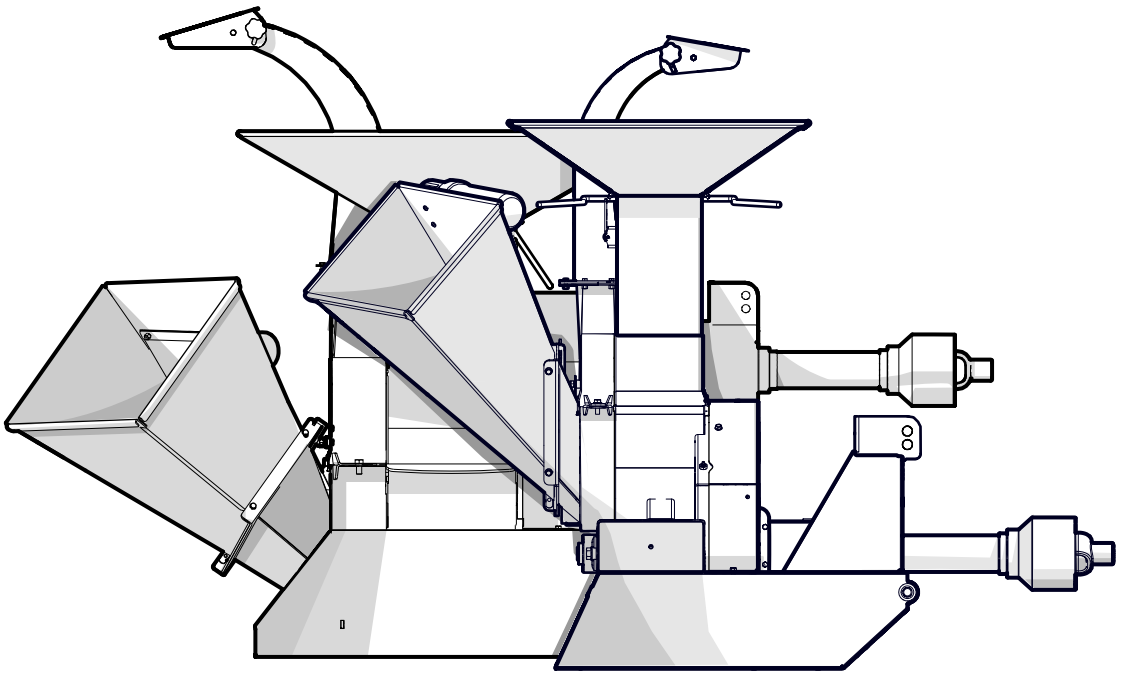
OPERATOR'S MANUAL

BXM Series

3 PH CHIPPER-SHREDDER



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WALLENSTEIN

1. Foreword

1.1 Introduction

Congratulations on your choice of a Wallenstein **BXM Series 3-point Hitch Chipper-Shredder!**

Wallenstein BXM Series Chipper-Shredders are designed to chip and chop small trees, brush, and other wood debris. The chipped / shredded material is fine enough to be composted or used in a variety of ways.

This manual covers the BXM Series models:

- **BXM32**
- **BXM42**

Safe, efficient and trouble-free operation of this Wallenstein product requires that anyone using or servicing the machine reads the Safety, Operation, Maintenance information contained within this Operator's Manual.

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.

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

⚠ 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

⚠ WARNING

Cancer and Reproductive Harm
www.P65Warnings.ca.gov

⚠ ADVERTENCIA

Cáncer y Daño Reproductivo
www.P65Warnings.ca.gov

www.wallensteinequipment.com

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1.2 Delivery Inspection Report

Wallenstein BXM Series 3-point Hitch Chipper-Shredder

To activate warranty, register your product at: *www.wallensteinequipment.com*

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

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

Customer

Address

City, State/Province, ZIP/Postal Code

( )
Phone Number

Contact Name

Model

Serial Number

Delivery date

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

Dealer

Address

City, State/Province, ZIP/Postal Code

( )
Phone Number

Dealer Inspection Checklist

_____ Rotor turns freely and the blade clearance is correct.
_____ All cutting edges are sharp and in good condition.
_____ Discharge chute and deflector move freely.
_____ All belts are aligned and tension is correct.
_____ Chop block and shredder knives function correctly.
_____ Spring-loaded shredder gate moves freely.
_____ All fasteners are tightened to the correct torque.
_____ All grease points are lubricated.
_____ Purchased accessories are included, if applicable.
_____ Operator's Manual is in the storage tube.

Safety Checks

_____ All safety sign decals are applied and legible.
_____ All guards, shields, and covers are installed and secure.
_____ A retainer is installed through each hitch point.
_____ Operating and safety instructions were reviewed.

1.3 Serial Number Location

Always provide 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 future reference.**

Record Product Information Here	
Model:	
Serial Number:	

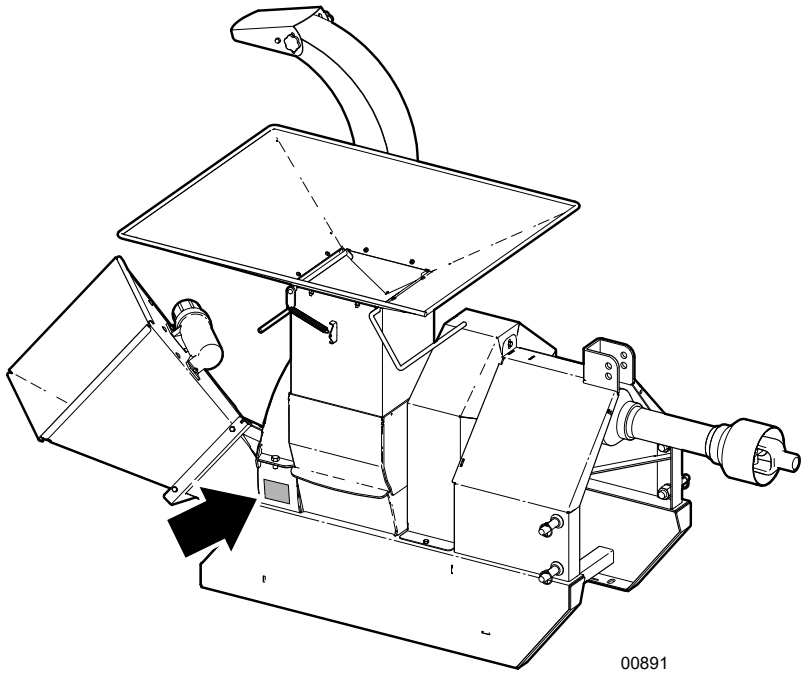
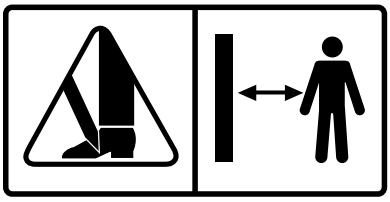


Fig. 1 – Serial Number Plate Location (Typical)

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.

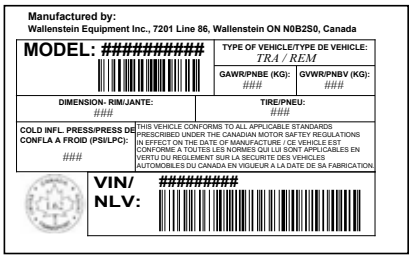
Safety Sign Decals are pictorial with a yellow background and generally two panel. They can be either vertical or horizontal.



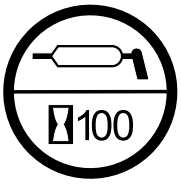
Safety Notice Decals are pictorial with a blue background and generally rectangular with single or multiple symbols. This decal informs what Personal Protective Equipment is required for safe operation.

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. The decal indicates a maintenance procedure 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 Wood Chipper 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

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

YOU are responsible for the SAFE operation and maintenance of your Wallenstein product. **YOU** must make sure that 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 alerts you to all good safety practices that should be used 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 the appropriate PPE. This includes but is not limited to:
  - A hard hat.
  - Heavy gloves.
  - Hearing protection.
  - Protective footwear with steel toes and slip resistant soles.
  - Protective glasses, goggles, or a 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, shields, and covers before starting.
- Keep a fire extinguisher available for use should the need arise and know how to use it.

- **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 owner's responsibility to the operator to ensure familiarity and understanding of the machine.
- **DO NOT** allow riders during transport.
- **DO NOT** risk injury or death by ignoring good safety practices.

2.5 Equipment Safety Guidelines

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

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 14*.
- Avoid loose fitting clothing, loose or uncovered long hair, jewelry, and loose personal articles. These can get caught in moving parts. Jewelry may also ground a live circuit.
- Never consume alcoholic beverages or drugs while using this equipment. These can hinder alertness or coordination. Consult your doctor about using this machine while taking prescription medications.
- This equipment is dangerous to children and persons unfamiliar with its operation. Do not allow persons to use or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works. Review the safety instructions with all users annually.
- The operator must be a responsible, properly trained and physically able person familiar with machinery and trained in this equipment's operations. If the elderly are assisting with work, their physical limitations need to be recognized and accommodated.
- Use this machine only in daylight or good artificial light.
- Learn the controls and how to stop the tactor and machine quickly in an emergency.
- 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

The term **Safe Condition** is referenced throughout this manual. What this means is setting the machine in a state that makes it safe to load, service, maintain, or prepare for storage.

Complete the following to place the machine in a Safe Condition before performing any service, maintenance work, or storage preparation:

Safe Condition

1. Lower the chipper to the ground.
2. Disengage the PTO.
3. Set the parking brake and turn off the tractor engine. Remove the ignition key.
4. Make sure all components have stopped moving.
5. Block and chock the tractor wheels.

2.7 Safety Training

Safety is a primary concern in the design and manufacture of Wallenstein products. Unfortunately, efforts to provide safe equipment can be wiped out by a single careless act.

- It is the operator's responsibility to read, understand and follow ALL safety and operation instructions in this manual.

- 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.
- Know the tractor controls and how to stop the machine quickly in an emergency.
- 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:
  - 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
  - Each of the safety messages found on the safety signs on the machine.
  - Engine operator's manual
- PPE is recommended during assembly, installation, operation, adjustment, maintenance, repair, removal, cleaning, and transport.
- 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.
- Be sure machine is properly mounted, adjusted and in good operating condition.
- Perform the **Pre-operation Checklist** procedure before starting work (see *Pre-Operation Checklist on page 28)*.

2.9 Welding Safety

- Welding repairs are to be performed by a trained welder with proper service instructions. Know the material to be welded and select the correct welding procedure and materials (electrodes, rods, wire) that provide a weld metal strength equivalent to the parent material.
- Work with extra care when welding, grinding or torch cutting near flammable objects.
- Welding on painted surfaces releases dangerous fumes and results in a poor weld joint that can result in failure and potential accidents. Always remove paint from areas to be welded.
- Heated paint gives of poisonous gases. Therefore, paint must be removed from an area with a radius of at least 4" (10 cm) before carrying out welding, grinding or gas cutting. In addition to the health hazard, the weld is of inferior quality and strength if the paint is not removed.

Methods and precautionary measures when removing paint:

- **Blasting**—use respiratory protective equipment and protective goggles.
- **Paint remover or other chemicals**—use a portable air extractor, respiratory protective equipment and protective gloves.
- **Grinding**—use a portable air extractor, respiratory protective equipment and protective gloves and goggles.

2.10 Sign-Off Form

Anyone using this machine must read and thoroughly understand all Safety, Operation and Maintenance information in this manual. An untrained operator should never use this machine.

To help document this training, the sign-off sheet provided below can be used.

Make periodic reviews of Safety and Operation a standard practice for all operators. Review again at the startup of every season.

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

ISO 4254-1 Agricultural machinery – Safety

ASABE S318 Safety for Agricultural Field Equipment

ISO 3600 Operator's Manual – Machinery for Agriculture, Forestry & Lawn Equipment

Sign-off Form		
Date	**Owner**	**Employee**

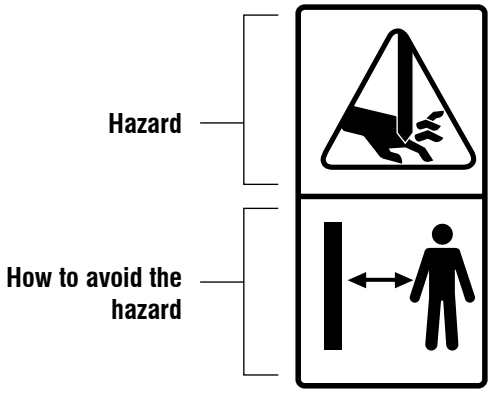
3. Safety Signs

3.1 Safety Sign Locations

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).

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

Think SAFETY! Work SAFELY!



