever in OFF position.
5. Disengage PTO.
6. Stop engine, remove ignition key and place in your pocket. Wait for all moving parts to stop.

12.8 Stopping in an Emergency

If an emergency occurs:

- **Activate the emergency PTO shutoff on the tractor (if available) or disengage the PTO**
- **Shut off the engine**
- **Correct emergency situation before restarting engine and resuming work.**

12.9 Chipping Operation

BX Series Wood Chippers are strong, rugged machines. They are built to provide consistent chipping of logs.



Be aware. Rotor continues to turn for a few revolutions after the PTO is disengaged. Wait for all parts to stop moving before opening any machine access.

W005



Material size capacity

- BX36S – 3.5" (9 cm) diameter
- BX52S – 5" (13 cm) diameter
- BX72S – 7" (17 cm) diameter
- BX102S – 10" (25 cm) diameter

IMPORTANT! Do not place metal, bottles, cans, rocks, glass or other solid material into the wood chipper. If that happens, stop the machine immediately for a detailed inspection.

If opening up any guards for inspection, always put the machine in **Safe Condition**. See *Safe Condition on page 9*.

Inspect machine for damaged or loosened parts. Repair or replace parts as required before resuming work.

1. Delimb large branches and trees and feed them in **ONE** at a time.
2. Be aware of the size and shape of the material. Knotty, curved branches and logs can move in unpredictable ways as they pass through the feed rollers. Large curved pieces should be cut to smaller straighter sections.
3. Very small diameter branches / limbs can be held together in a bundle and feed in simultaneously.
4. Place short branches on top of longer ones, to avoid reaching into the hopper.

5. Before beginning to feed, ensure the motor is warmed up and the rotor is up to speed.
6. Move the feed control bar into the feed position to start the feed rollers turning
7. Stand to the side of the feed table, slowly slide material into the feed table and move it into the feed rollers.
8. Do not force the material into the rollers, as the material engages the roller, the roller will draw the material in.
9. Ensure your wood chip pile is contained and doesn't affect the immediate work area.

12.10 Operating Hints

1. De-limb branches that are greater than 1" (2.5 cm) before feeding them into the hopper. This prevents the tree from jamming in the feed hopper.
2. When feeding large bushy branched material, have an assistant positioned at the roller control bar to keep branches from hitting it and deactivating the rollers.
3. Line up the chipper to the material so it can be fed straight in to the feed table. Loading is easier and reduces material handling time.
4. Keep the working area clean and free of debris to prevent slipping or tripping. Operate only on level ground.

12.11 Chipper Plugged

Although the machine is designed to handle a wide variety of material without any problem, occasionally it may plug. If the machine plugs, follow this procedure to unplug:

1. Place the machine in the **Safe Condition** before beginning. See *Safe Condition on page 9*.
2. Clear the area of all bystanders.
3. Visually inspect and ensure all material is out and nothing is jammed or wedged between the hopper and the rotor. If this does not unplug the chipper or the engine is stopped, the plug must be removed by hand.
4. Pull any remaining material out of the feed hopper and discharge hood.
5. Use a stick to poke loose any material jammed into the discharge hood. Be sure all the material is out and nothing is jammed or wedged between the input opening and the rotor.
6. Check that everyone is clear of machine before

restarting the machine.

7. Start the tractor and resume working.

12.11.1 Chipper Severely Plugged

1. Place the machine in the **Safe Condition** before beginning. See *Safe Condition on page 9*.
2. Clear the area of all bystanders.



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

W003

3. Open the upper rotor housing, and engage the rotor lock.
4. Remove jammed material from inside the rotor compartment.
5. Clean out the discharge chute
6. Inspect the lower rotor housing and clean out any debris.
7. If required, rotate the rotor: disengage the rotor lock and **very carefully** and slowly turn the rotor by hand to be sure there is nothing jammed between the rotor and stationary blades. **Do not reach into the rotor housing while the rotor is moving or unlocked.**
8. Engage the rotor lock.
9. Disengage the rotor lock, close the upper rotor housing. Tighten fasteners to their specified torque.
10. Check that everyone is clear of machine before restarting engine.
11. Start the engine and resume working.

13. Transporting




TRANSPORTING SAFETY

- Do not exceed a safe travel speed.
- Always follow and obey applicable highway rules and regulations.
- Be sure all lights, markers and SMV sign required by the traffic regulations are in place, clean and working.
- Check 3 point hitch connections and ensure they are safely pinned with retainers.
- Never allow riders on the machine.
- Do not drink and drive.
- Avoid rough terrain. Slow down when encountering rough conditions or cornering.
- Stow and secure feed table before moving or transporting.

13.1 Prepare for transport

When transporting the machine, review and follow these instructions:

1. Clear the area of bystanders, especially small children.
2. Insure that the machine is securely attached to the tractor with a mechanical retainer through the 3 point hitch mechanism.
3. Check that the slow moving vehicle sign is in place, and all the lights and reflectors required by the highway authorities are in place. Make sure they are clean and functioning properly.
4. Check that the tractor is in safe working order.
5. Plan your route, choose the most direct and safest path.
6. Turn the discharge hood and point toward the tractor to reduce the width of the machine.
7. Secure chipper components including:
 - access covers, and shields: bolted
 - rotor housing: bolted
 - stow the feed table: secure lock pin

 **NOTE:** When lowering the feed hopper, be aware of the pinch point between the hopper and the sub chute.



13.2 Stow the Feed Table

(All models except the BX36S.) The feed chute folds up when not in use for transportation and storage.

1. Release the feed chute lock pin.
2. Carefully grasp the front edge of the feed chute and fold it up to its vertical position.
3. Secure the feed table by engaging the latch pin into the pin tab.

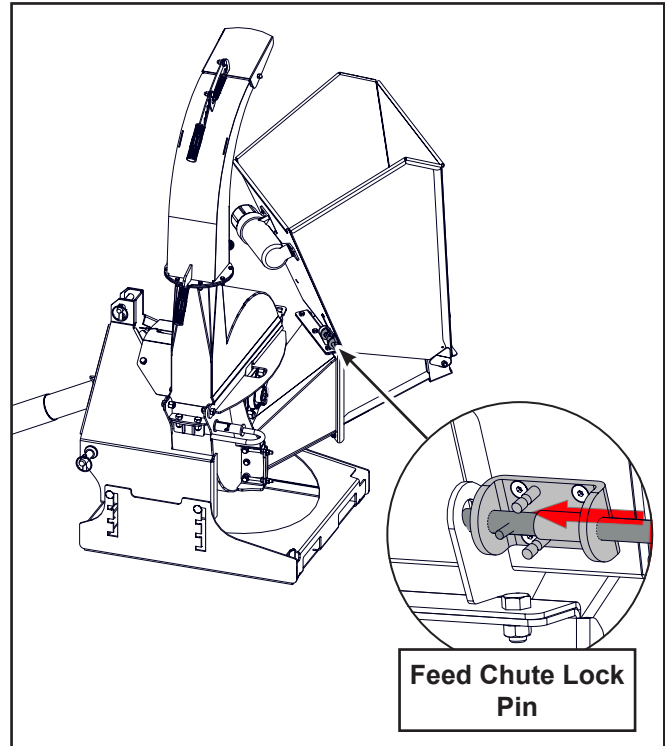


Fig. 29—Feed hopper in stowed position

14. Storage



STORAGE SAFETY

- Store the unit in an area away from human activity.
- Do not permit children to play on or around the stored machine
- Store the unit in a dry, level area. Support the frame with planks if required.

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

- Completely inspect all major systems.
- Replace or repair any worn or damaged components to prevent any unnecessary down time at the beginning of the next season.

