

WC88XL PTO WOOD CHIPPER



OPERATOR'S MANUAL

**WOODLAND
MILLS**

WE GO BEYOND.™

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INTRODUCTION

Congratulations on your purchase and welcome to Woodland Mills! This manual gives you the necessary information about your machine so you will be able to use it properly. The entire manual must be read and understood before you start using the machine. If any questions should arise that are not covered by this manual, please contact Woodland Mills Inc.

OWNER'S RECORD

Please take a moment to record the following information about your wood chipper. If you need to call for assistance, please be ready to provide your model and serial numbers. This information will allow us to help you more quickly when you call.

MODEL NUMBER

SERIAL NUMBER

DATE OF PURCHASE

This machine is designed for certain applications only. We strongly recommend that this machine is not modified and/or used for any application other than that for which it was designed. If you have any questions relative to a particular application, DO NOT use the machine until you have first contacted us to determine if it can or should be performed on the product.

For technical questions and replacement parts, please contact Woodland Mills Inc.

INTENDED USE

Woodland Mills wood chippers are designed for acreage owners to aid in chipping natural, untreated wood only. Materials that are processed may contain chemicals or by-products that could corrode the machine or damage it, resulting in safety concerns.

SAFETY, WARNING & INFORMATION SYMBOLS

Throughout this operator's manual and on the wood chipper, there are safety, warning, and information symbols. Please heed and obey all warnings.

Symbol	Description
	Refer to instruction/operator's manual
	Wear eye protection
	Wear a face shield
	Wear ear protection
	Wear protective gloves
	General warning
	Sharp element warning
	Moving parts warning
	Flying debris warning
	Stand clear warning

****Look for symbols in the upper-right corner of each page throughout the manual.****

SAFETY GUIDELINES

****SAVE THESE INSTRUCTIONS****

- Do not operate this machine until this manual has been read and fully understood; serious injury or severe machine damage could occur if these safety warnings are ignored.
- Never allow more than one person to operate this machine at one time. If two people are working together it will increase the chance of your workmate engaging the machine or causing you to fall into the machine.
- If your hand is ever near the chipping or feeding area, serious injury could occur.
- Never place your hands or feet on or near the machine while it is engaged.
- Never place your hands or feet on or near the material while it is feeding.
- DO NOT wear loose clothing, jewelry, or anything that can catch a branch that is feeding into the wood chipper.
- DO NOT stand directly in front of the infeed chute when loading material into the hopper; always load from the side of the hopper. This will help prevent any part of your body from being pulled into the machine.
- Always wear safety hearing protection, eye wear, gloves, and long pants when operating the wood chipper.
- Never place your hands beyond the opening of the hopper while the wood chipper is running.
- Never allow children, disabled, or untrained persons to operate the wood chipper.
- Do not operate the wood chipper near bystanders, public roads, or anywhere that debris may travel far enough to injure another person.
- Never move the wood chipper while it is running.
- Shut off the tractor and allow the wood chipper to come to a complete stop before removing any debris.
- Never perform any maintenance or repair while the wood chipper is running.

ROTATING DRIVELINES

****STAY CLEAR OF ROTATING DRIVELINES****



- Entanglement in rotating driveline can cause serious injury or death.
- Keep tractor master shield and driveline shields in place at all times. Make sure rotating shields spin freely.
- Wear close-fitting clothing.
- Shut off the engine and be sure the PTO driveline has stopped before making adjustments, connections, or cleaning out PTO-driven equipment.
- Do not install any adapter device between the tractor and the primary implement PTO drive shaft that would allow a 000 RPM tractor shaft to power a 540 RPM implement at speeds higher than 540 RPM.
- Do not install any adapter device that results in a portion of the rotating implement shaft, tractor shaft, or the adapter to be unguarded. The tractor master shield shall overlap the end of the splined shaft.



WARNING!

Read and understand all instructions. Failure to properly follow the instructions listed below may result in serious injury or death.



WARNING!

The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions or situations that could occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product but must be supplied by the operator.

PERSONAL SAFETY

- **Stay alert**, watch what you are doing and use common sense when operating a power tool. Do not use a power tool when you are tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating power tools may result in serious personal injury.
- **Dress properly.** Do not wear loose clothing, dangling objects, or jewelry. Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts. Air vents often cover moving parts and should be avoided.
- **Use safety apparel and equipment.** Use safety goggles or safety glasses with side shields that comply with current national standards, or when needed, a face shield. Use a dust mask in dusty work conditions. This applies to all persons in the work area. Also use non-skid safety shoes, a hardhat, gloves, dust collection systems, and hearing protection when appropriate.
- **Do not over reach.** Keep proper footing and balance at all times.
- **Remove adjusting keys or wrenches** before connecting to the power supply or turning on the tool. A wrench or key that is left attached to a rotating part of the tool may result in personal injury.
- **Never remove or install blades, conduct any maintenance, or make any other adjustments while the tractor engine is running.** Always shut the engine off, remove the ignition key, and disconnect the PTO shaft prior to carrying out any of the aforementioned procedures. Consult your tractor's manual for safe shutdown procedures to prevent accidental ignition.

WORK AREA

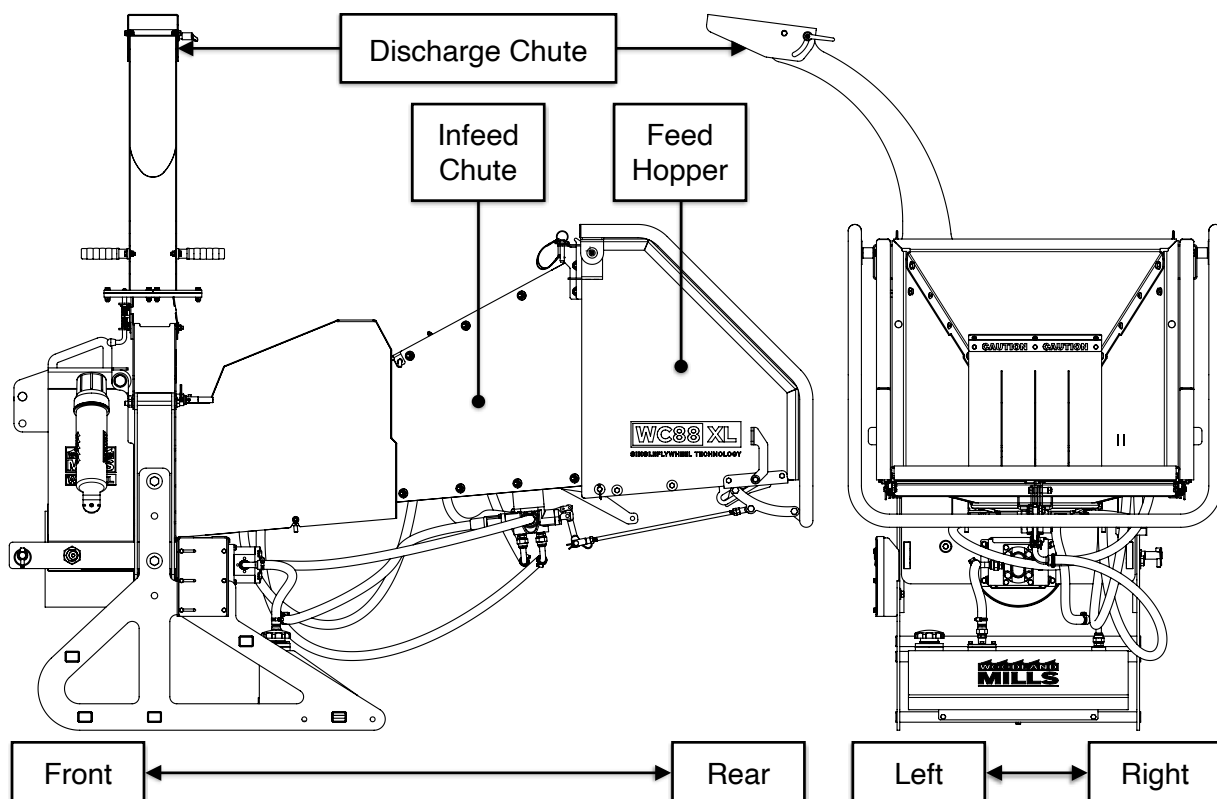
- **Keep work area clean**, free of clutter and well lit. Cluttered and dark work areas can cause accidents.
- **Do not use your wood chipper where there is a risk of causing a fire or an explosion;** e.g. in the presence of flammable liquids, gasses, or dust. Power tools create sparks which may ignite the dust or fumes.
- **Keep children and bystanders** away while operating a power tool. Distractions can cause you to lose control, therefore, visitors should remain a safe distance from the work area.
- **Be aware of all power lines, electrical circuits**, water pipes and other mechanical hazards in your work area, particularly those hazards below the work surface hidden from the operator's view that may be unintentionally contacted and cause personal harm or property damage.
- **Be aware of your surroundings.** Using power tools in confined work areas may put you dangerously close to cutting tools and rotating parts.

TOOL USE AND CARE

- **Always be sure the operator is familiar** with proper safety precautions and operation techniques before using machine.
- **Do not force the tool.** Tools do a better and safer job when used in the manner for which they are designed.
- **Turn off the tractor engine** and disconnect the PTO shaft before servicing, adjusting, installing accessories or attachments, or storing. Such preventive safety measures reduce the risk of starting the power tool accidentally.
- **Storing the wood chipper.** When the wood chipper is not in use, store it in a dry, secure place or keep it well covered and out of reach of children. Inspect the wood chipper for good working condition prior to storage and before re-use.
- **Maintain your wood chipper.** It is recommended that the general condition of the wood chipper be examined before it is used. Keep your wood chipper in good repair by adopting a program of conscientious repair and maintenance in accordance with the recommended procedures found in this manual. If abnormal vibration or noise occurs, turn the wood chipper off immediately and have the problem corrected before further use.
- **Keep blades sharp and clean.** Properly maintained wood chipper blades are less likely to bind and make feeding-in brush easier.
- **Cleaning and Lubrication.** Use only soap and a damp cloth to clean your wood chipper. Many household cleaners are harmful to plastic and rubber components on the wood chipper.
- **Use only accessories that are recommended** by the manufacturer for your model. Suitable accessories for another wood chipper may create an injury risk when used on this wood chipper.
- **Always** operate the machine with all safety devices and guards in place and in working order. DO NOT modify or make changes to safety devices. DO NOT operate the machine if any safety devices or guards are missing or inoperative.
- **Never leave wood chipper running unattended.**
- **Never use the equipment to chip brush with trunks exceeding 8" (203 mm) in diameter** or for any purpose other than chipping brush as described in this manual.

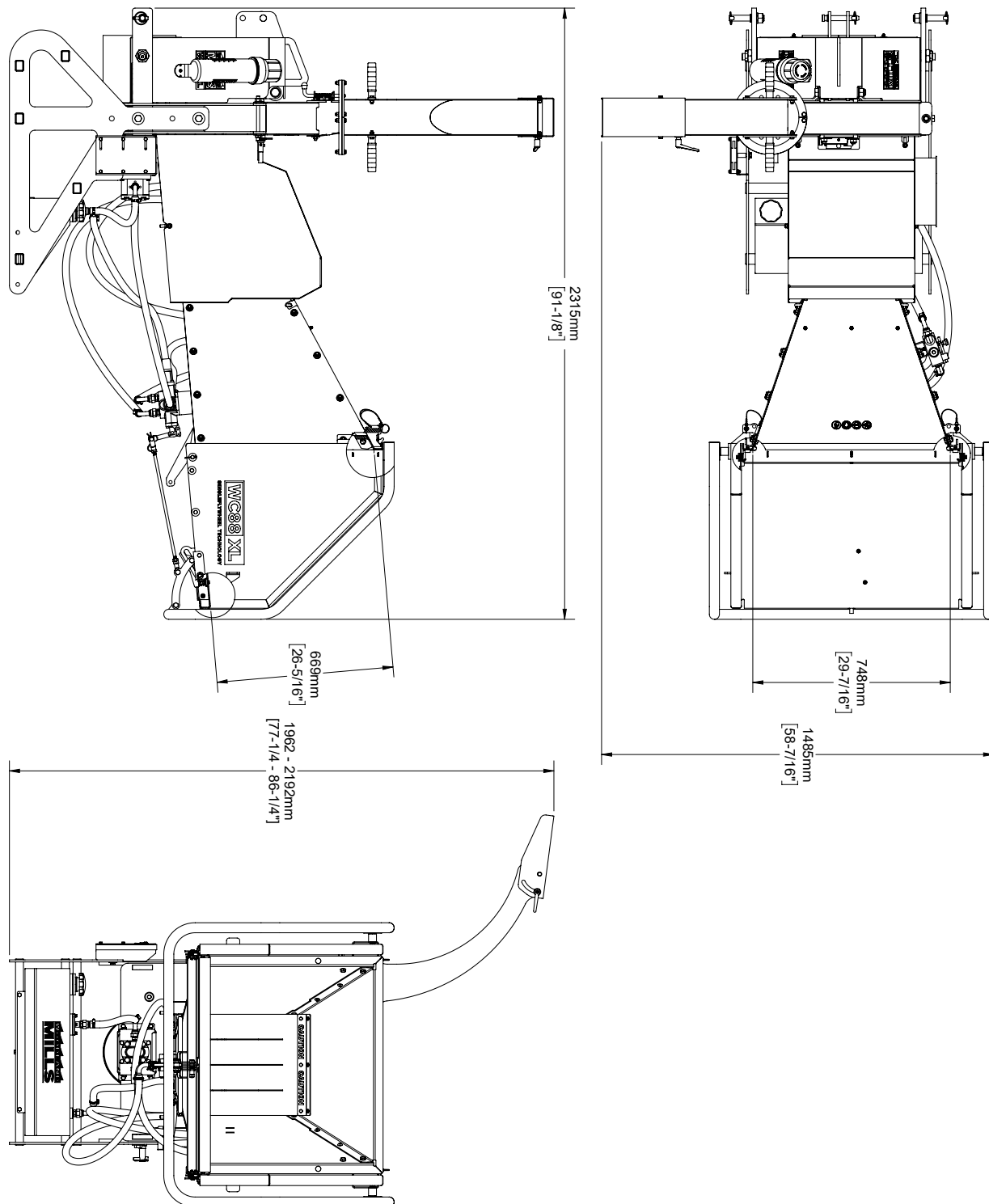
TECHNICAL SPECIFICATIONS

Component	WC88XL Specification
Drive System	PTO
Transport	3-Point Hitch
Minimum HP Required (at PTO)	35 hp
In-Feed System	Hydraulic
Hydraulic Oil	ISO 32 (ISO 46 for warmer climates)
Hydraulic Tank Volume	5 gal [19 L]
Hydraulic Requirement (Tractor)	None. Self contained.
PTO Shear Bolt	M8 X 50 mm Hex Bolt - Class 8.8 (Grade 5)
Blade Quantity and Dimensions	Four (4); 4.45 X 2.72 X 5/16 in [113 X 69 X 8 mm]
Blade Hardware	M10 X 40 mm Flat Head, M10 Lock Nuts - Class 10.9
Infeed Roller Diameter	8 in [203 mm] at Tooth Tip
Infeed Chute Dimensions (H X W)	26-5/16 X 29-7/16 in [669 X 748 mm]
Product Weight	1102 lb [500 kg]
Product Shipping Weight	1228 lb [557 kg]

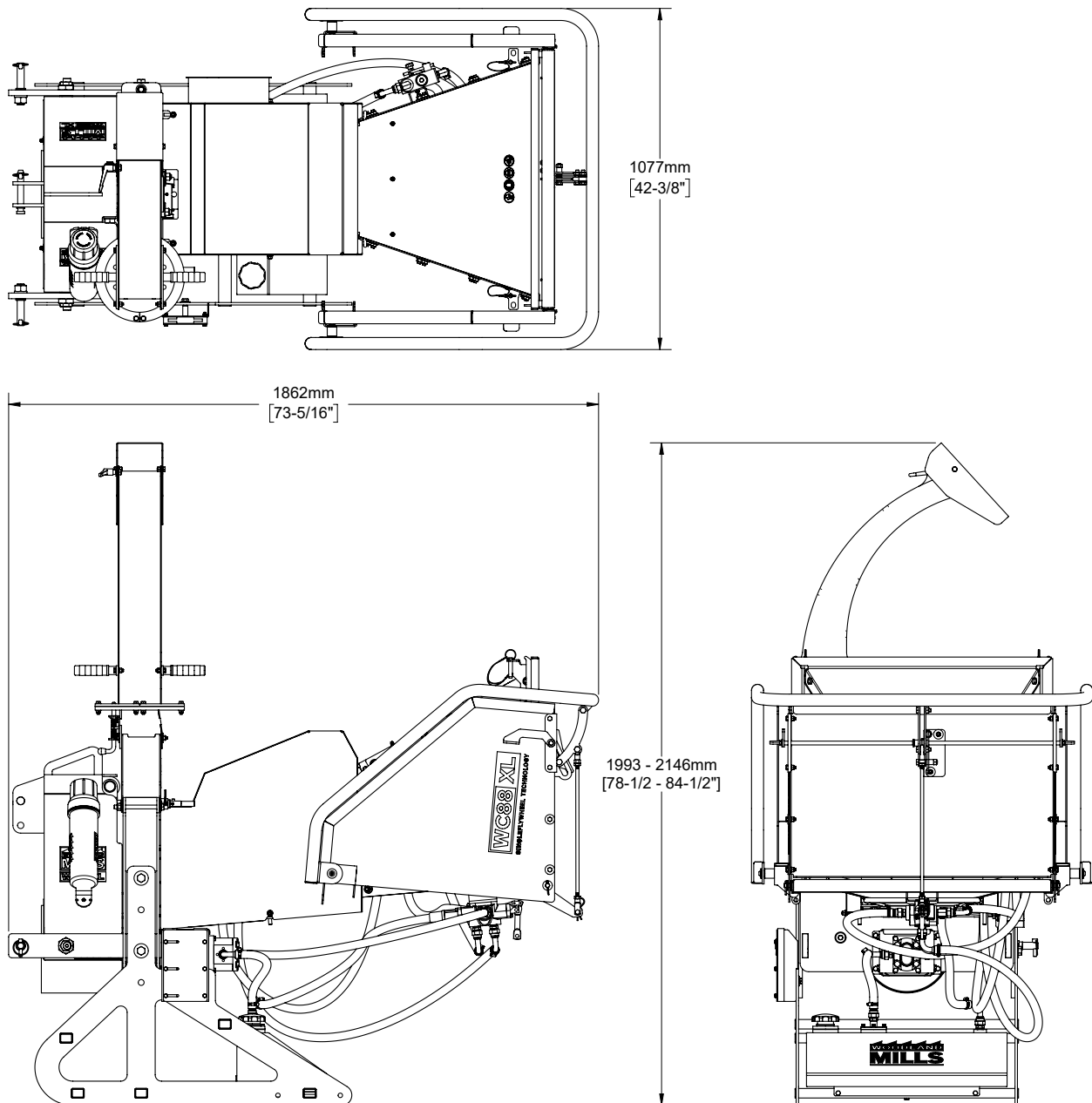


A. OVERALL DIMENSIONS—OPERATING STATE

Because the base offers up to 6 in [153 mm] of total vertical adjustment in 3 in [76.5 mm] increments, the overall height can vary by this amount as well.

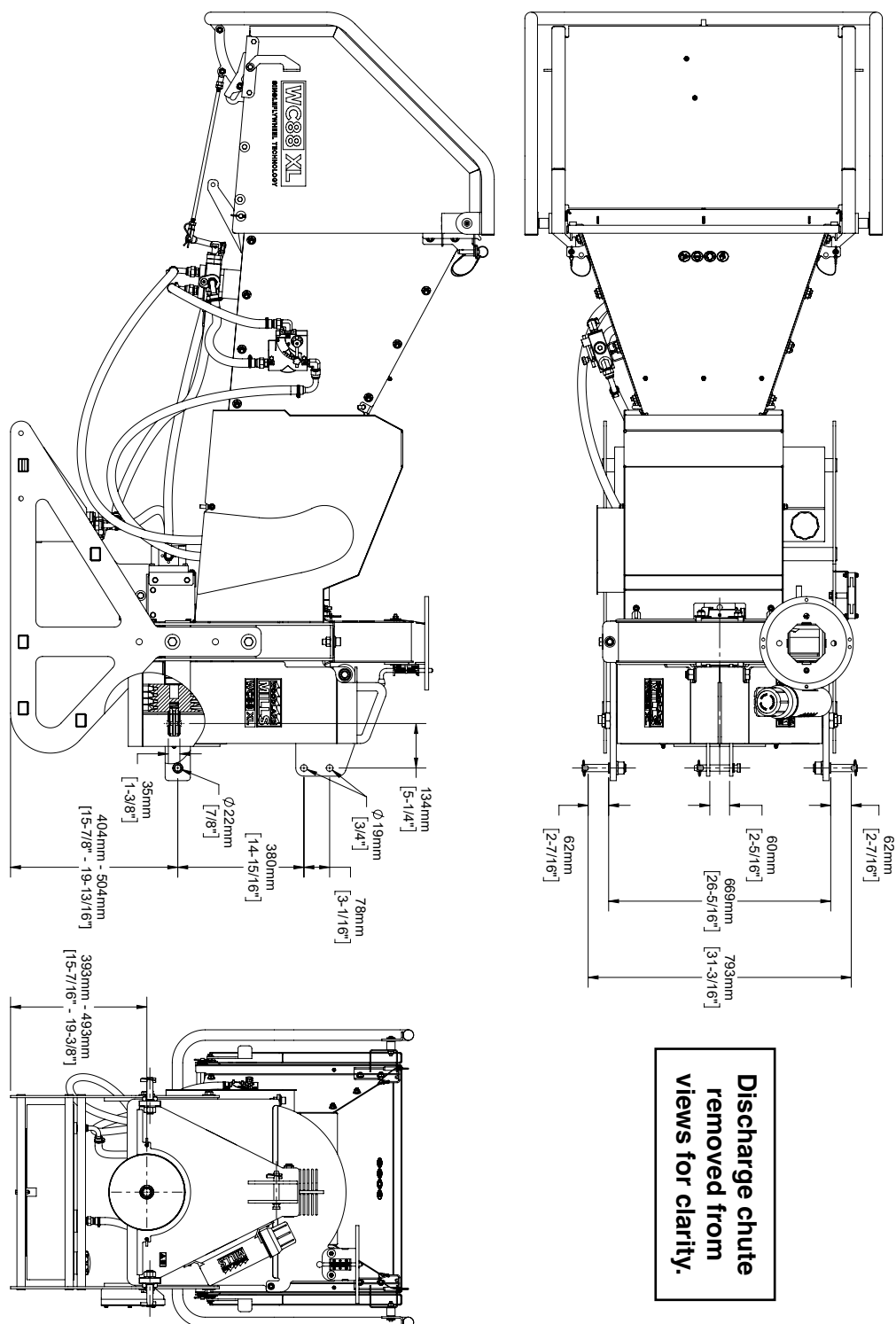


B. OVERALL DIMENSIONS—STORED STATE



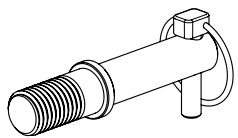
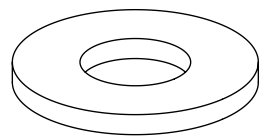
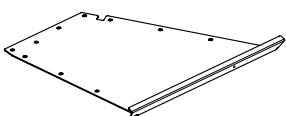
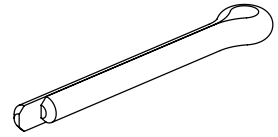
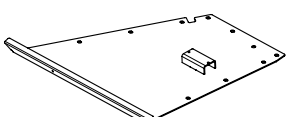
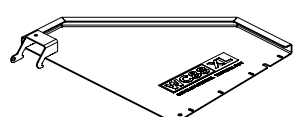
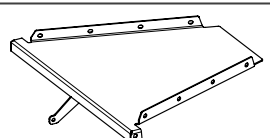
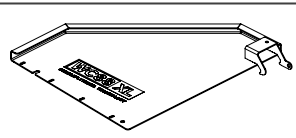
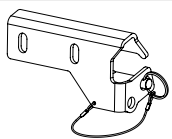
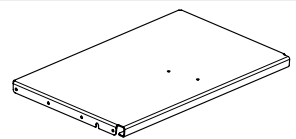
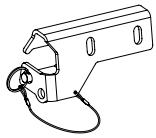
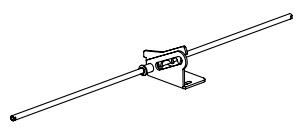
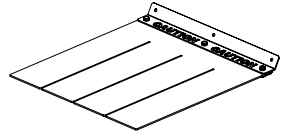
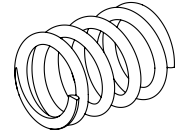
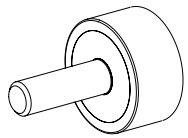
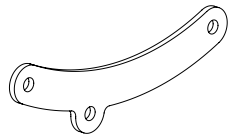
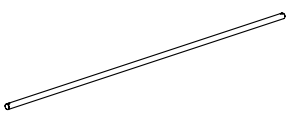
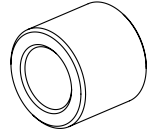
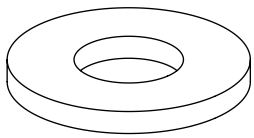
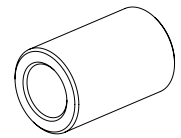
C. 3-POINT HITCH DIMENSIONS

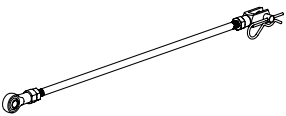
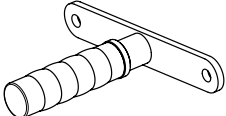
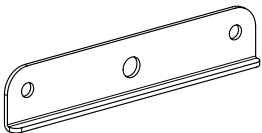
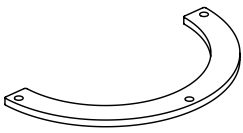
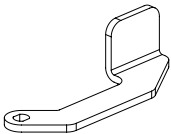
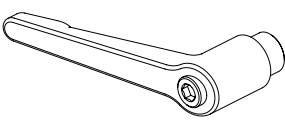
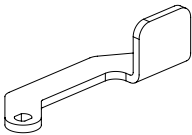
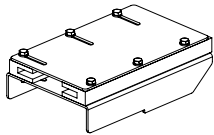
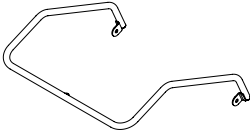
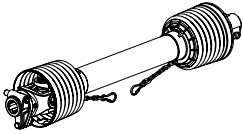
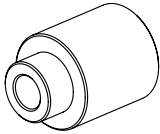
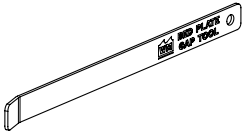
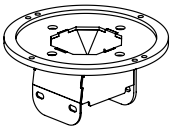
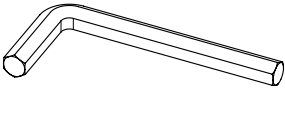
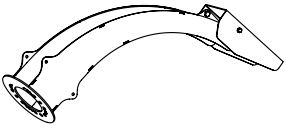
The wood chipper 3-point hitch is a *Category 1* system design to work with tractors in the horsepower range of 35-100+ hp. Upper hitch pin is $\frac{3}{4}$ " [19 mm] diameter and the lower hitch pins are $\frac{7}{8}$ " [22 mm] diameter.



COMPONENT LISTS

Verify all component and hardware quantities are correct prior to assembling the wood chipper.

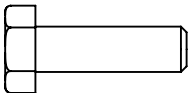
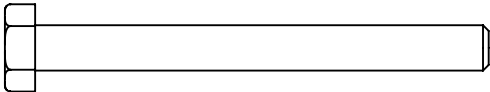
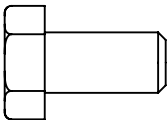
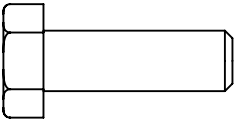
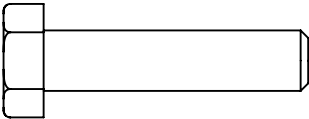
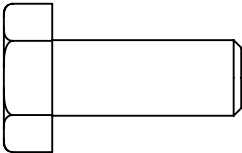
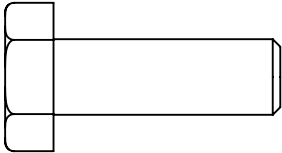
2x	Lower Hitch Pin Assembly		4x	Hinge Shaft Spacer (Black Nylon)	
1x	Infeed Chute Side Panel (Left) [0012378]		2x	Cotter Pin [004758]	
1x	Infeed Chute Side Panel (Right) [0012379]		1x	Feed Hopper Side Panel (Left) [0012936]	
1x	Infeed Chute Bottom Panel [0012377]		1x	Feed Hopper Side Panel (Right) [0012935]	
1x	Infeed Chute Strike Plate (Left) [0012464]		1x	Feed Hopper Bottom Panel [0012948]	
1x	Infeed Chute Strike Plate (Right) [0012467]		1x	Brake Linkage Assembly	
1x	Curtain Assembly		1x	Compression Spring [0012462]	
2x	Reinforced Bumper [0011095]		2x	Brake Linkage Rod Plate [0011646]	
1x	Hinge Shaft [0012380]		1x	Brake Linkage Spacer (14 mm) [0011520]	
4x	Hinge Shaft Spacer (Galvanized)		1x	Brake Linkage Spacer (25 mm) [0013170]	

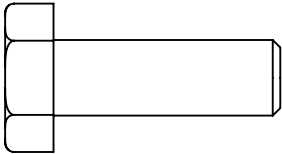
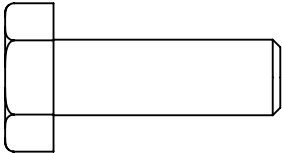
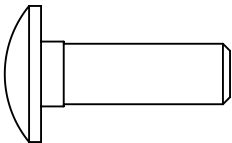
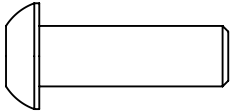
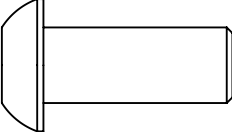
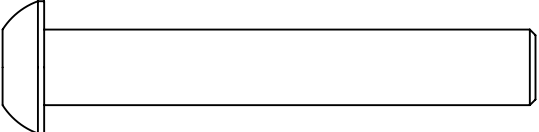
1x	Linkage Assembly		2x	Discharge Chute Handle with Grip	
2x	Brake Lever Guide Plate [0012937]		2x	Discharge Chute Retainer [0002191]	
1x	Brake Lever (Left) [0012939]		1x	Adjustable Position Handle [0001786]	
1x	Brake Lever (Right) [0012940]		1x	Chainsaw Holder Assembly	
1x	Control Arm [0012451]		1x	PTO Shaft [0010500]	
2x	Control Arm Spacer [0006898]		1x	Bed Plate Gap Tool [0010411]	
1x	Discharge Chute Nozzle Assembly		1x	Hex Key 14 mm [0014225]	
1x	Discharge Chute Assembly				

TO-SCALE HARDWARE

BOLTS & SCREWS

Hardware graphics are printed at 1:1 scale for ease of identification. Simply place the hardware over the image in the tables to verify it is the correct size.