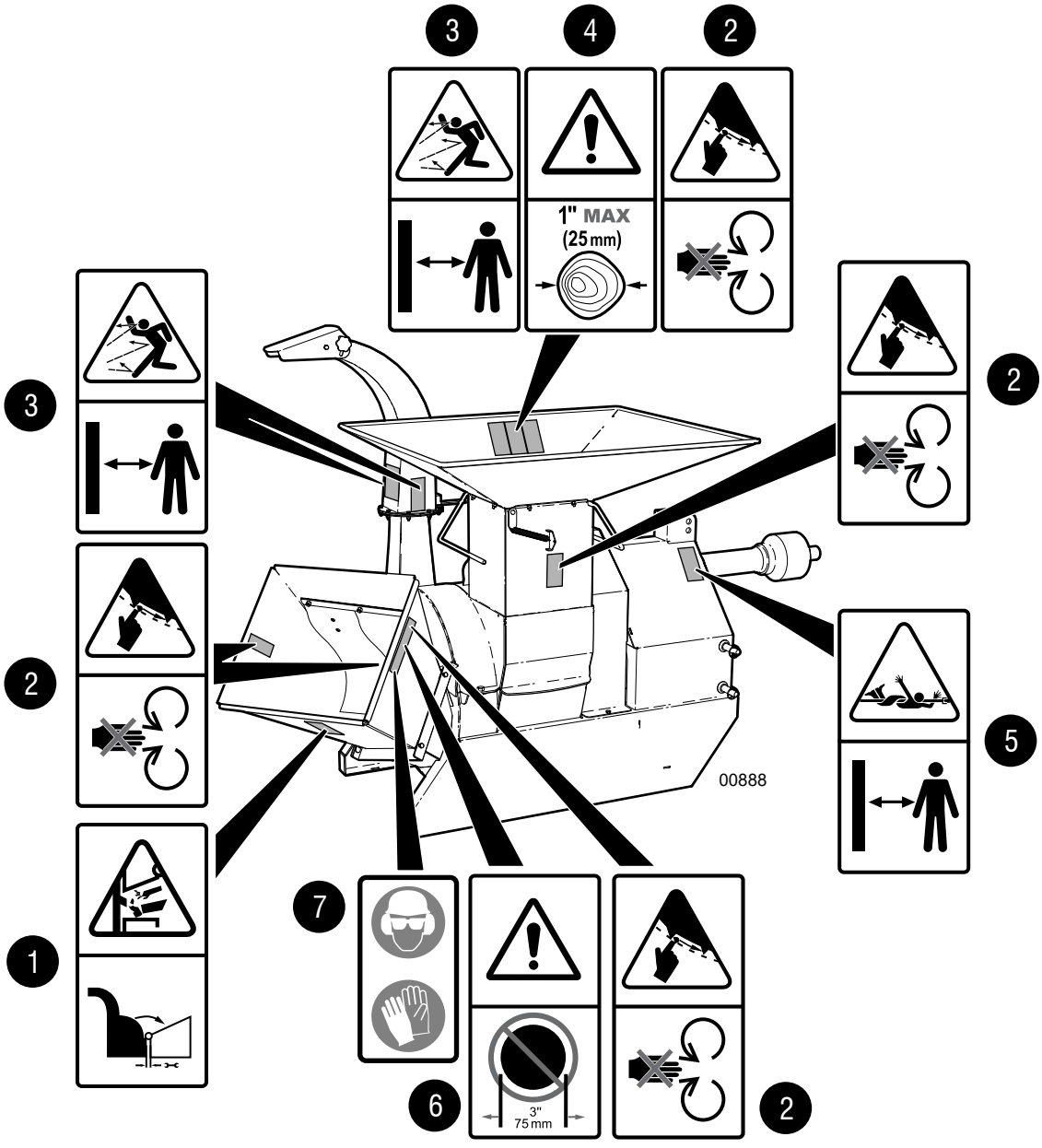


Fig. 2– Safety Sign Decal Locations—Typical

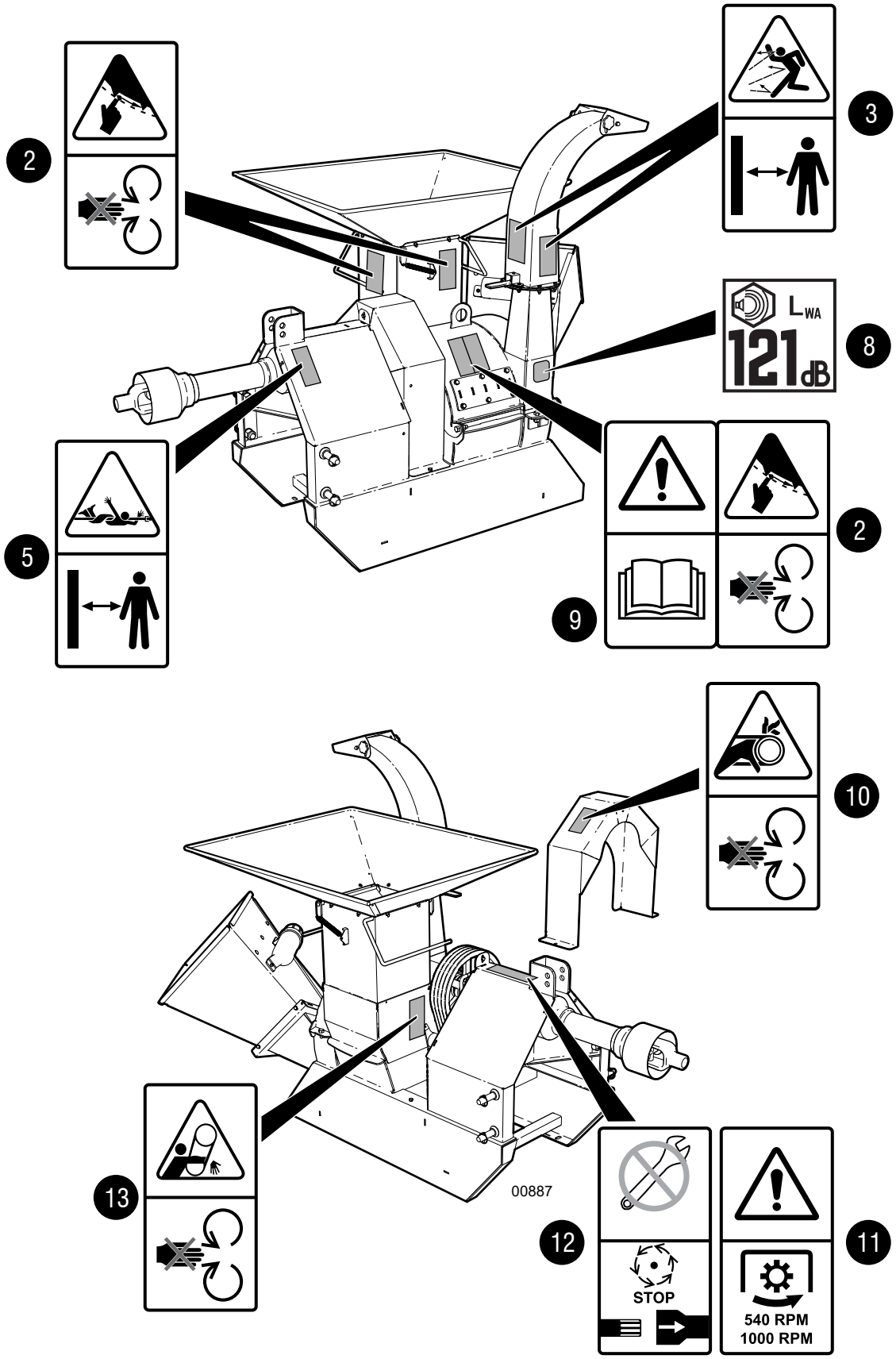


Fig. 3– Safety Sign Decal Locations—Typical

Safety

3.2 Safety Sign Explanations

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

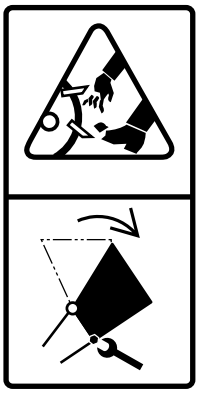
New safety signs are available from your authorized dealer.

1. WARNING!

Risk of hands or feet being severed or seriously injured in this area!

Never operate the chipper with the feed hopper raised in the transport position. Chipper feed hopper must be lowered and bolted in place for operation.

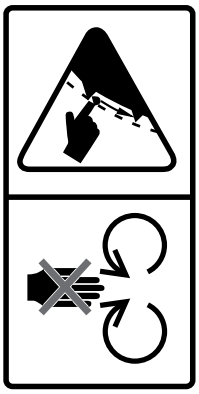
(BXM42 only)



2. WARNING!

Risk of fingers being severed or serious injury to hands in this area!

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

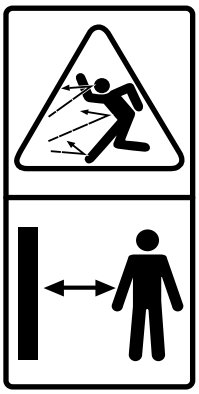


3. CAUTION!

Risk of injury from flying debris!

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. Point chipper discharge away from work area and bystanders. Keep a safe distance from discharge.



4. CAUTION!

Risk of personal injury!

Do not overload the shredder by placing material into the feed hopper larger than the size stated on the decal, for example 1" (25 mm) in diameter.

Machine damage could also result.

5. WARNING!

Risk of entanglement in rotating drive line!

Stay clear of the PTO shaft when the chipper is operating. Do not operate chipper with PTO shaft cover removed. Keep hands, loose clothing, and long hair away from drive line while it is rotating.

6. CAUTION!

Risk of personal injury!

Do not overload the chipper by placing material into the feed hopper larger than the size stated on the decal, for example 3" (75 mm) in diameter.

Machine damage could result.

7. CAUTION!

Always wear appropriate Personal Protective Equipment if around this machine when it is in operation.

- A hard hat
- Hearing protection
- Protective glasses, goggles or face shield
- Protective shoes with slip resistant soles
- Heavy gloves

8. CAUTION!

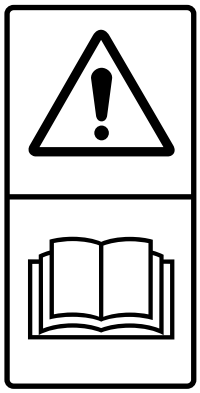
A noise declaration decal indicates the sound power (LWA) emitted by the machine when operating. For this chipper, it can be up to 121 decibels at close distances.

Always wear hearing protection when near the operating machine. Noise exposure over 85 dB on a long-term basis can cause severe hearing loss. Exposure over 90 dB over a long-term basis may cause permanent, total hearing loss.

9. WARNING!

Refer to the operator's manual. Read ALL operating instructions in the manual. Learn the meaning of ALL safety signs on the machine before operating it!

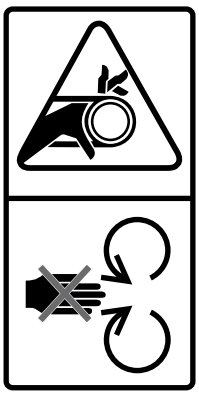
The best safety feature is an informed operator.



10. WARNING!

Risk of serious injury if caught in drivebelt!

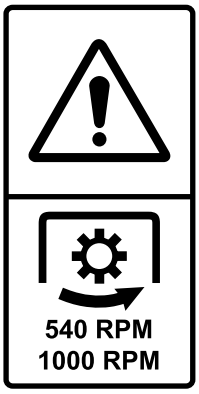
Never operate the machine with guard cover removed. Always keep guards and covers in place when machine is in operation. Keep hands clear of this area.



11. WARNING!

Risk of personal injury. Operate chipper at the correct PTO speed and direction.

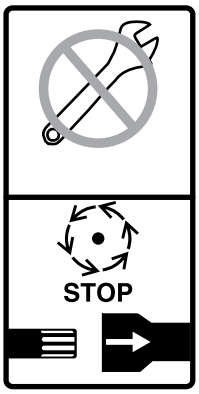
Tractor PTO must operate at 540 or 1000 rpm, rotating in the direction of the arrow.



12. WARNING!

Risk of personal injury!

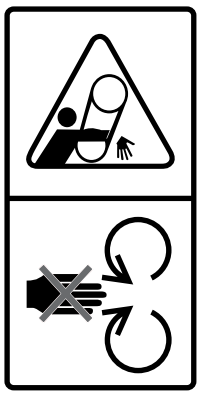
Stop the machine and disconnect the PTO shaft before performing any repair or maintenance procedure. Place the machine in a state that makes it safe to work on. See *Safe Condition on page 9.*



13. WARNING!

Risk of serious injury if caught in drivebelt!

Never operate the machine with guard cover removed. Always keep guards and covers in place when machine is in operation. Keep hands clear of this area.



3.3 Replace 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.
- Keep safety signs clean and legible at all times.
- Parts replaced that had a safety decal on them must also have the safety sign replaced.

Procedure

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).

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 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.

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 provide maximum efficiency. By following these instructions in conjunction with a good maintenance program, your BXM Chipper/Shredder can provide many years of trouble-free service.

4.2 Operator Orientation

IMPORTANT! The directions for left-hand, right-hand, backward and forward mentioned throughout this manual are determined when sitting in the tractor seat, facing the direction of forward travel.

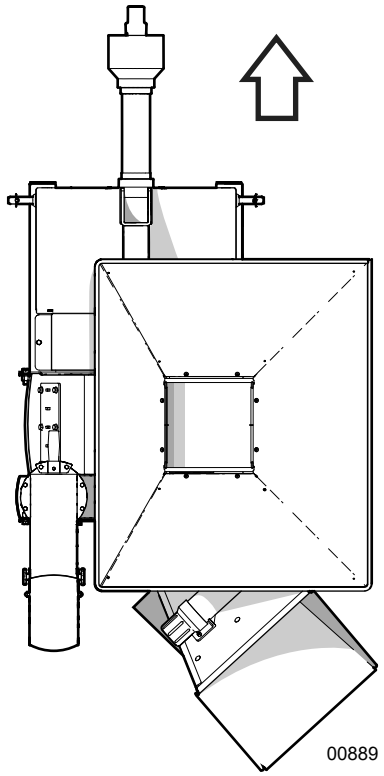


Fig. 4– Direction of forward travel

4.3 Machine Components

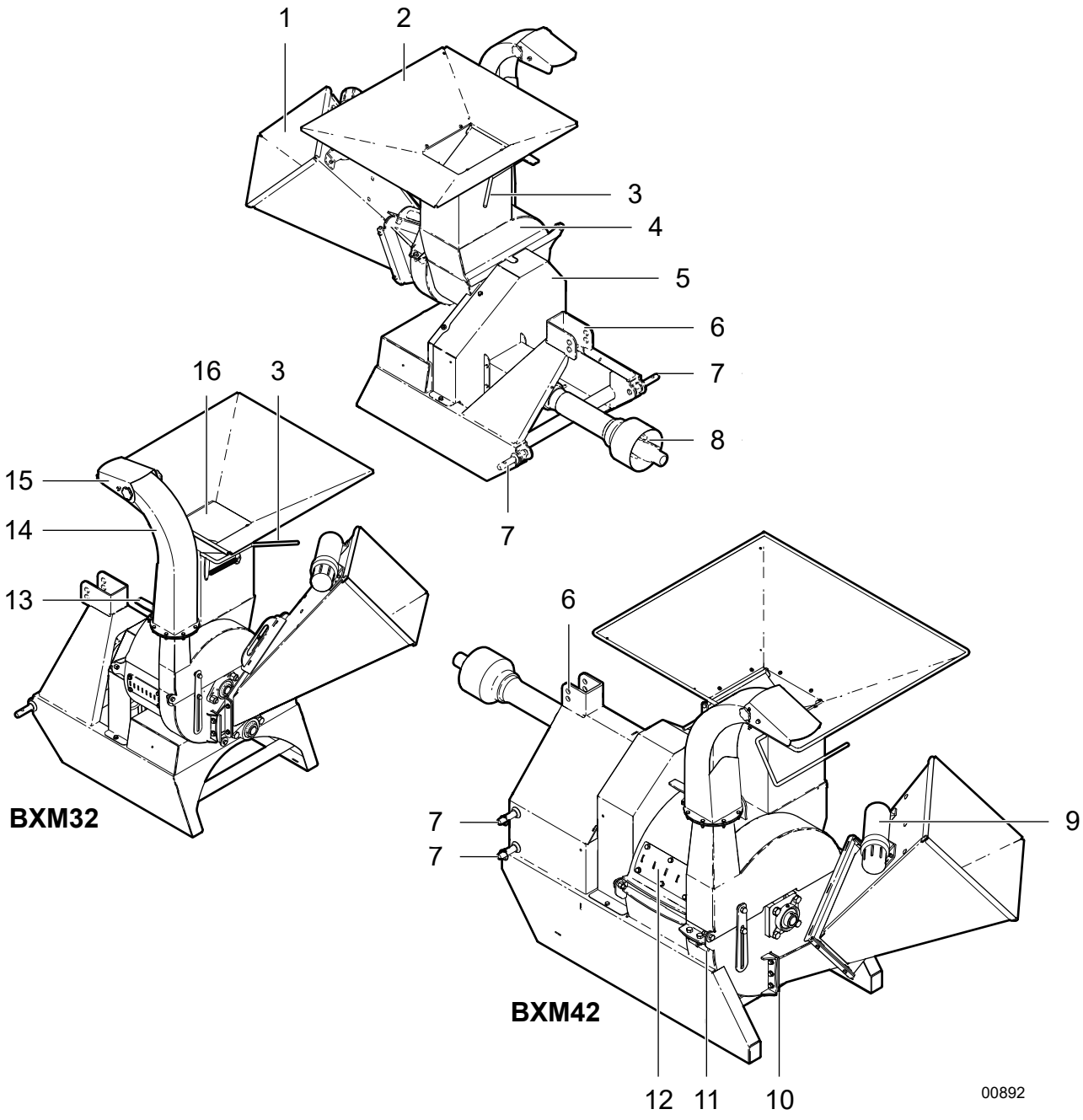


Fig. 5–Components

1. Chipper Feed Hopper
2. Shredder Feed Hopper
3. Shredder Feed Gate Lever
4. Upper Rotor Housing
5. Drive-belt Guard
6. Toplink Attach Point
7. Bottom Link Attach Point
8. PTO shaft
9. Operator's Manual Tube
10. Ledger Blade
11. Twig Breaker (BXM42 only)
12. Chop Block
13. Discharge Chute Lock Lever
14. Discharge Chute
15. Deflector Hood
16. Shredder Gate