14.1 Placing Chipper in Storage

1. Power Pack Accessory: review the engine owners manual concerning storage and prepare the engine for storage.
2. Remove all material from the machine.
3. Thoroughly wash the machine with a pressure washer or water hose to remove all dirt, mud or debris.
4. Inspect all rotating parts for entangled material. Remove all entangled material.
5. Run the machine a few minutes to dry the moisture from inside the machine.
6. Move the feed hopper up and lock.
7. Turn chute inward.
8. Touch up all paint nicks and scratches to prevent rusting.
9. It is best to store the machine inside. If that is not possible, cover with a waterproof tarpaulin and tie down securely.
10. Store in an area away from human activity.
11. Do not allow children to play around the stored unit.



NOTE: When lowering the feed hopper, be aware of the pinch point between the hopper and the sub chute.



14.2 Removing from Storage

When removing this machine from storage, follow this procedure:

1. Remove the tarpaulin if covered.
2. Review and follow the Pre-operation Checklist. (See page 31).

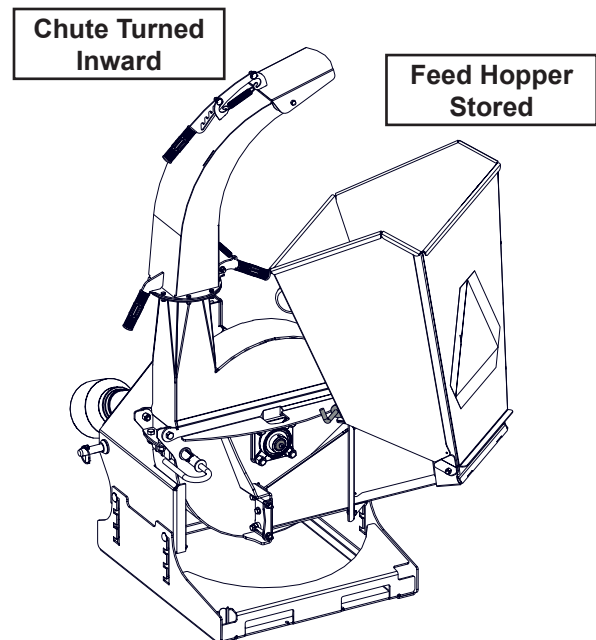


Fig. 30—Feed hopper stored

15. Service and Maintenance



MAINTENANCE SAFETY

- **Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.**
- **Place the machine in the Safe Condition before performing any service procedure. See *Safe Condition* on page 9).**
- **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.
- **Make sure there is plenty of ventilation. Never operate the engine of the towing vehicle in a closed building. The exhaust fumes may cause asphyxiation.**
- **Never work under equipment unless it is blocked securely.**
- **Always use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance work. Use heavy gloves when handling sharp components.**
- **Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not be responsible for injuries or damages caused by use of unapproved parts and/or accessories.**
- **A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.**
- **Periodically tighten all bolts, nuts and screws and check that all electrical and fuel connections are properly secured.**
- **When completing a maintenance or service procedure, make sure all safety shields and devices are installed before placing unit in service.**

15.1 Service

By following a careful service and maintenance program for your machine, you will enjoy many years or trouble-free operation.

15.1.1 Fluids and Lubricants

Grease:

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

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.

15.2 Greasing

1. Use a hand-held grease gun for all greasing.
2. Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
3. Replace and repair broken fittings immediately.
4. If fittings will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fittings if necessary.

15.2.1 Servicing Intervals

See *15.3 Maintenance Schedule* on page 41 for service interval information. The period recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication

15.2.2 BX36S Grease Points

IMPORTANT! Do Not over grease.



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

! WARNING!

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

W001

Refer to *Maintenance Schedule* on page 41..

IMPORTANT! Grease machine at period shown or hour interval, whichever comes first.

Location	Every 8 hours or daily
1	PTO lubrication points. See 15.4 <i>Driveline Maintenance</i> on page 43.

Location	Every 50 hours or annually
2	Rotor Main shaft, rear roller flange*
3	Rotor cover hinge (2 sides)

* One pump from a hand-held grease gun.

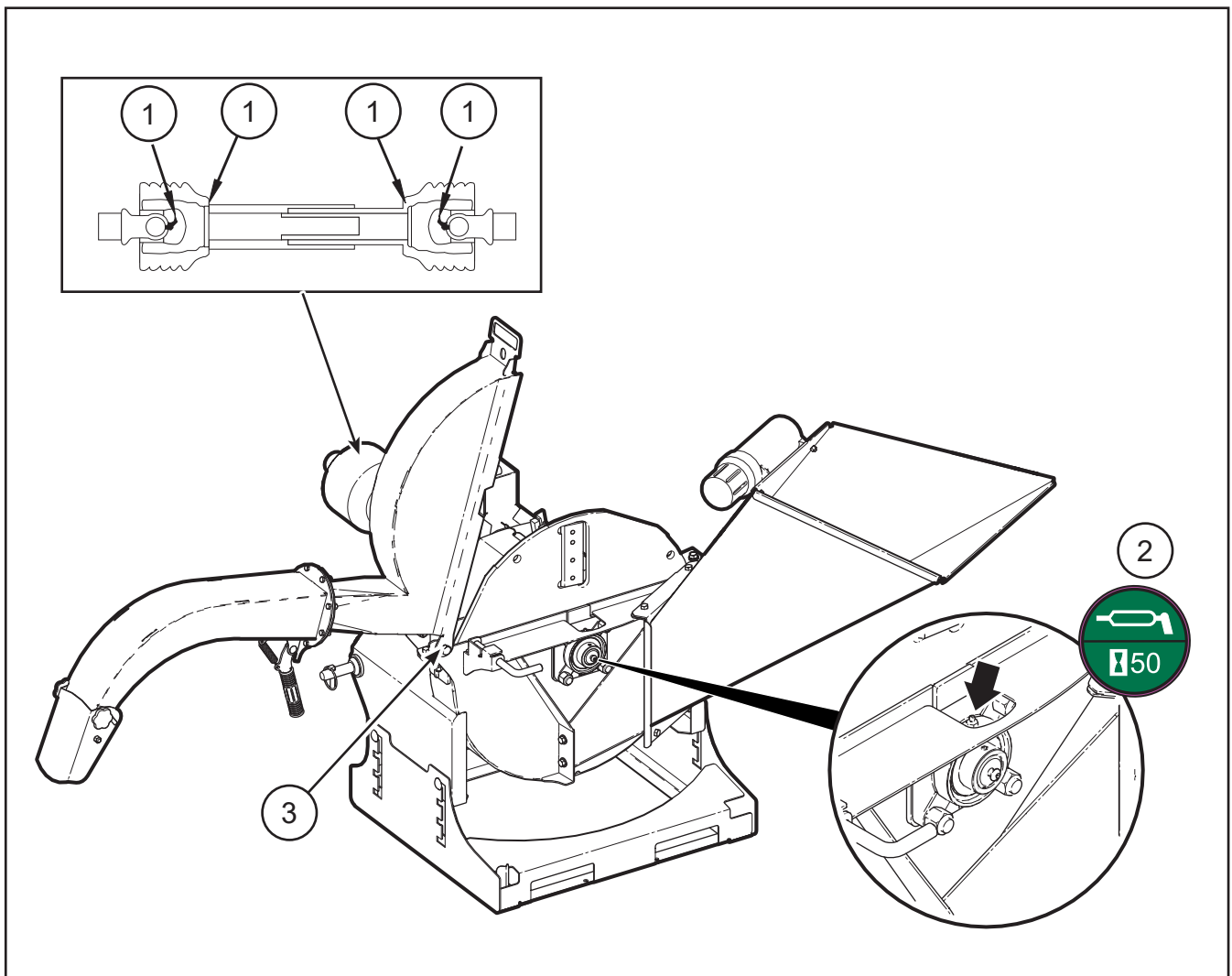


Fig. 31 – BX36S Grease Points

Location	Every 50 hours or annually
4	Rotor main shaft, front roller flange*
5	Hood deflector
6	Discharge chute swivel
7	PTO telescoping section

Location	Every 100 hours or annually
	Wash and clean wood chipper. Remove entangled material, wood chips, small debris.