3x	HHB-MBE075FCJ	M6 X 1 X 20 mm HEX BOLT	
2x	HHB-MBE115PCJ	M6 X 1 X 60 mm HEX BOLT	
2x	HHB-MBJ071FCJ	M8 X 1.25 X 16 mm HEX BOLT	
14x	HHB-MBJ080FCJ	M8 X 1.25 X 25 mm HEX BOLT	
6x	HHB-MBJ090FCJ	M8 X 1.25 X 35 mm HEX BOLT	
2x	HHB-MBM080FCJ	M10 X 1.5 X 25 mm HEX BOLT	
3x	HHB-MBM085FCJ	M10 X 1.5 X 30 mm HEX BOLT	

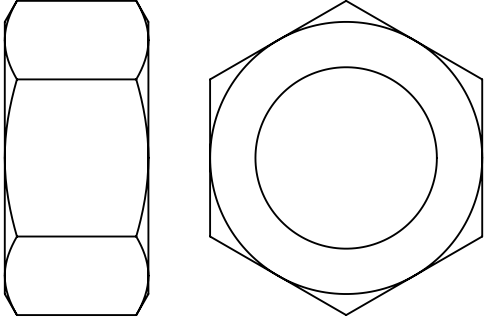
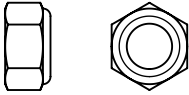
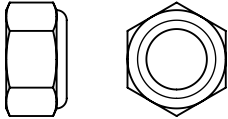
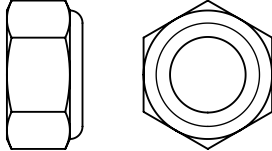
2x	HHB-MBM095FCJ	M10 X 1.5 X 40 mm HEX BOLT
		
1x	HHB-MBM115PCJ	M10 X 1.5 X 60 mm HEX BOLT
		
4x	SNC-MBJ080FCJ	M8 X 1.25 X 25 mm CARRIAGE HEAD BOLT
		
2x	BHS-MBJ080FCM	M8 X 1.25 X 25 mm BUTTON HEAD SCREW
		
20x	BHS-MBM080FCM	M10 X 1.5 X 25 mm BUTTON HEAD SCREW
		
2x	BHS-MBM120FCM	M8 X 1.25 X 65 mm BUTTON HEAD SCREW
		

SCALES

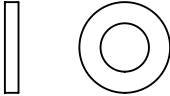
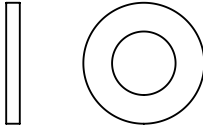
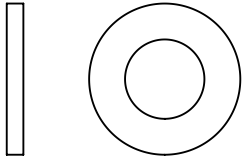
Ruler scale is also provided below to double-check bolt and screw lengths when necessary.

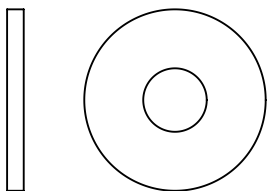
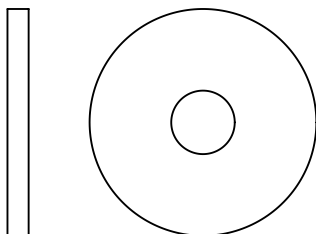
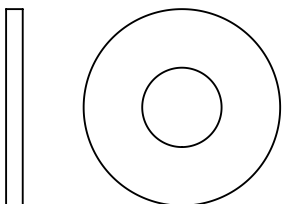
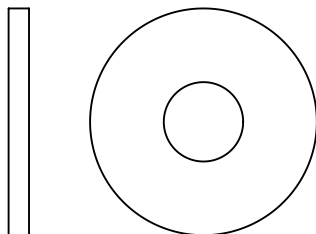
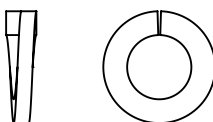
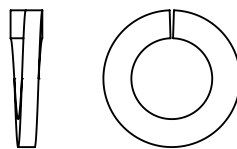
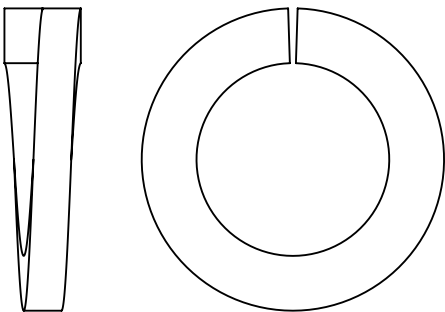


NUTS

2x	HXN-MCNCH M24 X 2 HEX NUT	
7x	HLN-MBECH M6 X 1 LOCK NUT	
24x	HLN-MBJCH M8 X 1.25 LOCK NUT	
29x	HLN-MBMCH M10 X 1.5 LOCK NUT	

WASHERS

8x	FTW-MBE000AJ M6 FLAT WASHER	
28x	FTW-MBJ000AJ M8 FLAT WASHER	
6x	FTW-MBM000AJ M10 FLAT WASHER	

2x	FDW-MBJ073000AJ M8 FENDER WASHER, 24 mm OD	10x	FDW-MBJ079000AJ M8 FENDER WASHER, 30 mm OD
			
25x	FDW-MBM075000AJ M10 FENDER WASHER, 26 mm OD	3x	FDW-MBM075000AJ M10 FENDER WASHER, 30 mm OD
			
4x	SLW-MBJAJ M8 SPLIT LOCK WASHER	1x	SLW-MBMAJ M10 SPLIT LOCK WASHER
			
2x	SLW-MCMAJ M24 SPLIT LOCK WASHER		
			

****Note: some of the hardware called out in these tables may come loosely assembled to their respective components out of the crate.****

ASSEMBLY

1. TOOLS REQUIRED

Tool	Specification
Wrench/Socket	10 mm (2x)
Wrench/Socket	13 mm (2x)
Wrench/Socket	16 mm (2x)
Wrench/Socket	17 mm (2x)
Wrench/Socket	24 mm or Adjustable Wrench (2x)
Wrench	30 mm or Adjustable Wrench
Wrench	36 mm or Adjustable Wrench
Hex Key	6 mm
Hex Key	8 mm
Hex Key	14 mm (included)
Hacksaw*	Any metal-cutting saw (Sawzall, etc.)

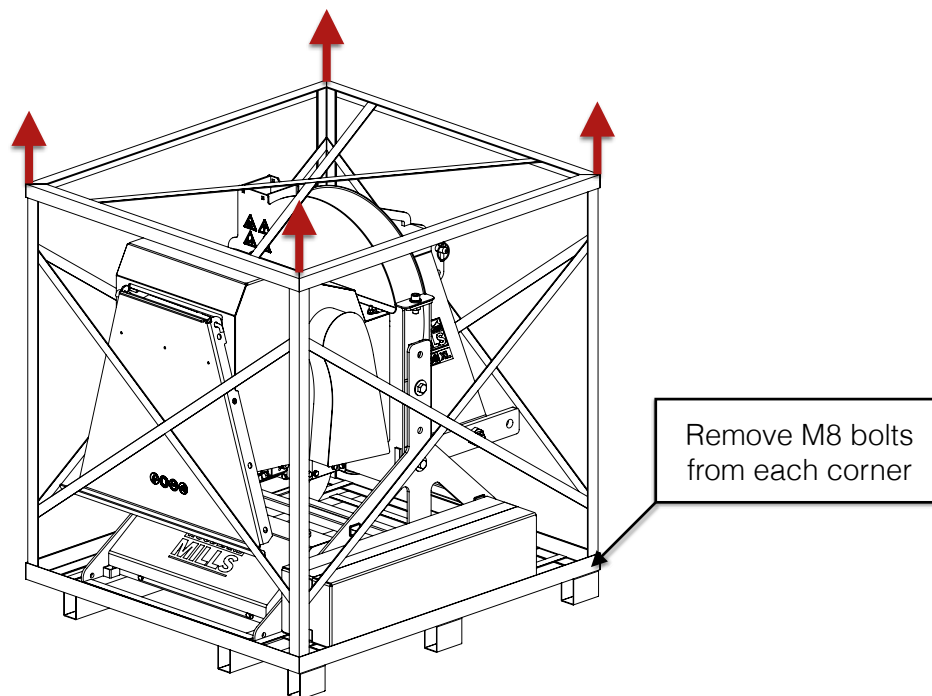
* Only if PTO shaft requires trimming. See ***Trimming the PTO Shaft*** section for more detail.



2. UNPACKING

A. UNBOXING THE CRATE

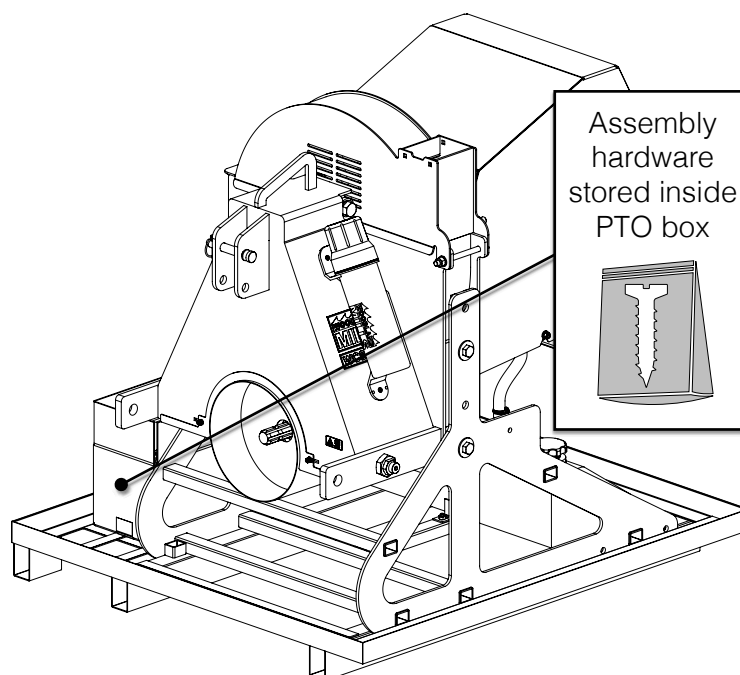
Unpack the contents of the crate by first cutting the nylon strapping and then remove the cardboard top and sides. Remove the four (4) M8 hex bolts and nuts located at each bottom corner of the crate and then lift it off the skid. Discard the crate.



Remove all the loose components from the skid (chute panels, control arm, linkages, discharge chute, handles, PTO shaft) and set them to the side. Leave the wood chipper on the skid.

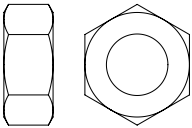
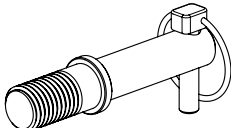
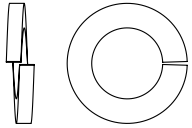
Hardware for the assembly is stored inside the PTO shaft box. The 14 mm hex key that is used for opening the flywheel housing is in the manual tube.

Note that the wood chipper is shipped dry (i.e. no hydraulic fluid). See the **Technical Specifications** section for the volume and type of oil required.

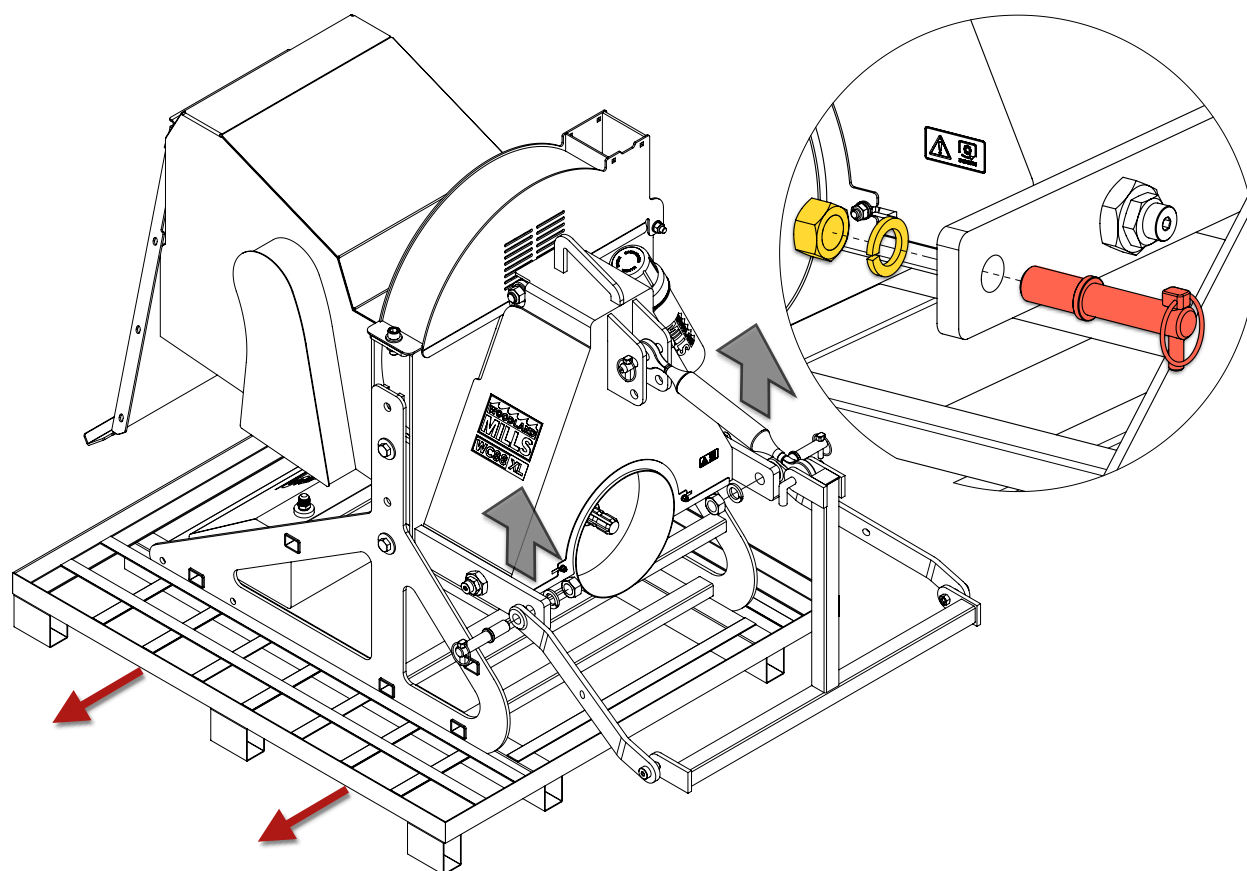


B. REMOVING THE SKID

Before the 3-point hitch system can be connected to the wood chipper, the lower hitch pins must be installed. Assemble the two (2) lower hitch pins using the components and hardware listed in the table below.

2x	M24 Hex Nut		2x	Lower Hitch Pin Assembly	
2x	M24 Split Lock Washer				

Assemble each lower hitch pin assembly to the lower chipper arms using one (1) M24 split lock washer and one (1) M24 hex nut per side. Fully tighten the hardware.

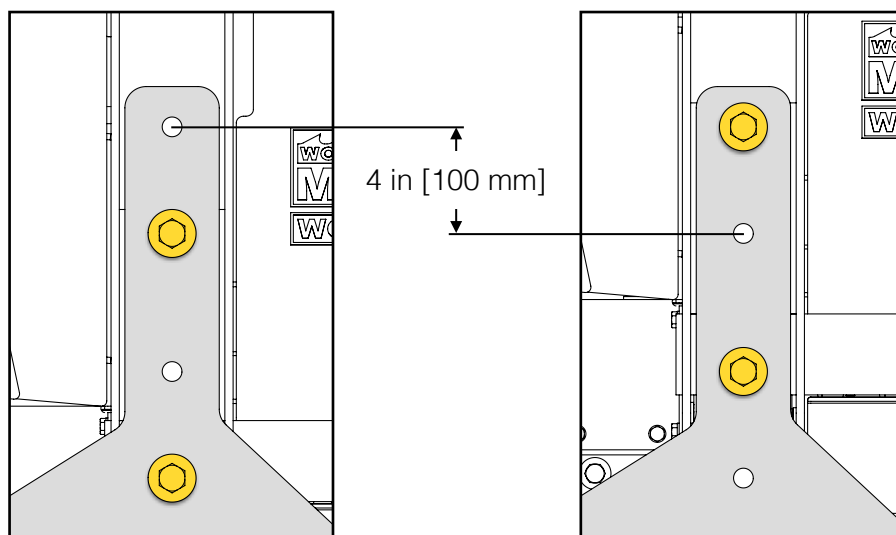


With the wood chipper still resting on the skid, attach the tractor's 3-point hitch and raise it up off the skid. Slide the skid out from under the wood chipper and discard it. Carefully set the wood chipper down on the ground.

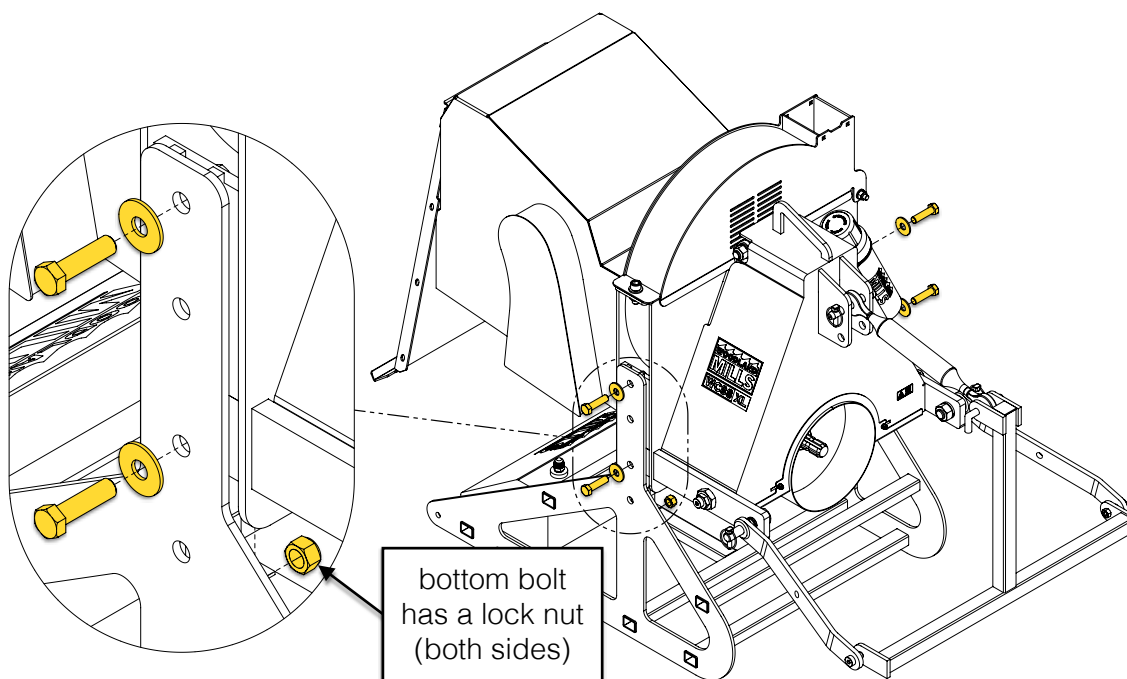
C. SETTING THE BASE HEIGHT

****This step is optional and is dependent on the height of the tractor to which the wood chipper will be mounted. Skip this step if the hitch pin height is suitable straight out of the crate. Refer to the 3-POINT HITCH DIMENSIONS graphic for dimensions.****

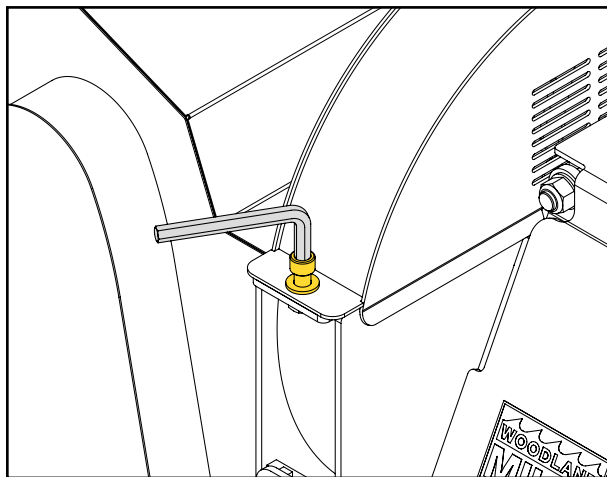
The height of the machine can be increased by 4 in [100 mm] by lowering the base.



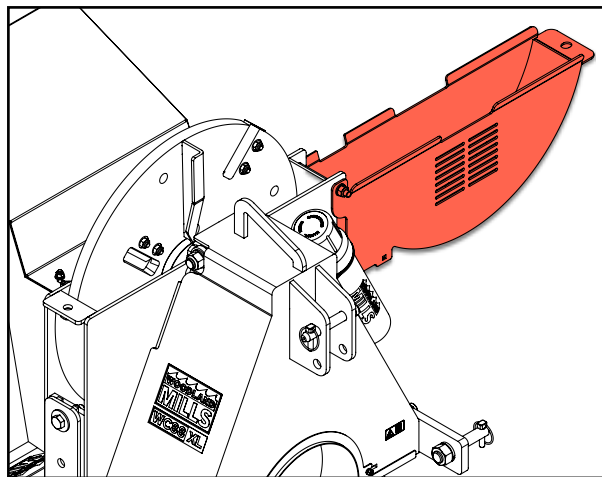
With the 3-point hitch attached to the wood chipper, remove the four M16 hex bolts and fender washers from both sides of the base. The bottom bolt on each side also have an M16 lock nut. Raise the chipper housing up until the top hole in the base aligns with the top hole in the flywheel housing, then reinstall and fully tighten the hardware.



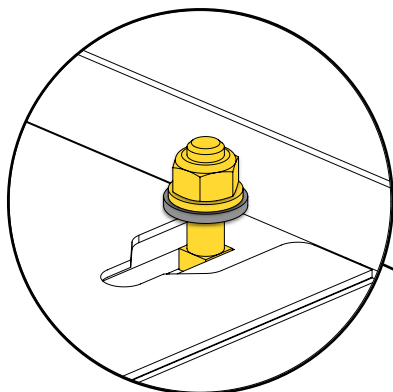
3. REMOVE LOWER FLYWHEEL HOUSING GUARD



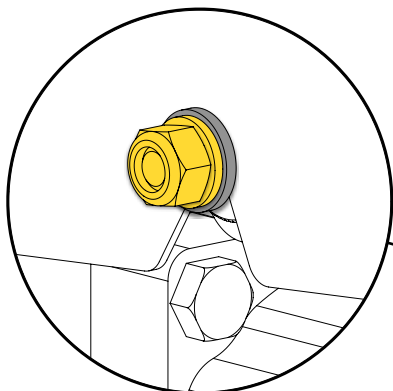
1. Remove screw using 14 mm hex key.



2. Open upper flywheel housing.

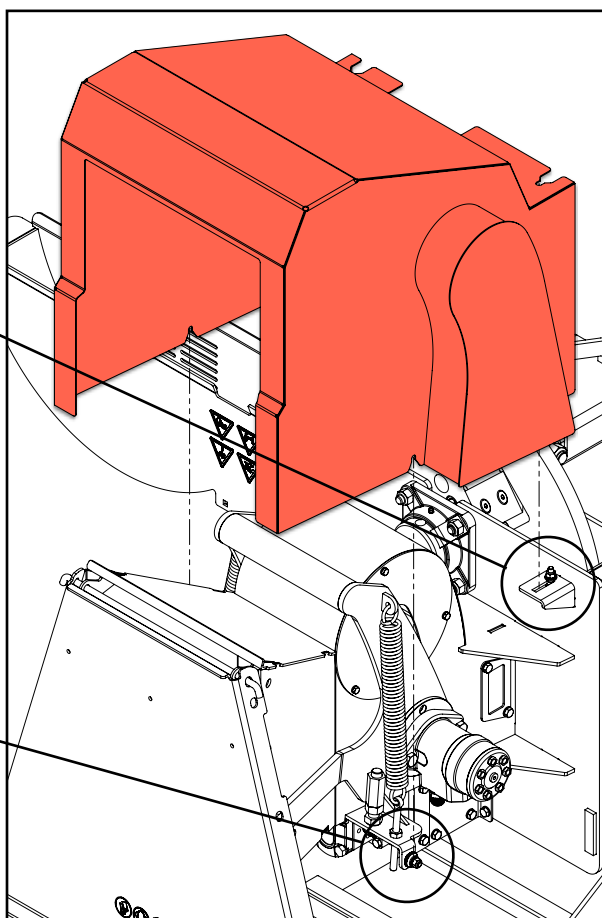


3. Loosen* upper guard hardware (2x).



4. Loosen* lower/side guard hardware (2x).

***Loosen the hardware, do not remove**



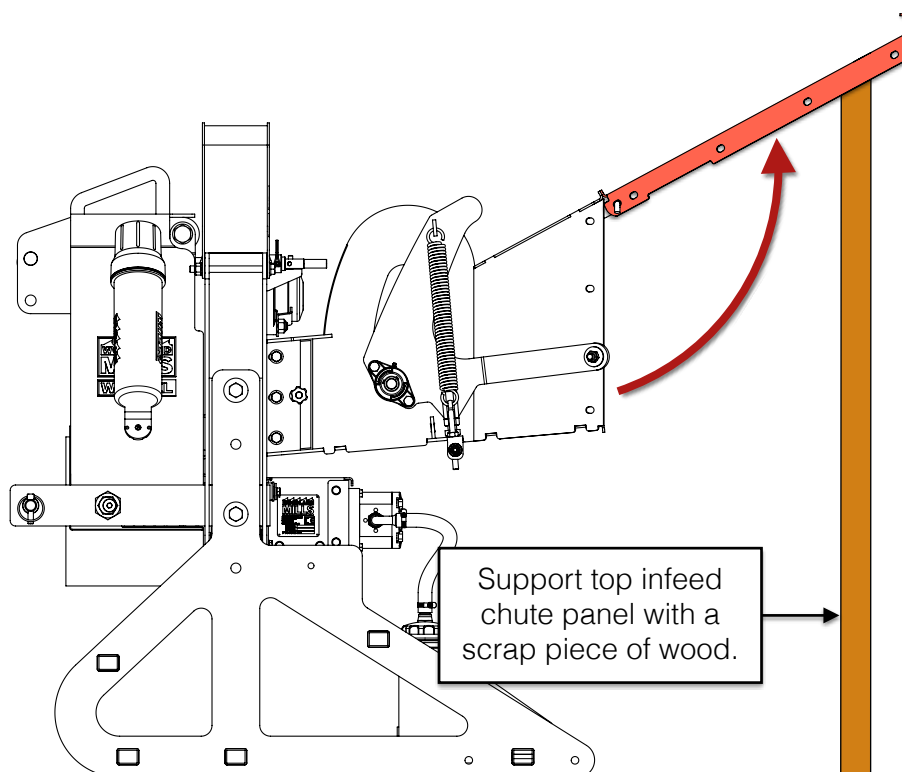
5. Lift guard off housing and set aside.

Close the upper flywheel housing after removing the guard. Do not reinstall the bolt.

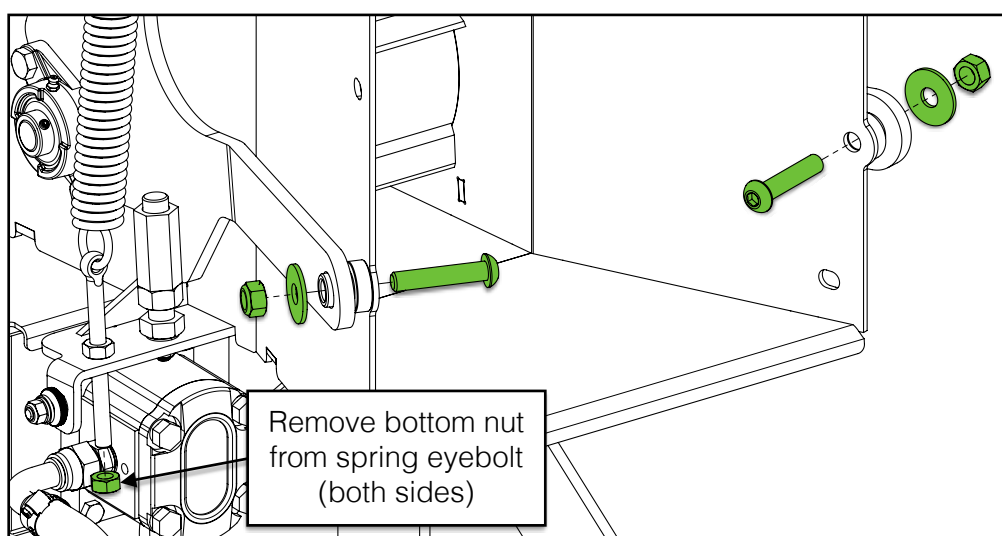
4. INFEEED CHUTE

A. UPPER INFEEED CHUTE PANEL

Rotate the upper infeed chute panel and remove the hydraulic valves from inside the chute. Set them aside until a later step.

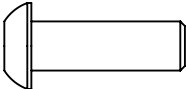
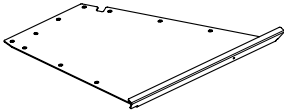
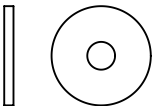
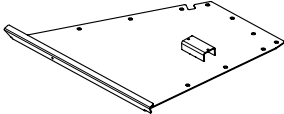
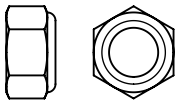


Remove the hardware from the swingarm arms (leave the spacers in place) and release all the tension from the springs by removing the bottom hex nut from each spring's eyebolt.

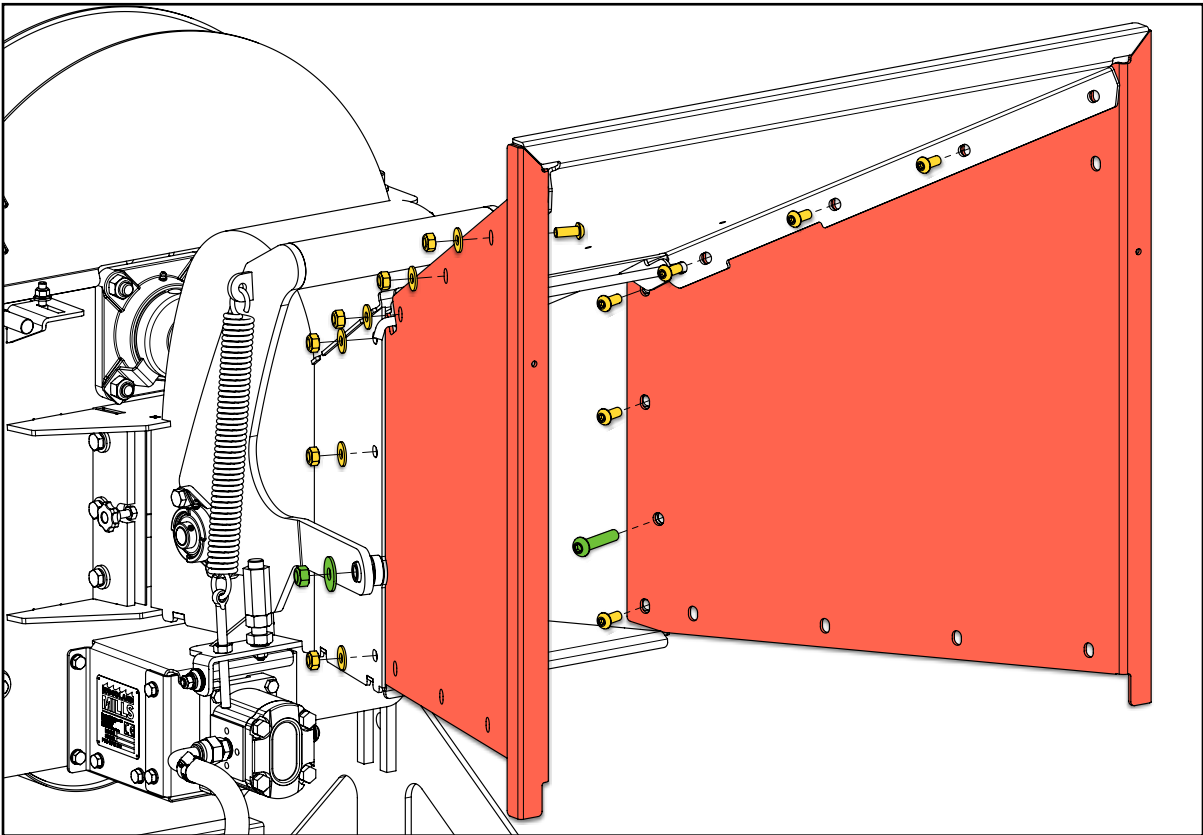


B. SIDE PANELS

Assemble the infeed chute side panels to the lower flywheel housing using the hardware and components listed in the table below.

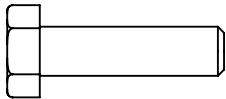
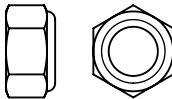
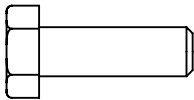
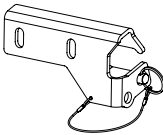
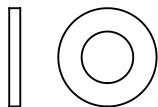
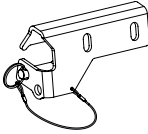
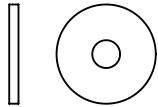
12x	M10 X 25 mm Button Head Screw		1x	Infeed Chute Side Panel (Left)	
12x	M10 X 26 mm Fender Washer		1x	Infeed Chute Side Panel (Right)	
12x	M10 Lock Nut				

Assemble each infeed chute side panel using six (6) M10 X 25 mm button head screws, six (6) M10 X 26 mm fender washers, and six (6) M10 lock nuts. Install the panels to the *inside* faces of the lower flywheel housing. Reinstall the swingarm arm hardware. Do not tighten any of the hardware until instructed in a later step.