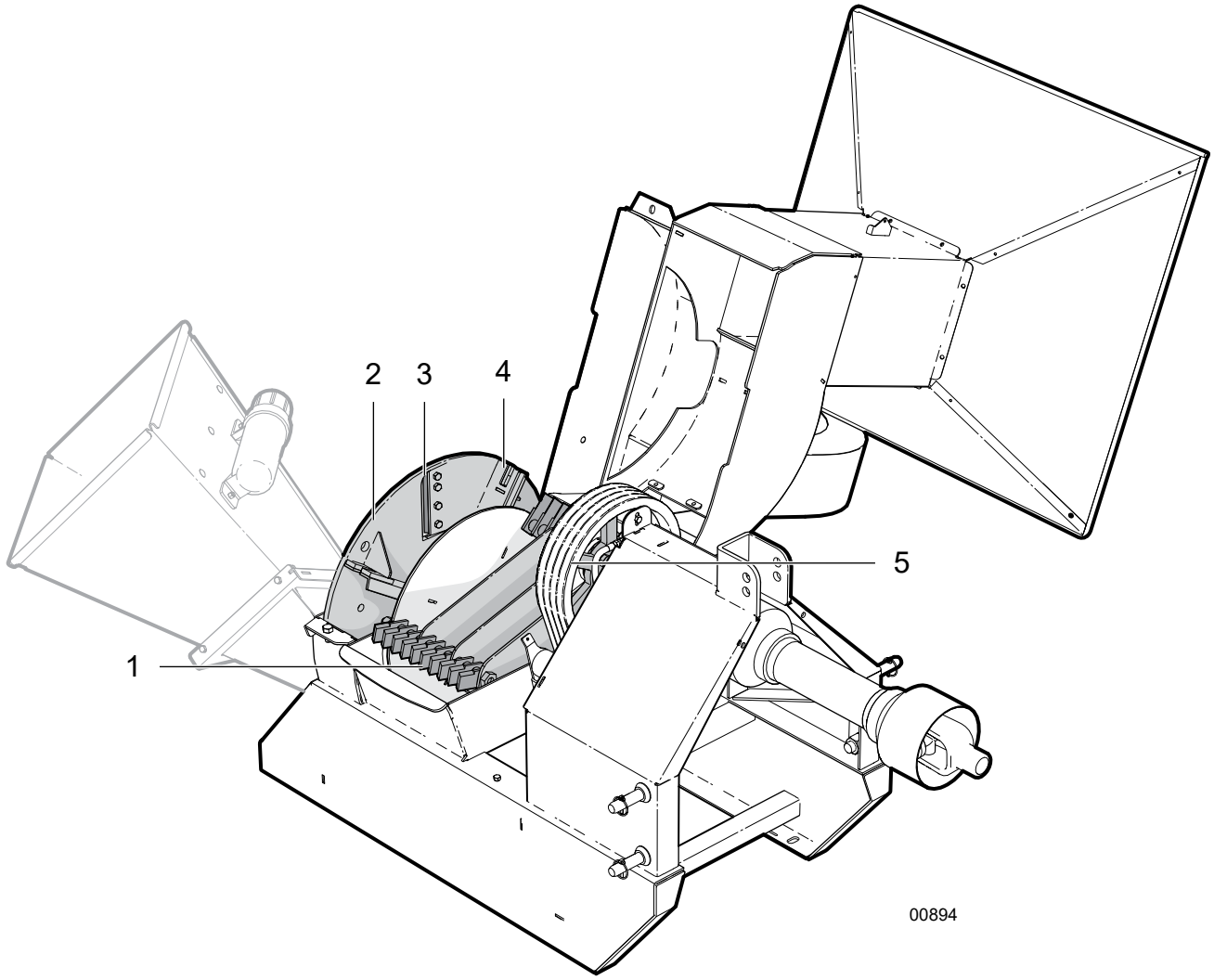


Fig. 6– Components (Typical)

1. Shredder Knives
2. Rotor
3. Rotor Knife
4. Rotor Paddles
5. Drive Belts and PTO Sheave

5. Attach to a Tractor

5.1 Connect 3-point Hitch

⚠ WARNING!

Never let anyone stand between the tractor and the implement during hitching. Too fast of an approach or the operator's foot slipping from the clutch can lead to injury or fatality to the person standing nearby.

W048

IMPORTANT! Removing the drawbar may be required for clearance.

- The BXM32 and BXM42 models are Category I, and are Quick Hitch and iMatch™ compatible.
- BXM42 chipper/shredders feature additional lower clevis style attachment points.

Make sure there is enough room and clearance to safely reverse to the chipper.

Procedure

1. On the tractor, place the 3-point hitch lift arms in their full sway position, then reverse the tractor up to the chipper. The tractor needs to be exactly in-line with the mounting points of the chipper otherwise attaching the 3-point hitch may require moving the implement from side to side.
2. When reversing, lower/raise the lift arms so that they are level with the lower attachment points on the chipper.

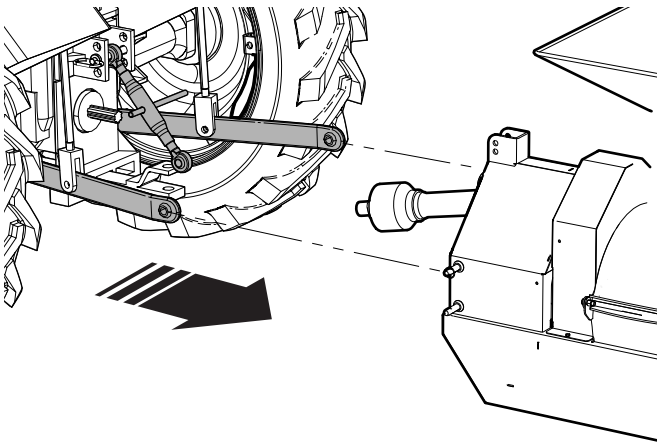


Fig. 7– Back up in line with the chipper

3. Back up slowly and align the balls in the lift arms to the pins on the chipper.
4. Apply the tractor park brake.
5. Starting on one side, push the floating ball on the tractor's lift arms over the lower attachment pin on the chipper.
6. Do the other side in the same manner, keeping the lift arms even. Insert lynch pins on both sides to secure the chipper to the tractor.
7. Attach the tractor toplink to the upper attachment point on the chipper. Insert the pin and lynch pin.
8. As with any implement, the turnbuckle on the toplink may need to be adjusted to level the chipper. Raise the implement just off the ground to check. Adjust toplink length as required.
9. If not already done, level the chipper from side to side using the lift arm jack-screw arm and the toplink turnbuckle. The chipper frame should always be kept horizontal, sitting on the ground during operation.

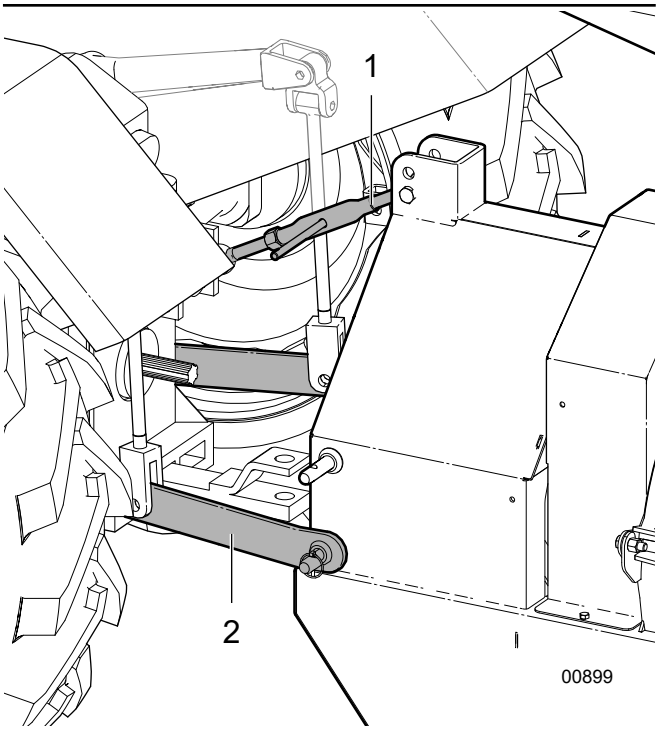


Fig. 8– Three-point Hitch Connected

1. Toplink
2. Lower Lift Arms

5.2 Size 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 this equipment. Carefully read all safety messages in the manual and follow all safety signs on the machine. W081

⚠ 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*.

Illustrations show a winch; however, the method is the same.

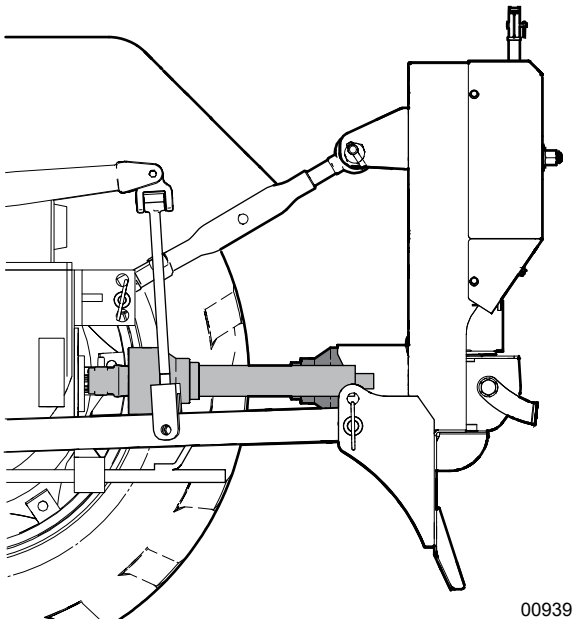


Fig. 9– Input shaft and output shaft

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 23*.

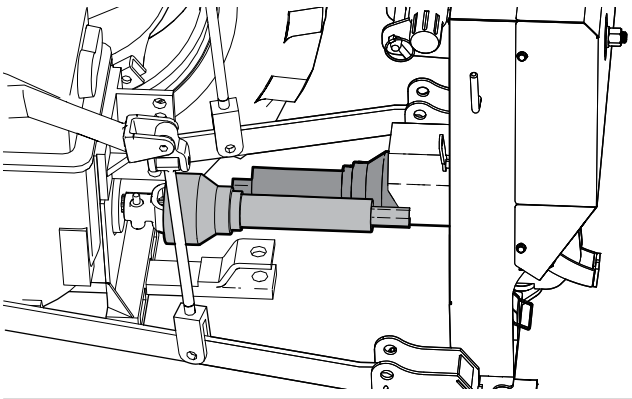


Fig. 10– Lift shaft ends up parallel

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

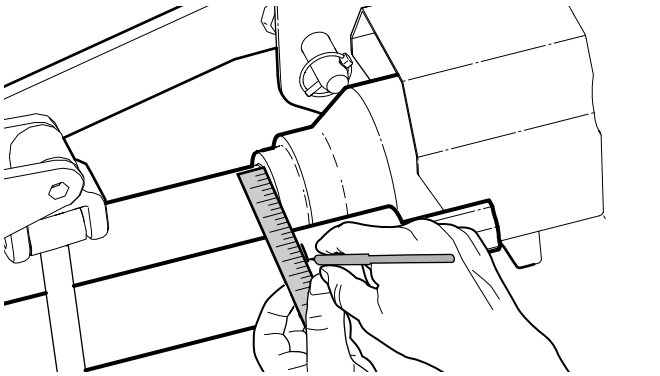


Fig. 11– Transferring the mark

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.

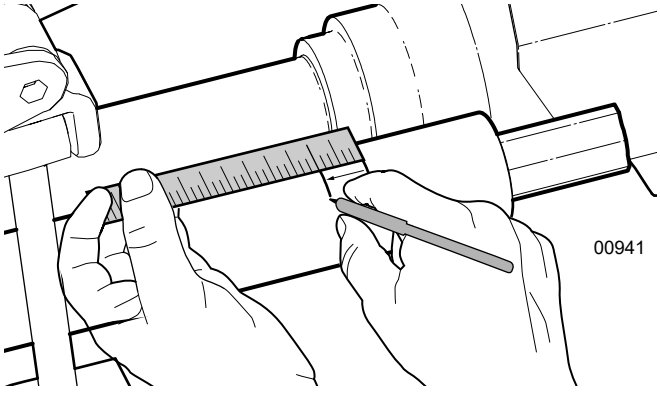


Fig. 12– Place mark to cut plastic tube

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

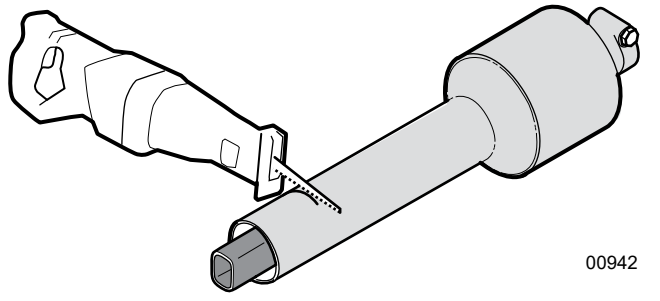


Fig. 13– Cut plastic tube at the mark

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.

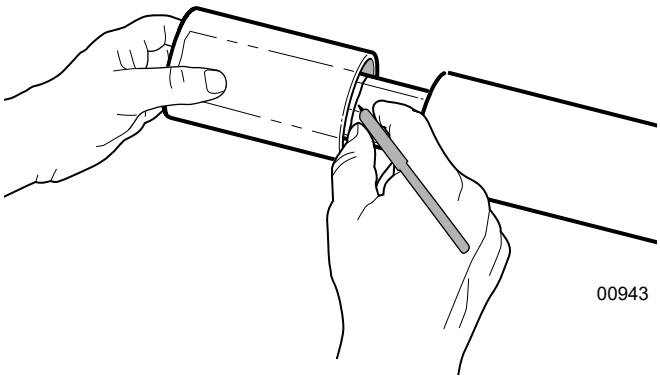


Fig. 14– Marking steel tube.