* One pump from a hand-held grease gun.

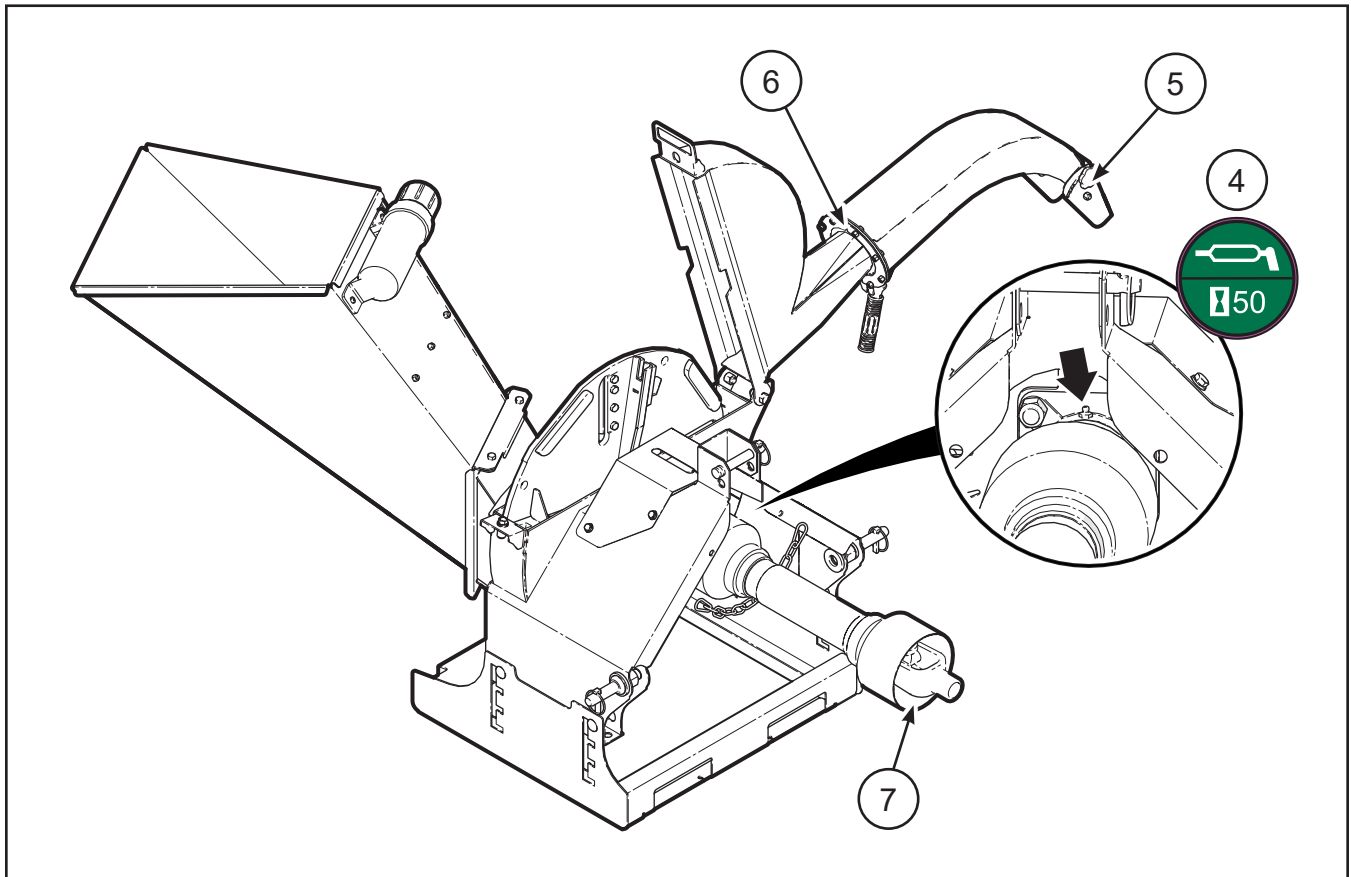


Fig. 32–BX36S Grease Points

15.2.3 BX52S, BX72S, BX102S Grease Points



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

! WARNING!

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

W001

IMPORTANT! Grease machine at period shown or hour interval, whichever comes first.

Location	Every 8 hours or daily
1	PTO lubrication points. See 15.4 <i>Driveline Maintenance on page 43.</i>

Location	Every 50 hours or annually
2	Rotor Main shaft, rear roller flange*
3	Feed Hopper Hinges
4	Rotor cover hinge (2 sides)

* One pump from a hand-held grease gun.