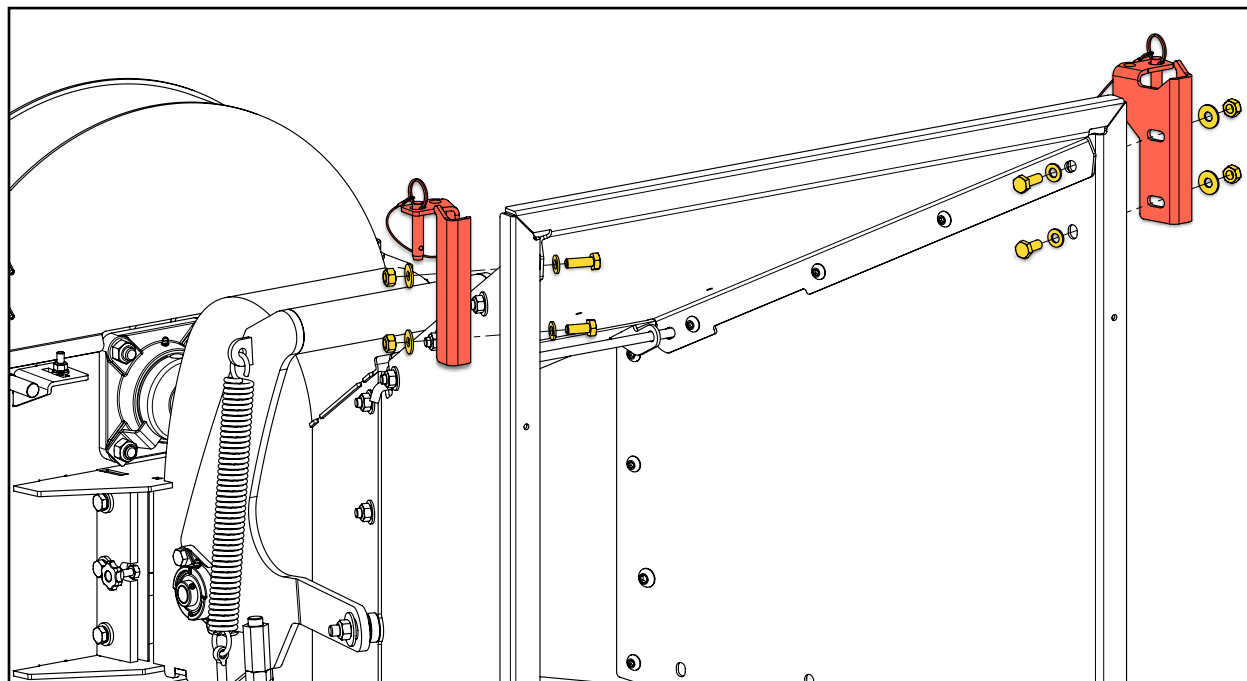


C. STRIKE PLATES

Assemble the strike plates to the infeed chute side panels using the hardware and components listed in the table below.

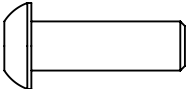
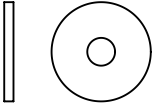
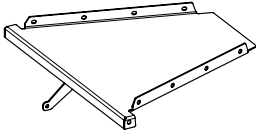
2x	M10 X 30 mm Hex Bolt		4x	M10 Lock Nut	
2x	M10 X 25 mm Hex Bolt		1x	Infeed Chute Strike Plate (Left)	
4x	M10 Flat Washer		1x	Infeed Chute Strike Plate (Right)	
4x	M10 X 26 mm Fender Washer				

Assemble each strike plate to the upper left and right corners of the infeed chute using one (1) M10 X 30 mm hex bolt (upper hole), one (1) M10 X 25 mm hex bolt (lower hole), two (2) M10 X 26 mm fender washers, two (2) M10 flat washers, and two (2) M10 lock nuts per side. Do not tighten any of the hardware until instructed in a later step.

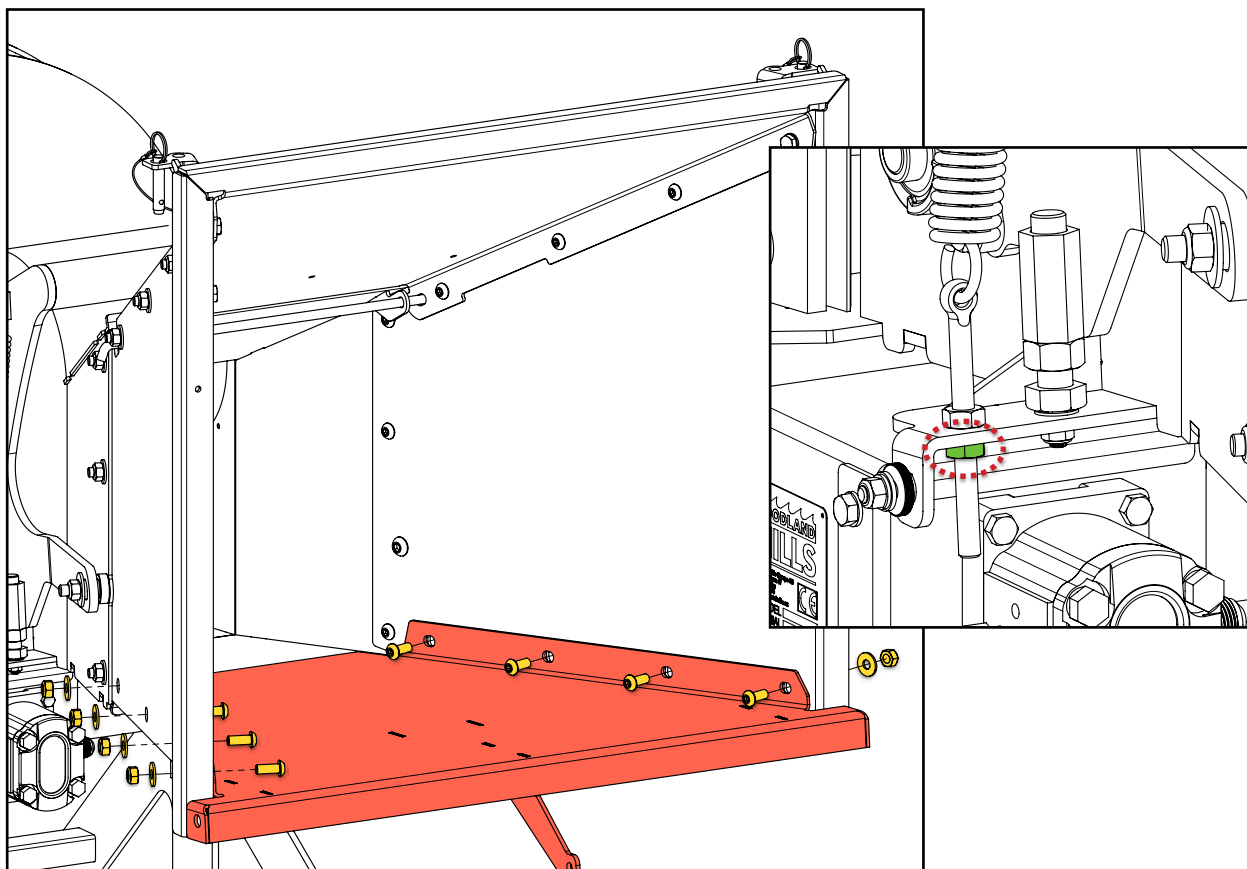


D. BOTTOM PANEL

Assemble the infeed chute bottom panel to the side panels using the hardware and components listed in the table below.

8x	M10 X 25 mm Button Head Screw		8x	M10 Lock Nut	
8x	M10 X 26 mm Fender Washer		1x	Infeed Chute Bottom Panel	

Assemble the bottom infeed chute panel using four (4) M10 X 25 mm button head screws, four (4) M10 X 26 mm fender washers, and four (4) M10 lock nuts per side.

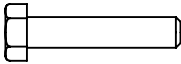
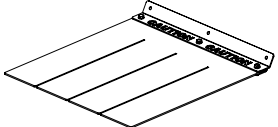


Tighten all the infeed chute hardware from this and previous steps except for the strike plate hardware—leave those four (4) bolts snug but not fully tight.

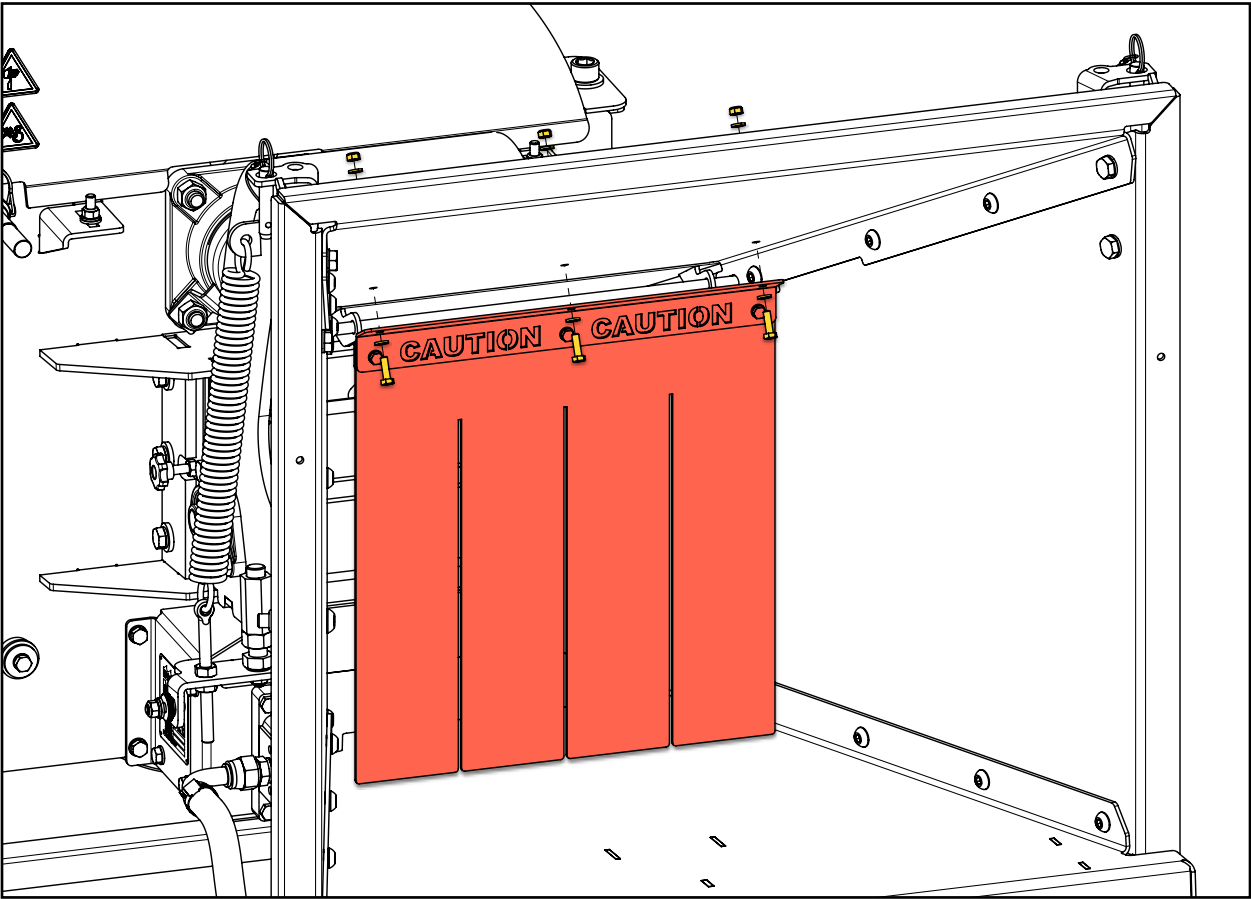
Tighten the swingarm hardware and reinstall and tighten the lower hex nuts on the spring eyebolts until the springs are under full tension once again.

E. CURTAIN

Assemble the curtain to the top infeed chute panel using the hardware and components listed in the table below.

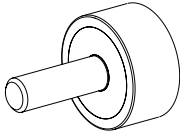
3x	M6 X 20 mm Hex Bolt		3x	M6 Lock Nut	
3x	M6 Flat Washer		1x	Curtain Assembly	

Assemble the curtain to the inside of the top infeed chute panel using three (3) M6 X 20 mm hex bolts, three (3) M6 flat washers, and three (3) M6 lock nuts. Fully tighten the hardware.

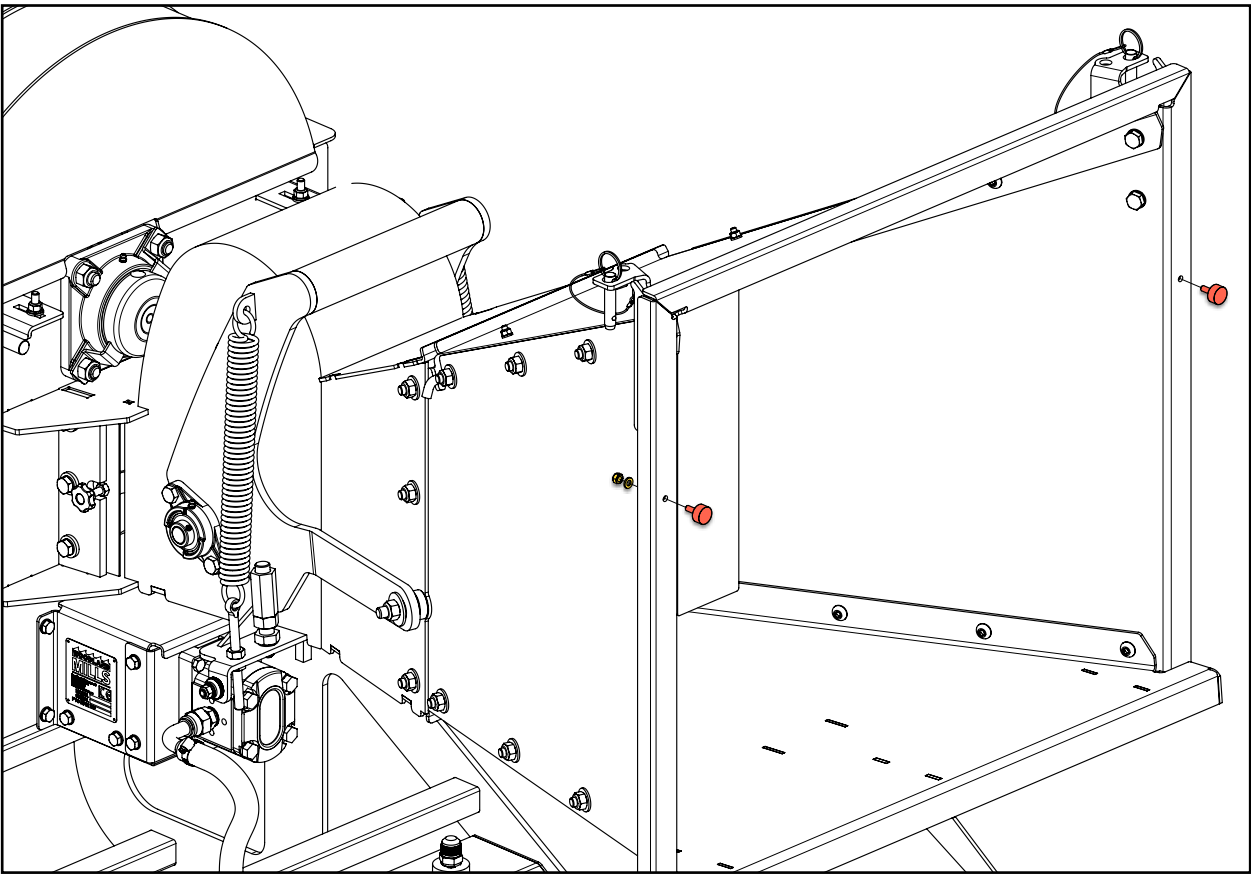


F. BUMPERS

Assemble the bumpers to the front face of both infeed chute side panels using the hardware and components listed in the table below.

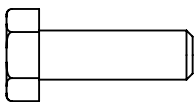
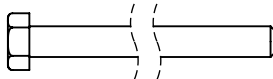
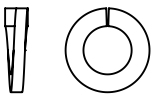
2x	M6 Flat Washer		2x	Bumper	
2x	M6 Lock Nut				

Assemble the bumper to the front face of each infeed chute side panel using one (1) M6 flat washer and one (1) M6 lock nut per side. Fully tighten the hardware.

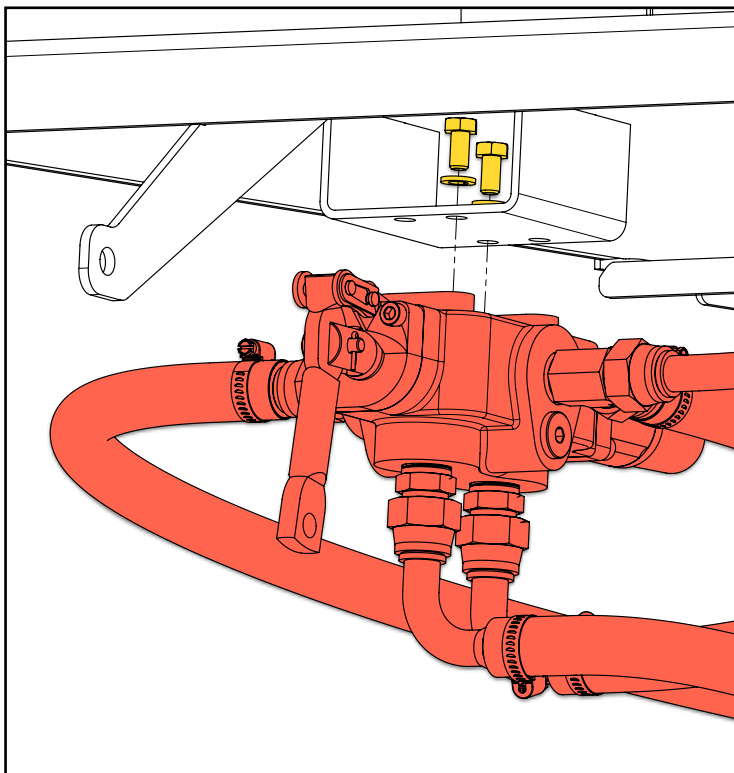
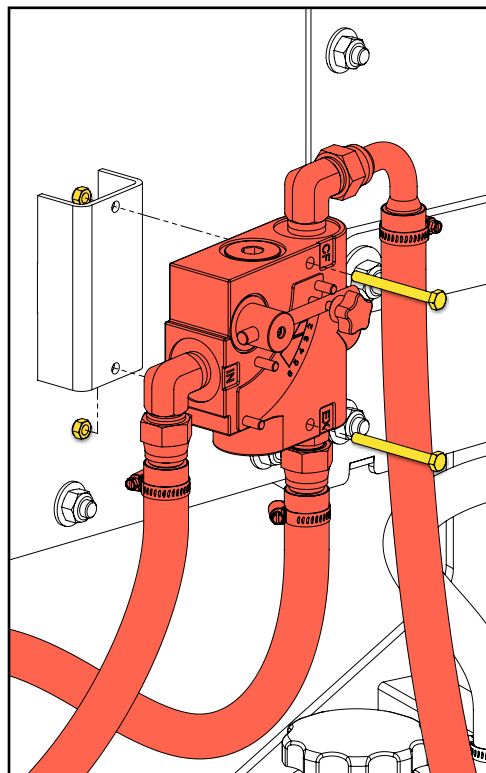


5. HYDRAULICS

Assemble the hydraulic valves to the infeed chute using the hardware listed in the table below.

2x	M8 X 16 mm Hex Bolt		2x	M6 X 60 mm Hex Bolt	
2x	M8 Split Lock Washer		2x	M6 Lock Nut	

Assemble the variable flow control valve to the right side infeed chute panel bracket using two (2) M6 X 60 mm hex bolts and two (2) M6 lock nuts. Fully tighten the hardware.

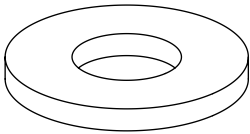
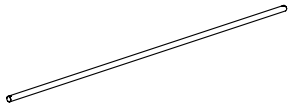
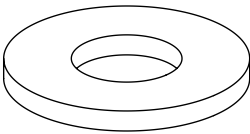
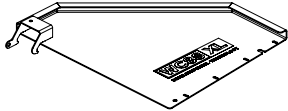
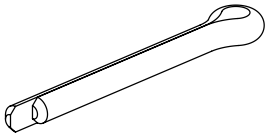
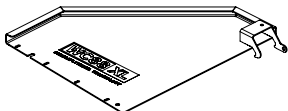


Assemble the directional flow control valve to the underside of the bottom infeed chute panel bracket using two (2) M8 X 16 mm hex bolts and two (2) M6 split lock washers. Fully tighten the hardware.

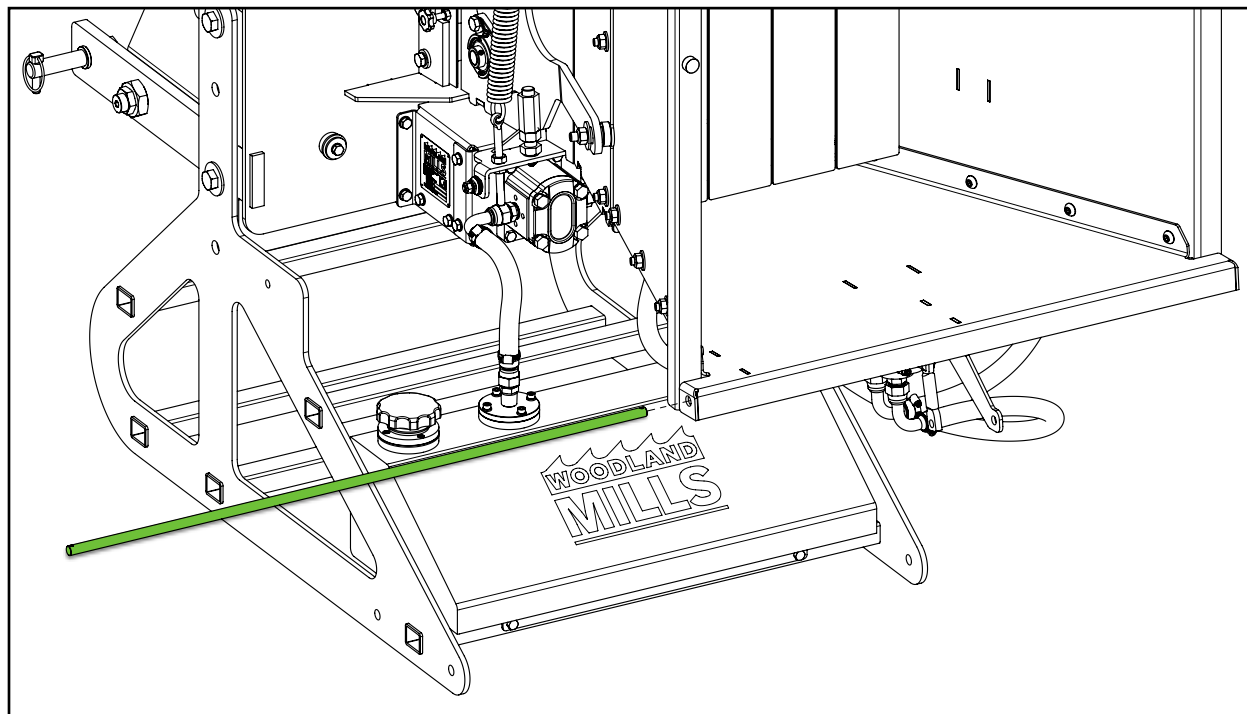
6. FEED HOPPER

A. SIDE PANELS

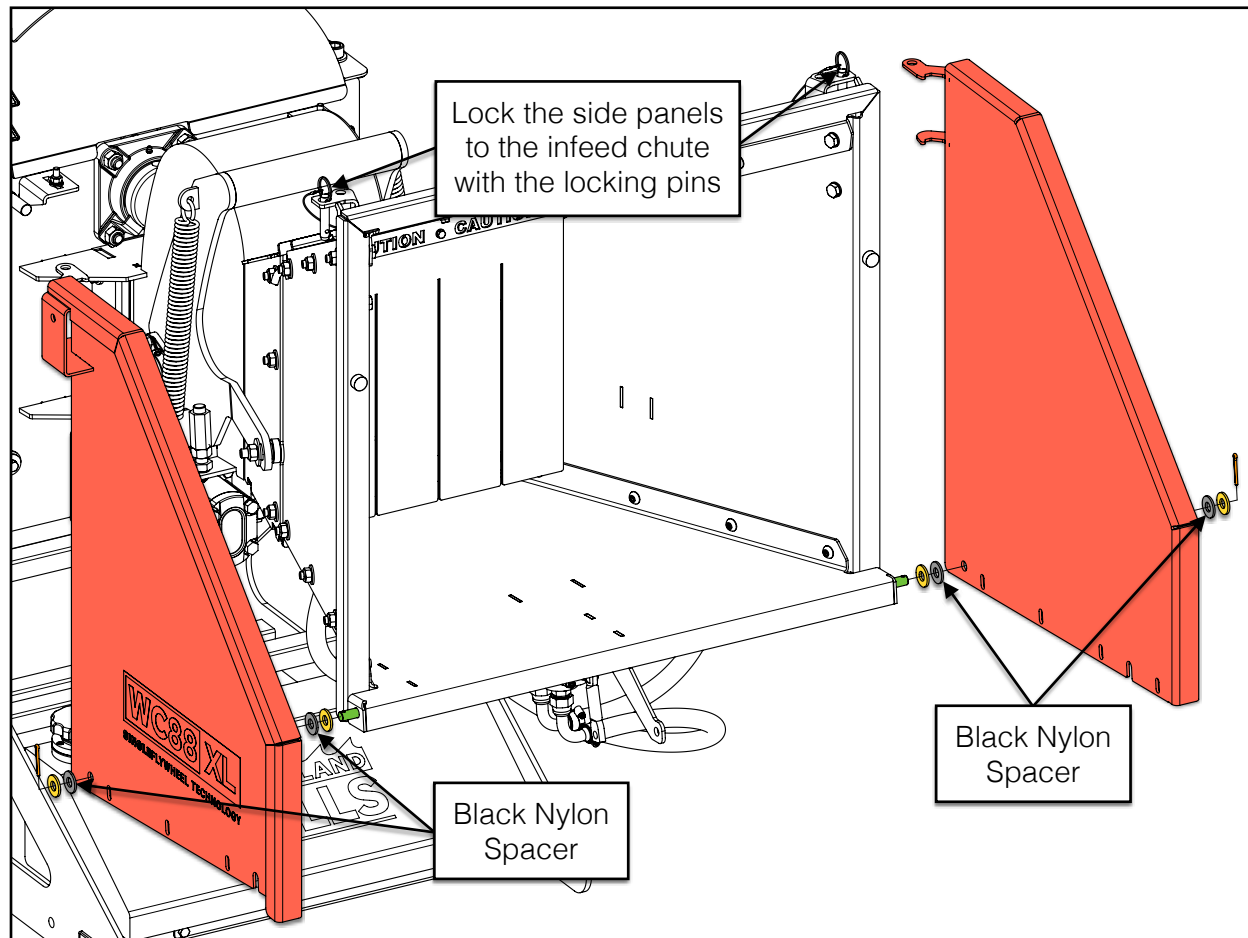
Assemble the infeed chute side panels to the lower flywheel housing using the hardware and components listed in the table below.

4x	Spacer (Galvanized)		1x	Hinge Shaft	
4x	Spacer (Black Nylon)		1x	Feed Hopper Side Panel (Left)	
2x	Cotter Pin		1x	Feed Hopper Side Panel (Right)	

Assemble the feed hopper hinge shaft to the bottom infeed chute panel by sliding it through the holes in the ribs on the underside.



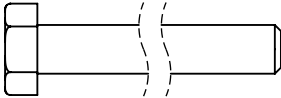
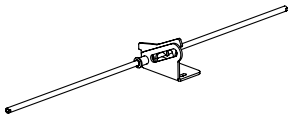
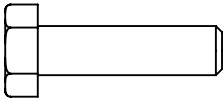
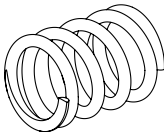
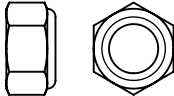
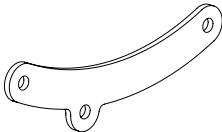
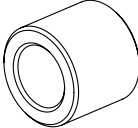
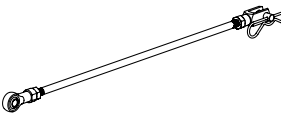
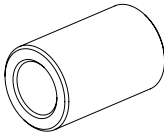
Slide two (2) spacers (1 galvanized, 1 nylon) onto the right-side of the shaft with the black nylon spacer *facing out*. Assemble the right-side feed hopper panel using two (2) more spacers (1 galvanized, 1 nylon) with the black nylon spacer *facing in* and secure it with a cotter pin in the end of the shaft.



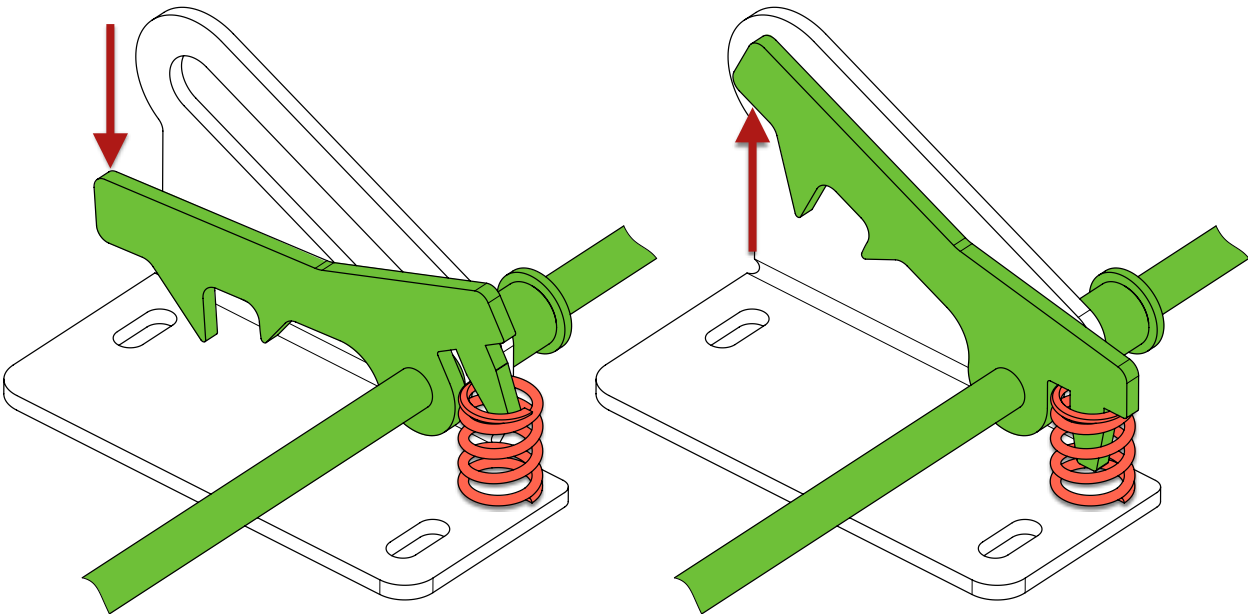
Hook the top corner of the side panel to the strike plate and use the locking pin to temporarily hold it in place. Repeat the steps for the other side panel.

B. BRAKE

Assemble the brake mechanism using the hardware and components listed in the table below.