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

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.

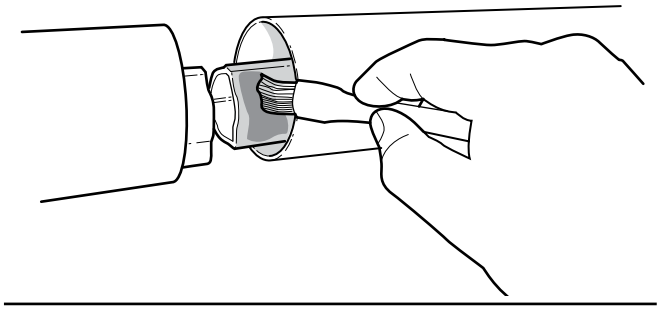


Fig. 15– Grease the inner tube

14. Assemble the two halves of the PTO shaft.

IMPORTANT! Using a driveshaft not supplied with your machine may result in being assembled out of phase (universal joint yokes are not aligned with each other). Make sure driveshaft is assembled with u-joints in phase otherwise unbalances cause wear and eventually lead to failure.

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 PTO shaft halves should overlap inside at least 6" (150 mm).

5.2.1 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**.

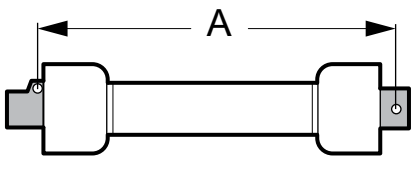


Fig. 16–Measurement A

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**.

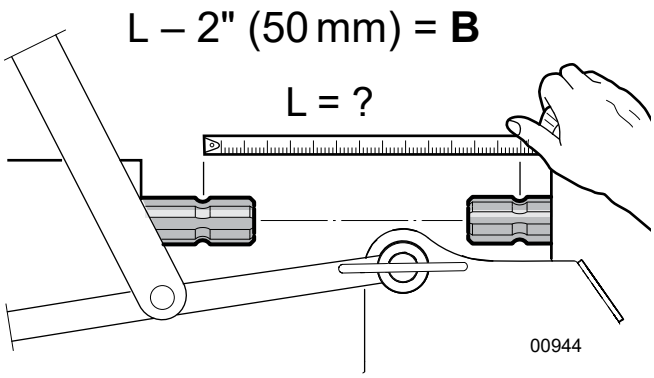


Fig. 17–Measurement B

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

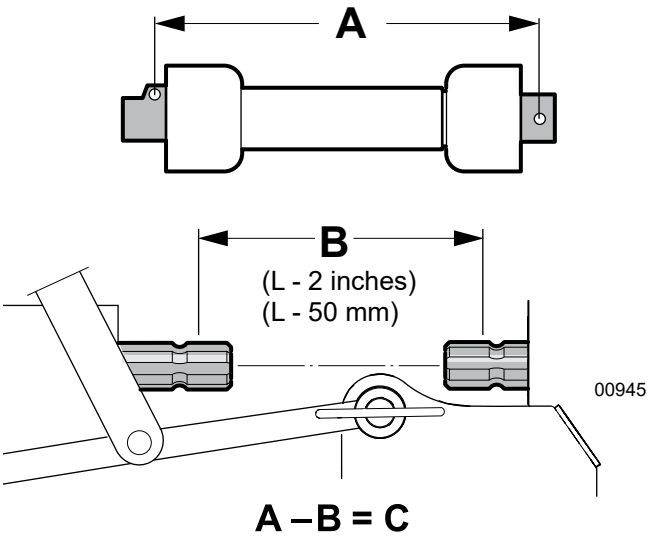


Fig. 18–Value C = Cut Length

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

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.

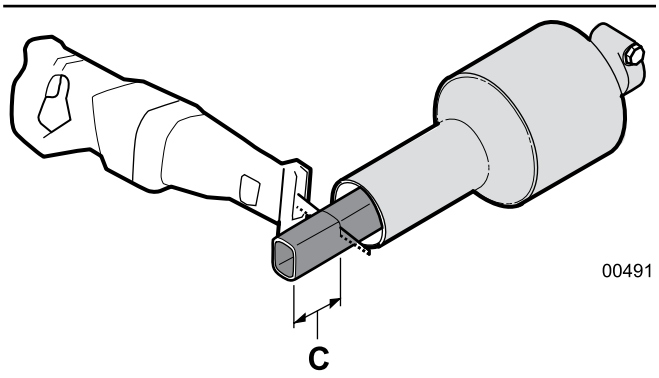


Fig. 19–Cut off the Length C from both PTO Shaft halves

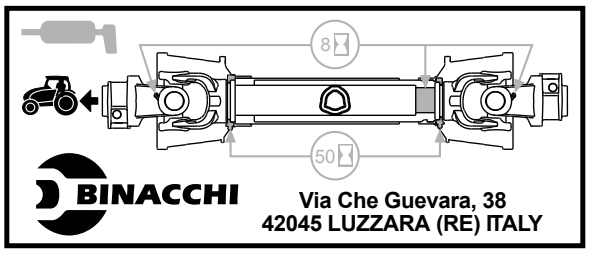
5.3 Install PTO Shaft

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.

A decal on the shielding indicates the tractor-end of the driveshaft.



01655

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.

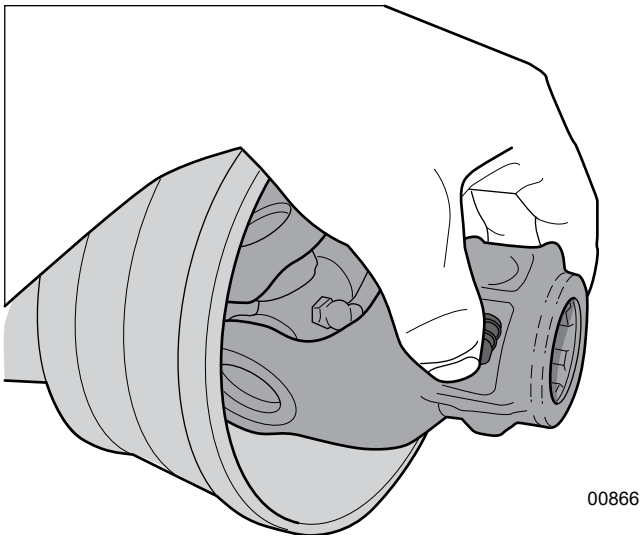
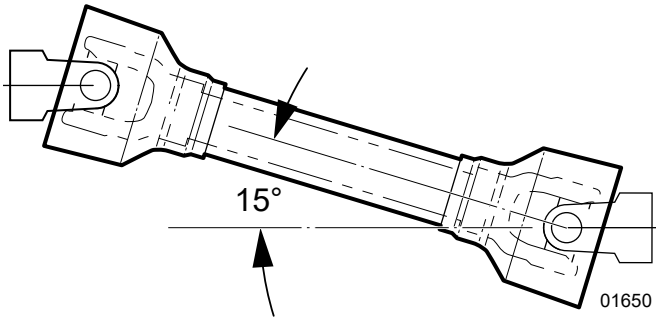

00866

Fig. 20 – 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.

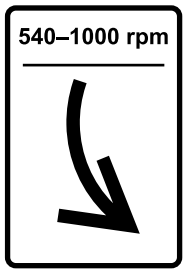
IMPORTANT! Check driveshaft alignment. During operation, the working angle should not be greater than 15° between the tractor and the implement. Misalignment can cause premature wear and eventually failure.



01650

Fig. 21 – Driveshaft Alignment

6. Check the rotation direction. A decal on the machine indicates correct rotation.



6. Controls

Before starting to work, all operators should be familiar with the location and function of all controls.

6.1 PTO Control

⚠ WARNING!

Risk of entanglement in rotating drive line! Stay clear of the PTO shaft when the chipper is operating. Do not operate chipper with PTO shaft cover removed. Keep hands, loose clothing, and long hair away from drive line while it is rotating.

W064

The PTO on the tractor drives the chipper rotor. There is no control on the chipper to engage/disengage the rotor, or control rotor speed. Engaging the PTO starts the rotor to turn.

- Always engage the PTO control slowly with the tractor engine rpm at low idle.
- Disengage the PTO control slowly with the tractor engine rpm at low idle so the rotor slows to a stop before engaging PTO brake.

6.2 Discharge Chute

⚠ 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

The discharge chute has a spring-loaded latch handle that allows the chute to be positioned at any angle, then locked into position with the latch.

1. Lift the latch handle up until the chute lock pin disengages.
2. Use the handle to turn the chute, then release to latch it. Make sure the chute locks into position at the next nearest lock point.

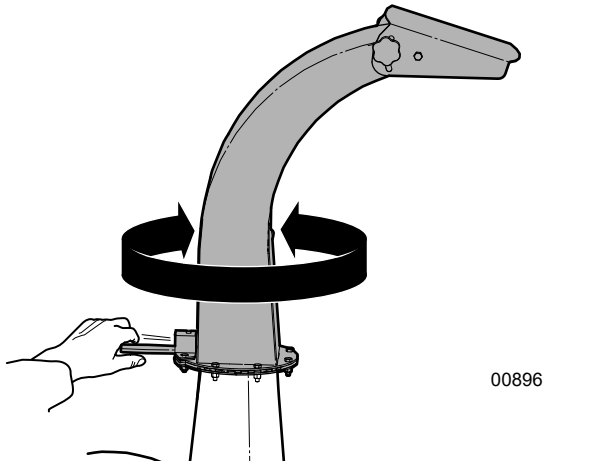


Fig. 22–Discharge Chute

6.3 Discharge Chute Deflector

The discharge chute is used to direct the wood chips.

- Loosen both hand knobs, adjust the hood to the preferred angle then tighten the knobs.

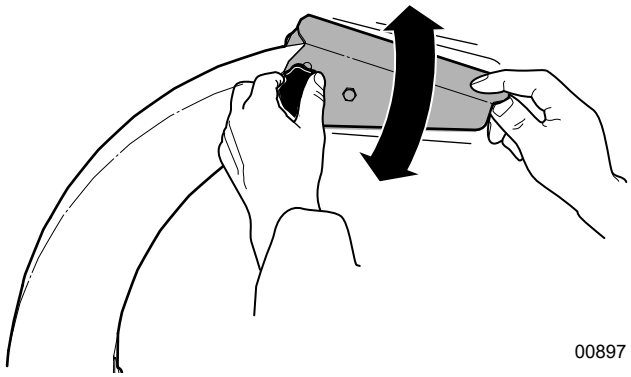


Fig. 23–Chute Deflector

6.4 Shredder Feed Gate Lever

CAUTION!

Risk of personal injury! Do not overload the machine by placing material into the feed hopper larger than the size stated on the decal.

Machine damage could also result.

W063

WARNING!

Risk of fingers being severed or serious injury to hands in this area! Keep hands and feet out of inlet and discharge openings while machine is operating.

W061

The shredder intake chute has a spring-loaded gate to allow the material in the hopper to flow into the shredder rotor blades. The gate keeps material from flying out when closed.

There is a gate control lever on both sides of the shredder intake. Move the lever down to allow the material to move into the shredding rotor. Release the lever and the spring closes the gate.

BXM42 has dual gates. BXM32 has a single gate with levers on each side.

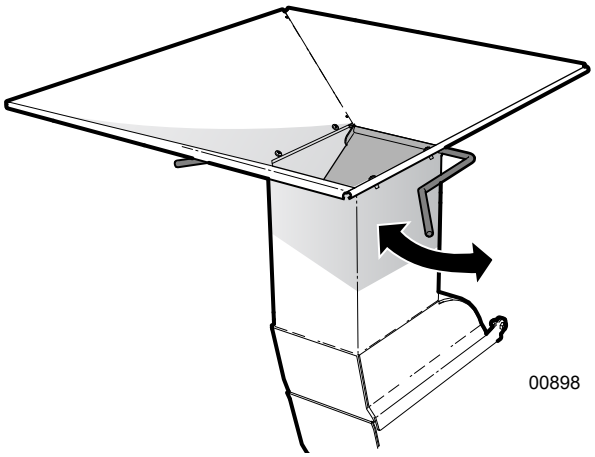


Fig. 24– BXM32 Shredder Feed Gate

6.5 Chipper Feed Hopper

WARNING!

Risk of fingers being severed or serious injury to hands in this area! Keep hands and feet out of inlet and discharge openings while machine is operating.

W061

WARNING!

Risk of hands or feet being severed or seriously injured in this area! Never operate the chipper with the feed hopper raised in the transport position. Chipper feed hopper must be lowered and bolted in place for operation (BXM42 only).

W060

Wood material is slid into the feed hopper past the safety curtain and into the rotor. The material is drawn in as it engages the rotor. The safety curtain inside the feed hopper is there to protect the operator from flying debris. Reaching into the feed hopper past the curtain when the chipper is operating risks contacting the rotor blades.

Use a stick or branch to push any piece of material into the rotor that does not move on its own.

The feed hopper on the BXM42 can be unbolted and raised up for travel purposes, if the width of the machine is of concern.

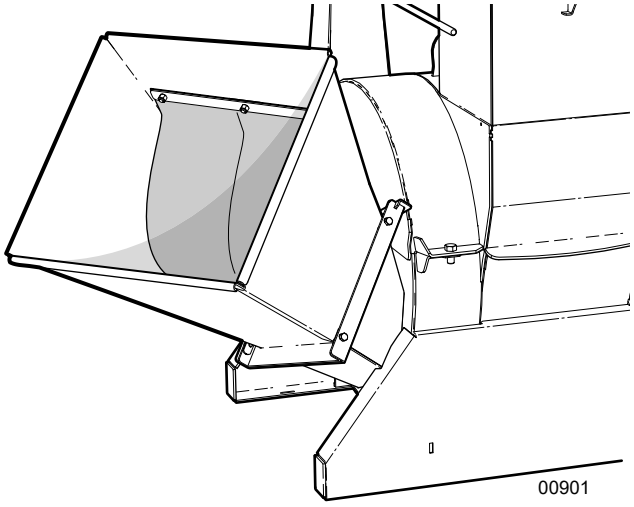


Fig. 25– BXM42 Chipper Feed Hopper

Check the condition of the curtain each day before operating. Replace if torn, missing or damaged.

7. Operating Instructions

⚠ WARNING!

Risk of fingers being severed or serious injury to hands in this area! Keep hands and feet out of inlet and discharge openings while machine is operating.

W061

⚠ 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

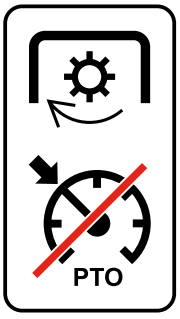
⚠ CAUTION!

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

W016

IMPORTANT! Do not put metal objects, bottles, cans, rocks, glass or other foreign material into wood chipper. If such items happen to get into the chipper, stop machine and turn engine off. Wait for all moving parts to stop before removing material. Inspect machine for damaged or loose parts before resuming work.