Refer to *Maintenance Schedule on page 41.*

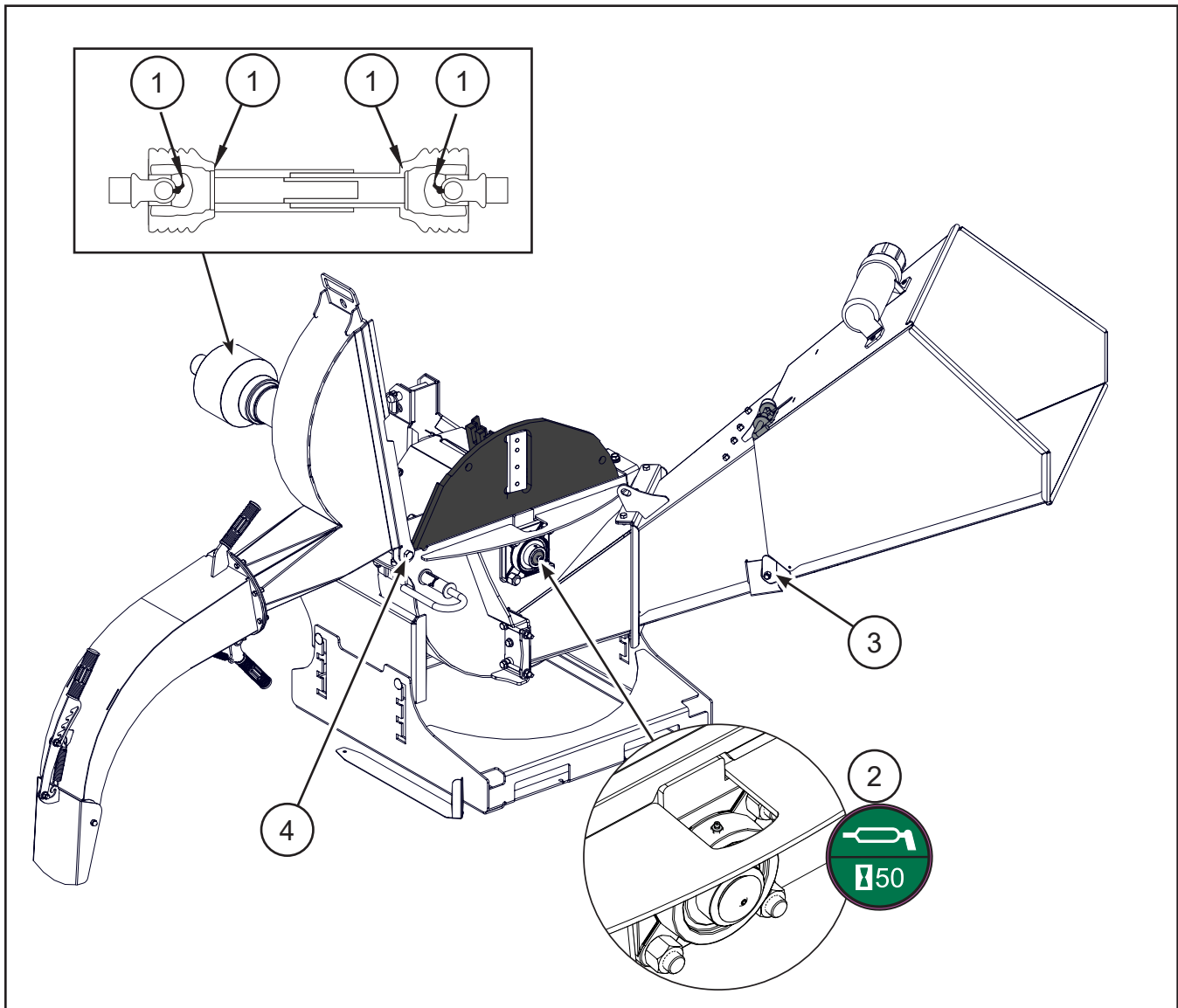


Fig. 33—BX52S, BX72S, BX102S Grease Points

Location	Every 50 hours or annually
5	Rotor main shaft, front roller flange*
6	Hood deflector
7	Discharge chute swivel
8	PTO telescoping section

* One pump from a hand-held grease gun.

Location	Every 100 hours or annually
	Wash and clean wood chipper. Remove entangled material, wood chips, small debris.

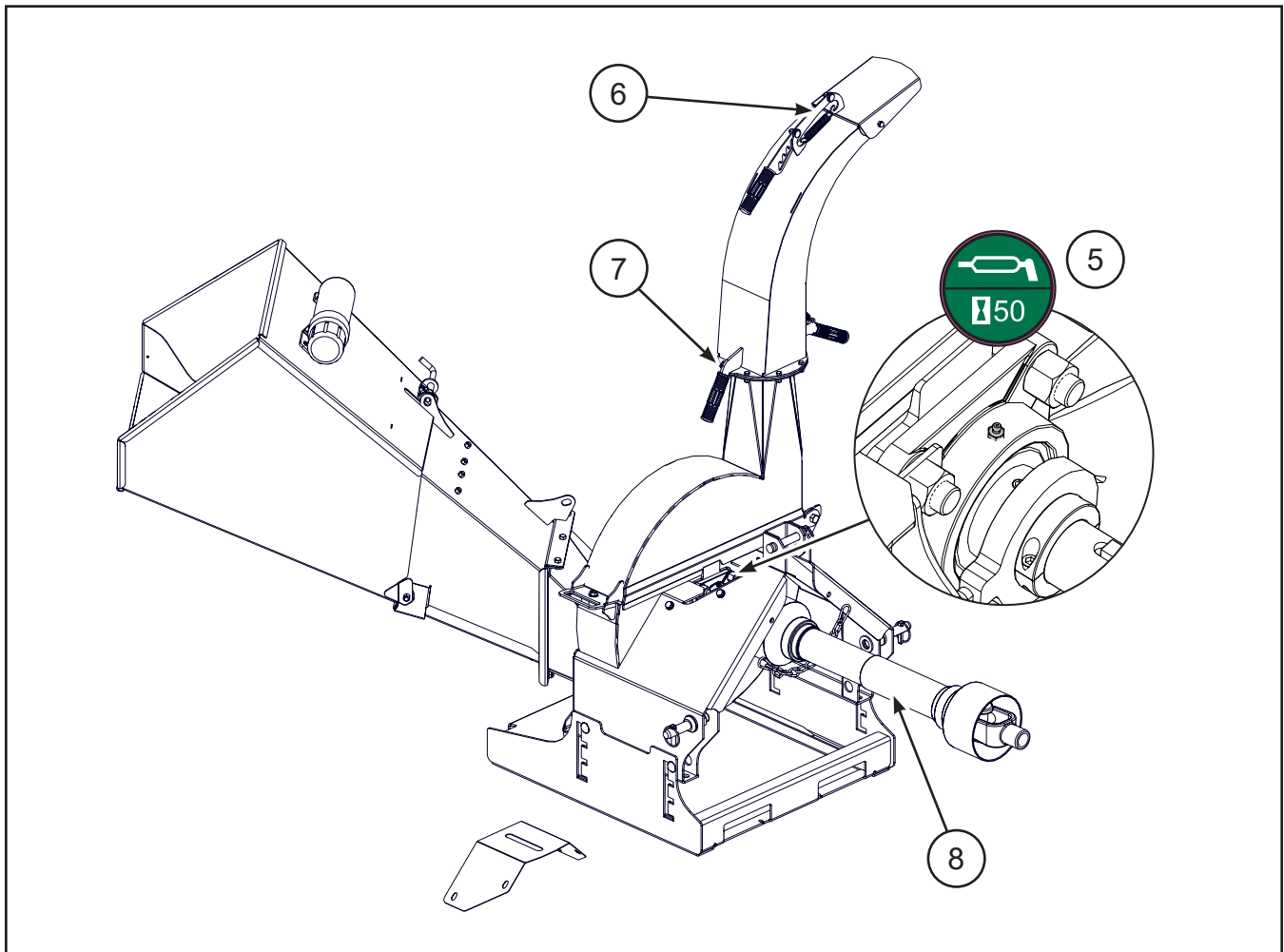


Fig. 34–BX52S, BX72S, BX102S Grease Points

15.3 Maintenance Schedule

See Lubrication and Maintenance sections for details of service.

Maintenance schedule

Perform at time shown or hour interval, whichever comes first. Item	Every 8 hours or Daily	Every 50 hours or Annually	Every 100 hours or Annually
Check twig breaker, rotor blades, ledger blade.	✓		
Check that all fasteners are secure.	✓		
Lubricate hinges and pivot points.		✓	
Lubricate all grease points. See service illustrations.		✓	
Adjust rotor and ledger blades.		✓	
Clean machine.		✓	
Wash and clean wood chipper. Remove entangled material, wood chips, and small debris.			✓

15.3.1 Service Illustration

This illustration shows the general location of service points for all models in this manual.

Check all nuts, bolts and screws and ensure they are all properly secured on a regular basis.