1x	M10 X 60 mm Hex Bolt		1x	Brake Linkage Assembly	
1x	M10 X 40 mm Hex Bolt		1x	Compression Spring	
2x	M10 Lock Nut		2x	Brake Linkage Rod Plate	
			1x	Spacer (14 mm Lg)	
1x	Linkage Assembly		1x	Spacer (25 mm Lg)	

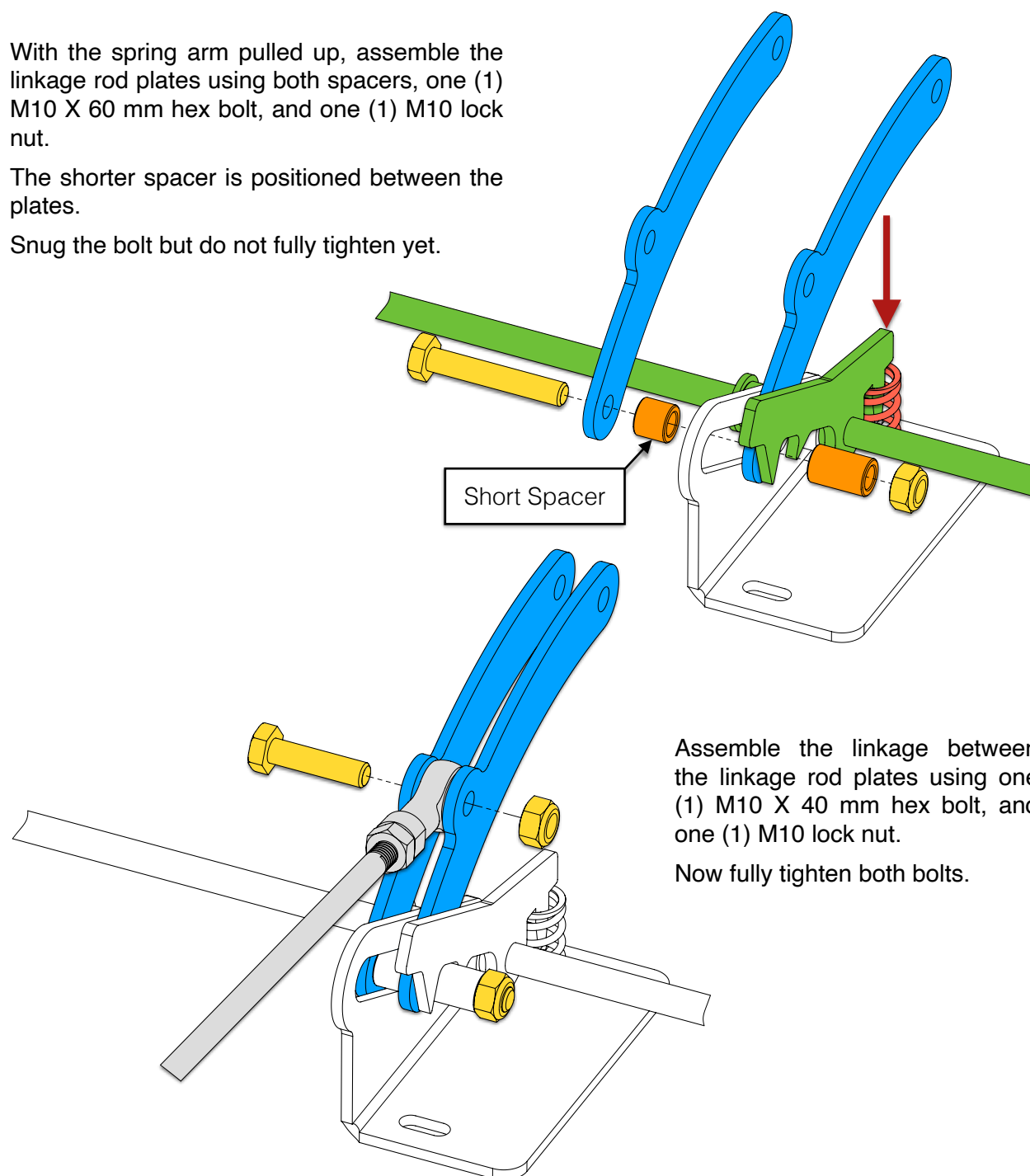
Push the spring arm down and insert the compression spring between it and the base. Then pull up on the spring arm to compress the spring which will allow the hardware to be assembled.



With the spring arm pulled up, assemble the linkage rod plates using both spacers, one (1) M10 X 60 mm hex bolt, and one (1) M10 lock nut.

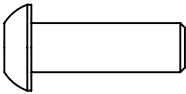
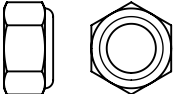
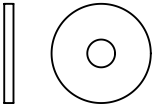
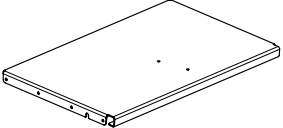
The shorter spacer is positioned between the plates.

Snug the bolt but do not fully tighten yet.

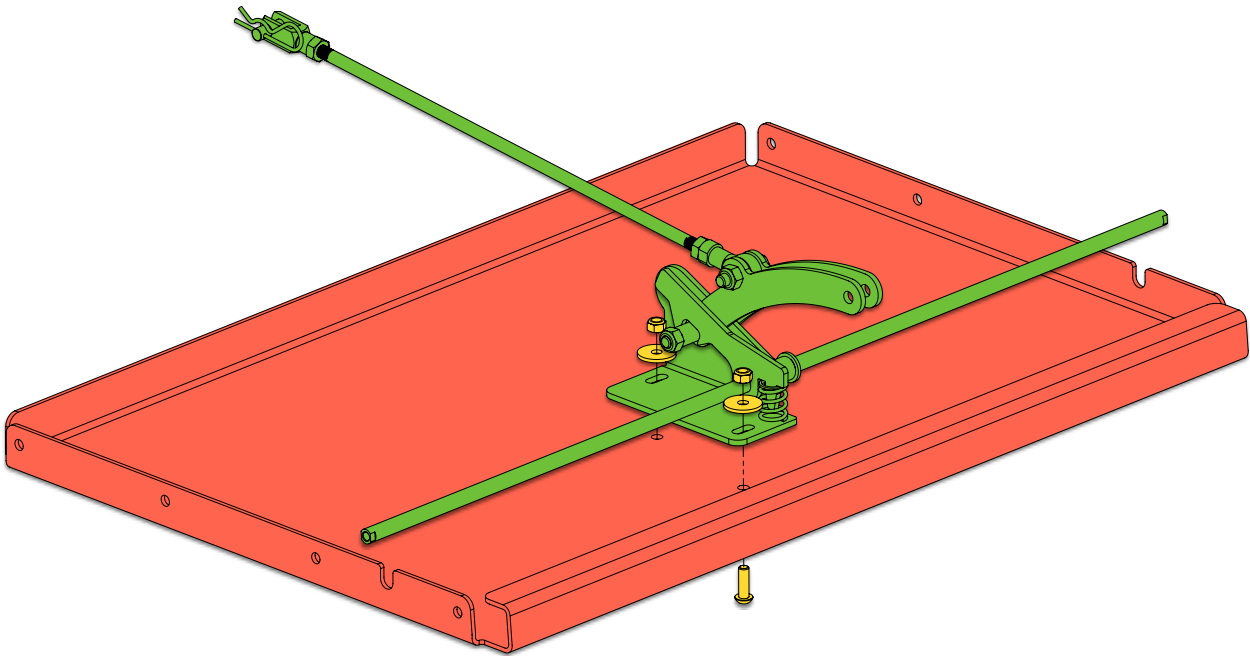


****Note that the assembly may sit cockeyed due to the spring force because the linkage has not been connected at the other end. This is normal.****

Assemble the brake linkage assembly to the feed hopper bottom panel using the hardware and components listed in the table below.

2x	M8 X 25 mm Button Head Screw		2x	M8 Lock Nut	
2x	M8 X 30 mm Fender Washer		1x	Feed Hopper Bottom Panel	

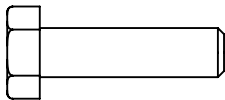
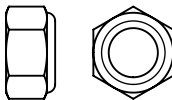
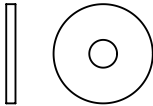
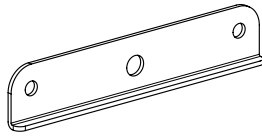
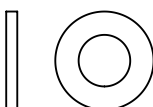
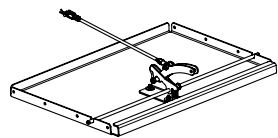
Assemble the brake assembly to the underside of the bottom feed hopper panel using two (2) M8 X 25 mm button head screws, two (2) M8 X 30 mm fender washers, and two (2) M8 lock nuts.



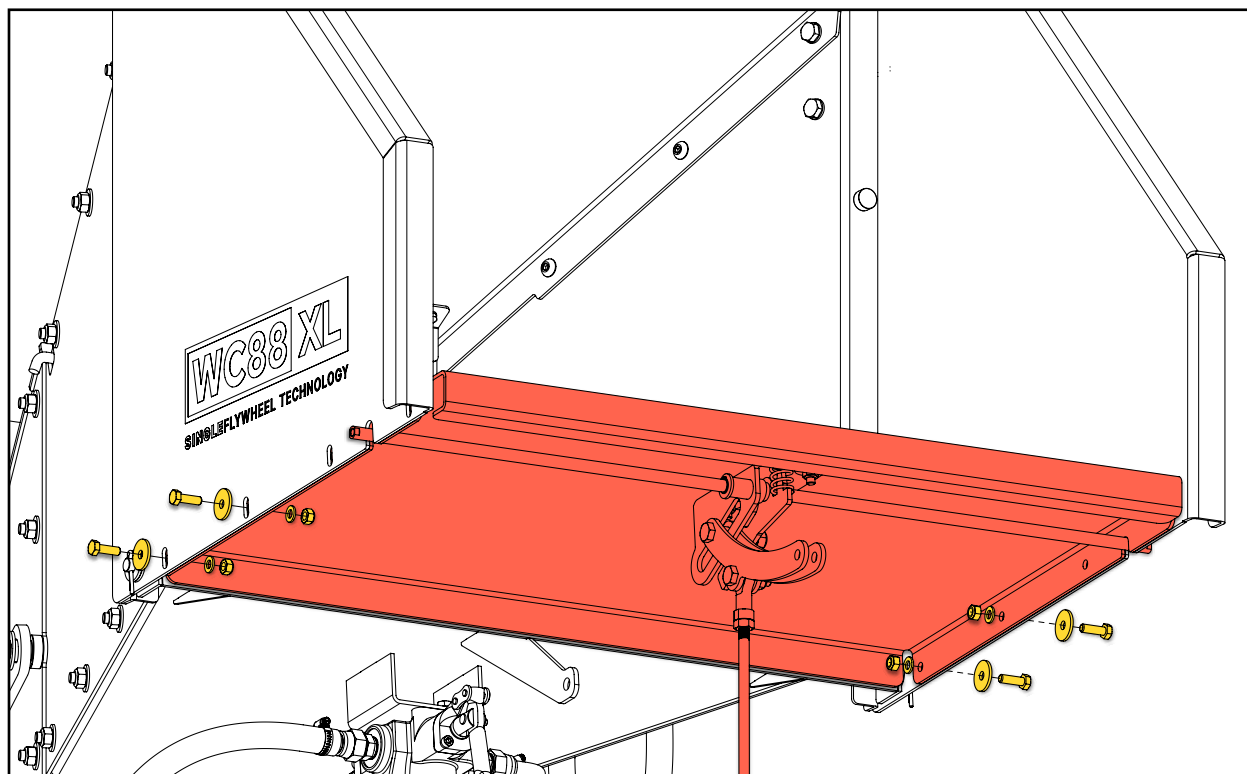
Snug the hardware but do not fully tighten until instructed in a later step.

C. BOTTOM PANEL

Assemble the feed hopper bottom panel to the side panels using the hardware and components listed in the table below.

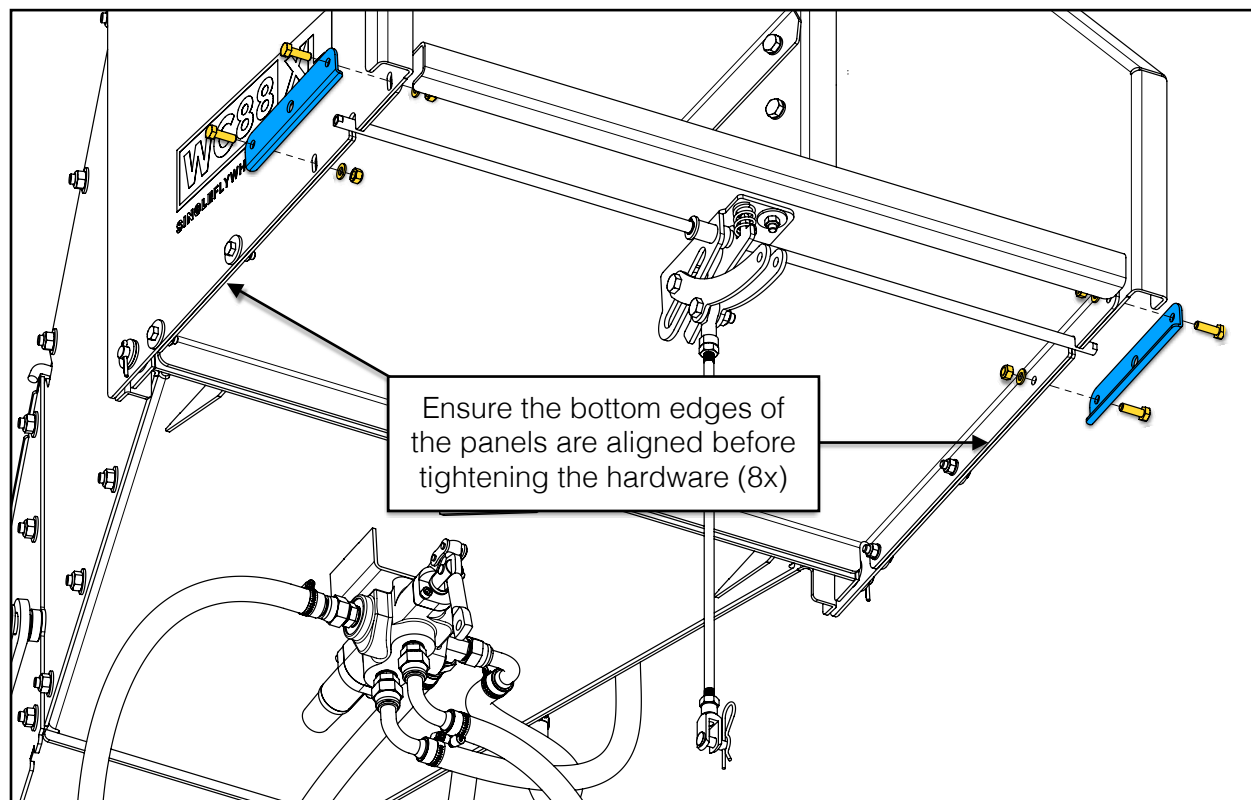
8x	M8 X 25 mm Button Head Screw		8x	M8 Lock Nut	
4x	M8 X 30 mm Fender Washer		2x	Brake Lever Guide Plate	
8x	M8 Flat Washer		[1x]	Feed Hopper Bottom Panel and Brake	

Assemble the bottom feed hopper panel + brake to the feed hopper side panels using four (4) M8 X 25 mm hex head bolts, four (4) M8 X 30 mm fender washers, four (4) M8 flat washers, and four (4) M8 lock nuts.

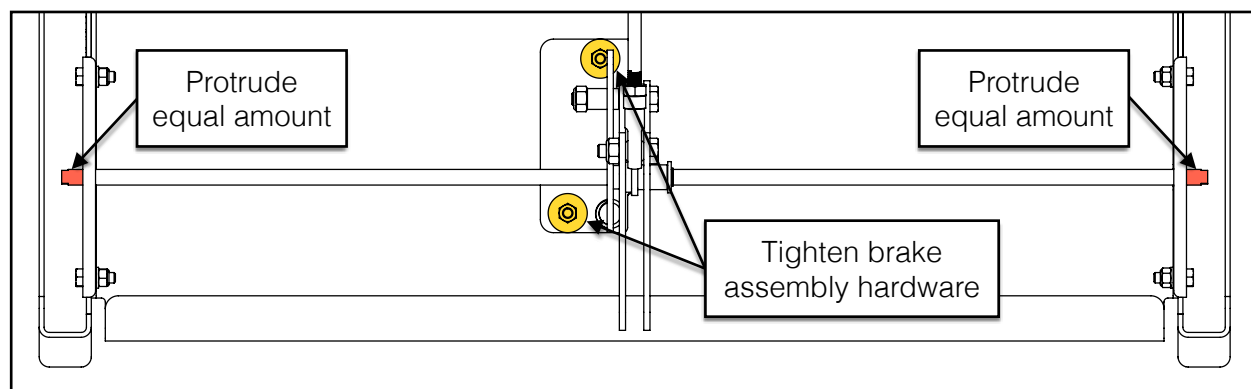


Use only the first two (2) slots on each side of the panel as shown. Snug the hardware but do not fully tighten until instructed to in a later step.

Assemble the brake lever guide plates to the to the feed hopper side panels and bottom panel using two (2) M8 X 25 mm hex head bolts, two (2) M8 flat washers, and two (2) M8 lock nuts per side.



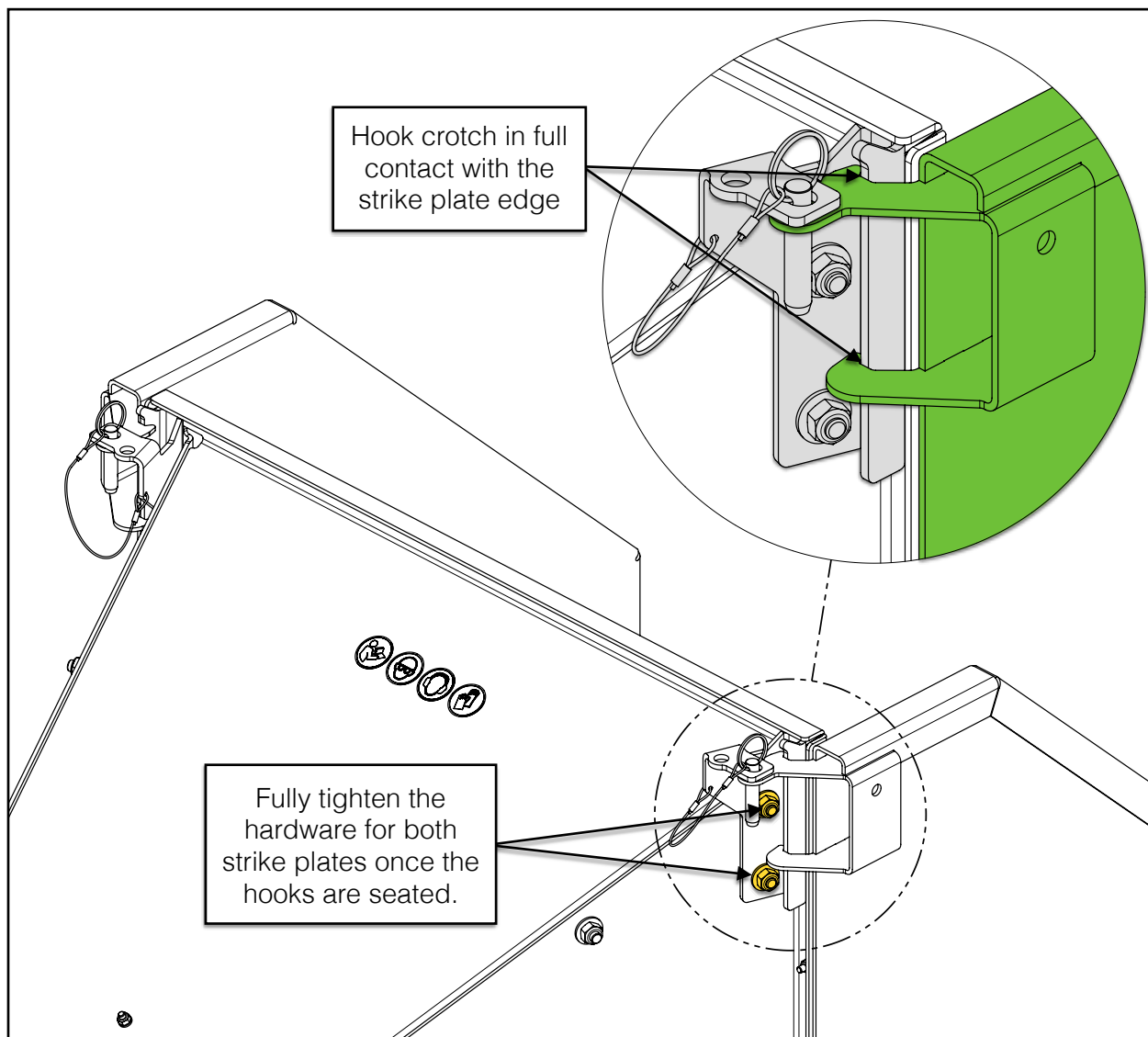
Ensure the bottom edge of each side panel is flush with the bottom edges of the bottom panel and fully tighten all eight (8) bolts.



Viewed from Bottom

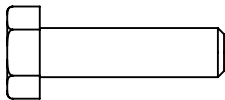
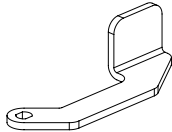
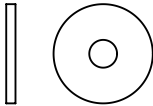
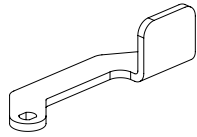
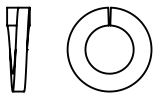
Ensure the ends of the brake arm protrude an equal amount from the brake lever guide plates. Tap one end until they are equal. Then fully tighten the two (2) button head screws securing the brake assembly to the bottom panel.

With the bottom panel and side panel hardware fully tightened, ensure the side panel hooks are fully seated with the strike plate edges. Adjust the position of the strike plates until both sides seat properly and then fully tighten the strike plate hardware.

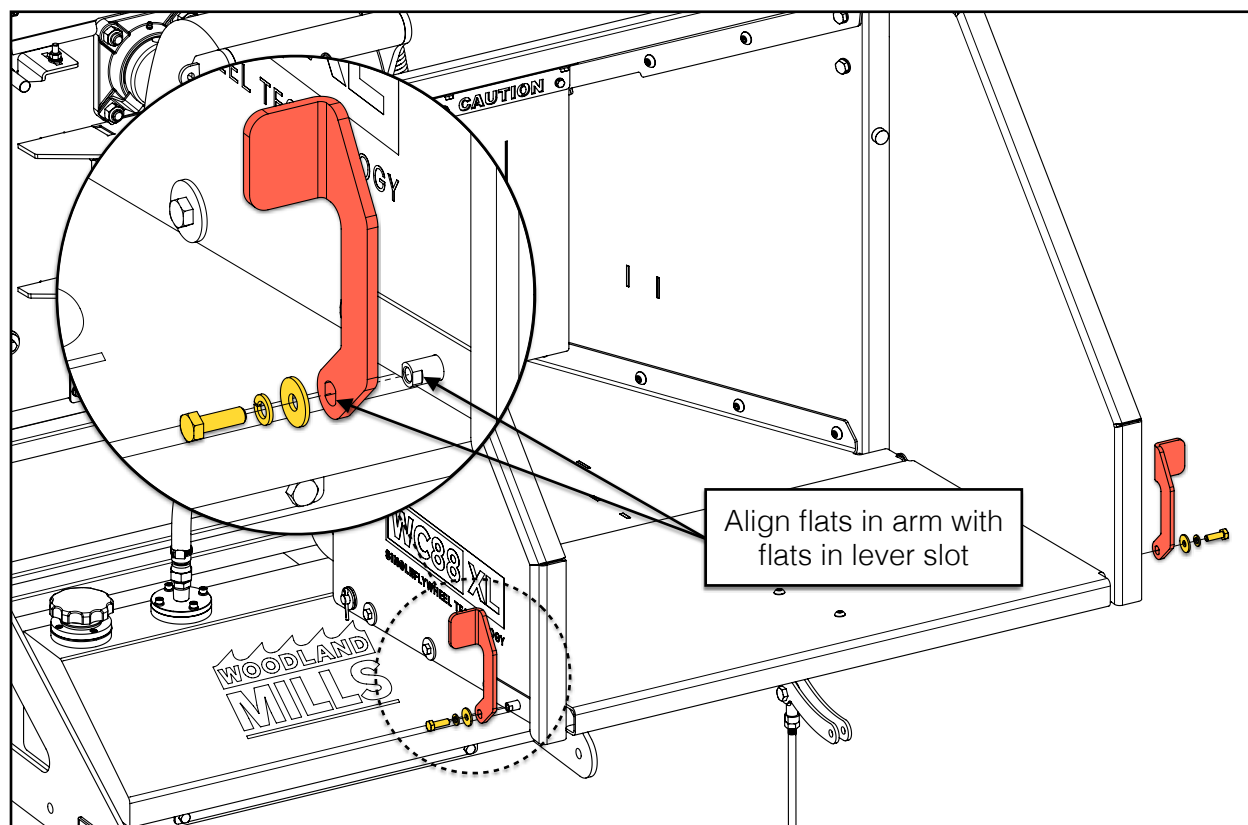


D. BRAKE LEVERS

Assemble the brake levers to each end of the brake arm using the hardware and components listed in the table below.

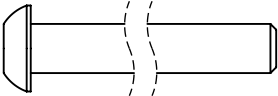
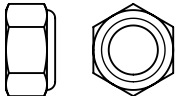
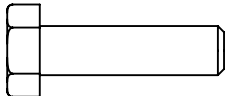
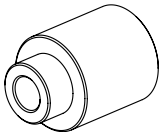
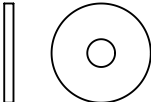
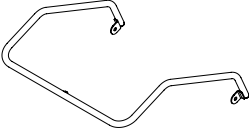
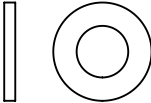
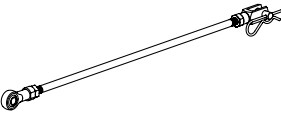
2x	M8 X 25 mm Button Head Screw		1x	Brake Lever (Left)	
4x	M8 X 24 mm Fender Washer		1x	Brake Lever (Right)	
2x	M8 Split Lock Washer				

Assemble the brake levers to the ends of the brake arm using an M8 X 25 mm hex head bolt, M8 split lock washer, and M8 X 24 mm fender washer per side. Align the flats at the ends of the brake arm with the flats in the brake lever slot. Fully tighten the hardware.

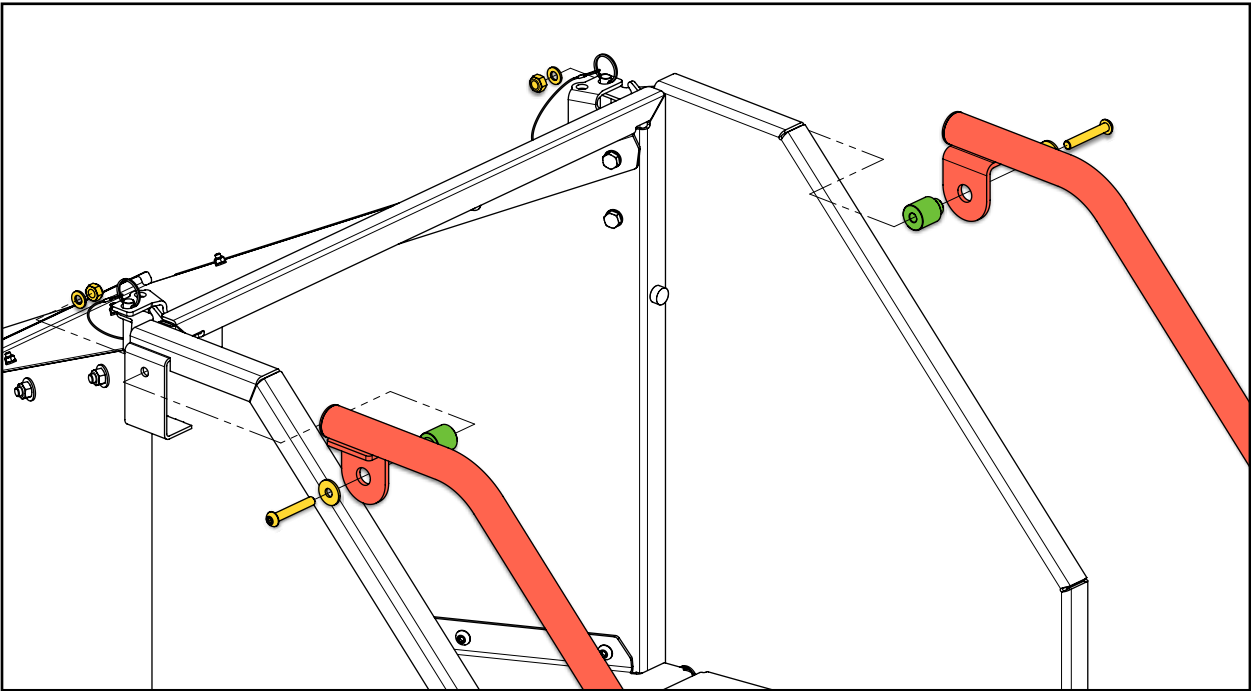


E. CONTROL ARM

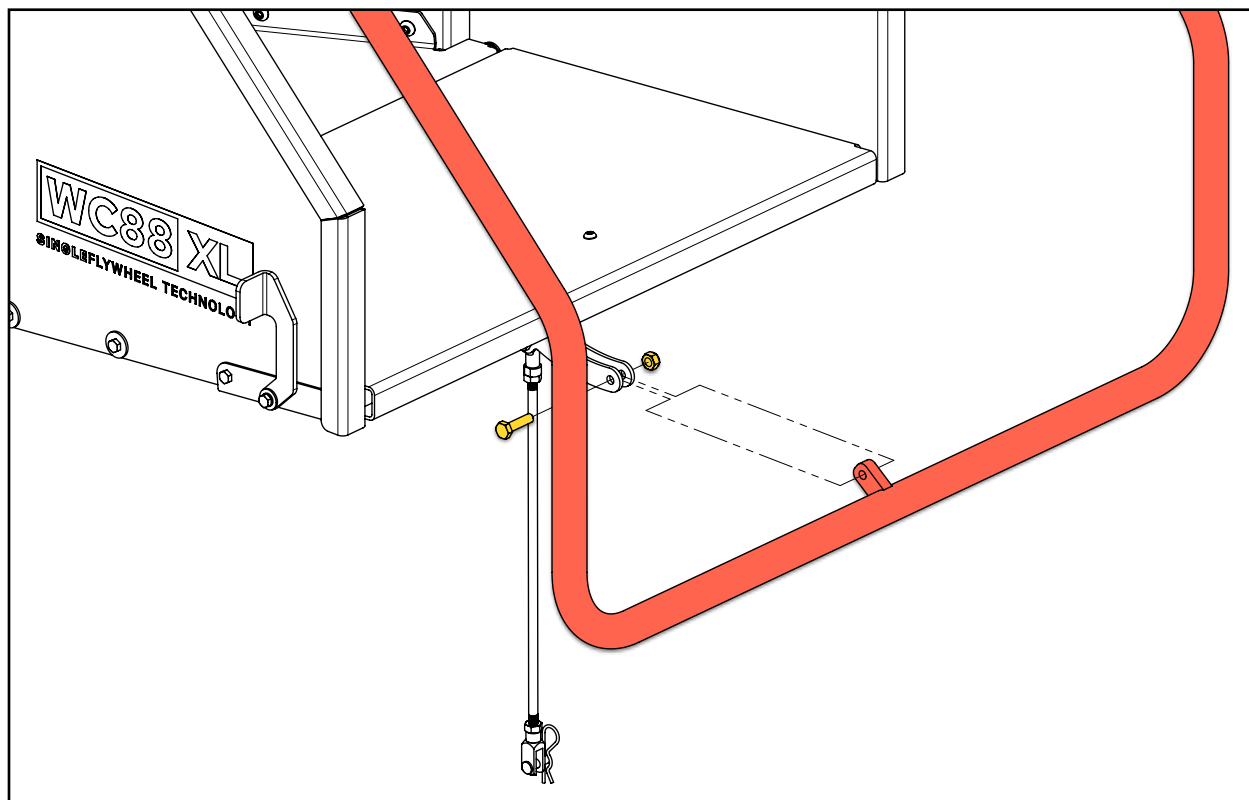
Assemble the red control arm to the feed hopper using the components and hardware below.

2x	M10 X 65 mm Hex Bolt		3x	M10 Lock Nut	
1x	M10 X 40 mm Hex Bolt		2x	Control Arm Spacer	
2x	M8 X 24 mm Fender Washer		1x	Control Arm	
2x	M10 Flat Washer		[1x]	Linkage Assembly	

Assemble the upper ends of the control arm to the feed hopper side panel brackets using a control arm spacer, an M10 X 65 mm button head screw, M10 X 30 mm fender washer, M10 flat washer, and M10 lock nut per side. Fully tighten the hardware.