IMPORTANT! Do not use PTO Cruise Control with this chipper/shredder. The chipper rotor slows and speeds up as material is fed in. Cruise control then attempts to adjust to changing flywheel speeds. These fluctuations in engine speed and torque can result in component failure.



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.

7.1 Operating Safety Rules

- **Do not reach into rotor or feed hopper openings when the machine is running. Install and secure access covers before starting engine.**
- **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, crotchety branches and logs can move in unpredictable ways and could cause injuries. Large curved pieces should be cut to smaller straighter sections.**
- **Do not work alone, it is safer to work in pairs in case an emergency arises.**
- **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.**
- **Do not run machine inside a closed building to prevent asphyxiation from engine exhaust.**
- **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.**

⚠ 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

1. Lower the chipper to the ground.
2. Disengage the PTO.
3. Set the parking brake and turn off the tractor engine. Remove the ignition key.
4. Make sure all components have stopped moving.
5. Block and chock the tractor wheels.

7.2 Pre-operation Checklist

Check the following each time the wood chipper is used:

Item to Check	✓
Check that the machine has been lubricated as 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 ledger blades. Adjust or replace as required.	
Check that rotor bearings turn freely. Replace if they do not.	
Check and ensure that all covers, guards, and shields are in place, secure, and functioning as designed.	
Check and tighten all fasteners. Make sure the equipment is in good condition.	

7.3 Before Startup

1. Review Operating Safety Rules.
2. Clear the area of all bystanders, especially children.
3. Make sure each operator is trained and familiar with the set up and operation of the wood chipper.
4. Perform the Pre-operation Checklist.
5. Place the chipper in a clear, level work area close to the material at the work site. Material can then be put into the chipper with limited handling.
6. Set the tractor brake and block or chock the wheels.
7. Lower the chipper so the machine is resting on the ground. Make sure machine is level and stable.

IMPORTANT! The chipper must be resting on the ground during operation. Operating the chipper while raised off the ground is dangerous and results in damage to the machine.

8. Turn the discharge chute to the desired position and adjust the deflector as required.

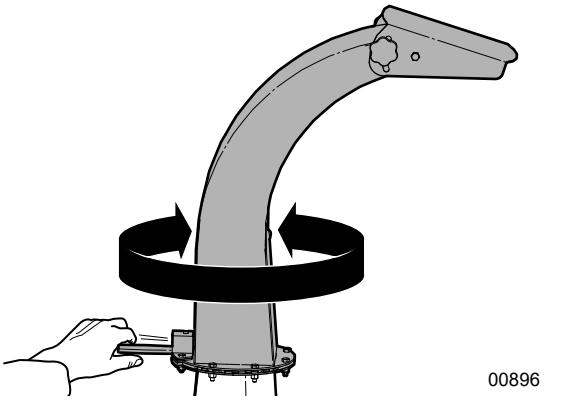


Fig. 26– Discharge Chute

7.4 Chipping Operation

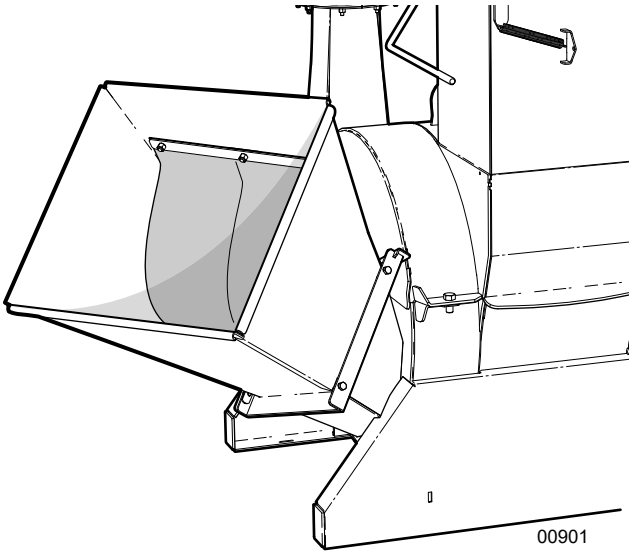


Fig. 27 – Chipper Feed Hopper

1. Engage the PTO. Set tractor at half throttle. Make sure the rotor is up to speed before beginning.
2. Slowly slide material into the chipper. Do not force the material. The material is drawn in as it engages.

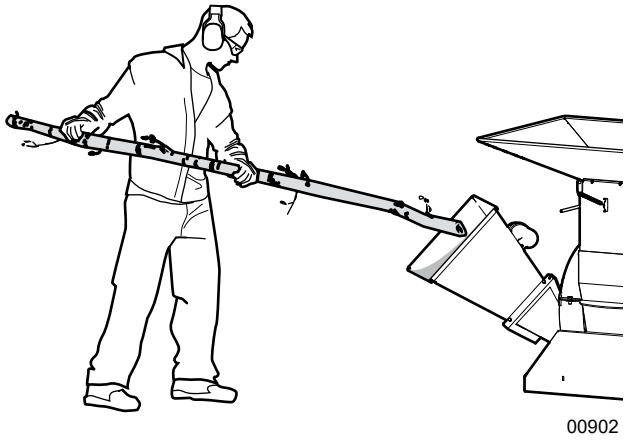


Fig. 28 – Chipping wood

3. Make sure the wood chip pile is contained and does not affect the immediate work area.

Be aware of the size and shape of the material.

Delimb large branches. Crotchety, curved branches can move in unpredictable ways. Large curved pieces should be cut to smaller straighter sections.

Hold small diameter branches / limbs together in a bundle and feed in together.

Place short branches on top of longer ones, to avoid reaching into the hopper.

7.5 Shredder Operation

Leafy/wooden material

Load the shredder feed hopper until it is full.

Use the feed control handle on the side of the hopper to open the feed gate. Control how much and how fast the material is delivered into the shredder by varying the gate opening.

Small pieces of wood material

Place material into the hopper and then manually open the gate. Release the gate when the material enters the shredder.

Large, bushy, bulky material

Place material into the hopper and intake. Most of the time the shredder rotor will pull it in.

If the shredder begins to slow down, stop and let the shredder get back up to speed, then restart feeding.

Do not reach into the shredder feed hopper further than the gate to avoid contact with the knives on the rotor.

Use a stick or branch to push any piece of material in that does not move on its own and stops in the chipper housing.

Release the handle to close the gate. Always make sure the gate is closed between loads to keep flying material contained within the shredder housing. Do not prop the gate open.

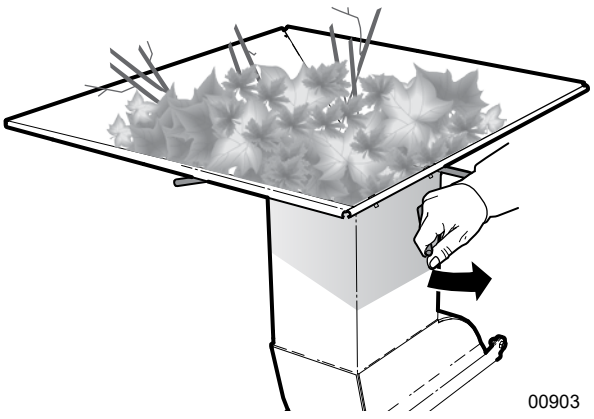


Fig. 29 – Shredder feed Lever Control Lever

7.6 Stopping Procedure

1. Stop feeding material into the chipper / shredder.
2. Slow tractor engine RPM.
3. Disengage PTO and turn off tractor.
4. Stop engine, remove ignition key and wait for all moving parts to stop.

⚠ CAUTION!

Risk of injury from rotating parts. Wait for all parts to stop moving before attempting to access the machine. Rotor continues to turn for a few minutes after the engine has stopped.

W025

7.7 Stopping in an Emergency

Know your controls and how to stop engine and attachment quickly in an emergency.

1. Activate the emergency PTO shutoff on the tractor (if available).
2. Disengage the PTO and shut off the engine.
3. Correct emergency situation before restarting engine and resuming work.

7.8 Clearing a Plugged Chipper

The wood chipper is designed to handle a wide range of material sizes without any problem. However, in the event material gets lodged in the chipper, follow this procedure to clear the blockage.

⚠ 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

1. **Shut down the tractor and place the machine in a Safe Condition before proceeding further.** See *page 28*.
2. Disengage the PTO and shut the tractor off. Remove the ignition key and wait for all moving parts to stop.
3. Pull any material out from the chipper and shredder hoppers. Make sure all the material is out and nothing is jammed or wedged between the input opening and the rotor.
4. Pull any material out of the discharge hood. Use a stick to loosen any material jammed inside. Do not leave anything in this area.
5. Visually inspect to make sure nothing is jammed or wedged in the rotor. Try restarting to see if the jam is cleared.

If the chipper is still plugged, the jammed material must be removed by hand.

⚠ CAUTION!

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

⚠ CAUTION!

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

W003

6. Remove the rotor upper housing anchor bolt and open the rotor housing.

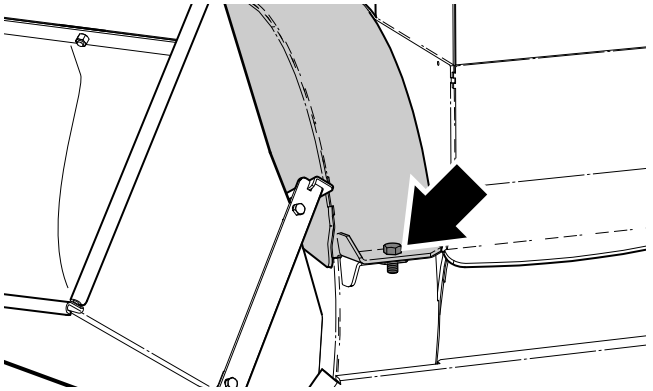


Fig. 30 – Rotor Housing Bolt

7. Remove any jammed material from inside the chipper rotor and shredder compartment.
8. Clean out the discharge area rotor paddles.
9. Turn the rotor by hand to make sure there is nothing jammed between the rotor and stationary blades.
10. Close the rotor housing and tighten the anchor bolt.

⚠ WARNING!

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

W001

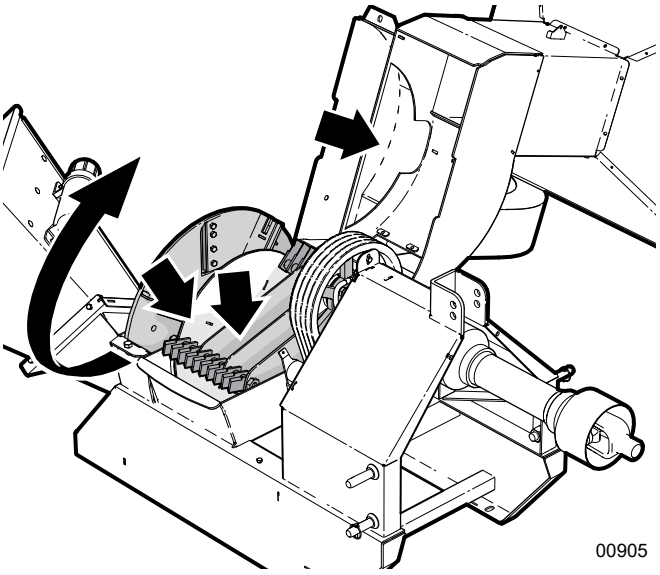


Fig. 31 – Clear out areas inside chipper

7.9 Transporting the Chipper

- **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 three-point hitch connections and ensure they are safely pinned with retainers.**
- **Never allow riders on the machine.**
- **Avoid rough terrain. Slow down when encountering rough conditions or cornering.**

7.9.1 Prepare for Transport

On BXM42 models, the feed hopper can be rotated up to additionally reduce the width of the machine. Remove the lower bolts, loosen the upper bolts and swing the hopper up. Tighten the upper bolts to hold it there.

1. Clean all dirt, debris off the chipper. Falling debris could cause problems for other traffic.
2. Make sure all access covers are secured in place, and the rotor upper housing is bolted down.
3. Turn the discharge hood inward to reduce the width of the machine.
4. Make sure the tractor is in safe working order.
5. Plan the route. Choose the most direct and safest path.

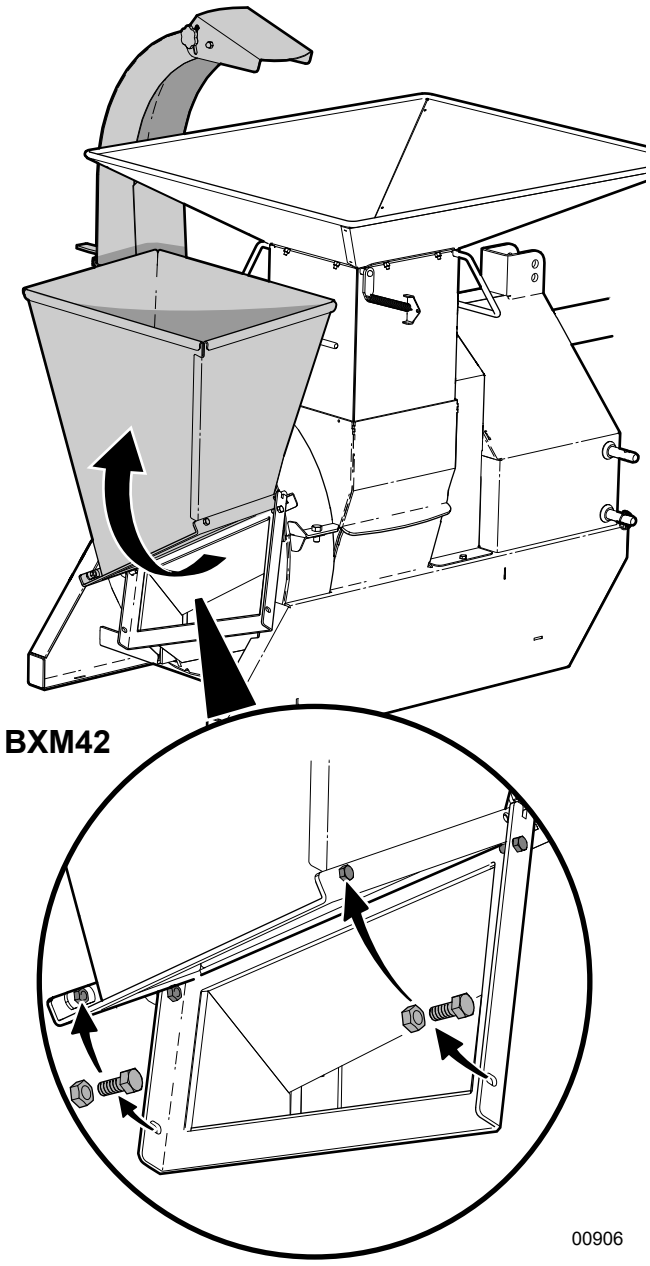


Fig. 32– Raising BXM42 Feed Hopper

7.10 Storage

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.

- **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 wood blocking as required.**

7.10.1 Placing Chipper in Storage

1. 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.
2. Inspect all rotating parts and remove entangled material.
3. Thoroughly wash the machine to remove all dirt, mud or debris.
4. Run the machine a few minutes to dry the moisture from inside the machine.
5. Touch up all paint nicks and scratches to prevent rusting.
6. If not possible to store the machine inside, cover with a waterproof tarp.
7. Store in an area away from human activity.
8. If the machine cannot be stored inside, remove the PTO shaft for added security.