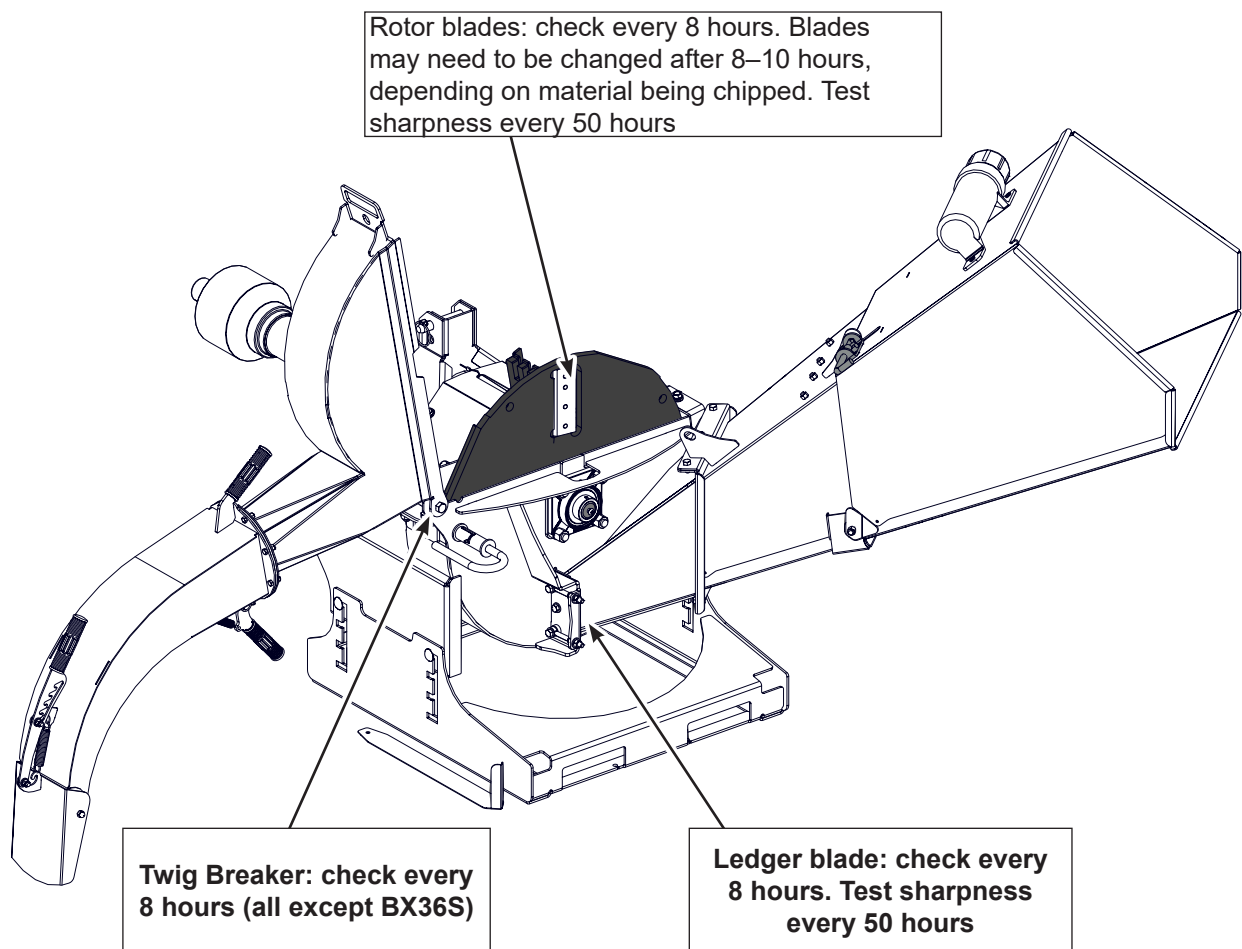


Fig. 35–Service Illustration

15.4 Driveline Maintenance

The PTO drive line is designed to telescope to allow for dimensional changes as the machine goes through its operational range.

A heavy duty plastic tubular guard encloses the driving components and is designed to turn relative to the driving components.

The drive line should telescope easily and the guard turn freely on the shaft at all times. Annual disassembly, cleaning and lubrication is recommended to insure that all components function as intended.

Ensure that the universal joints are lubricated, inspect and lubricate every 8 hours.

When reassembling the driveline, ensure that the driveline is assembled "in phase", to avoid unnecessary vibration when the machine is running.

15.5 Shear Pin

The PTO drive line is designed with a shear pin at the input yoke to prevent overloading the drive system. Remove the broken parts from the yoke when the pin shears and replace with genuine Wallenstein parts.

The drive system is designed to function well without failing the shear pin. If it does fail, generally it is being fed too fast or something very hard has been jammed into the rotor or between the blades. Always unplug the system and determine the cause of the problem and correct it before resuming work. Shear pin replacements are available from your dealer

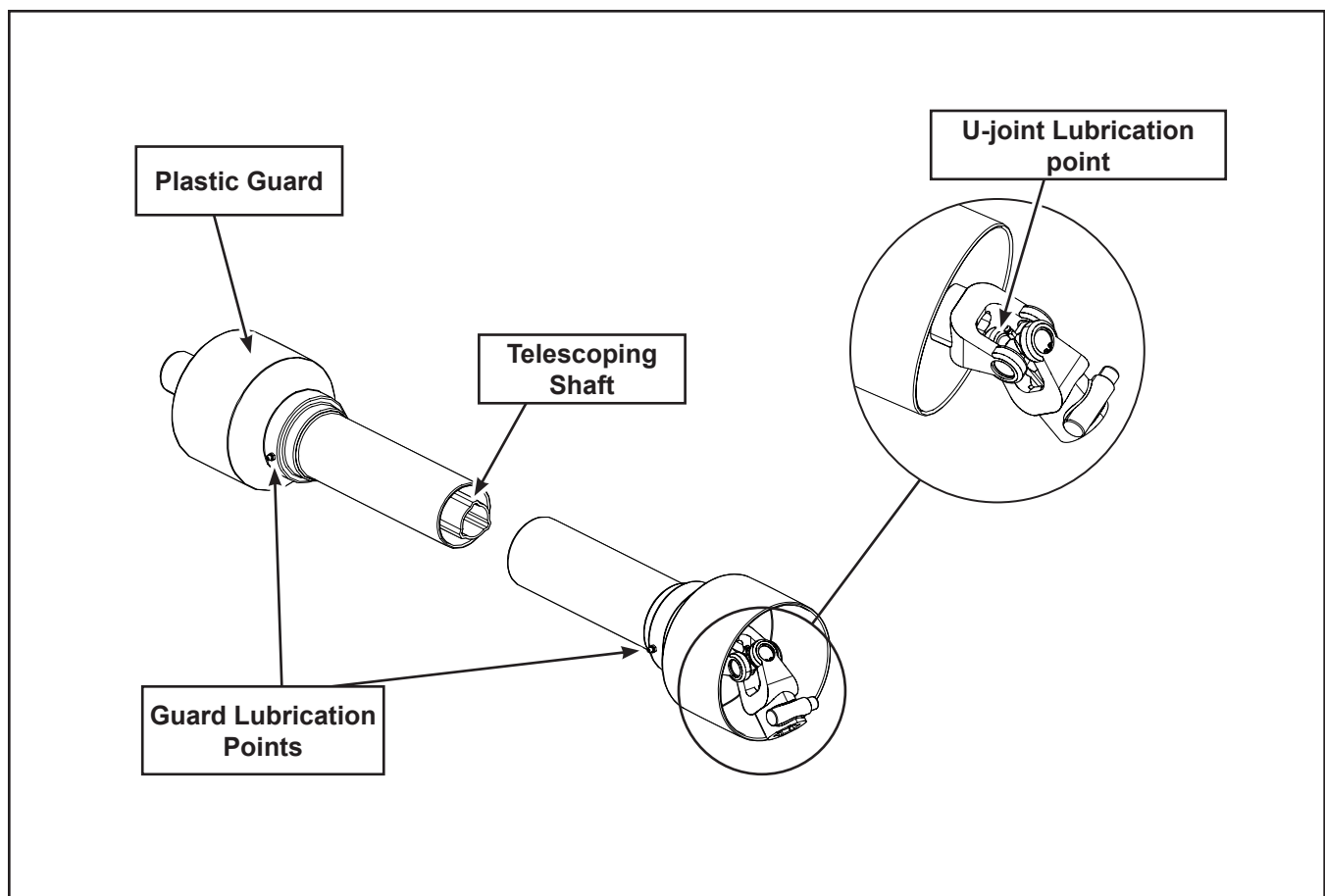


Fig. 36—Driveline Maintenance

15.6 Rotor Lock Pin

All models have a rotor lock pin on the upper rotor housing. It works on a pull, twist and release principle and is a simple and reliable spring pin used to secure the rotor from moving while the upper rotor housing is open. It is designed to only be able to be engaged when the rotor housing is open, the spring pin cannot be engaged when the rotor housing is closed. This feature prevents unintended use while in operation.

The rotor lock pin should be used anytime the rotor housing is open to prevent potential injury.