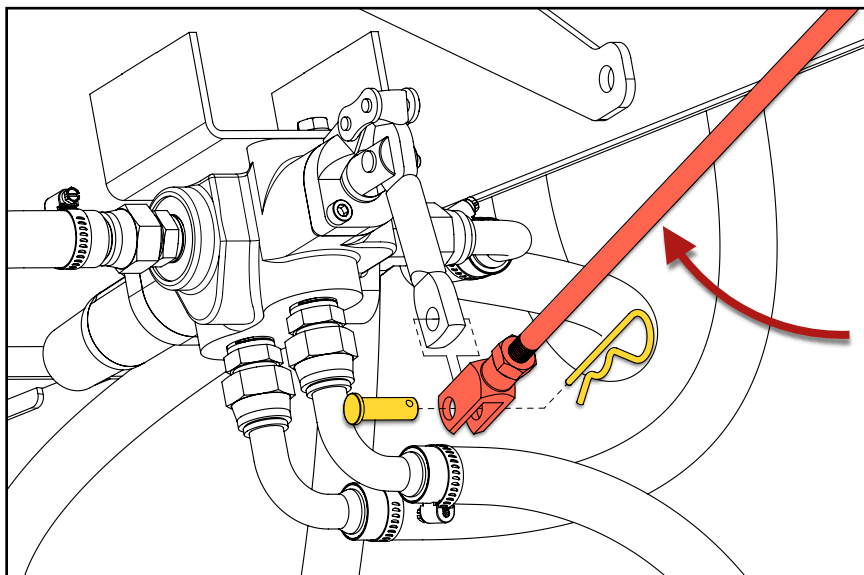


Assemble the lower mount of the control arm between the brake linkage rod plates using an M10 X 40 mm hex head bolt and an M10 lock nut. Fully tighten the hardware.



Temporarily remove the clevis pin and cotter pin from the end of the linkage and rotate the linkage up until it meets the directional control valve actuator.

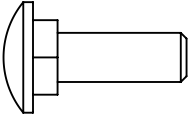
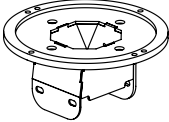
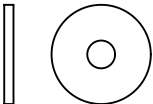
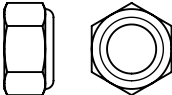
Slide the linkage clevis around the actuator and reinstall the clevis pin and cotter pin.



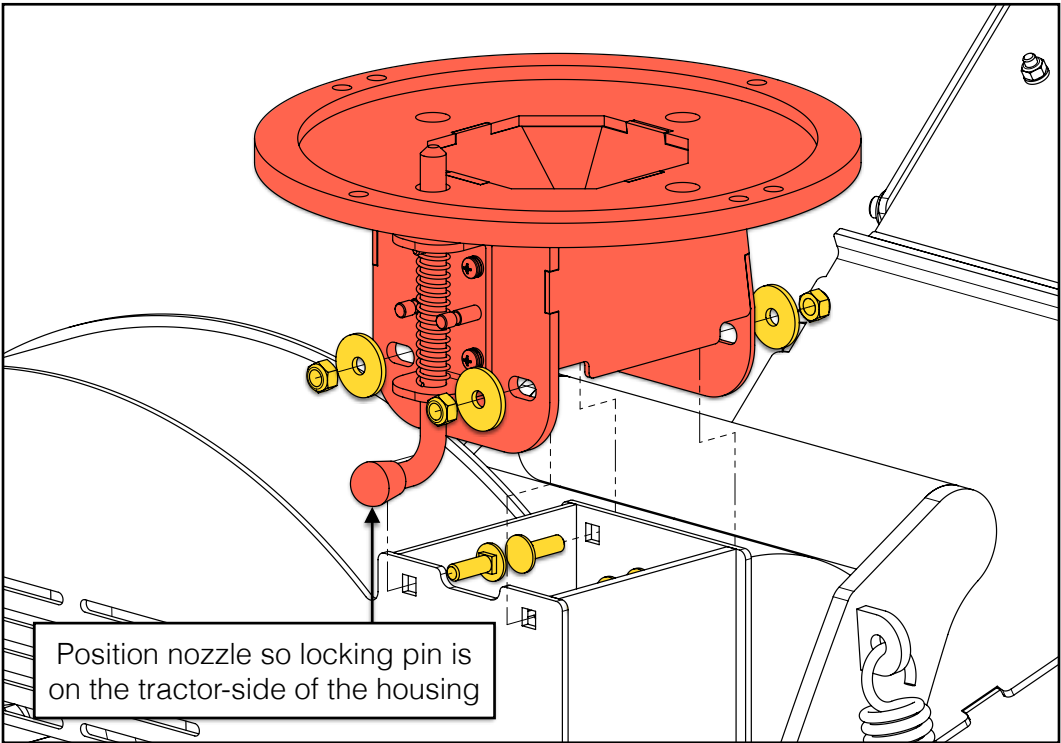
7. DISCHARGE CHUTE

A. NOZZLE

Assemble the discharge chute nozzle to the upper flywheel housing using the components and hardware listed in the table below.

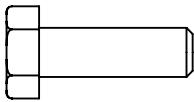
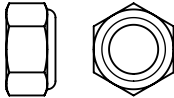
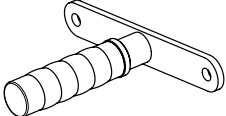
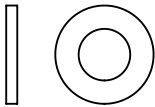
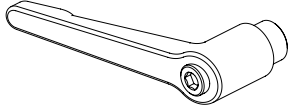
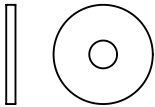
4x	M8 X 25 mm Carriage Bolt		1x	Nozzle	
4x	M8 X 30 mm Fender Washer				
4x	M8 Lock Nut				

Slide the nozzle over the upper flywheel housing. Secure it to the housing using the four (4) M8 X 25 mm carriage bolts, four (4) M8 X 30 mm fender washers, and four (4) M8 lock nuts. The carriage bolts are assembled from inside the housing, pointing outward. Fully tighten all the hardware.

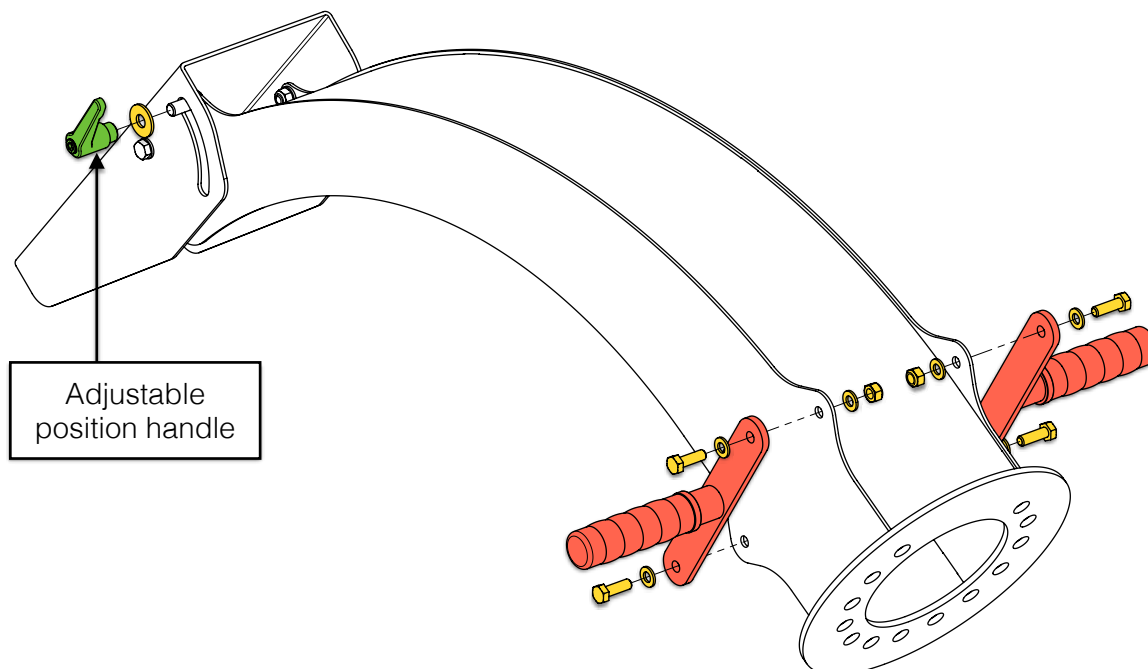


B. HANDLES

Assemble the handles to the discharge chute using the components and hardware listed in the table below.

4x	M8 X 25 mm Hex Head Bolt		1x	Discharge Chute Assembly	
4x	M8 Lock Nut		2x	Handle with Grip	
8x	M8 Flat Washer		1x	Adjustable Position Handle	
1x	M10 X 26 mm Fender Washer				

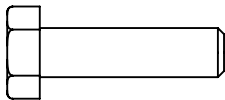
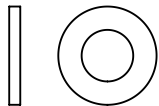
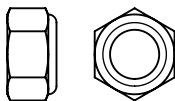
Assemble the handles to each side of the discharge chute using two (2) M8 X 25 mm hex bolts, four (4) M8 flat washers, and two (2) M8 lock nuts per handle. Fully tighten all the hardware.



Assemble the adjustable position handle to the threaded boss on the deflector using an M10 X 26 mm fender washer. Snug the handle tight.

C. RETAINERS

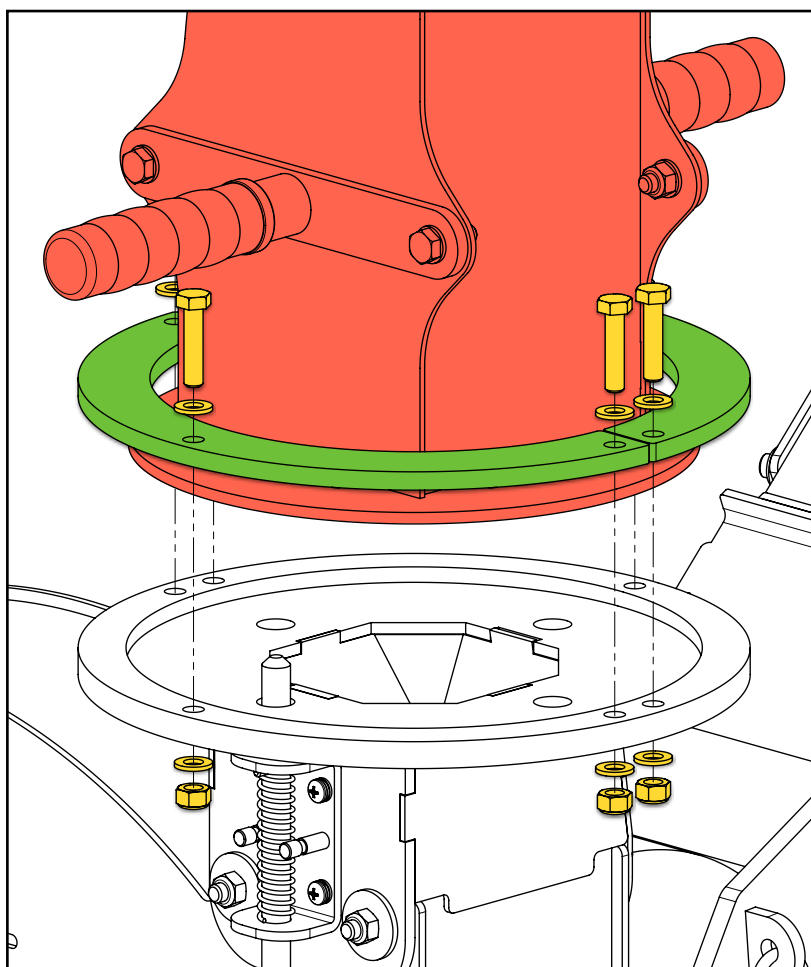
Assemble the discharge chute to the nozzle using the components and hardware listed in the table below.

6x	M8 X 35 mm Hex Head Bolt		2x	Retainer	
12x	M8 Flat Washer				
6x	M8 Lock Nut				

Set the discharge chute into the recess in the top of the nozzle.

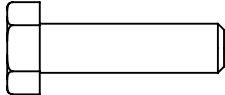
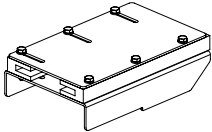
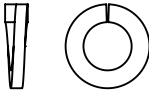
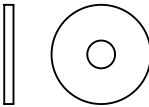
Secure the chute to the nozzle using the two (2) retainers with six (6) M8 X 35 mm hex bolts, twelve (12) M8 flat washers, and six (6) M8 lock nuts.

Fully tighten all the hardware.

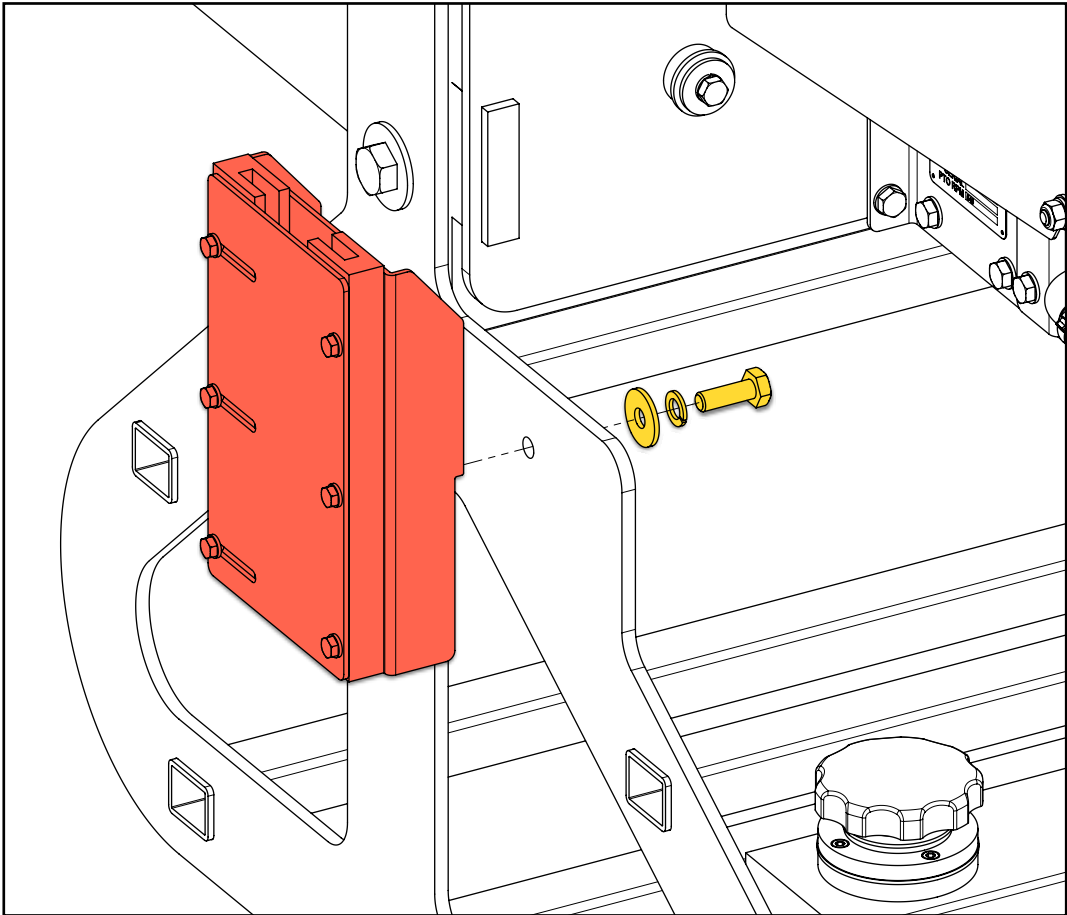


8. CHAINSAW HOLDER

Assemble the chainsaw holder to the base using the components and hardware listed below.

1x	M10 X 30 mm Hex Head Bolt		1x	Chainsaw Holder Assembly	
1x	M10 Split Lock Washer				
1x	M10 X 30 mm Fender Washer				

Assemble the chainsaw holder to the base using an M10 X 30 mm hex bolt, M10 X 30 mm fender washer, and M10 lock nut. Fully tighten all the hardware.



TRIMMING THE PTO SHAFT

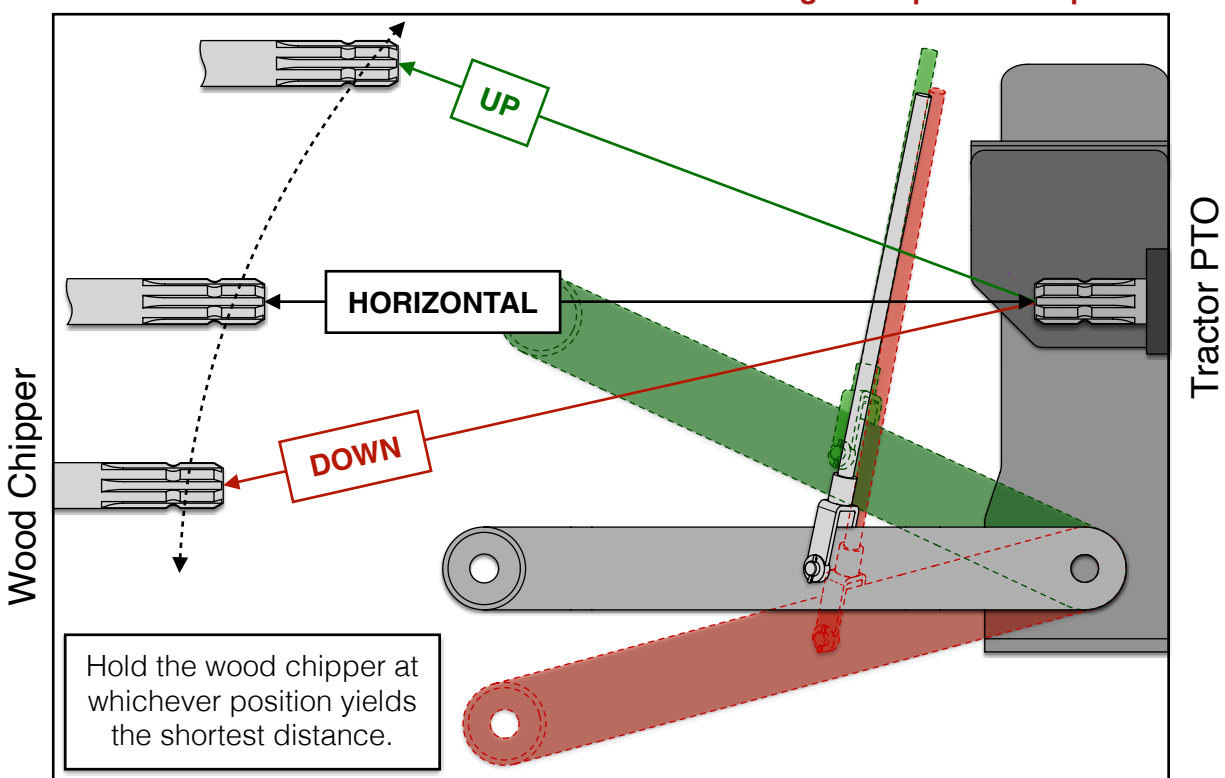
The PTO shaft may need to be trimmed depending on the tractor size and configuration. Follow the 6 steps below to ensure the PTO shaft is fitted correctly, and trimmed if necessary.

1. FIND THE SHORTEST DISTANCE

1. Attach the wood chipper to the tractor's 3-point hitch. Do *not* install the PTO shaft yet.
2. Measure the distance between the splined shafts on the tractor PTO and the wood chipper with the 3-point hitch in the following positions:
 - i. All the way Down
 - ii. In-Line / Horizontal
 - iii. All the way Up

Whichever position yields the *shortest* distance, **hold the wood chipper at that position for the next step.**

****Note: if the wood chipper shaft cannot be positioned in-line or below the tractor PTO due to the size of the tractor relative to the wood chipper, take two (2) measurements instead: 1 at the lowest and 1 at the highest 3-point hitch position.****

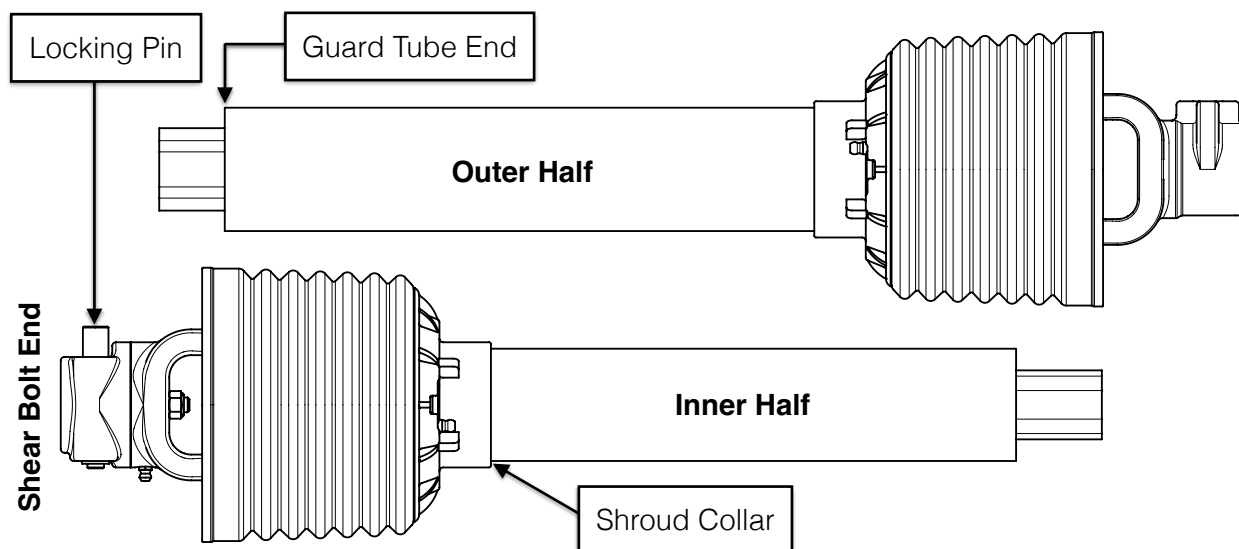


WARNING!

Remove the tractor's draw bar — *if equipped* — before installing any Woodland Mills implement (Wood Chipper or Stump Grinder).

2. SEPARATE PTO HALVES

Pull the PTO shaft apart until it is two separate halves: inner and outer.



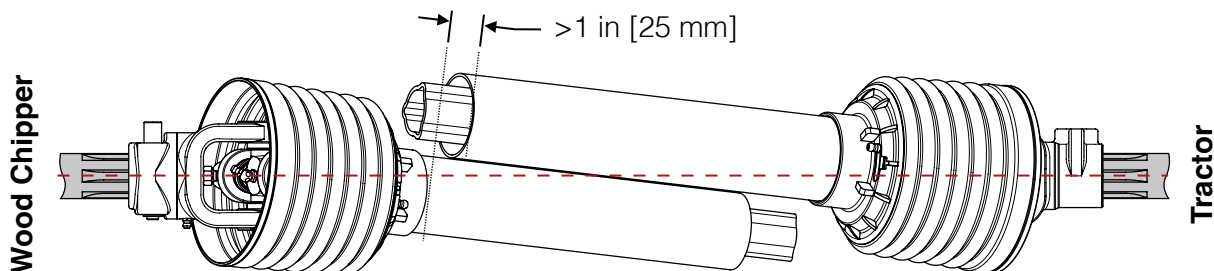
3. ATTACH THE PTO SHAFT

Attach the shear bolt end to the wood chipper and the outer half to the tractor as separate pieces.

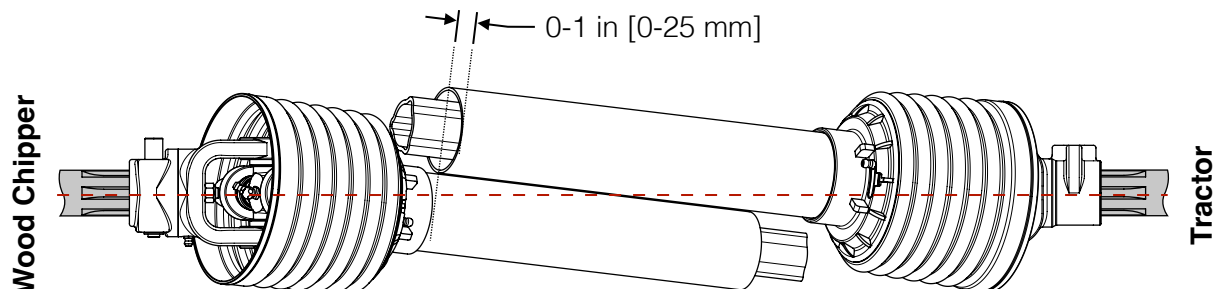
4. DETERMINE IF TRIMMING IS REQUIRED

Hold the shafts parallel. Use tape or tie the shaft halves together with string if necessary to get proper measurements. Three possible scenarios can exist.

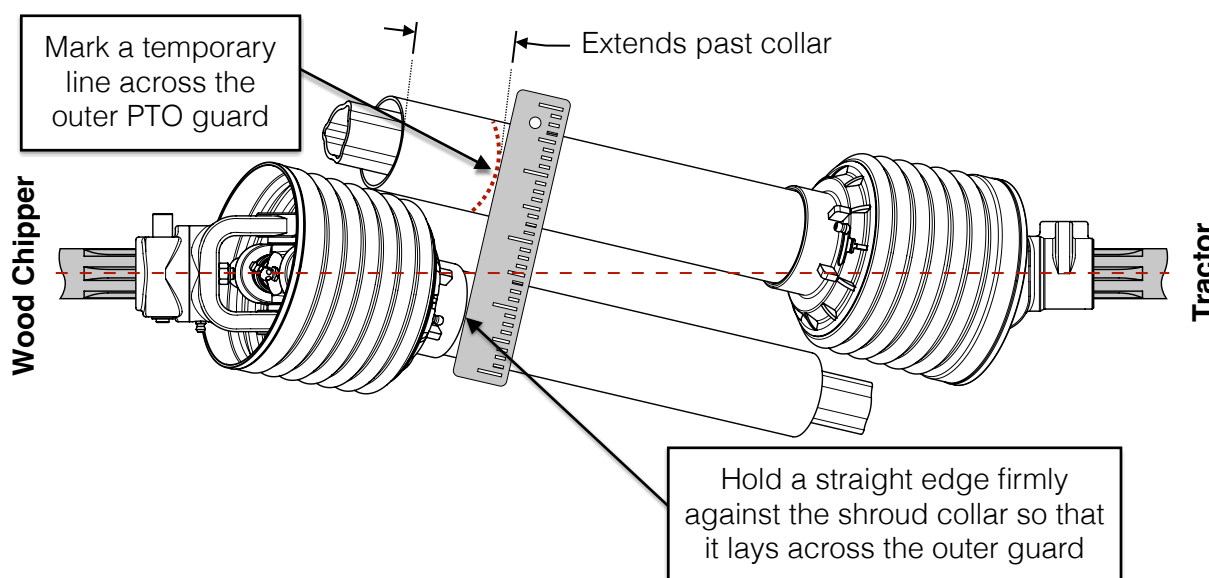
Scenario 1. If the distance between the shroud collar and the guard tube end is **greater than 1 in [25 mm]**, the PTO shaft does not require trimming. Remove the PTO shaft from the tractor and wood chipper and proceed to Step 6.



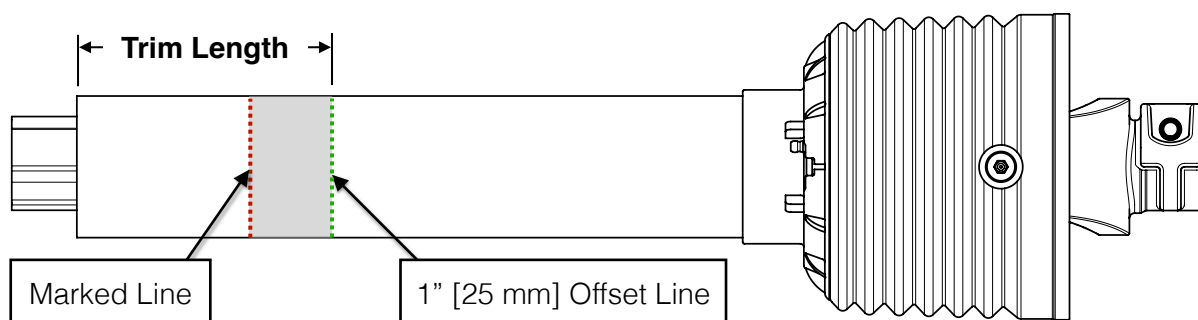
Scenario 2. If the distance between the shroud collar and the guard tube end is **between 0 and 1 in [25 mm]**, the PTO shaft requires a 1 in [25 mm] trim. Proceed to Step 5 using 1 in [25 mm] as the “**Trim Length**”.



Scenario 3. If the guard tube end extends past the shroud collar, hold a straight edge firmly against the shroud collar so that it lays across the outer guard. Mark the position on the outer guard.

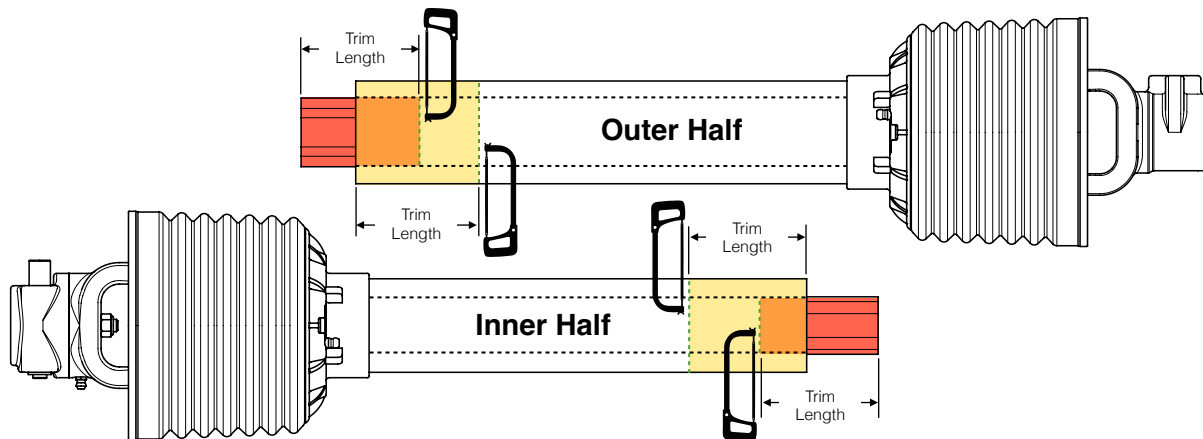


Measure 1 in [25 mm] past the marked line to the guard tube end to determine the trim length. This is the “**Trim Length**” by which the PTO shaft needs to be trimmed. Proceed to Step 5.



5. TRIM THE PTO SHAFT

Remove both halves of the PTO shaft from the tractor and wood chipper. Trim **both** outer plastic guards and **both** inner triangular steel shafts by the “**Trim Length**”. Trim the plastic guards first, taking care not to cut into the triangular shafts inside. Then trim **both** triangular steel shafts by the “**Trim Length**”. File burrs as necessary.



6. REASSEMBLE THE PTO SHAFT

1. Slide the halves back together, ensuring they telescope in-and-out freely.
2. Slide the shear bolt end onto the wood chipper. Install the other end on the tractor.
3. Raise and lower the 3-point hitch, ensuring there is a 1 in [25 mm] minimum gap between the shroud collar and guard tube end throughout the entire lifting range.



OPERATION

1. PRE-START UP CHECKLIST

- i. Fill the hydraulic tank with hydraulic oil per the table below:

Model	Capacity		Hydraulic Oil
	Gallons (gal)	Litres (L)	
WC46	4.5	17	ISO 32, ISO 46, AW 32, AW 46
WC68	5	18.9	
WC88	5	18.9	
➡ WC88XL	5	18.9	
TF46 PRO	3.2	12	
TF68 PRO	5	18.9	
TF810 PRO	5	18.9	

- ii. Attach the wood chipper to your tractor and take the appropriate measurements to trim the PTO shaft. Refer to section **TRIMMING THE PTO SHAFT** for detailed instructions.