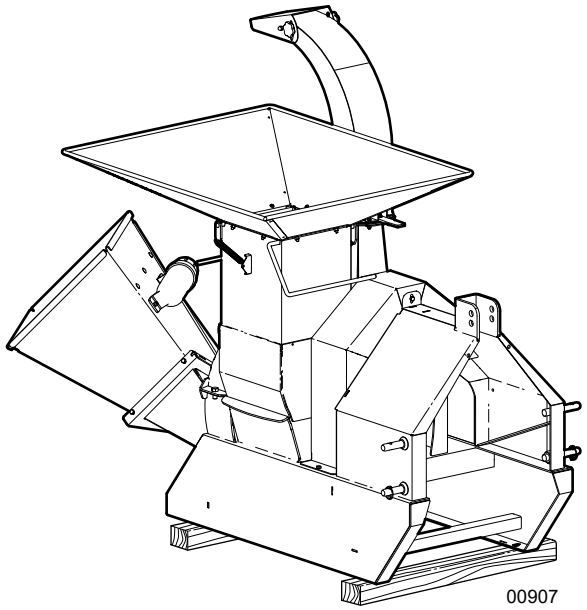


Fig. 33 – Storage Position

7.10.2 Removing from Storage

When taking the machine out of storage, review the pre-operation checklist before putting the machine back into service. See *page 28*.

8. Service and Maintenance

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 tractor engine inside a closed building. The exhaust fumes may cause asphyxiation.**
- **Place machine in a Safe Condition before servicing or repairing. See *page 7*.**
- **Allow the machine to cool before performing maintenance. Components may be hot enough to cause burn injury.**
- **Never work underneath equipment unless it is blocked securely.**
- **When performing any service or maintenance work always wear proper PPE for the job.**
- **Where replacement parts are necessary, genuine factory replacement parts must be used to restore equipment to original specifications. The manufacturer is not responsible for injuries or damages caused by use of unapproved parts or accessories.**
- **Inspect and tighten all bolts, nuts and screws. Check that all connections are properly secured to ensure chipper is in a safe working condition.**
- **After completing a service procedure, make sure all covers and shields are reinstalled.**
- **When cleaning any parts, do not use gasoline or diesel fuel. Use a regular cleanser.**
- **Always use proper tools in good condition.**

IMPORTANT! If welding on the chipper is necessary, protect sensitive tractor electronics by unhooking the chipper beforehand. Always connect the ground clamp as close to the work area as possible.

⚠ WARNING!

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

W033

⚠ 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

1. Lower the chipper to the ground.
2. Disengage the PTO.
3. Set the parking brake and turn off the tractor engine. Remove the ignition key.
4. Make sure all components have stopped moving.
5. Block and chock the tractor wheels.

8.1 Fluids and Lubricants

1. Grease Type

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

2. 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.

8.2 Maintenance Schedule

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

As required
Remove entangled material from chipper.

Every 8 hours or daily	
Grease PTO Shaft	*See this page, and page 37*
Perform Pre-operation check	See *page 28*

Every 50 hours	
Check rotor blade sharpness	See *page 38*
Check shredder blade sharpness.	*See page 41*
Check ledger knife sharpness	See *page 39*
Check twig breaker	See *page 38*
Grease PTO Shaft Shield	*See page 36*

Every 100 hours or annually	
Check drive belt tension.	*See page 41*
Grease Rotor / PTO bearings.	*See page 37*

8.3 Grease Points

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

- 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 8 hours of operation
1	PTO Shaft Universal Joints
2	PTO Shaft Slip Joint

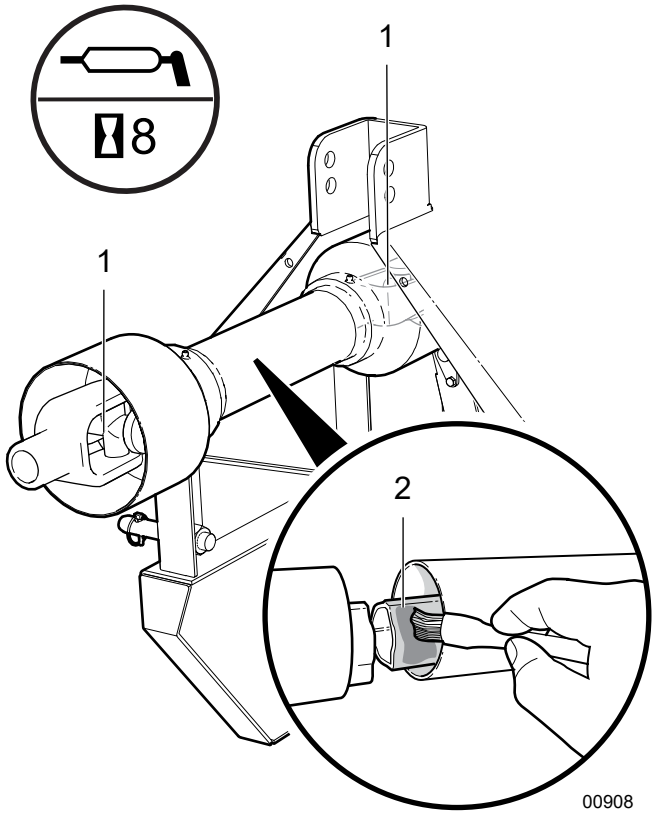


Fig. 34– 8-hour Grease Points

Location	Every 50 hours of operation
3	PTO Shaft Shield

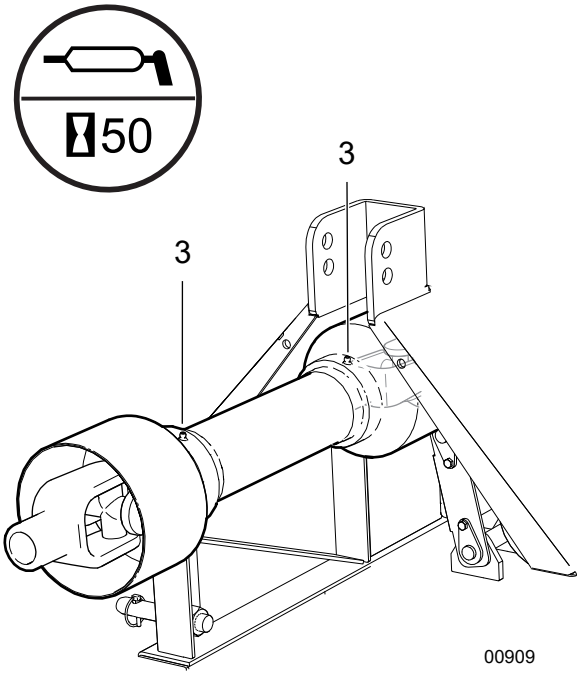


Fig. 35– Grease Points – 50 Hours of Operation

Location	Every 100 hours of operation or annually
4	Rotor PTO Bearings
5	Rotor Bearings

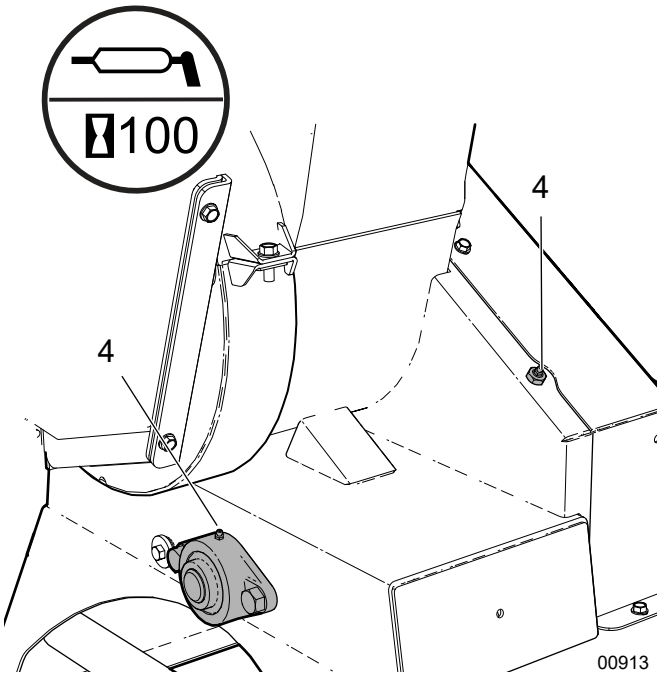


Fig. 36– BXM32 Rotor PTO Bearings

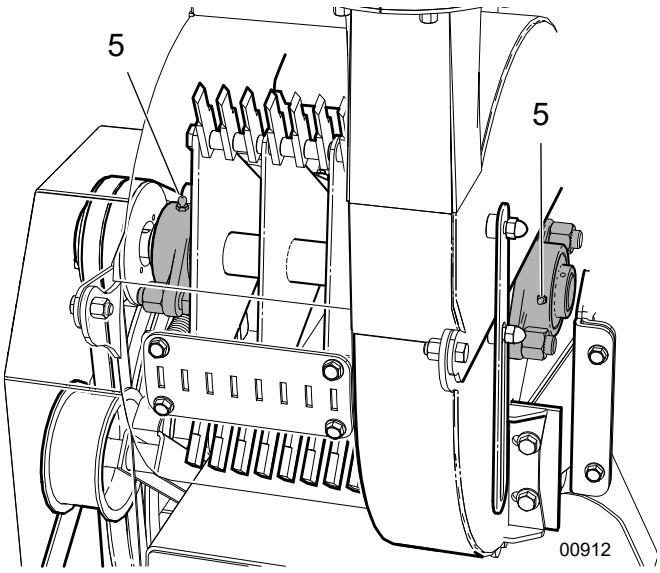


Fig. 37– BXM32 Rotor Bearings

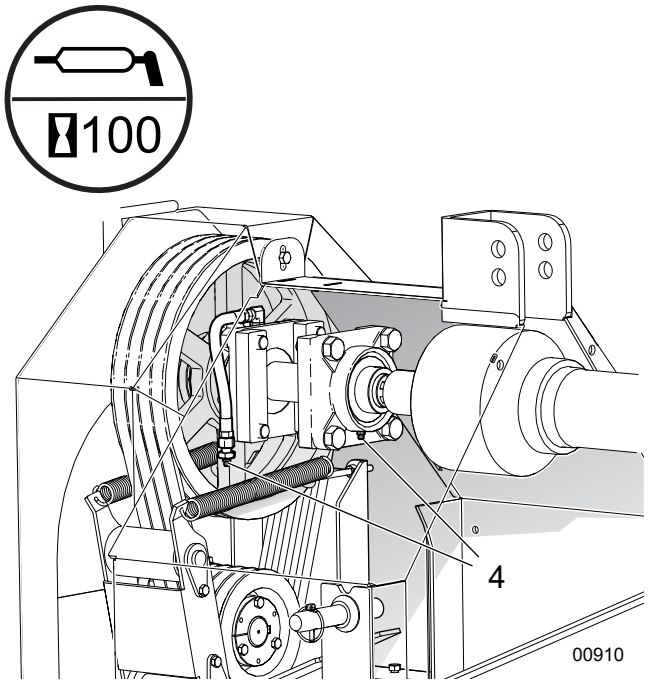


Fig. 38 – BXM42 Rotor PTO Bearings

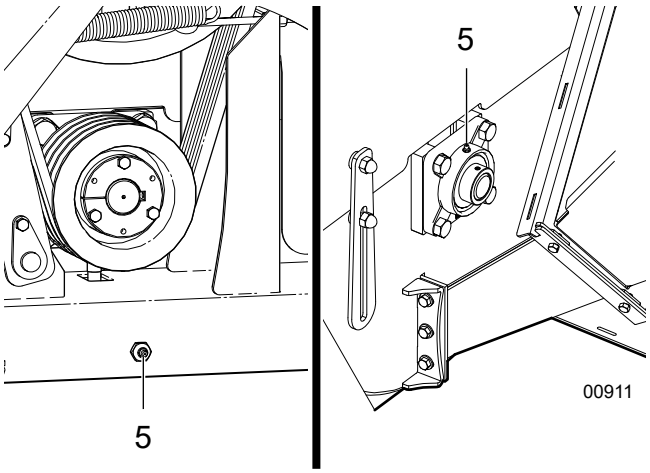


Fig. 39 – BXM42 Rotor Bearings

8.4 PTO Shaft Maintenance

Grease the PTO shaft every 8 hours.

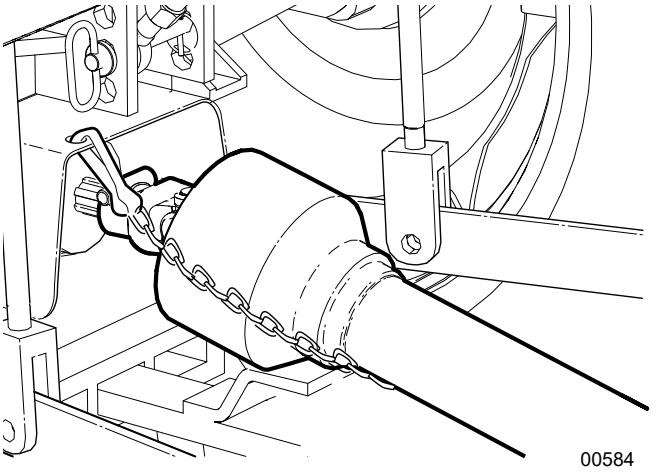


Fig. 40 – PTO Shaft

The PTO shaft is designed to collapse and extend as the machine goes through its operational range.

Heavy-duty plastic shielding encloses the driving components. As a safety measure, it is designed to stay stationary as the driveshaft turns.

Annual disassembly, cleaning and inspection is recommended to make sure that all components function as intended.

Shear Bolt

The PTO shaft has a shear bolt on the implement end, at the input yoke. The shear bolt is designed to break in the event the drive system is overloaded to protect other critical components.

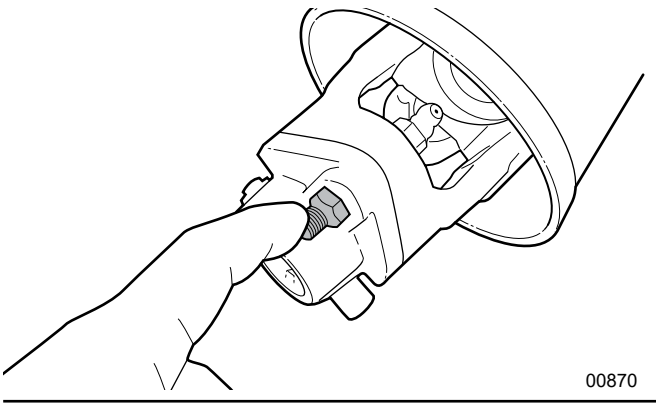


Fig. 41 – PTO Shear Bolt

The drive system is designed to function well without the shear bolt failing. If it does fail, generally it is because material is being fed too fast or something very hard has been jammed into the rotor or between the blades.