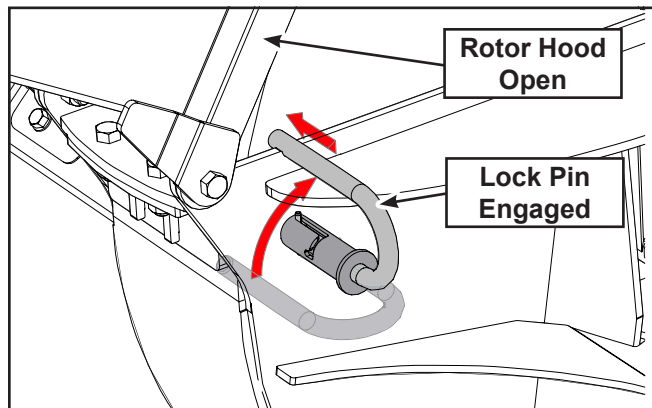


Fig. 37 – Rotor Lock Pin (BX52S, BX72S, BX102S shown)

15.7 Twig Breaker

(All Models except BX36S.)

The Twig Breaker is a breaker tab located on side of the lower rotor housing. The discharge paddle passes around the twig breaker and helps to break the material into smaller pieces and turn it into mulch. Inspect the twig breaker for damage such as gouges, a bent, or missing tooth.

A damaged or worn twig breaker should be replaced.

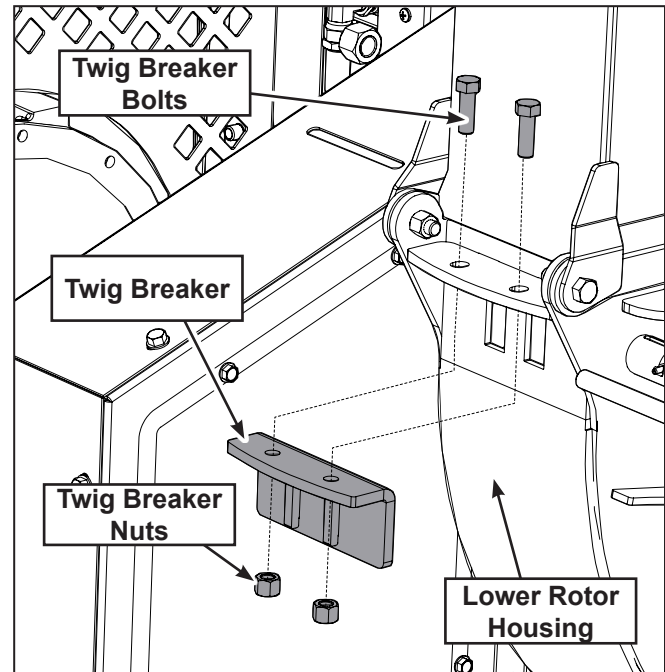


Fig. 38 – Twig Breaker

15.8 Rotor Blades

The rotor and ledger blades need to be sharp for the chipper to perform as expected. Periodic inspection is recommended. Keep the blades sharp to reduce the amount of power required during operation. Watch the sharpness of the blades when processing material with a lot of sand, soil or dirt mixed with it. Reverse or sharpen the blades if the cutting edge becomes dull.

The rotor is equipped with 4 blades spaced evenly to keep the rotor in balance. If one blade needs to be changed, the one opposite should also be changed.

It is recommended that the rotor blades be removed from the rotor when sharpening. Always sharpen the blades at a 45° angle to provide the best cutting effect as it meets the stationary blade. Be sure to tighten the blade mounting bolts to their specified torque when re-installing the blades to the rotor.

CAUTION!

Avoid getting pinched or wedged between the lower rotor housing and rotor. The rotor is very heavy. Turn rotor slowly and be aware of hand positioning.

W002

WARNING!

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

W001

15.8.1 Changing Rotor Blades

Place machine in **Safe Condition**. (See page 9.)

1. Remove the bolt that secures the upper rotor housing, and carefully open the rotor housing.
2. With care, slowly rotate chipper rotor plate until the rotor lock lines up with lock hole in the rotor plate.
3. Engage the rotor lock, and ensure it snaps into the lock hole. Do not allow the rotor lock to snap into the chipper blade slot, damage to the blade may result.
4. Remove the bolts that hold the rotor blade to the rotor, remove the blade.
5. Rotate the blade and reinstall or replace with new or re-sharpened blade.
6. Ensure the blade is properly oriented, with the leading edge out. The blade is designed to fit into the rotor one way only. See diagram for proper installation.

7. Tighten bolts as specified in the torque chart.

8. Repeat steps for remaining blades.

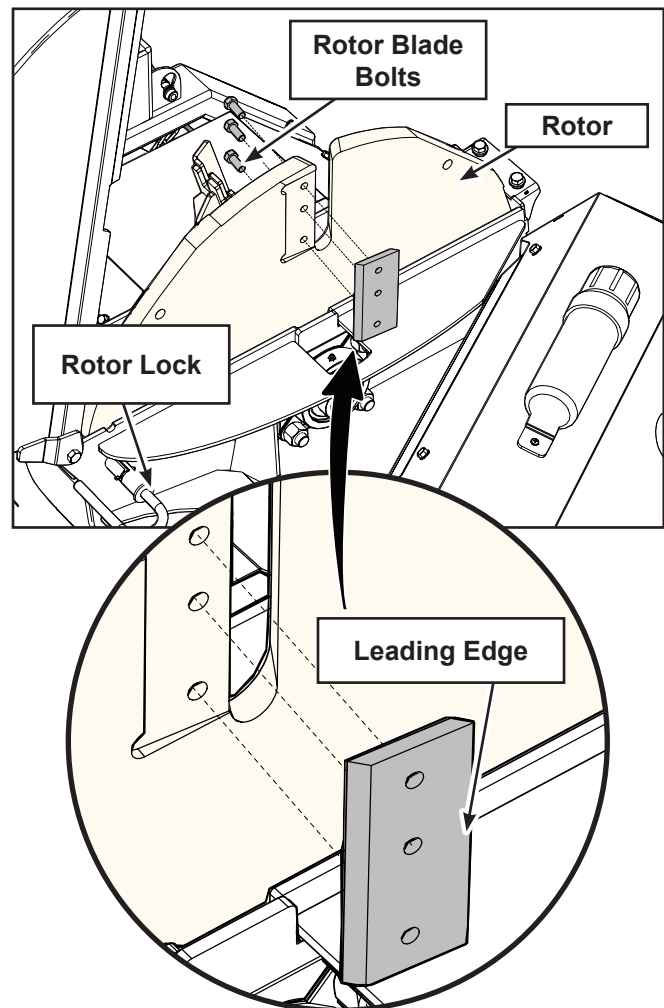



Fig. 39—Proper orientation of rotor blade

 **NOTE:** The rotor blade may have 4 mounting holes, depending on the model. The removal / replacement procedure is the same.

15.9 Ledger Blades

Ledger blades shear material as it passes the moving rotor blades.

Ledger blades are located on the lower rotor housing, mounted on slotted holes for adjustment. There are four usable corners on the blade. When the corner facing the rotor blade rounds over, remove the blade and re-install so a different corner is facing the rotor blade.

Place machine in **Safe Condition** (See page 9).