****Note: Failure to do so may result in severe damage to the implement and is not covered under warranty.****

- iii. Check the gap between the bed plate and blades by using the Bed Plate Gap Tool ($\frac{1}{8}$ in [3 mm]). Refer to section **SETTING THE BED PLATE GAP** for detailed instructions.
- iv. The wood chipper has five (5) bearings fitted with Zerk fittings for greasing. The PTO shaft is equipped with seven (7) Zerk fittings. The PTO shaft and all bearings come pre-greased and do not require greasing on initial start-up. Refer to section **GREASING** for detailed maintenance instructions.
- v. Check the bolts on each of the four flywheel blades ensuring the torque is set to 40 ft•lb [54 N•m].

2. START UP

The following steps in the sub-section below (a. through i.) are a summarization of the steps necessary to safely and properly operate the wood chipper. Please follow the references to other sections that provide further detail into the step being performed.

- a. Place the tractor transmission in neutral, set the parking brake, then turn the tractor engine off.
- b. Connect the 3-point hitch linkages to the wood chipper and secure them with linch pins.
- c. Adjust the top link of the 3-point hitch so that the wood chipper sits level.
- d. Connect the PTO shaft to the tractor with the shear bolt end of the PTO on the wood chipper. Make sure the PTO safety chains are attached to both the tractor and the wood chipper to keep the protective PTO safety cover from rotating.
- e. Rotate the discharge chute towards a safe direction and lock it in place with the spring-loaded latch and indexing holes. Adjust the chip deflector to the desired position based on how far they should be thrown.
- f. Ensure the infeed roller is in the neutral position by firmly pushing/pulling the red control arm. When there is no movement, it is in neutral.
- g. Start the tractor engine and hold the engine RPM's at a strong idle. Engage the PTO slowly. If the tractor is running at a high speed when the PTO is engaged, you could damage the drive belts or break the shear bolt on the PTO shaft. After the rotor is spinning freely increase the tractor RPM's until the PTO speed is 540 RPM. Most tractor tachometers commonly indicate this with a line and/or text.
- h. **Push** the brake lever all the way forward to disengage the brake and then **pull** the red control arm towards the operator until it stops (*forward* position). This will start the infeed roller rotating. Set the infeed roller control to the desired speed.
- i. With the wood chipper now running and the infeed roller rotating, it is safe to begin chipping. Start by feeding smaller diameter branches until better acquainted with the machine and its operation. Once comfortable, begin feeding in larger pieces. Adjust the infeed roller control as necessary to regulate the infeed rate of the branches.



WARNING!

To avoid serious injury or death, do not chip brush containing embedded foreign objects such as nails, wire, metal fragments, etc. The operator and any assistants must always stay clear of the infeed chute of the wood chipper whenever it is running.

3. INFEEED ROLLER CONTROL

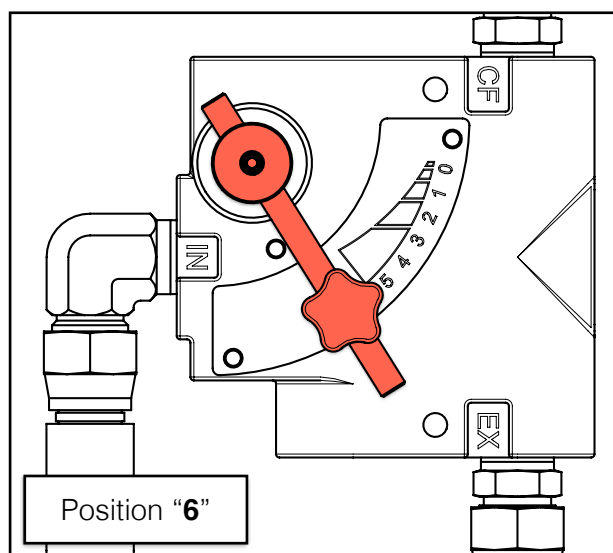
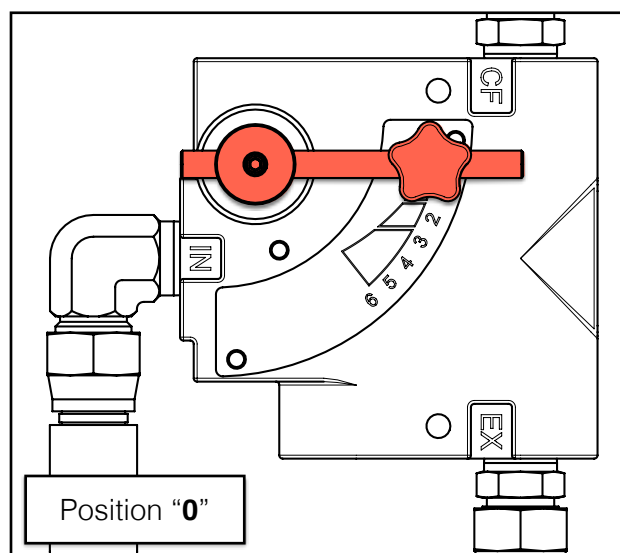
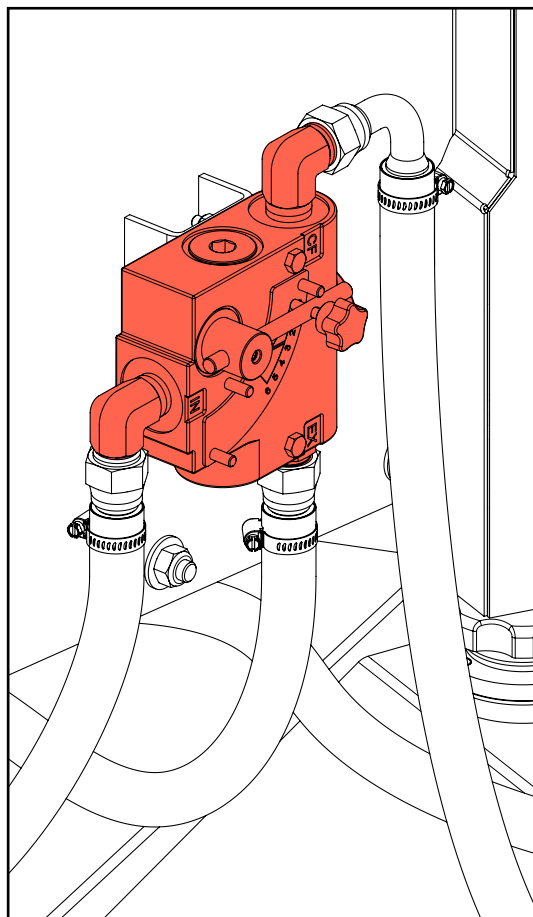
The valve that controls the wood chipper's infeed roller speed is located to the right of the infeed chute.

Rotating the valve arm as shown in the pictures below will increase or decrease the roller speed without load and will create a pulsating action once loaded with a branch.

The number "0" (left image below) represents no infeed roller rotation while "6" (right image below) represents full speed. To maximize productivity and performance, chipping at full infeed speed is recommended.

If the tractor is unable to keep up with the workload, rotating the valve arm throughout its range will create a pulsating action—*dependent on branch size and workload*—that will allow larger material to be chipped when horsepower is limited.

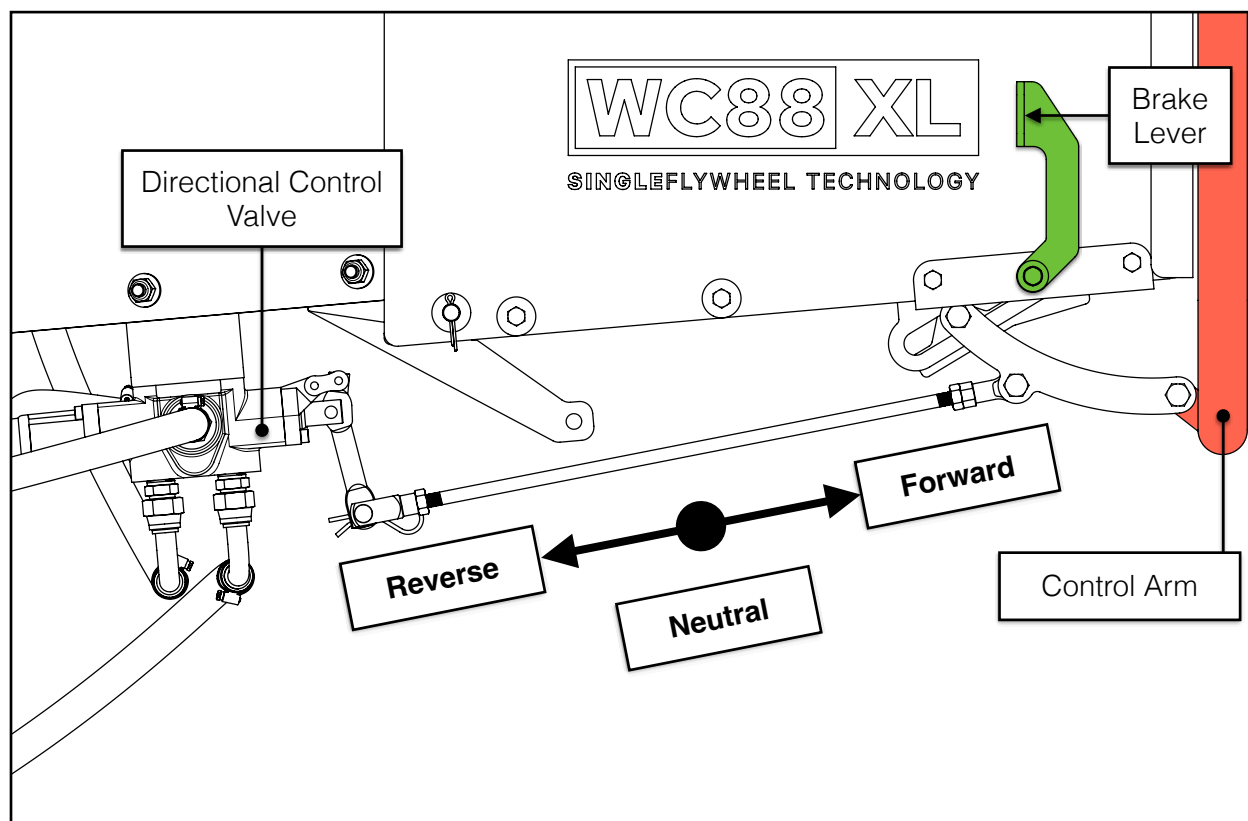
This pulsating action can also be created using the red control arm by switching the chipper into **neutral**—which allows the tractor and flywheel to regain speed—and then switching back into **forward** as it works through larger material.



The infeed roller has three (3) different settings: *forward*, *neutral* and *reverse*—operated by pushing one of the brake levers forward and then pushing or pulling the red control arm.

****Note: the control arm can be pushed/pulled into *neutral* without touching the brake lever. However, the brake lever must be pushed all the way forward to disengage the brake before the control arm can be pulled (*forward*) or pushed (*reverse*).****

The *forward* position pulls branches into the wood chipper; *neutral* stops the roller from rotating; and *reverse* pushes the branches back out the wood chipper towards the operator. The diagram below illustrates the 3 positions:

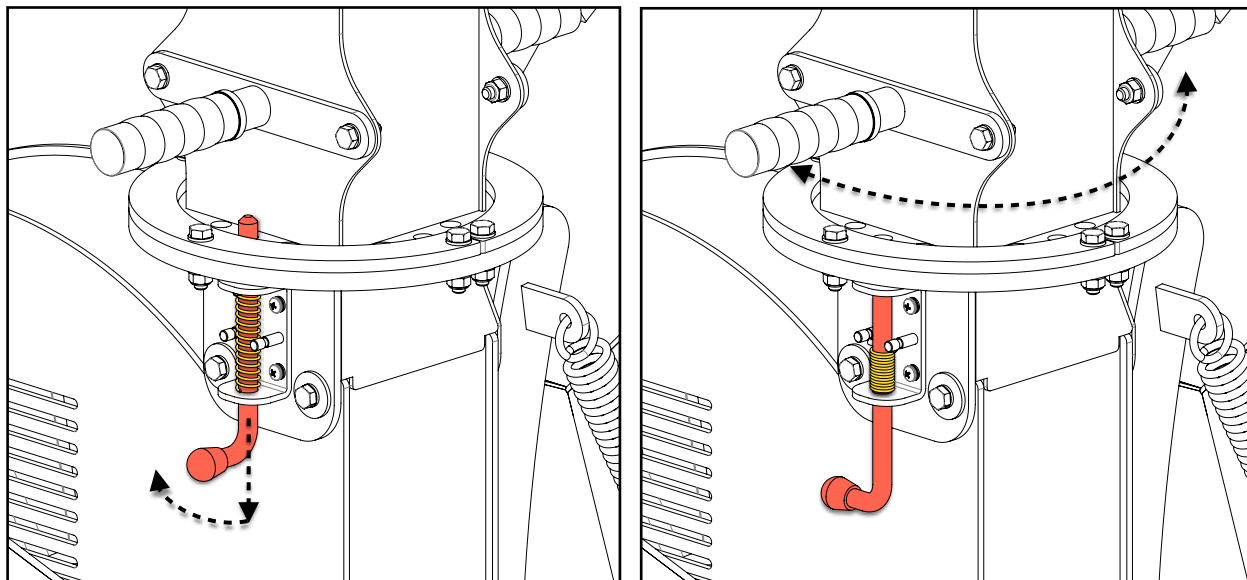


To change the speed of the infeed roller, place the red control arm in the *neutral* position. This stops the infeed roller from rotating. The speed control valve can now be moved to the desired position/speed. Reengage the infeed roller via the control arm.

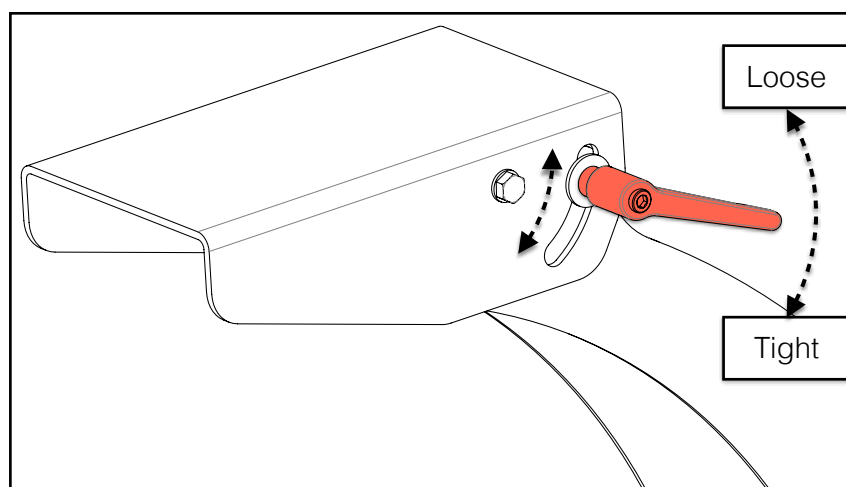
See maintenance section, **ADJUSTING THE CONTROL ARM**, if the control arm feels too loose or stiff, or if it falls into neutral or reverse unexpectedly.

4. DISCHARGE CHUTE

To rotate the discharge chute, push down all the way on the spring-loaded locking pin and twist it 90° to temporarily lock it in the open position. The discharge chute is now free to rotate a full 360°. Using the handles, rotate it to the desired position and then twist the locking pin back 90° so that it extends into the closest locking hole to secure the chute in position.



The chip deflector easily adjusts to regulate the distance the chips are thrown. Rotate the handle counterclockwise to loosen the deflector, adjust the deflector to the desired angle, then re-tighten the handle by rotating it clockwise to secure the deflector.





5. CHIPPING

Keep your face and body away from the feed opening. Do not over reach. Keep proper balance and footing at all times. The wood chipper is designed to chip a variety of materials into a more readily decomposing or handled condition. The following guidelines can be used to help you get started. Please read and follow all safety instructions in this manual. Failure to operate the wood chipper in accordance with the safety instructions **MAY RESULT IN PERSONAL INJURY!**

- Ensure the wood chipper is at full operating speed before starting to chip material.
- Select limbs up to 8" (203 mm) in diameter. Trim side branches that cannot be bent enough to feed into the wood chipper infeed chute. Hold small diameter branches in a bundle and feed simultaneously.
- Feed brush from the side of the infeed chute rather than from the front. Step aside to avoid being hit by brush moving into the wood chipper.
- Never lean into the infeed chute or extend any parts of your body inside the infeed chute to push objects further into the wood chipper. Use another stick or branch.
- Do not use hand tools to push brush into the wood chipper. They can go through the wood chipper and cause injury or damage to the wood chipper.
- Place branches, butt end first, into the wood chipper infeed chute until it contacts the infeed roller. Once the infeed roller makes contact with the branches, it will pull the material inwards.
- **NOTE:** The wood chipper blades dull with use and require periodic sharpening and sometimes replacing. Refer to the section under service and maintenance, "Sharpening Wood Chipper Blades," for further instructions.

6. STOPPING

Do not leave the wood chipper unattended or attempt any inspection/service unless the PTO is disengaged and the tractor engine is turned off. Allow time for the wood chipper to come to a complete stop. To stop the wood chipper, follow the steps below:

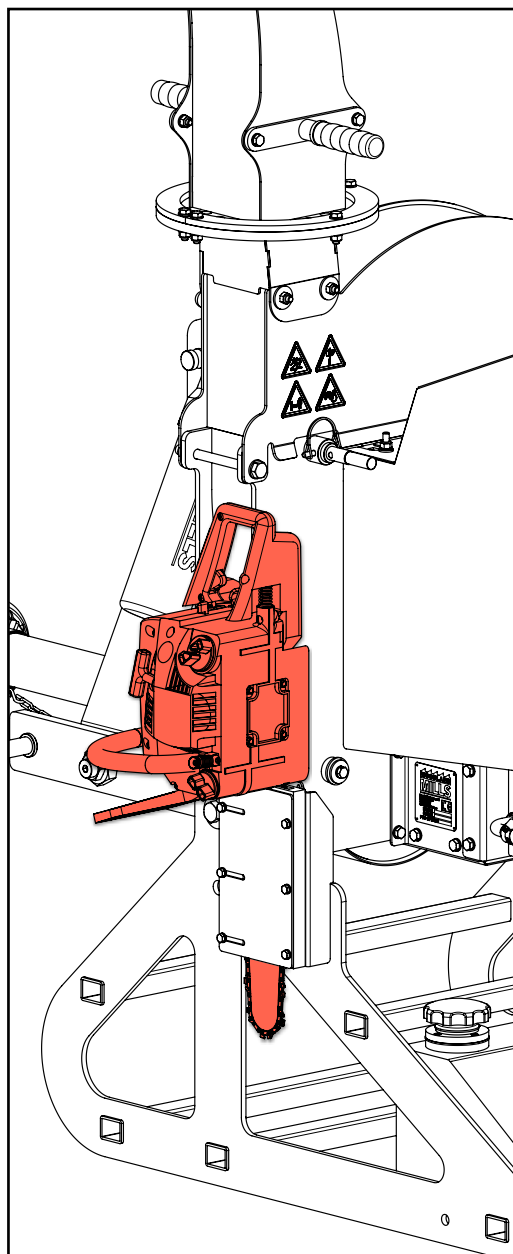
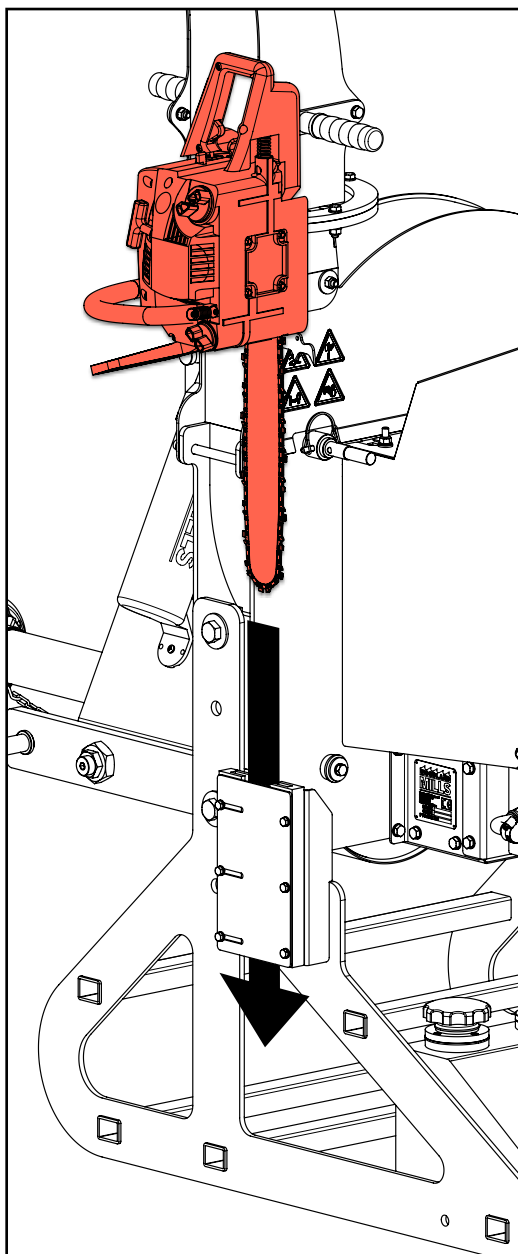
1. Move the tractor throttle to the SLOW/IDLE position.
2. Disengage the PTO lever and turn off the tractor engine.
3. Allow time for the wood chipper to come to a complete stop.

NOTE: The flywheel continues to spin for some time after the engine or tractor has been turned off. The flywheel has stopped spinning when noise and/or machine vibration are no longer detectable. The PTO shaft will also no longer be spinning.

7. CHAINSAW HOLDER

The chainsaw holder is located on the rear side of the flywheel housing to conveniently secure a chainsaw while transporting the wood chipper or to store it out of the way while chipping brush.

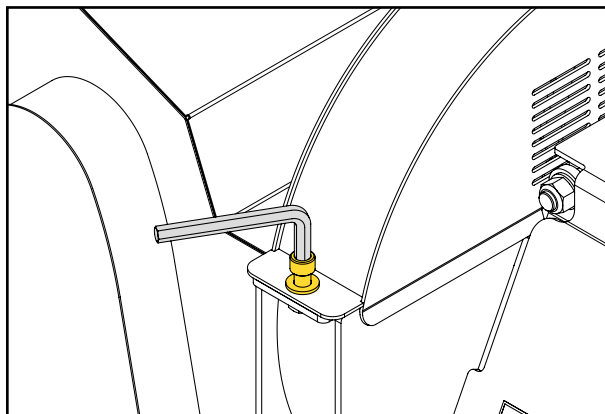
Insert the chainsaw's guide bar into the holder between the grooved nylon rails. If the chainsaw still shifts easily between the rails, loosen the three (3) bolts in the slots on the left side of the holder and move the left nylon rail in until it fits around the guide bar. Test that the chainsaw slides in and out without binding and then retighten the three bolts.



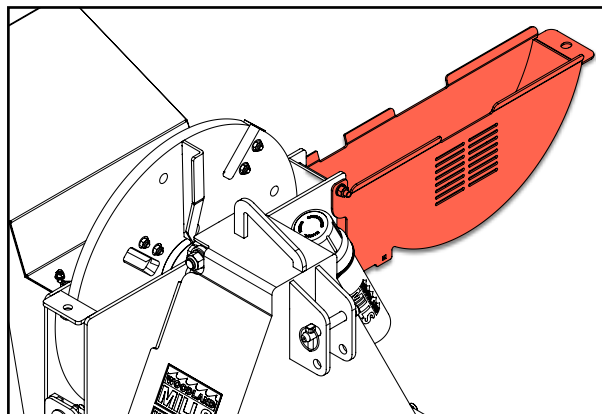
MAINTENANCE

REMOVING GUARDS AND COVERS

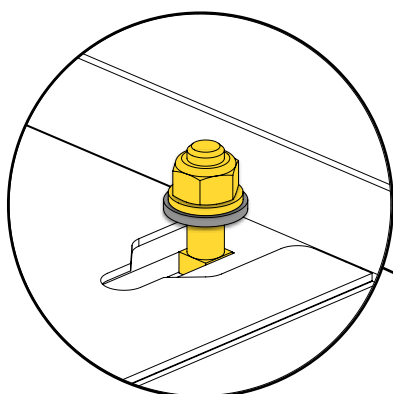
LOWER FLYWHEEL HOUSING GUARD



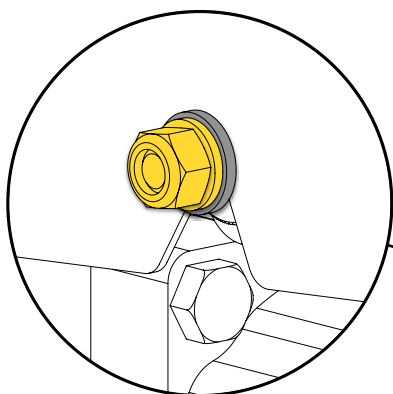
1. Remove screw using 14 mm hex key.



2. Open upper flywheel housing.

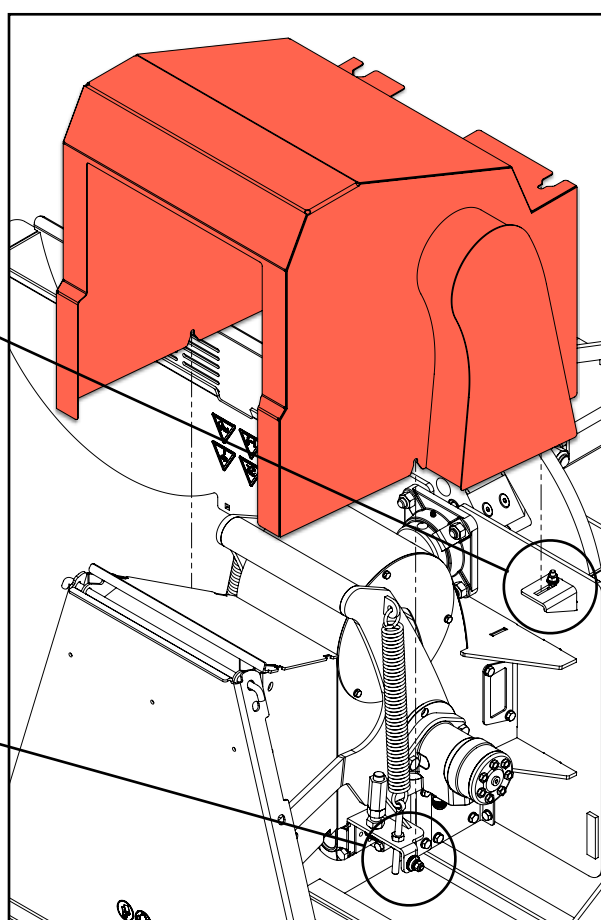


3. Loosen* upper guard hardware (2x).



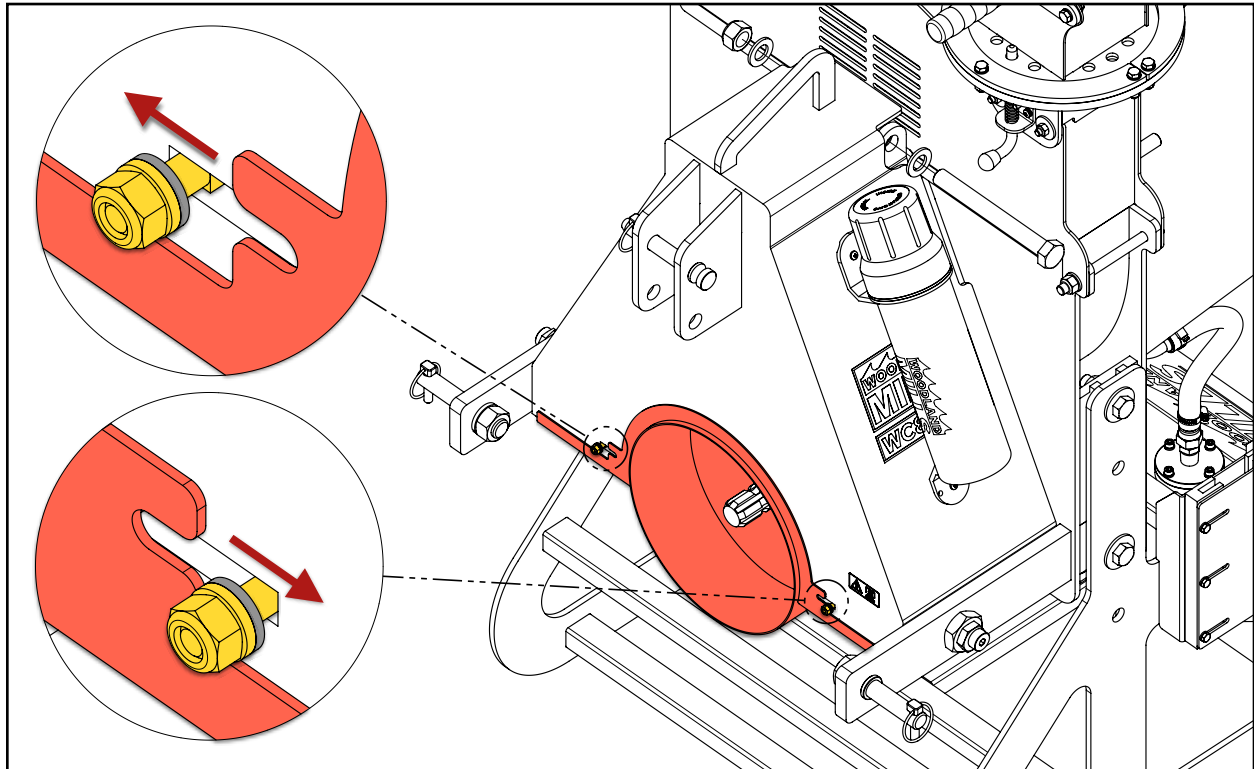
4. Loosen* lower/side guard hardware (2x).