Replace a broken shear bolt with one that is the same size and hardness. Always determine the cause of the problem and correct it before resuming work. Shear bolts are available from your local distributor or dealer.

8.5 Twig Breaker (BXM42 only)

Inspect the twig breaker for damage, bent or missing teeth every 50 hours.

The twig breaker is located inside the lower rotor housing. Material in the chipper is broken up into smaller pieces as the discharge paddles rotate past it.

A damaged or worn twig breaker should be replaced.

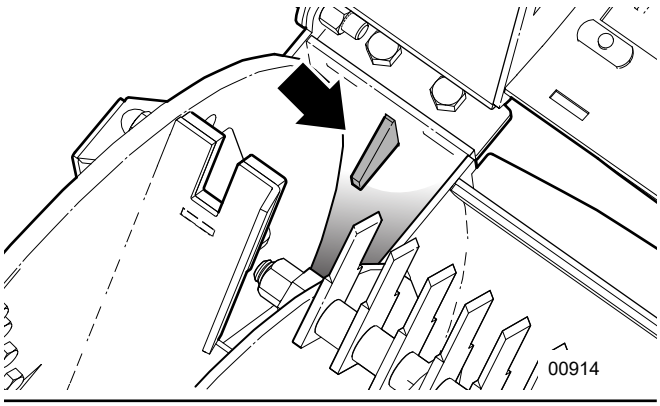


Fig. 42– Twig Breaker

8.6 Rotor Blades

Check rotor blade sharpness daily.

If the chipper is not pulling the material or material has to pushed into the chipper, the rotor blades are probably dull. Reverse or sharpen the blades if the cutting edge becomes dull. Check blade sharpness more often if processing material with a lot of sand, soil or dirt in it.

Keeping the blades sharp reduces the amount of power required during operation. If one blade needs to be sharpened or changed, the opposite one should be done as well.

Sharpening Rotor Blades

1. Open the upper rotor housing.

CAUTION!

Risk of getting hands pinched or wedged between lower rotor housing and rotor. Turn rotor slowly and be aware of hand positioning.

W032

2. Turn the rotor by hand so that one blade is fully exposed.
3. Remove the blade from the rotor to sharpen. Sharpen at a 45° angle to provide the best cutting effect.

IMPORTANT! Sharpen both blades equally to maintain proper rotor balance.

4. Install rotor blades with leading edge out, towards the ledger blade. Tighten the blade mounting bolts to **33 lbf•ft (45 N•m)**.
5. Repeat the steps for the other blade.

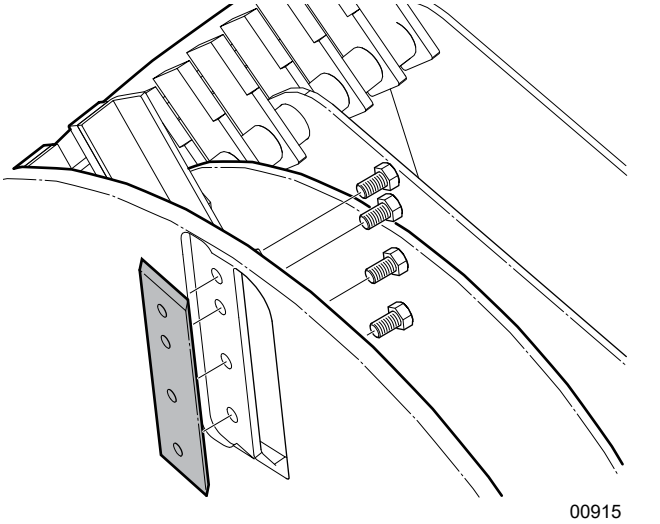


Fig. 43– Changing rotor blade

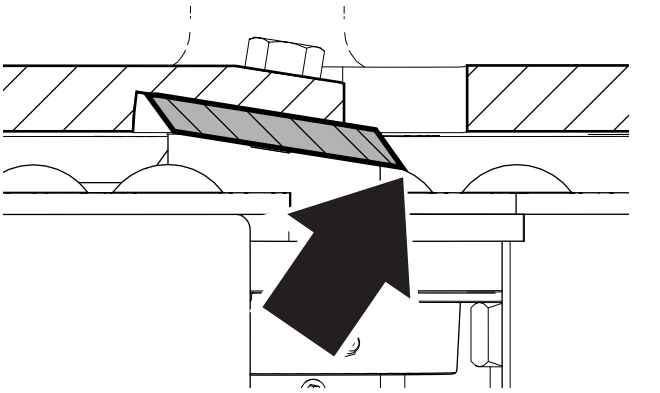


Fig. 44– Rotor blade leading edge

8.7 Ledger Knife

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

The ledger knife is bolted in 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.

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.

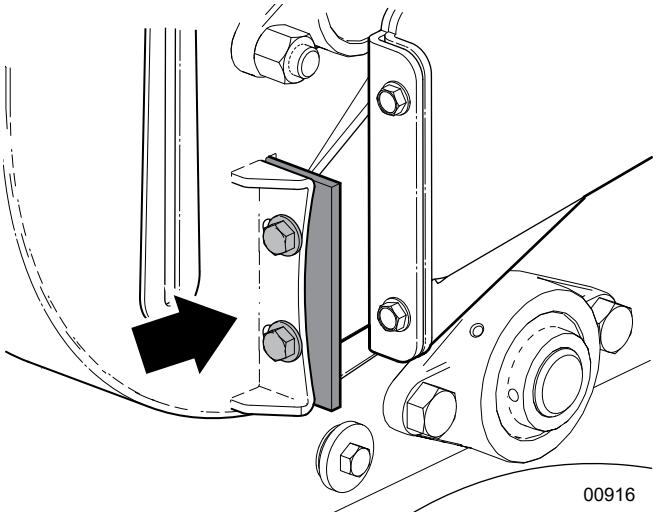


Fig. 45–Ledger knife on lower rotor housing

To obtain the best chipper performance, check the clearance between the rotor blade and stationary ledger blade every 50 hours.

8.7.1 Ledger Knife Clearance

Use the ledger setting gauge to check knife clearance**. The thickness of the gauge is the correct ledger blade clearance.** If spacing is in excess of the gauge thickness, adjust the clearance.

Checking

1. Open the upper rotor housing.

⚠ CAUTION!

Risk of getting hands pinched or wedged between lower rotor housing and rotor. Turn rotor slowly and be aware of hand positioning.

W032

2. Turn the rotor by hand so that one rotor blade edge is next to the ledger knife.
3. Slide the end of the ledger gauge down between the rotor blade and the ledger knife.

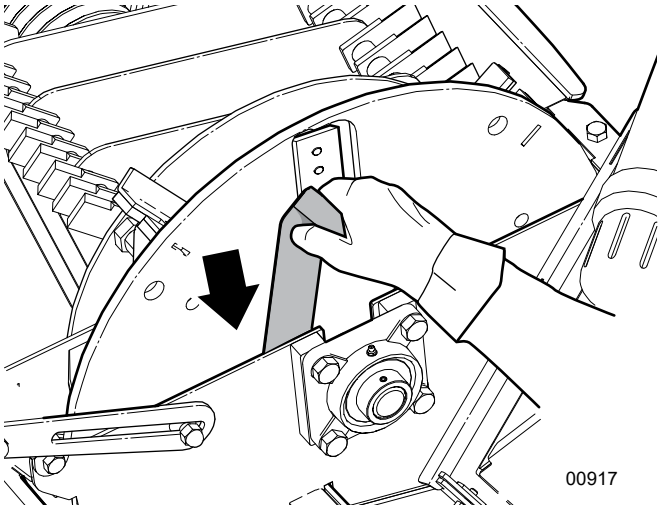


Fig. 46–Inserting Gauge

4. Turn the rotor past the ledger knife with the gauge inserted between them to check clearance. The gauge should be tight. Check both knives.

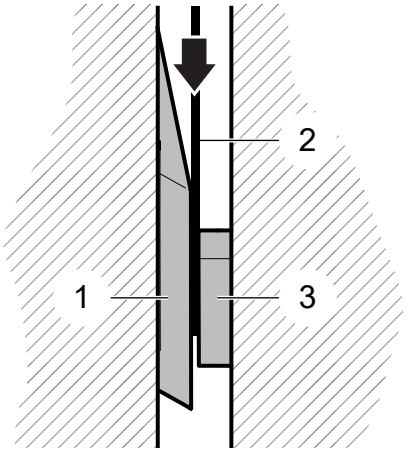


Fig. 47–Checking ledger knife clearance

1. Rotor Blades
2. Gauge
3. Ledger Knife

Adjusting

1. Loosen the bolts on the outside of the ledger knife support (1).
2. Slide the ledger knife inward, until it is snug against the gauge.

If no gauge is available, set the clearance between the rotor blades and the ledger knife to 1/32"–1/16" (0.76–1.52 mm).

3. Tighten the bolts and remove the ledger knife gauge.

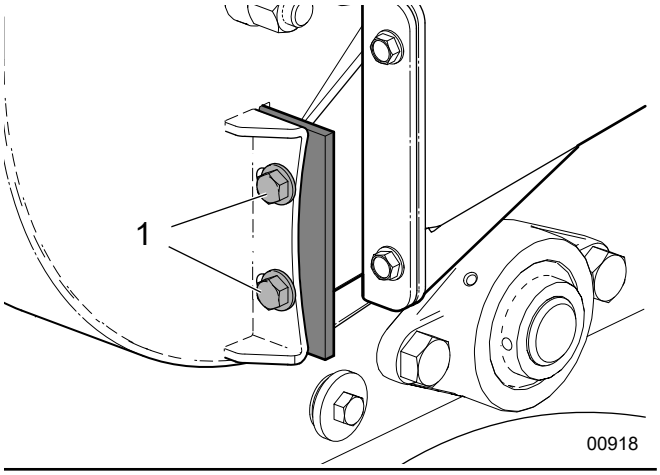


Fig. 48– Adjusting Ledger Knife (BXM32 shown)

Changing Ledger Knife

1. Remove the bolts (1) holding the ledger knife in place. Slide the knife out of the chipper housing.
2. Rotate the ledger knife or replace it with a new or sharpened knife.
3. Hand-tighten the bolts and verify clearance setting.
4. Tighten the bolts to torque value shown on *page 47*.

IMPORTANT! Make sure the ledger knife is installed squarely. Both ends must protrude past the support the same amount.

8.8 Chop Block

The chop block is bolted in the bottom end of the upper rotor housing. As shredder knives rotate around through the chop block, material is broken into smaller pieces and turned it into mulch.

Inspect the chop block periodically for damage such as gouges, bent, or missing teeth. If the teeth are showing wear, remove and install it the other way around.

A damaged or worn out chop block should be replaced.

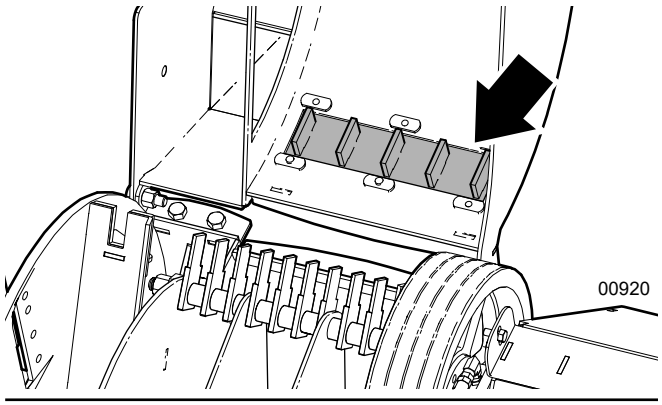


Fig. 49– Chop Block (BXM42 shown)

8.9 Shredder Knives

The shredder rotor has three sets of knives. Each knife rotates freely on the retainer pin as the rotor turns. There are 30 knives on the BXM42, and 27 knives on the BXM32.

Each knife has a beveled edge to cut, chop and mulch the material. The chop block breaks the material into smaller pieces as the knives pass.

The opening in the divider at the top of the rotor keeps the material inside the rotor housing until it becomes fine enough to pass through onto the rotor paddles. The paddles then expel the material out the discharge chute.

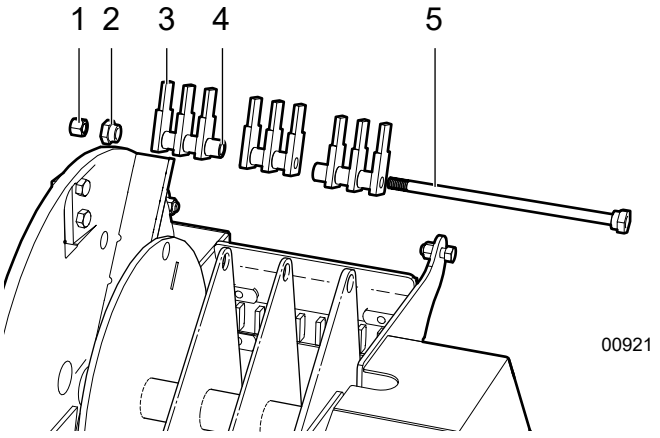


Fig. 50 – Shredder Knives

1. Retainer Nut
2. Retainer Rod Bushing
3. Shredder Knife
4. Spacer
5. Retainer Pin

To change the knives:

1. Manually rotate chipper rotor plate so that one set of shredder knives is fully exposed.
2. Loosen the shredder bolt that holds the set of shredder knives and spacers to the shredder plate.
3. Slowly remove the bolt while catching the knives and spacers as they become free.
4. Change the knives to install in the other direction, or replace with new or re-sharpened knives.
5. Ensure that the knives and spacers are installed in the correct sequence. Improper installation decreases performance of the shredder. Refer to illustration.
6. Tighten down bolts as specified in the torque chart. Make sure knives can rotate freely.
7. Repeat steps for second and third sets of shredder knives.

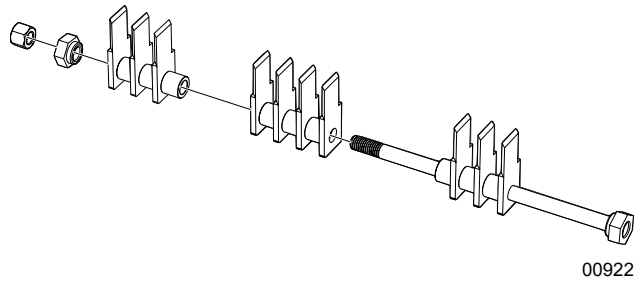


Fig. 51 – BXM42 Knife / Spacer Order

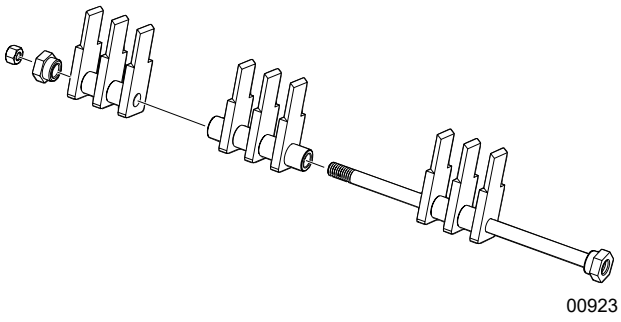


Fig. 52 – BXM32 Knife / Spacer Order

8.10 Drive Belt Replacement and Tensioning

1. Remove the drive-belt guard.
2. Remove the PTO shaft.
3. Loosen (do not remove) the drive-belt tensioner nut. (There are two on the BXM42.)
4. Turn the tensioning nut (1) counterclockwise until the drive belt is loose enough to remove.
5. Install a new drive belt. Turn the drive-belt tensioning nut clockwise to tighten the drive belt. (On the BXM42, be sure to tighten each side evenly.)
6. Check the tension by pushing on the drive belt with your forefinger and measuring its defection. The drive belt should not deflect more than 1/8"–3/16" (3 mm–5 mm).
7. Check pulley alignment before reinstalling the drive-belt guard.
8. Check the drive belt tension again after 10 hours of operation.