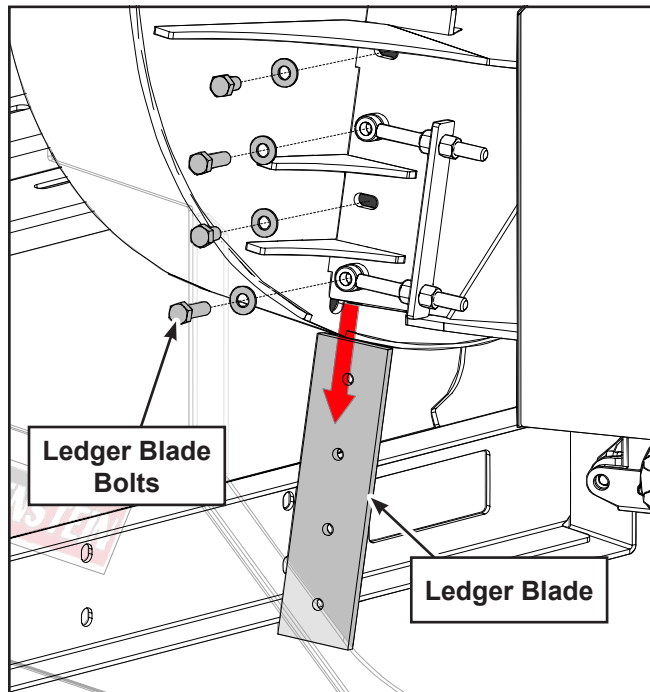


Fig. 40 – Cut away view to show ledger blade assembly

1. Remove the four bolts that hold the ledger blade to the ledger mount.
2. Carefully remove the blade, pull it down and slightly to the side to clear the axle.
3. Rotate the blade and reinstall, or replace with new or re-sharpened blade.
4. Hand tighten the bolts.
5. Set the clearance between the ledger and rotor blades using the ledger adjuster.
6. Loosen the nuts on the adjuster and move the ledger to the correct clearance at **1/32–1/16"** (**.76–1.52 mm**) to obtain the best performance.
7. Make sure both adjusters are moved evenly.

NOTE: For fast and easy setting, use the chipper clearance setting gauge, included with your BX chipper.

8. Tighten adjuster nuts, then tighten ledger blade bolts. Tighten as specified in the torque chart.

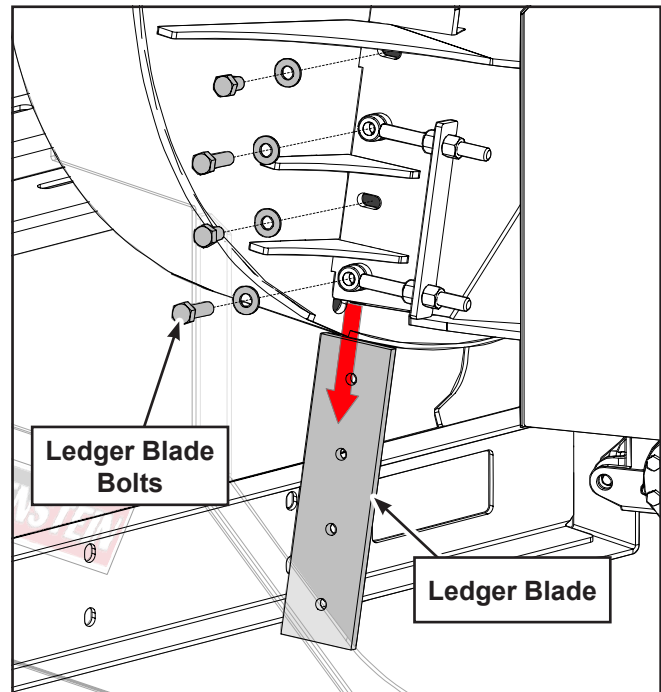


Fig. 41 – Cut away view to show ledger blade assembly

NOTE: The ledger blade may have three mounting holes, depending on the model. The removal / replacement / adjustment procedure is the same for both.

15.9.1 Ledger Knife Spacer Tool

The Ledger Knife Spacer Tool is located on the lower rotor housing.

As the blade wears, it can be rotated or flipped to use a fresh corner. If the blade is moved, it must have its clearance settings adjusted to maintain its shearing efficiency.

The best way to ensure you have the correct clearance is to use the Wallenstein Ledger Adjusting Tool. It is the correct thickness to set the recommended clearance between the rotor and stationary blades.

IMPORTANT! The clearance should be set to 1/32–1/16" (.76–1.52 mm) for optimum performance.

Depending on the chipper model, there may or may not be adjusting bolts along with mounting nuts and bolts to secure the ledger blade. Adjusting the ledger blade is the same in either case.


Place machine in **Safe Condition** (See page 9).

1. Remove the bolt that secures the upper rotor housing, and carefully open the rotor housing.
2. Carefully move the rotor so the a rotor blade overlaps the ledger blade.
3. Loosen the fasteners and / or adjusters and move the ledger away from the rotor blade.
4. Insert the gauge between the ledger blade and rotor blade

5. Move the ledger blade in towards the rotor blade.
6. Ensure you move the ledger evenly, so the entire edge of the ledger is in contact with the gauge.
7. Hand tighten the fasteners, the gauge should drag slightly between the blades
8. With the gauge in place:
 - Tighten adjuster nuts first (if equipped).
 - Tighten ledger blade bolts.
 - Tighten all fasteners as specified in the torque chart.
9. Check that the gauge still drags slightly when you remove it.

Ledger blade is now correctly adjusted and is ready for service.

It is recommended to occasionally check the blade clearance per your chippers maintenance schedule.

 **NOTE:** Depending on the model, the ledger blade may have 3 or 4 mounting holes. The adjustment procedure is the same for both.

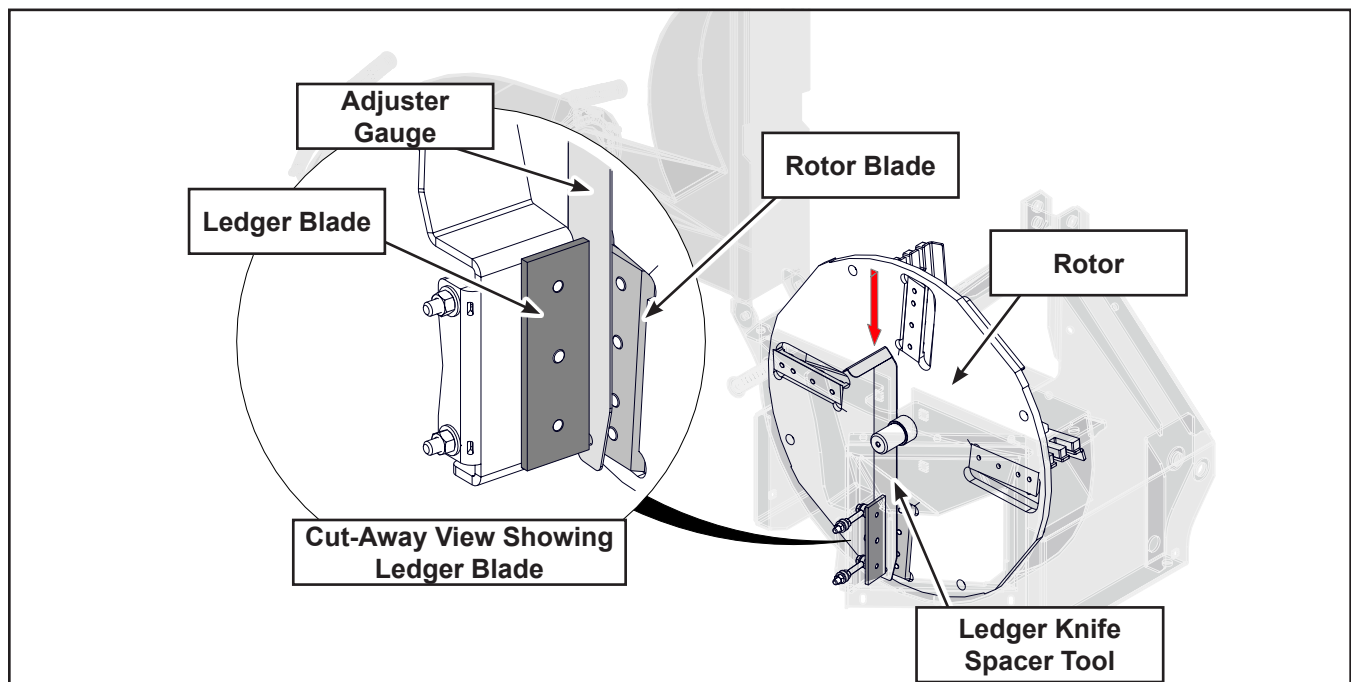


Fig. 42—Ledger Blade Adjusting Tool


16. Trouble Shooting

The Wallenstein 3-Point Hitch Wood Chipper is designed with blades on a rotor to cut, shear and chip wooden material. It is a simple and reliable system that requires minimal maintenance.