***Loosen the hardware, do not remove**

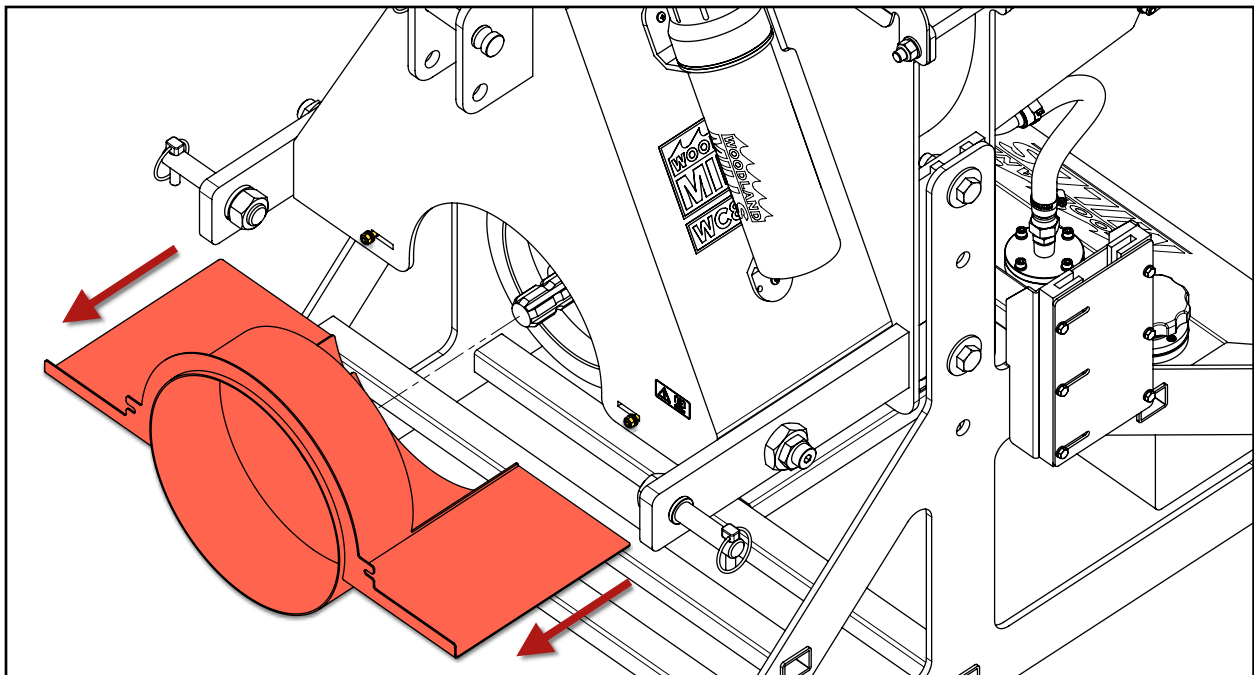


5. Lift guard off housing and set aside.

PULLEY COVER

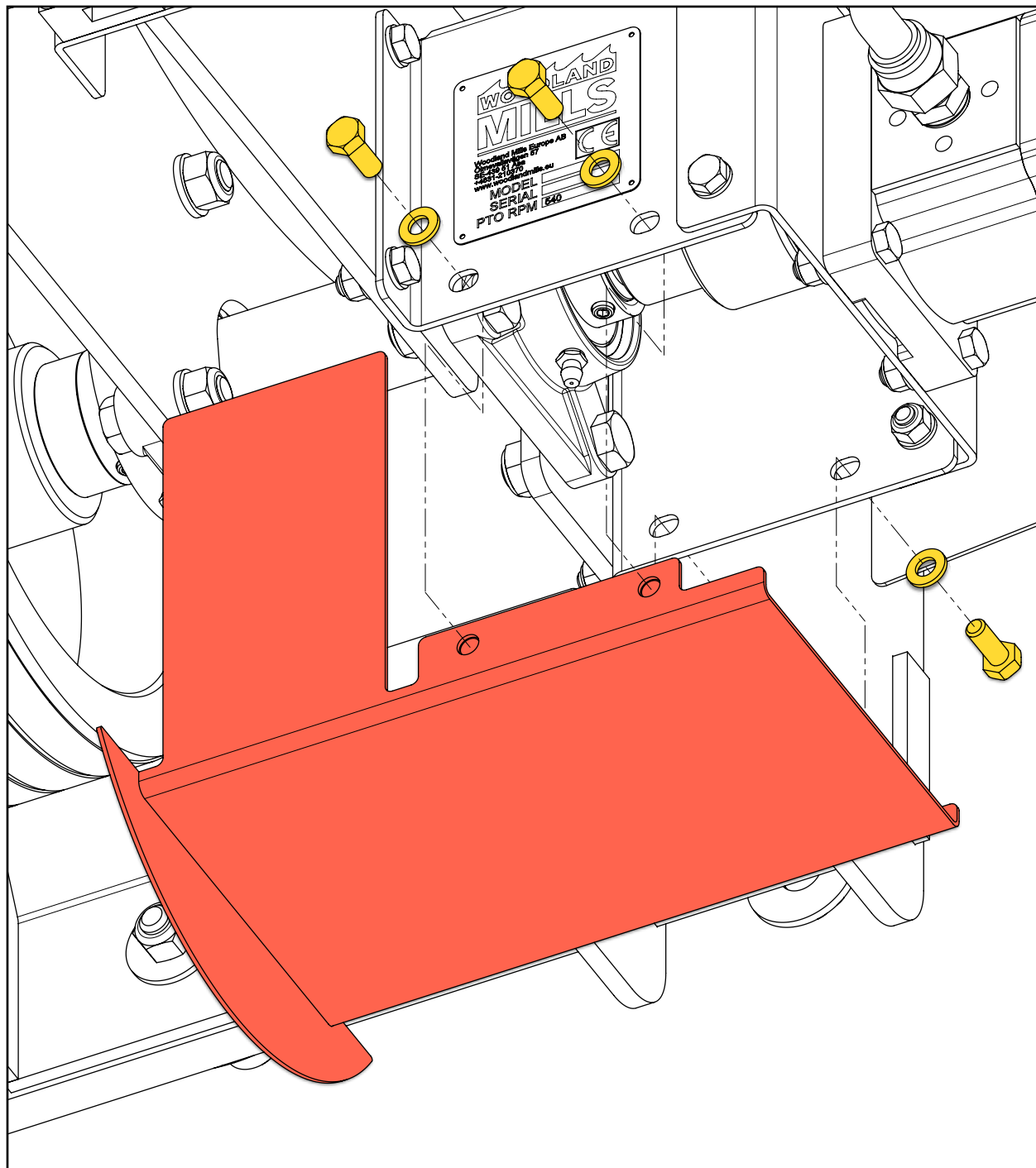


1. Loosen the two nuts on each side of the pulley cover and push them outward.



2. Slide the pulley cover out and set it aside.

PUMP SHAFT HOUSING BOTTOM COVER

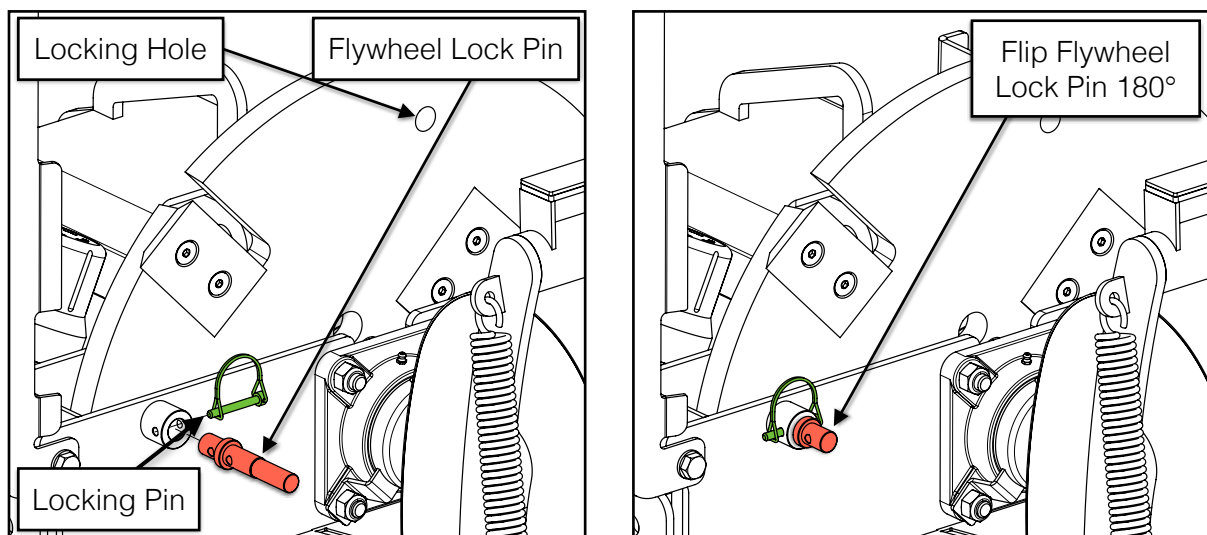
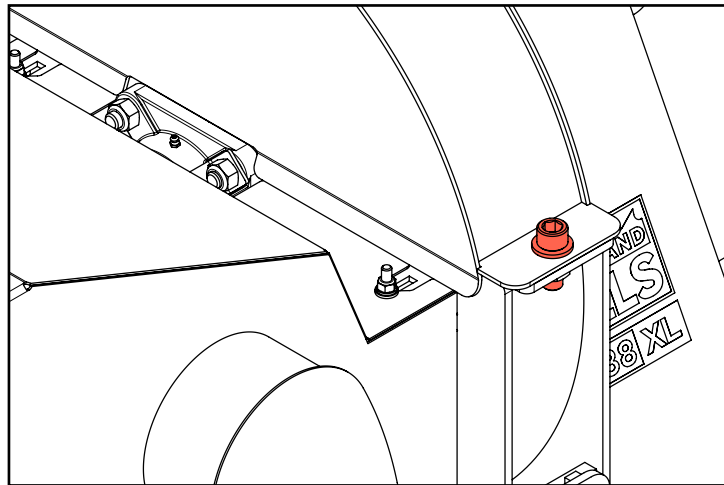


1. The pulley cover must be removed first (see previous page).
2. Remove the four hex bolts and flat washers from the pump housing and pull the cover down.
(Some components removed for clarity)

REPLACING BLADES

Follow these steps when replacing blades. The WC88XL wood chipper uses four (4) reversible hardened steel blades. Each blade is 4.45 X 2.72 X 5/16" (113 X 69 X 8 mm) in size.

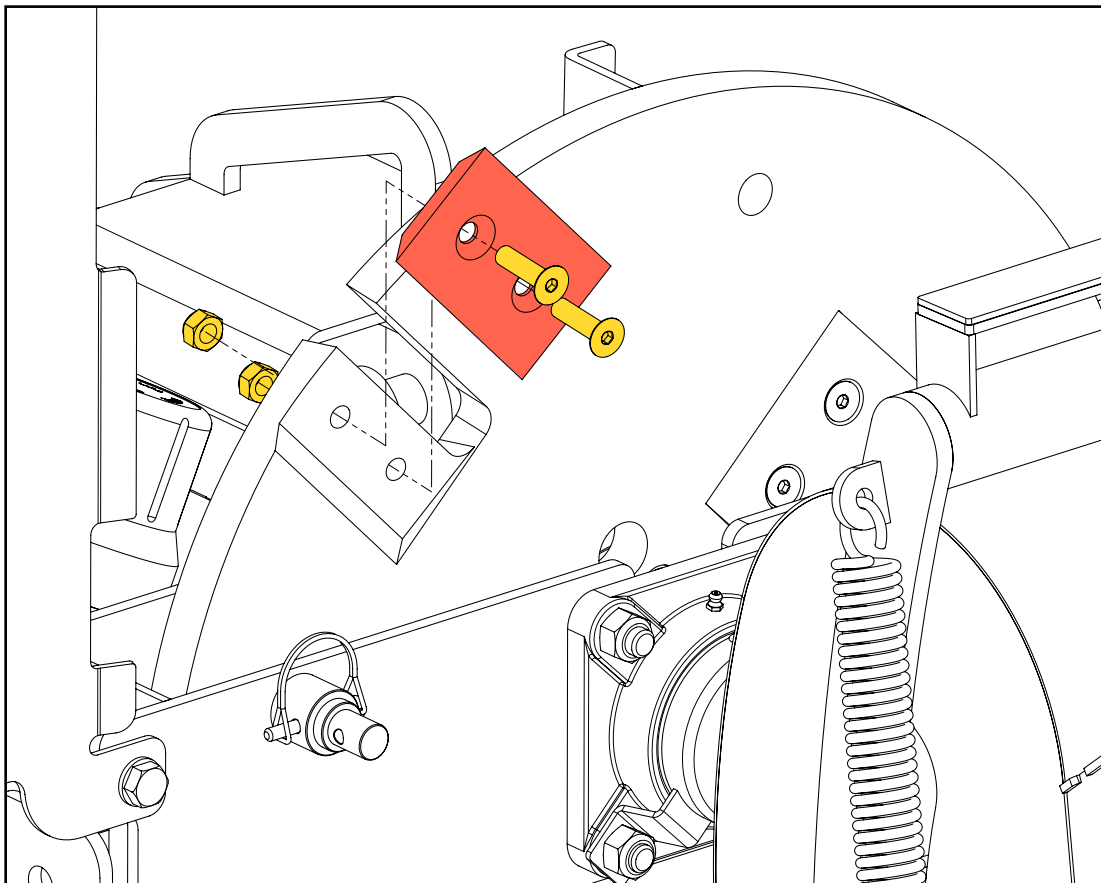
1. If installed, disconnect the PTO shaft from the tractor for safety.
2. Open the upper flywheel housing using a 14 mm hex key by removing the M16 X 40 mm socket head cap screw and flat washer that secure the housing.



3. With the flywheel exposed, manually rotate it so that one of the four (4) locking holes in the flywheel (near the front of the blade) approximately lines up with the flywheel lock pin at the rear of the housing. Remove the small locking pin from the flywheel lock pin and flip the flywheel lock pin around 180°, passing it through the housing and into the locking hole in the flywheel. Reinstall the smaller locking pin to the flywheel lock pin.



4. Remove the two (2) M10 X 40 mm flat head bolts and M10 lock nuts that fasten the blade to the flywheel using a 6 mm hex key on the bolts and a 17 mm socket/wrench on the lock nuts. Take care not to drop the hardware into the lower flywheel housing. However, should this occur, a telescoping pen magnet can be used to retrieve them.



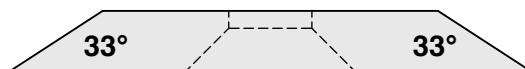
5. Repeat Steps 3 & 4 above to remove the remaining three blades. If this is the first time the blades have been removed following either the original wood chipper purchase or a recent blade sharpening, the blades can be reversed to utilize the other cutting edge. Or, the entire blade can be removed and sharpened or it can be replaced with a new blade. Torque the M10 X 40 mm flat head bolts to 40-45 ft•lb (54-60 N•m) when installing blades. Always replace the M10 lock nuts with a new set when changing or reversing blades. Refer to section, ***Blade Sharpening*** for blade sharpening instructions.
6. Once the blades have been reversed or new blades installed, proceed to section, ***Setting the Bed Plate Gap***, to properly set the spacing between the blades and bed plate.



BLADE SHARPENING

The wood chipper blades will dull, making chipping difficult and cause your tractor to labour. It is recommended to sharpen the blades every 25-50 hours of operation. The WC88XL wood chipper uses four (4) hardened steel blades. The blades are reversible and can be sharpened on both sides. Follow the below steps to sharpen the blades.

1. Follow the steps from the previous section, **Replacing Blades**, to safely remove the blades from the flywheel.
2. Hand-grind the angled edges of the blade at 33° (see diagram below) using a whetstone or have them sharpened by a professional. A pedestal style bench grinder will likely yield poor results if not used properly. If sharpened quickly or aggressively on a bench grinder, the blade edge can get too hot and change colour, thus removing the heat treating-properties from the steel. Use short grinding times and cool frequently with water. Remove an equal and consistent amount of material from each blade to maintain proper balance when reassembled to the flywheel.



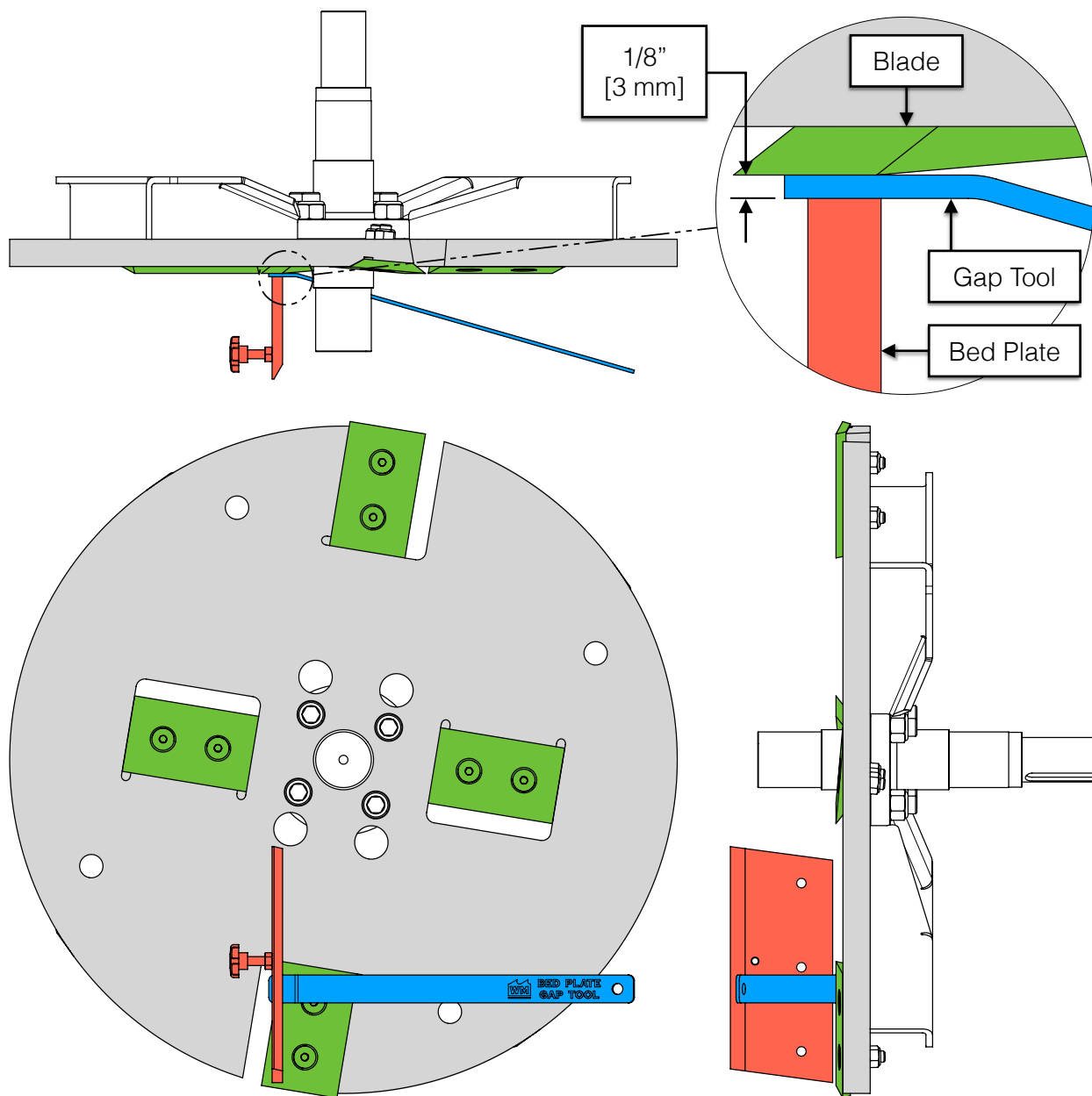
Blade Profile

3. Reinstall the sharpened blades on the flywheel and torque the M10 X 35 mm flat head bolts to 40-45 ft•lb (54-60 N•m). Always replace the lock nuts with new hardware when changing or reversing the blades.
4. Once the blades have been sharpened, proceed to the next section, **Setting the Bed Plate Gap**, to properly set the spacing between the newly sharpened blades and the bed plate.



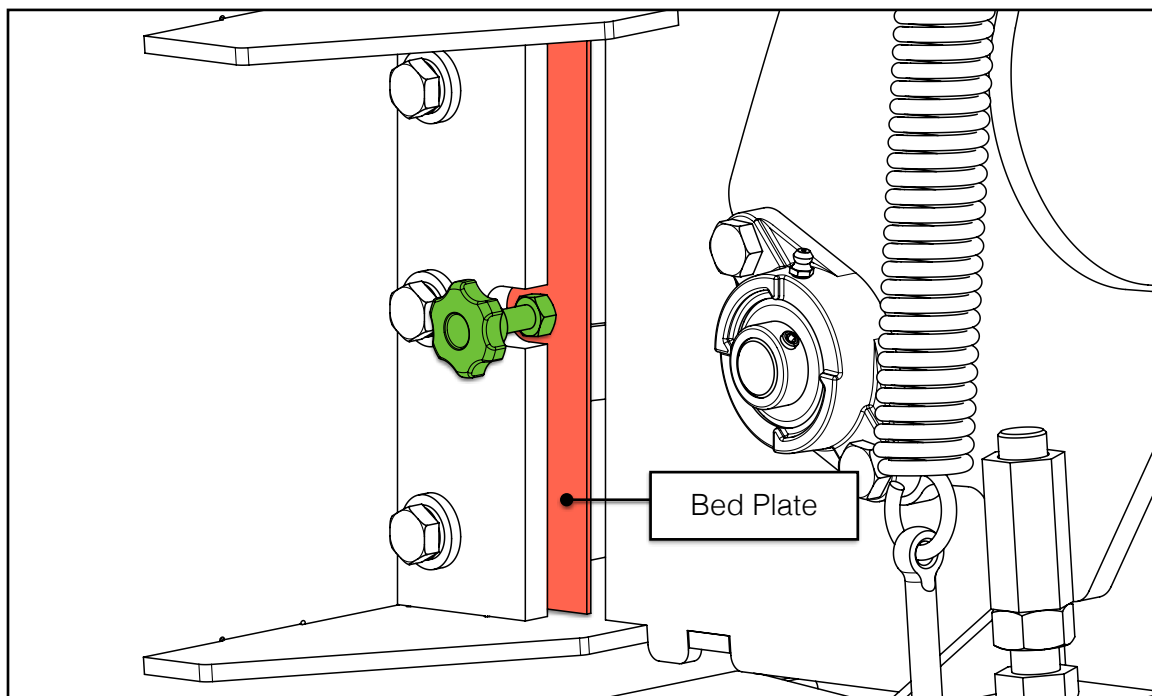
SETTING THE BED PLATE GAP

The bed plate (also known as the *anvil plate*) is located on the left side of the flywheel housing (while facing the infeed chute). For ideal chipping performance, the gap between the bed plate and blades should be set using the *Bed Plate Gap Tool* ($\frac{1}{8}$ in [3 mm]).

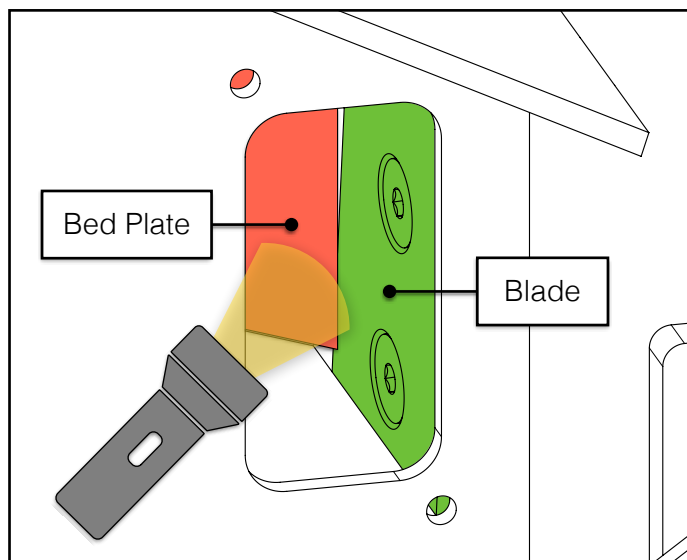
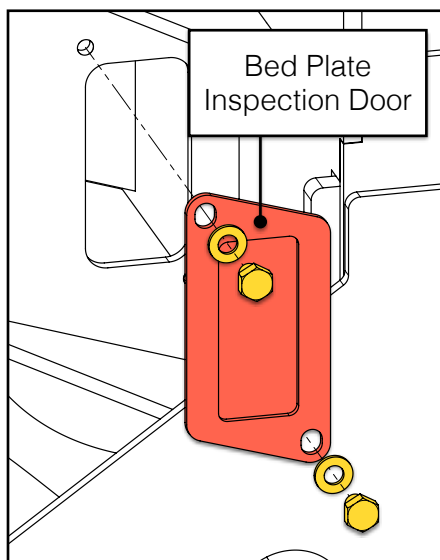


This graphic illustrates how the gap tool interfaces with the bed plate and blades in order to achieve uniform spacing. Some components removed for clarity.

Follow the steps on the next page to set the gap correctly. Failure to set the proper gap can lead to poor chipping performance and/or clogging.

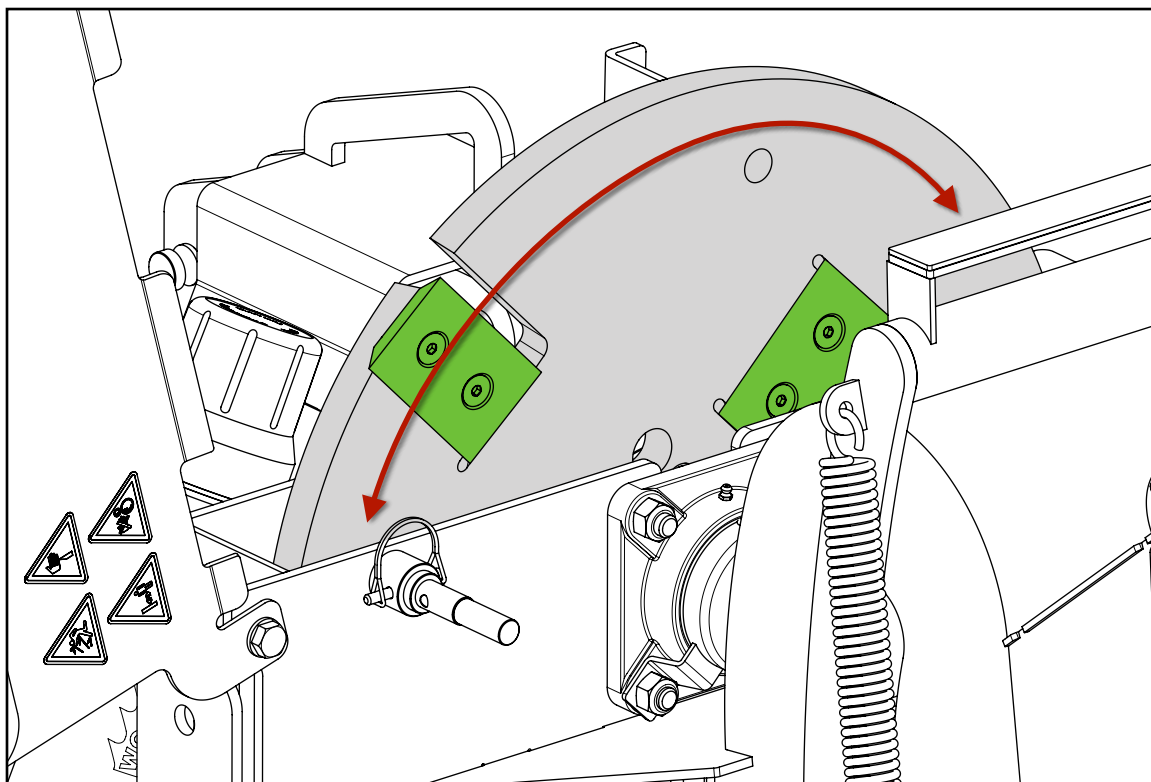


1. Disconnect the PTO shaft from the tractor for safety.
2. Open the upper flywheel housing using the provided 14 mm hex key.
3. Remove the upper flywheel housing guard. Refer to section, **REMOVING GUARDS AND COVERS**, for instructions.
4. Remove the two (2) M8 X 10 mm hex bolts securing the bed plate inspection door located on the right-side of the lower infeed housing. With the bed plate inspection door removed, a clear view of the bed plate and its relationship to the blades can be seen. Use a flashlight for better viewing if necessary.

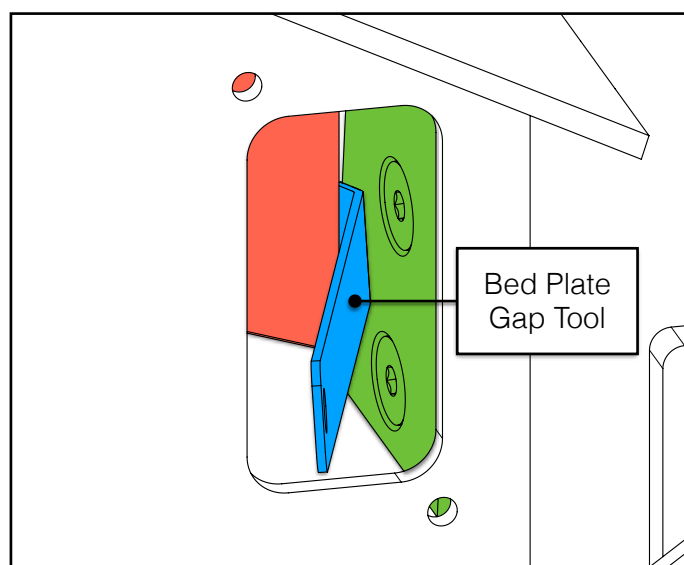




5. Rotate the flywheel so that the first blade is aligned with the bed plate. Take note of the gap between the two and continue to check the remaining blades relative to the bed plate—*taking note of which blade is closest*. Position this closest blade at the bed plate as this is the blade that will be used to set the proper gap with the provided tool.

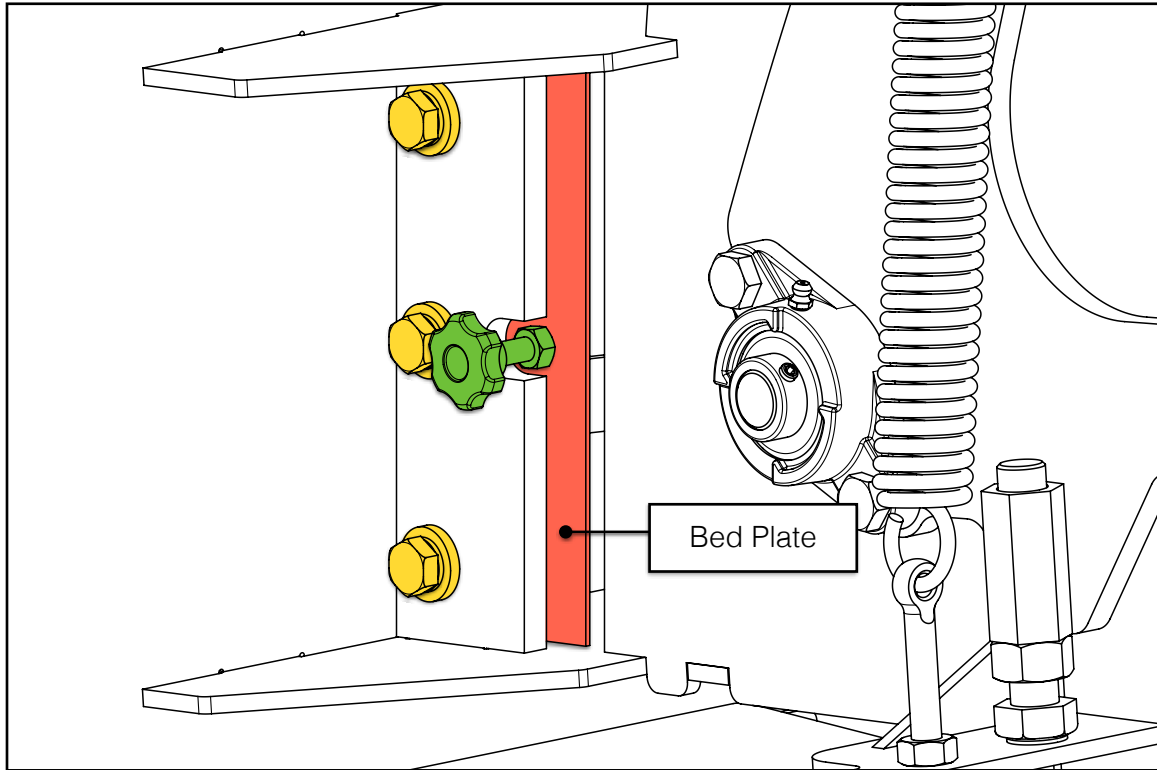


6. Place the bed plate gap tool between the bed plate and blade. Verify that the gap is consistent vertically from the top of the bed plate to the bottom.





7. Loosen the three (3) bed plate M10 X 25 mm hex bolts enough so that the bed plate is free to slide in and out. This movement will increase or decrease the gap between the bed plate and the cutting edge of the blade.



Slide the bed plate by gripping the knob and adjust its position so that it touches the bed plate gap tool. Ensure the gap is uniform along the entire edge of the blade.