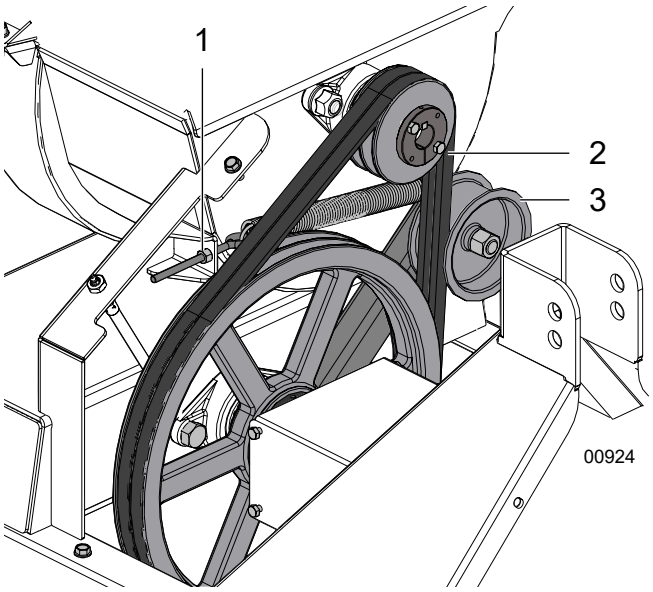


Fig. 53–BXM32 Drive Belt

1. Drive-Belt Tension Adjuster
2. Drive Belt
3. Drive-Belt Tensioner

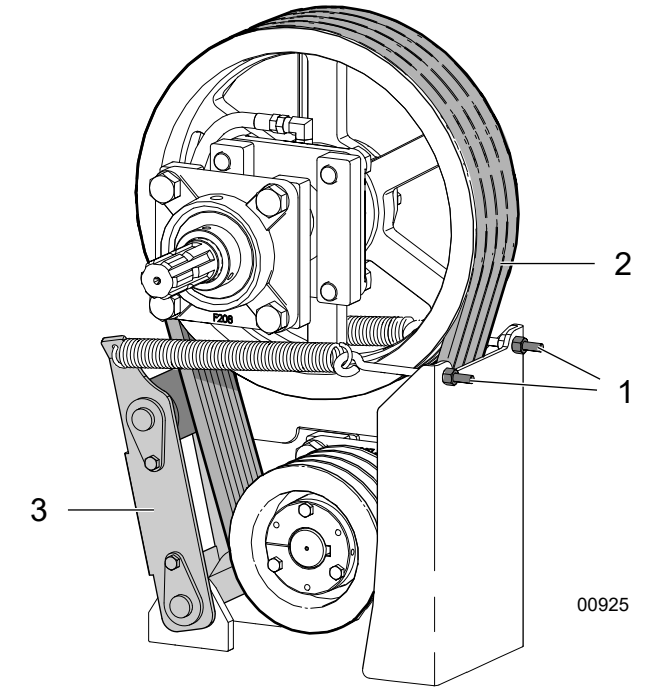


Fig. 54–BXM42 Drive Belt

1. Drive-Belt Tension Adjusters
2. Drive Belt
3. Drive-Belt Tensioner

8.11 Sheave Alignment

Drive belts transmit power from the PTO shaft to the rotor. Keep the drive belts properly tensioned and the sheaves aligned for the best performance.

For maximum accuracy, have the sheaves aligned with a laser alignment tool. Contact your dealer for more information.

Sheave alignment can be checked using a straight edge. One of at least 30" (76 cm) in length is required. To check the alignment with a straight edge, follow this procedure:

1. Remove the drive-belt guard.
2. Place the straight edge along the face of the PTO sheave, and place the opposite end along the face of the rotor sheave.
3. Check to see if there is a gap between the straight edge and the clutch or the sheave.

– For BXM32 Models:

The gap at both ends between the PTO sheave and the straight edge must be equal. Check A measurement in Fig. 56.

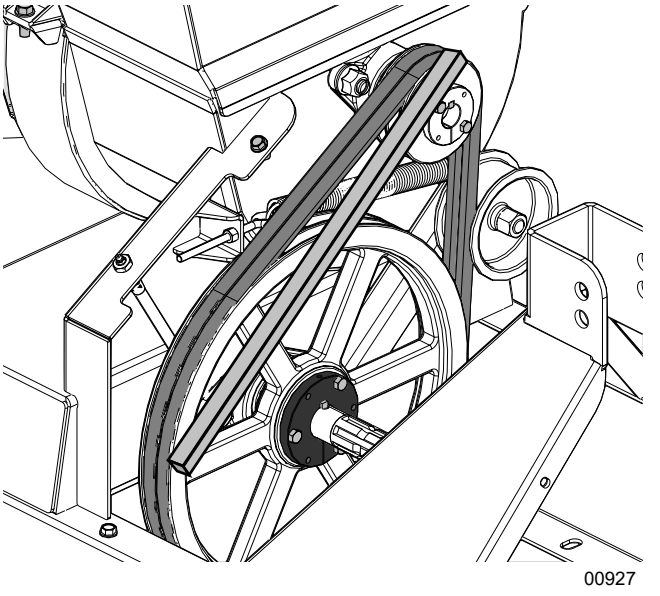


Fig. 55–Sheave Alignment (BXM32 shown)

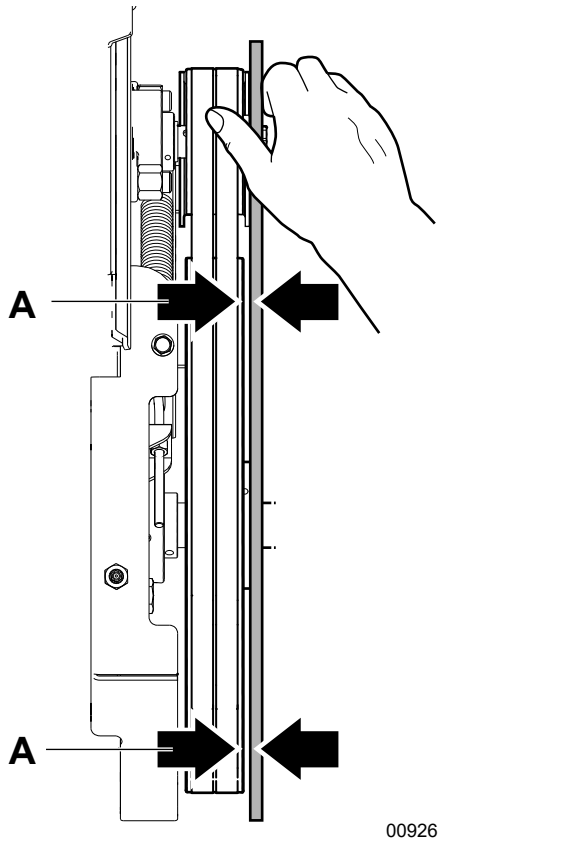


Fig. 56 – Top View of Sheave Alignment (BXM32 shown)

– For BXM42 Models:

If the gap between the ends of either sheave is more than 1/32" (0.8 mm), adjustment is required.

Adjusting Alignment

1. Loosen the set screw on the bushing attached to rotor sheave. See Fig. 57.
2. Remove the three hex bolts on the bushing. Thread them into the tapped holes on the bushing.
3. Tighten each hex bolt progressively 1/4 turn until bushing is free from the sheave taper.
4. Move the sheave to the required position to align the drive belt.
5. Align drilled holes with tapped holes on the sheave. Replace and hand-tighten bolts.
6. Tighten the set screw and recheck alignment.
7. Carefully tighten hex bolts uniformly 1/4 turn each until firmly seated.
8. Recheck the drive-belt tension, and then install the drive-belt guard.

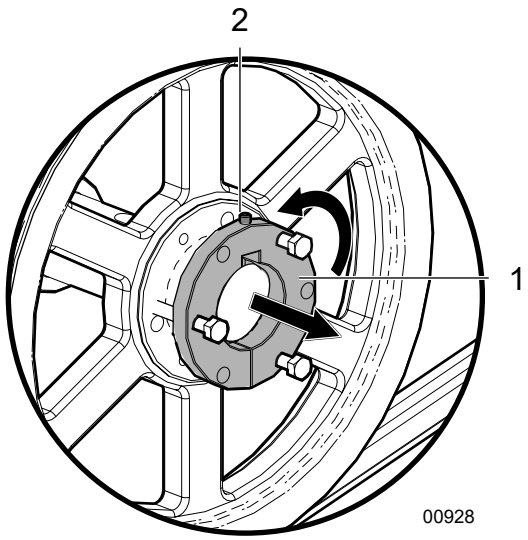


Fig. 57 – Rotor Sheave

1. Set Screw
2. Rotor Bushing

9. 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 your local dealer, distributor or Wallenstein. Have the serial number ready.

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.
	Broken shear bolt.	Replace it with a shear bolt that is the correct size and hardness. See the chipper Parts Manual.
	Loose drive belt.	Re-tension the drive belt. See *page 41*.
	Broken drive belt.	Replace the drive belts, and then tension them. See *page 41*.
Material feeding in too slow	Engine or rotor speed to low.	Set throttle to increase rotor rpm.
	Blades or knives are dull or clearance is incorrect.	Check rotor and ledger blades. Rotate, sharpen or replace. See *page 38*.
	Rotor blade knife edge angle incorrect.	Resharpen the rotor knives to specified 45° angle and check that blade is installed properly. See *page 38*.
	Obstructed discharge.	Clear debris from discharge chute.
Unusual machine vibration while operating	Broken or missing rotor blade.	Replace the rotor blade. See *page 38.*
	Rotor may be bent.	Check for rotor wobble. Replace the rotor.
	Rotor bearings failed.	Replace the bearings.
	Loose fasteners.	Tighten fasteners to the correct torque. See *page 47.*
	PTO shaft yokes are out of phase. (It is recommended that Binacchi® PTO shafts are used to prevent this from occurring).	Set the yokes on each end of the PTO shaft to the same phase.
PTO shear bolt breaking	Tractor cruise control function is on.	Turn off the tractor cruise control.
	Rotor knives are dull.	Rotate, sharpen, or replace the rotor knives. See *page 38*.
	Space between the rotor blades and ledger knife is too large.	Use the ledger guide tool to check the clearance. See *page 39*.
	Tractor PTO speed is set too low.	Increase the PTO speed to 540 or 1,000 rpm.
	PTO shaft angle is incorrect.	Adjust the PTO shaft angle to 15° or less from horizontal. See *page 24*.
	Shear bolt is incorrect.	Replace it with a shear bolt that is the correct size and hardness. See the chipper Parts Manual.
	Chipper is not on the ground.	Place the chipper on the ground.
	Three-point hitch is raised or lowered, while the chipper rotor is turning.	Wait for the chipper rotor to stop turning before raising or lowering the chipper.
	Tractor PTO spline and chipper PTO spline are not on parallel planes.	Adjust the toplink to align the tractor and chipper PTO spline planes.
	PTO shaft is too long.	Cut the PTO shaft to the correct length. See *page 21.*
	PTO shaft yokes are out of phase. (It is recommended that Binacchi® PTO shafts are used to prevent this from occurring).	Set the yokes on each end of the PTO shaft to the same phase.
Poor Chip Quality	Dull blades.	Check rotor and ledger blades. Rotate, sharpen or replace. See *page 38*.
	Poor quality material.	Material is small or rotting. Mix with higher quality material.
	Space between the rotor blades and ledger knife is too large.	Use the ledger guide tool to check the clearance. See *page 39*.

Problem	Cause	Solution
Mulch too Coarse	Chop or twig breaker may be damaged.	Inspect and replace if damaged.
	Broken or missing blade or knife.	Inspect and replace if damaged.
	Knives in shredder installed incorrectly.	Check installation of knives. Adjust or reinstall as required.
Machine requires excessive power or stalls	Obstructed discharge.	Clear debris from discharge chute.
	Engaging PTO too quickly.	Engage PTO at low engine speed then slowly increase. Make sure hoppers and rotor housing are clear.
	Feeding material too quickly.	Feed larger material slowly into chipper hopper.
	Rotor plugged.	Inspect and clear chipper hopper lower rotor housing and rotor.
	Green material does not discharge.	Allow material to dry first, or alternate between dry and wet material.
	Space between rotor blade and ledger knife too large.	Set ledger clearance. See *page 39*.
	Dull blades or knives.	Check rotor and ledger blades. Rotate, sharpen or replace. See *page 38*.

10. Specifications

10.1 Machine Specifications[1]

Model	BXM32	BXM42
Drive System	PTO Input, Belt-driven	
Horsepower Range	12–35	30–85
Chipping Capacity	3" (8 cm)	4" (10 cm)
Chipper Housing Opening	3" x 6" (8 cm x 15 cm)	4" x 10" (10 cm x 25 cm)
Chipper Hopper Opening	10" x 13" (25 cm x 33 cm)	18" x 18" (45 cm x 45 cm)
Quantity of Rotor Knives	2	2
Shredder Capacity	1" (2.5 cm)	2" (5 cm)
Shredder Hopper Opening	30" x 28" (71 cm x 76 cm)	40" x 33" (102 cm x 84 cm)
Shredder Housing Opening	10" x 10" (25 cm x 25 cm)	11" x 11" (27 cm x 27 cm)
Quantity of Shredder Knives	27	30
Rotor Weight	70 lb (32 kg)	170 lb (77 kg)
Mounting System	3-point hitch. CAT I, iMatch™, Quick Hitch compatible	
Operating Weight	445 lb (202 kg)	800 lb (363 kg)
Dimensions (LxWxH)	54" x 36" x 60" (137 cm x 91 cm x 152 cm)	72" x 44" x 62" (183 cm x 112 cm x 157 cm)
Rotor rpm	1600	1200
Discharge Hood Rotation	360°	
Discharge Hood Height	58" (147 cm)	62" (158 cm)
Rated Tractor PTO Speed	540 rpm	

1 Specifications are subject to change without notice.

10.2 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%.

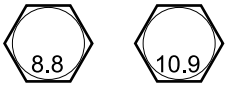
Bolt grades are identified by their head markings.

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



11. Product Warranty

LIMITED WARRANTY

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

Five Years for Consumer Use

Two Years for Commercial/Rental Use

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

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

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

This warranty does not cover the following:

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

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