The following table lists causes and solutions to problems that could be encountered.

If a problem encountered that is difficult to solve, contact a Wallenstein distributor or dealer. Have the chipper serial number handy.

Always wear **Personal Protective Equipment (PPE)** whenever operating the Wood Chipper or working in the vicinity.

Problem	Cause	Solution	Caution 
Rotor does not turn	Obstructed discharge.	Clear debris from discharge chute.	Ensure machine is off
	Rotor plugged.	Inspect and clear chipper hopper lower rotor housing and rotor.	Ensure machine is off
	Broken shear pin		Ensure machine is off
Slow feeding.	Low engine speed	Set throttle to specified speed (540–1000 rpm)	
	Blades and/or knives are dull.	Rotate, sharpen or replace blade and/or knives.	Ensure machine is off
	Rotor blade angle wrong, improper angle.	Re-sharpen knives to specified angle and check that blade is installed properly.	Ensure machine is off
	Obstructed discharge.	Clear debris from discharge chute .	Ensure machine is off
Unusual vibration while operating.	Broken or missing blade .	Replace broken / missing blade.	Ensure machine is off.
	PTO driveline out of phase	Align driveline	Ensure machine is off.
	Rotor may be bent	Check rotor to see if it wobbles. Replace rotor	Ensure machine is off. Call technician for repair
Machine requires excessive power or stalls.	Obstructed discharge.	Clear debris from discharge chute	Ensure machine is off
	Feeding in too much material	Feed smaller amounts into chipper hopper.	
	Feeding material too quickly	Feed larger material slowly into chipper hopper.	
	Rotor plugged.	Inspect and clear chipper hopper lower rotor housing and rotor.	Ensure machine is off
	Green material will not discharge.	Allow material to dry or alternate dry/wet material.	
	Chipper blade clearance too large.	Set clearance to 1/32–1/16" (.76–1.52 mm). Use chipper clearance tool (see accessories)	Ensure machine is off
	Dull blades.	Rotate, sharpen or replace blade	Ensure machine is off

17. Specifications

Model	BX36S	BX52S	BX72S	BX102S
Drive System	Direct Drive, PTO with shear bolt	Direct Drive, PTO with shear bolt	Direct Drive, PTO with shear bolt	Direct Drive, PTO with shear bolt
HP Range	12–30 hp 9–22 kW	22–55 hp 14–37 kW	50–85 hp 26–75 kW	80–120 hp 49–112 kW
Chipper Capacity (diameter)	3.5" 9 cm	5" 13 cm	7" 17 cm	10" 25 cm
Chipper Housing Opening	3.5" x 9" 9 cm x 23 cm	5" x 10" 13 cm x 26 cm	7" x 12" 17 cm x 30 cm	10" x 15" 25 cm x 38 cm
Rotor Size	25" 64 cm	25" 64 cm	28" 71 cm	36" 91 cm
Number of Rotor Knives	4 segmented knives	4 segmented knives	4 full knives	4 segmented knives
Knife Type	4-bolt hardened / reversible	4-bolt hardened / reversible	4-bolt hardened / reversible	3-bolt hardened / reversible
Rotor Weight	96 lb 44 kg	125 lb 57 kg	175 lb 79.3 kg	400 lb 181 kg
Feeding System	Manual Feed	Manual Feed	Manual Feed	Manual Feed
PTO height (from ground)	13"–19" (adjustable) 34–42 cm	13"–19" (adjustable) 34–42 cm	19" 42 cm	23" 58 cm
Mounting System	3-Point Hitch Cat I (iMatch™ and Quick Hitch compatible)	3-Point Hitch Cat I (iMatch™ and Quick Hitch compatible)	3-Point Hitch Cat I (iMatch™ and Quick Hitch compatible)	3-Point Hitch Cat II (iMatch™ and Quick Hitch compatible)
Weight	395 lb 179 kg	505 lb 229 kg	728 lb 330 kg	1,143 lb (estimated) 519 kg
Dimensions (L x W x H)	55" x 45" x 60" 140 cm x 114 cm x 152 cm	43" x 55" x 66" 110 cm x 140 cm x 168 cm	64" x 70" x 82" 163 cm x 178 cm x 208 cm	71" x 71" x 89" 180 cm x 180 cm x 226 cm
Discharge Hood Rotation	360°	270°	360°	360°
Discharge Hood Height	60" 152 cm	66" 168 cm	82" 208 cm	89" 226 cm
Rated Speed	540–1000 rpm	540–1000 rpm	540–1000 rpm	540–1000 rpm

Model	BX36S	BX52S	BX72S	BX102S
<p>Standard Features</p>	<ul style="list-style-type: none"> • Aggressive Self Feed System • Multi Position, Locking Discharge Chute • Reversible Rotor Blades • Reversible Ledger Knife • Manual Feed Hopper • Ledger Knife Spacer Tool • Bearing Protection Plates • Four-position Rotor Lock • Adjustable Ski Base • Single Blade Twig Breaker • 270° Single Handle Exit Chute Rotation • Dual Knob Easy Change Discharge Deflector • Three-position Select 3-PH Lift Arm Width 	<ul style="list-style-type: none"> • Aggressive Self Feed System • Multi Position, Locking Discharge Chute • No Tools Fold Up Feed Hopper with latch • Reversible Rotor Blades • Reversible Ledger Knife • Manual Feed Hopper • Ledger Knife Spacer Tool • Bearing Protection Plates • Positive Adjust Ledger Knife • Four-position Rotor Lock • Adjustable Ski Base • Dual Blade Twig Breaker • 270° Dual Handle Exit Chute Rotation • Single Handle Easy Change Discharge Deflector • Three Position Select 3-PH Lift Arm Width 	<ul style="list-style-type: none"> • Aggressive Self Feed System • Multi Position, Locking Discharge Chute • No Tools Fold Up Feed Hopper with latch • Reversible Rotor Blades • Reversible Ledger Knife • Manual Feed Hopper • Ledger Knife Spacer Tool • Bearing Protection Plates • Positive Adjust Ledger Knife • Four-position Rotor Lock • Dual Blade Twig Breaker • 270° Dual Handle Exit Chute Rotation • Single Handle Easy Change Discharge Deflector • Three Position Select 3-PH Lift Arm Width 	<ul style="list-style-type: none"> • Aggressive Self Feed System • Multi Position, Locking Discharge Chute • No Tools Fold Up Feed Hopper with latch • Reversible Rotor Blades • Reversible Ledger Knife • Manual Feed Hopper • Ledger Knife Spacer Tool • Bearing Protection Plates • Positive Adjust Ledger Knife • Four-position Rotor Lock • Dual Blade Twig Breaker • 270° Dual Handle Exit Chute Rotation • Single Handle Easy Change Discharge Deflector • Three Position Select 3-PH Lift Arm Width


17.1 Bolt torque

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



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