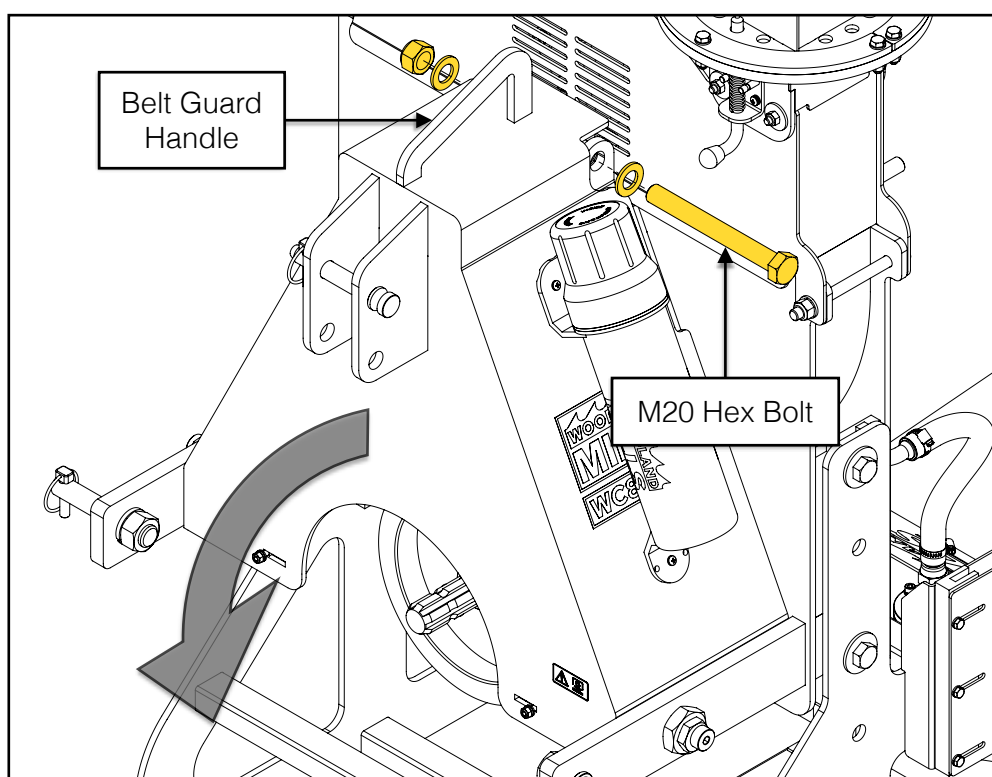
8. Snug the three (3) bed plate bolts once the gap has been set correctly for the blade closest to the bed plate.
9. Rotate the flywheel by hand again, checking the gap at each blade. The bed plate gap tool should still fit between the bed plate and blade along the entire length of the blade.
10. Once the bed plate gap is set, torque the three (3) M10 X 25 mm bed plate hex bolts to 40 ft•lb [54 N•m].
11. Close the upper flywheel housing and secure it to the lower housing by reinstalling the M16 X 40 mm bolt and flat washer.
12. Reinstall the bed plate inspection door and torque the two (2) M8 X 10 mm hex bolts to 225 in•lb [25 N•m].
13. Reinstall the lower flywheel housing guard.



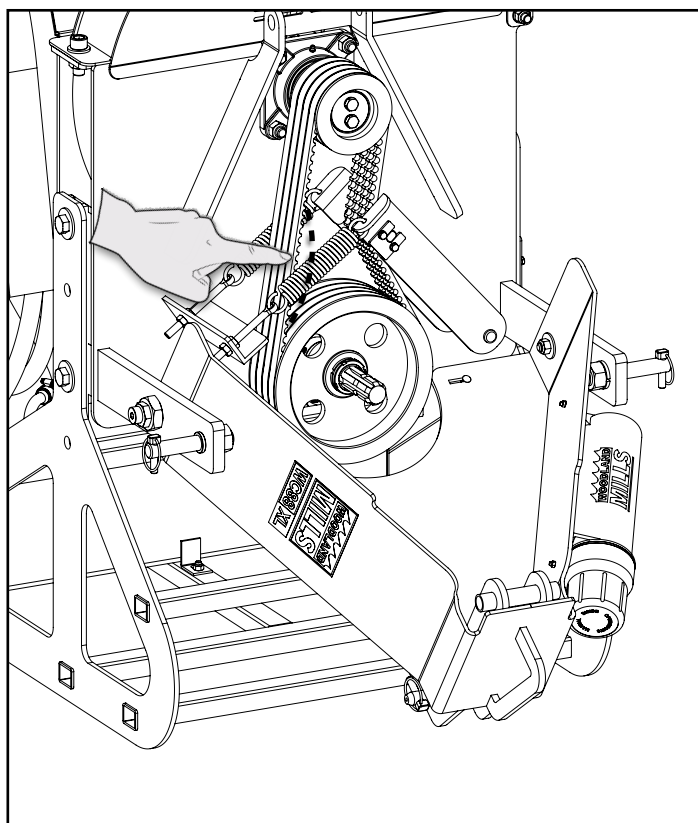
ADJUSTING THE DRIVE BELTS' TENSION

Check the condition and tension of the drive belts after every 30 hours of operation. The belts are self-tensioning via two (2) extension springs. The amount of tension can be adjusted by following these steps:

1. If installed, disconnect the PTO shaft from the wood chipper for safety and to allow rotation of the belts and pulleys.
2. Remove the pulley cover. Refer to section, ***REMOVING GUARDS AND COVERS***, for instructions.
3. Remove the M20 hex bolt, flat washers, and lock nut securing the top of the belt guard. Then firmly grasp the handle on the top of the belt guard and rotate it downward. Warning: the belt guard is heavy.



4. Check the tension on the belts by pressing on them with your finger (see "***Checking Belt Tension***" on the next page). There should not be any free slack in the belts. They should be under firm tension and not deflect more than 1/4" (6 mm).
5. If the belts require more tension, the eyebolts connected to the spring can be adjusted by moving the M8 hex nuts (see "***Adjusting Belt Tension***" on the next page). This will stretch the springs and increase the belt tension until the proper tension is achieved.
6. The belt guard can now be rotated back upwards and the lock pin reinstalled; secured with the linch pin.



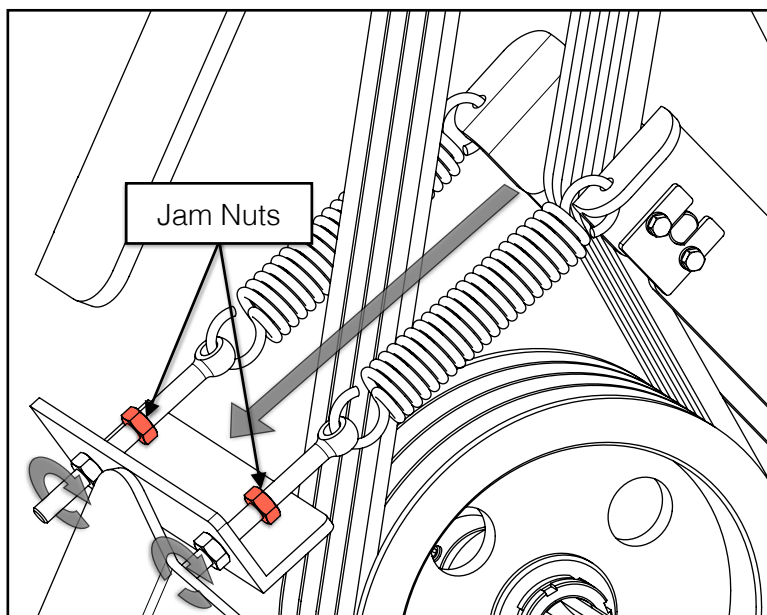
Checking Belt Tension

The belts should not deflect more than $\frac{1}{4}$ " (6 mm) when firm pressure is applied. If the belts are too loose, adjust the tension as shown in "**Adjusting Belt Tension**" shown below.

Adjusting Belt Tension

To increase the tension on the belts, first loosen the jam nuts on both of the eyebolts by rotating them clockwise until they are clear of the support bracket. Then rotate the bottom nuts clockwise, making sure each eyebolt nut is turned an equal amount so that the tension arm belt roller doesn't become skewed.

Once sufficient tension has been imparted to the belts, retighten the jam nuts securely to the support bracket.

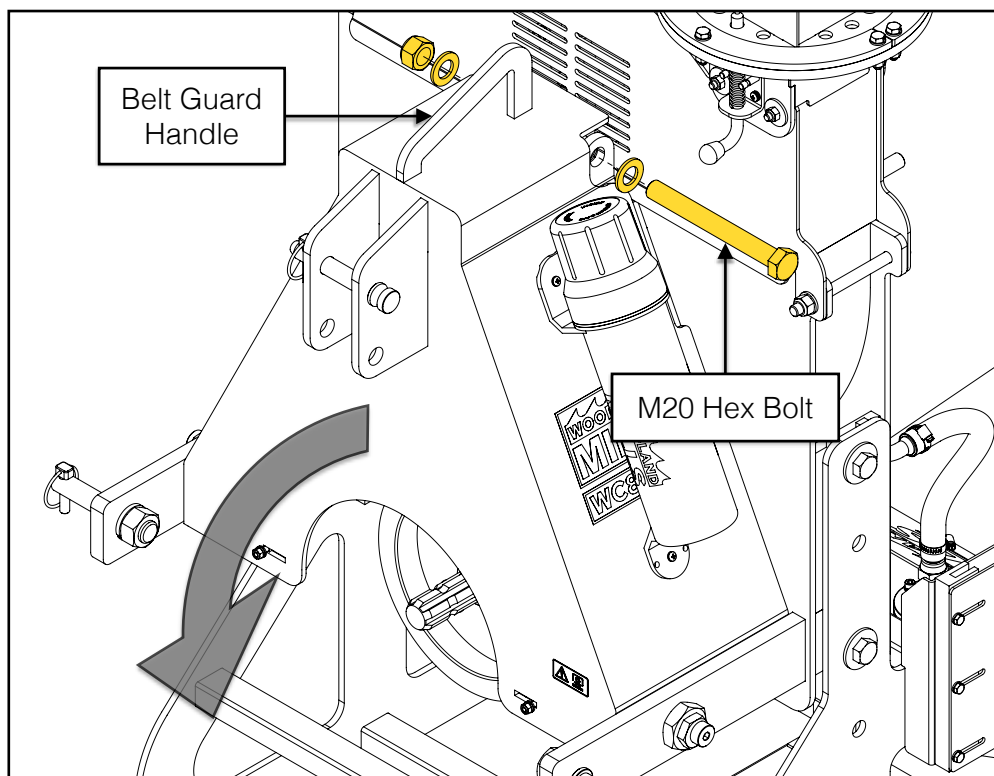




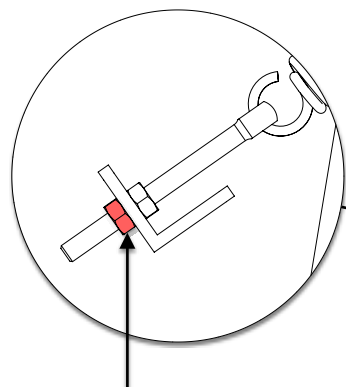
REPLACING THE DRIVE BELTS

Check the condition and tension of the drive belts after every 30 hours of operation. If the infeed roller is not rotating, or it is rotating slowly, the belt could be slipping. A squealing noise may also be heard. In either case, these conditions can occur due to worn belts or improper belt tension (see the previous section, **Adjusting the Drive Belts' Tension**). To replace worn belts, follow the steps below:

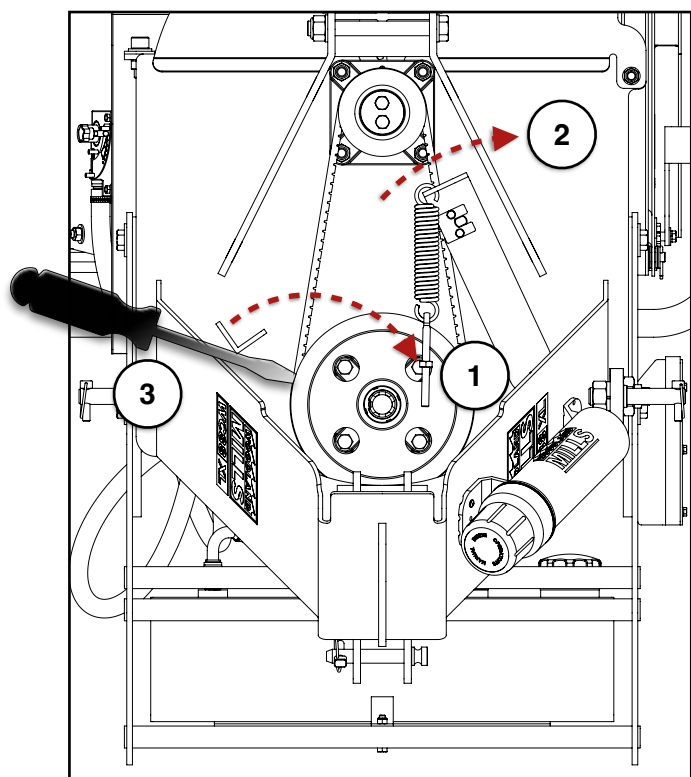
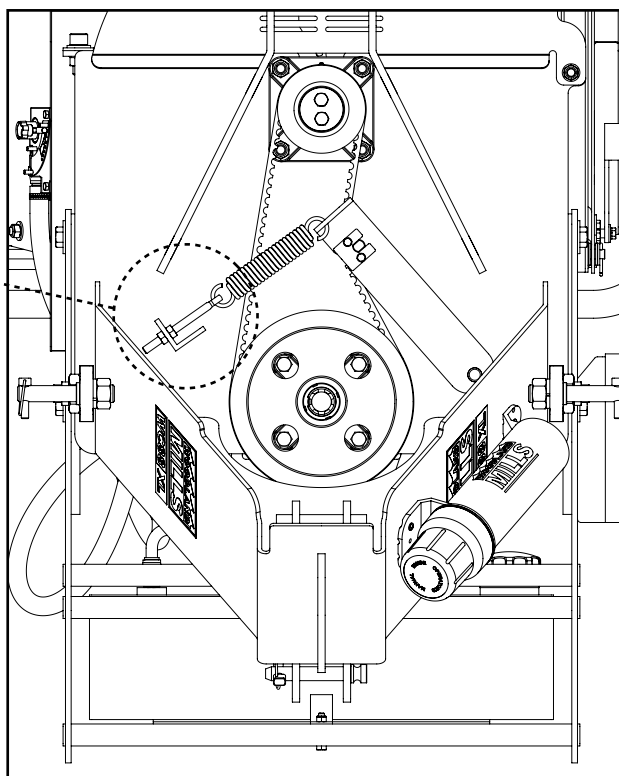
1. If installed, disconnect the PTO shaft from the wood chipper for safety.
2. Remove the pulley cover. Refer to section, **REMOVING GUARDS AND COVERS**, for instructions.
3. Remove the M20 hex bolt, flat washers, and lock nut securing the top of the belt guard. Then firmly grasp the handle on the top of the belt guard and rotate it downward. Warning: the belt guard is heavy.



4. Using a 13 mm wrench, loosen the lower M8 hex nuts that secure the eyebolts to the support bracket until sufficient tension has been removed from the springs so the eyebolts can be completely removed from the support bracket. The belt tensioner arm can now be swung up out of the way allowing for removal of the belts from the pulleys.
5. Install the new belt around the pulleys first and then reinstall the spring. Re-tension the spring by tightening the lower M8 hex nut on the eyebolt. Refer to the previous section, **Adjusting the Drive Belts' Tension**, for instructions on how to properly re-tension the belts.



Loosen and remove the lower M8 hex nuts from both of the eyebolts. Be sure to loosen each nut a little at a time so that the tension is released equally from both eyebolts.



With the eyebolts disconnected from the bracket, let them hang loose from the springs while still attached to the tension arm¹.

With tension removed from the springs, the tension arm can be swung up out of the way².

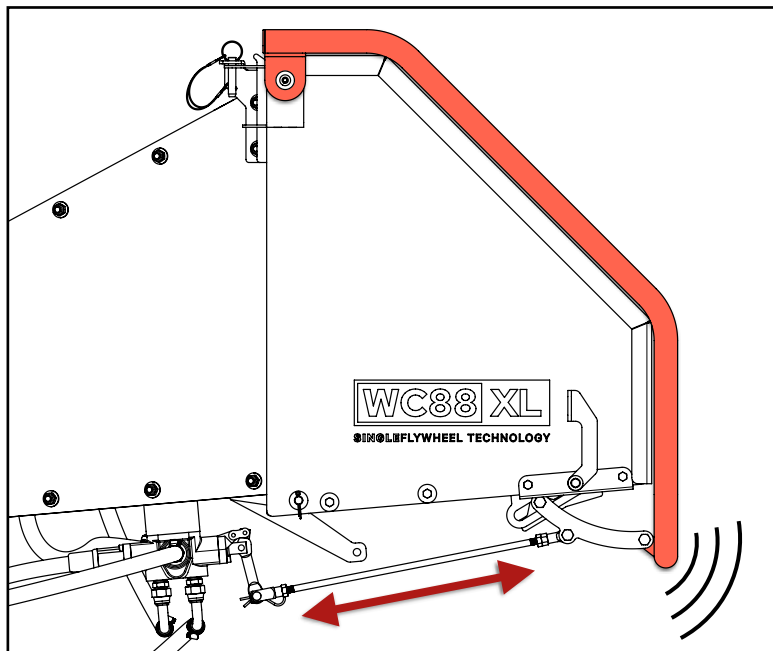
Use a pry bar or screwdriver to remove the old belts from the pulleys and install new BX53 belts³.

Reassemble the eyebolts to the bracket using the M8 hex nuts and re-tension the springs. Follow the steps in the ***previous section*** to ensure the correct tension is applied to the belts.

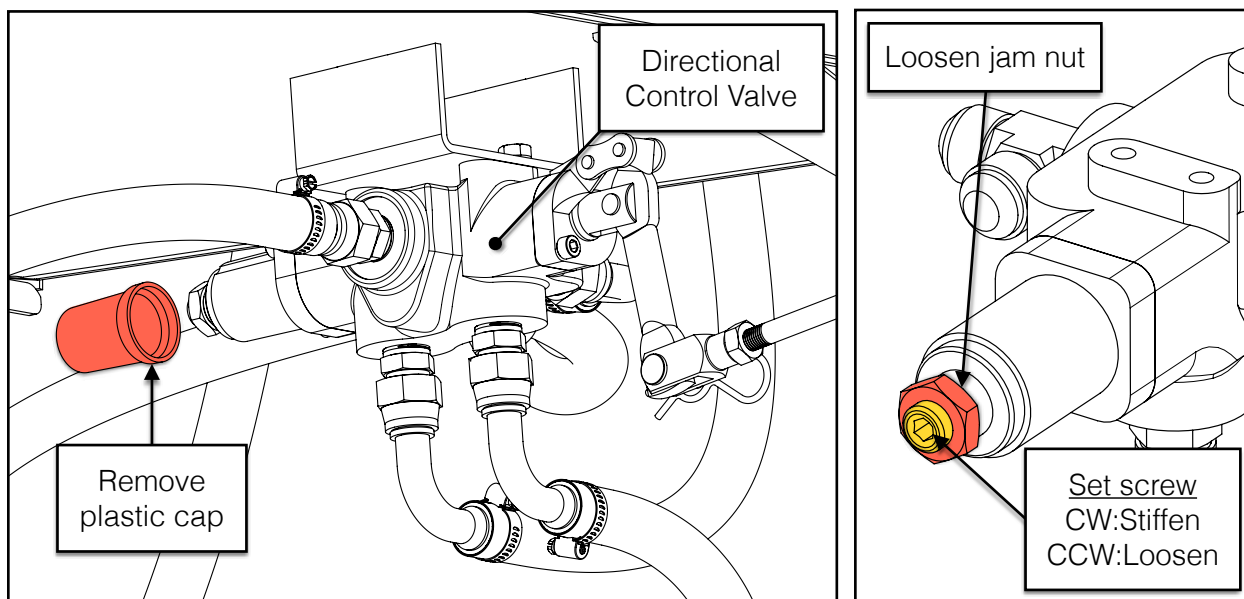
Rotate the belt guard up and secure it with the belt guard lock pin and linch pin.

ADJUSTING THE CONTROL ARM

If the movement of the red control arm feels too stiff or too loose, or if it falls into neutral or reverse unexpectedly, it can be adjusted via the directional control valve.



Unscrew the plastic cap from the back of the directional control valve (located under the infeed chute), exposing the jam nut and set screw.



Loosen the jam nut with a 22 mm [$\frac{7}{8}$ in] wrench. Use a 6 mm hex key and turn the set screw **clockwise (CW) to stiffen** the movement of the arm, **counter-clockwise (CCW) to loosen** it. Tighten the jam nut and replace the cap after the control arm movement feels satisfactory.

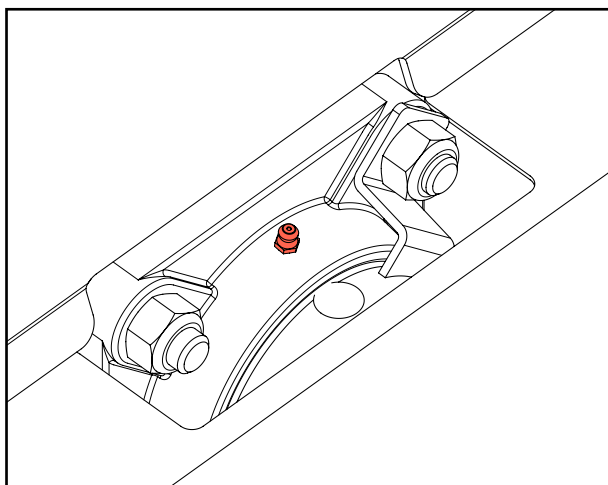
GREASING

BEARINGS & OUTPUT SHAFT

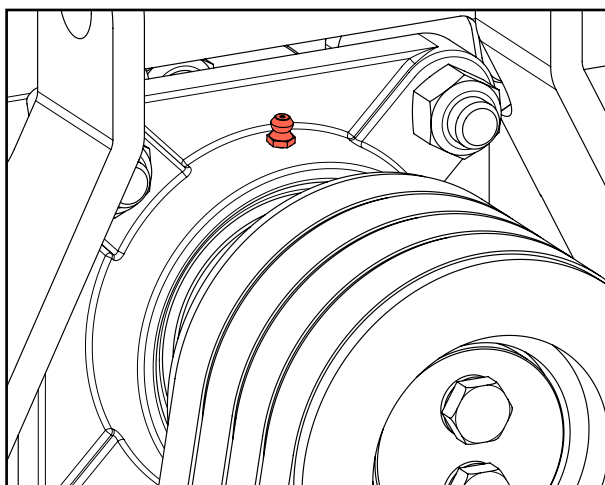
The wood chipper has five (5) grease points with Zerk fittings: two (2) flywheel bearings, two (2) pump shaft bearings, and one (1) infeed roller bearing. Check each grease point prior to use and add grease as needed.

Periodically brush grease onto the wood chipper's output shaft for ease of PTO shaft connection & removal, to prevent rust buildup, and to prevent the two shafts from seizing together.

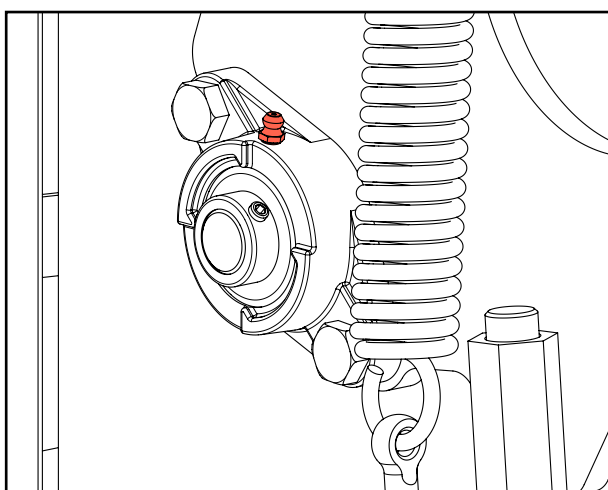
*****Warning: The 5 bearing grease points come pre-greased from the factory. Do not add grease to them on a new wood chipper. Over-greasing can damage the bearing seals.*****



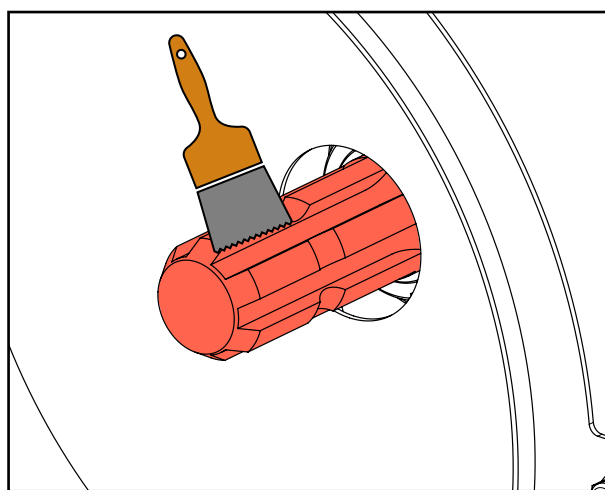
Rear Flywheel Shaft Bearing



Front Flywheel Shaft Bearing

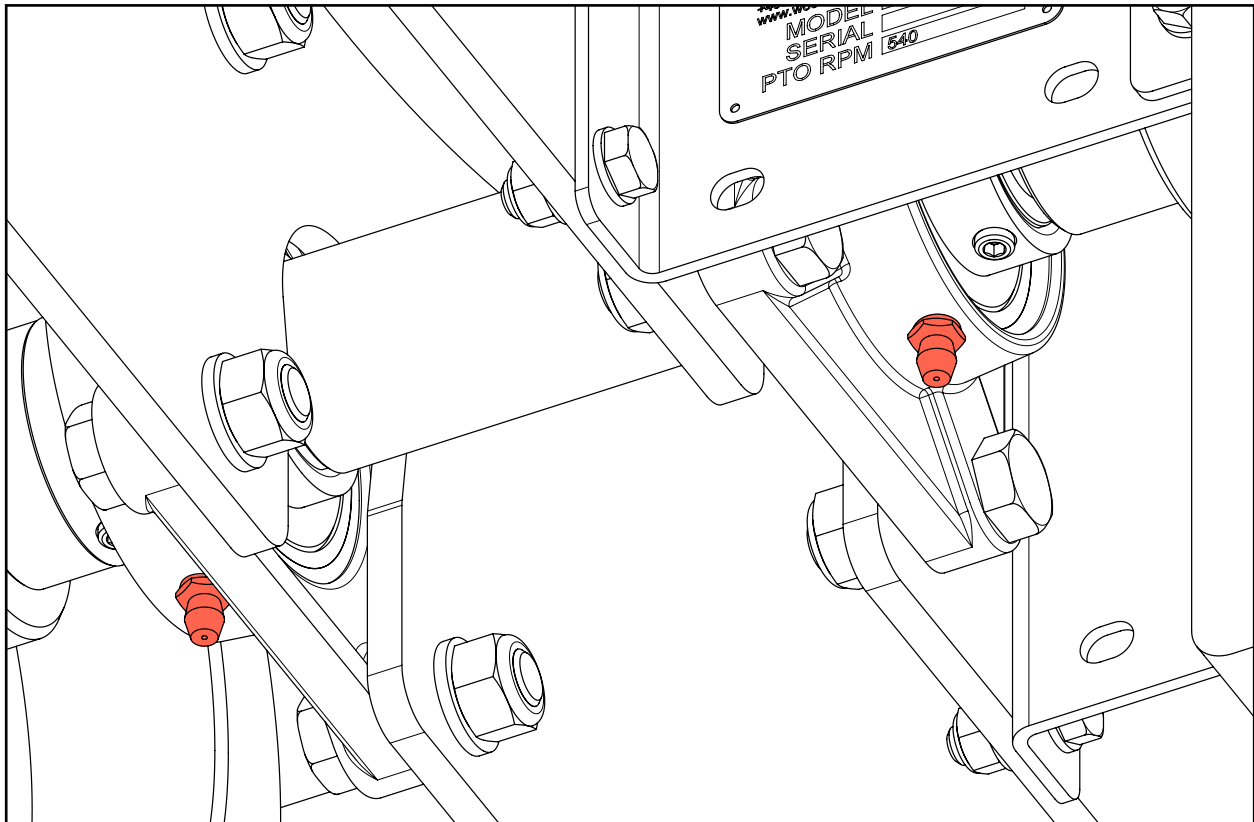


Infeed Roller Bearing



Output Shaft

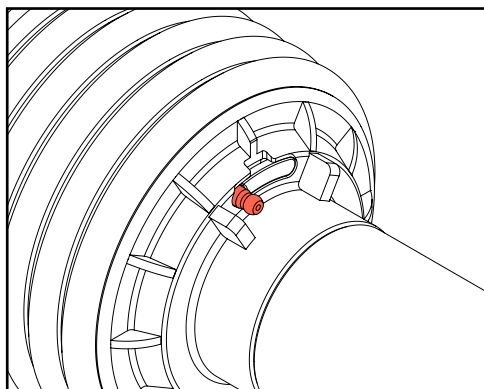
To access some of the bearings, guards and covers will need to be removed. See section, **REMOVING GUARDS AND COVERS**, for instructions.



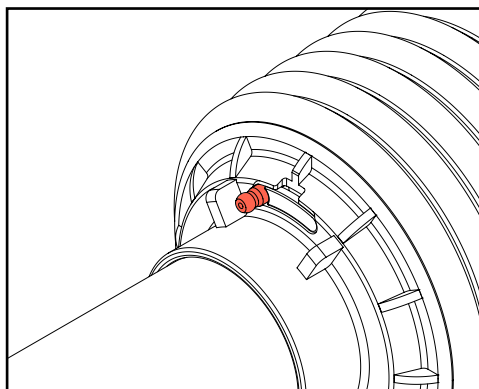
**Pump Shaft Bearings [2x Underside]
(Pulley Cover and Pump Shaft Housing Bottom Cover Removed. See section,
REMOVING GUARDS AND COVERS, for instructions.)**

PTO SHAFT

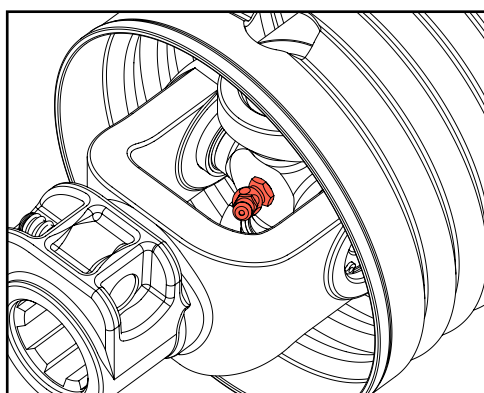
The PTO shaft has seven (7) grease points that are accessible from the outside: one (1) on each of the inner and outer guards, two (2) on the tractor yoke, and three (3) on the shear pin yoke. Check each grease point prior to use and add grease as needed.



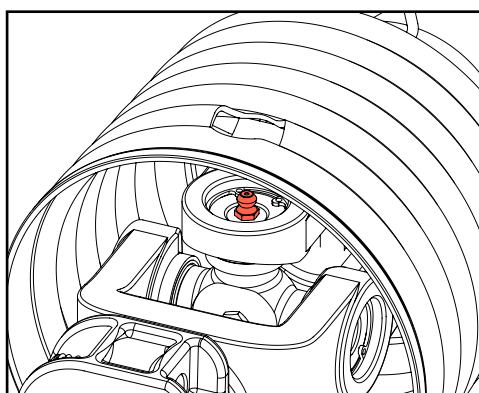
Inner Cover



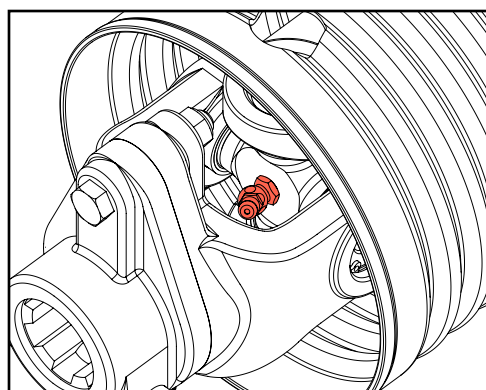
Outer Cover



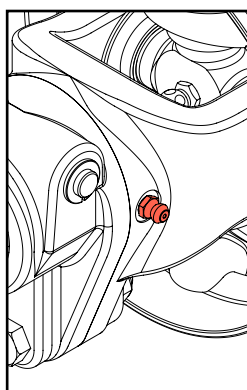
Tractor Yoke 1



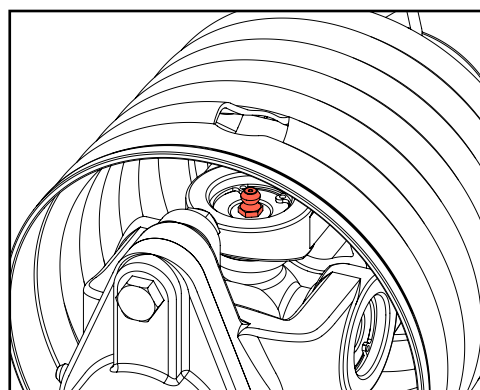
Tractor Yoke 2



Shear Bolt Yoke 1



**Shear Bolt
Yoke 2**

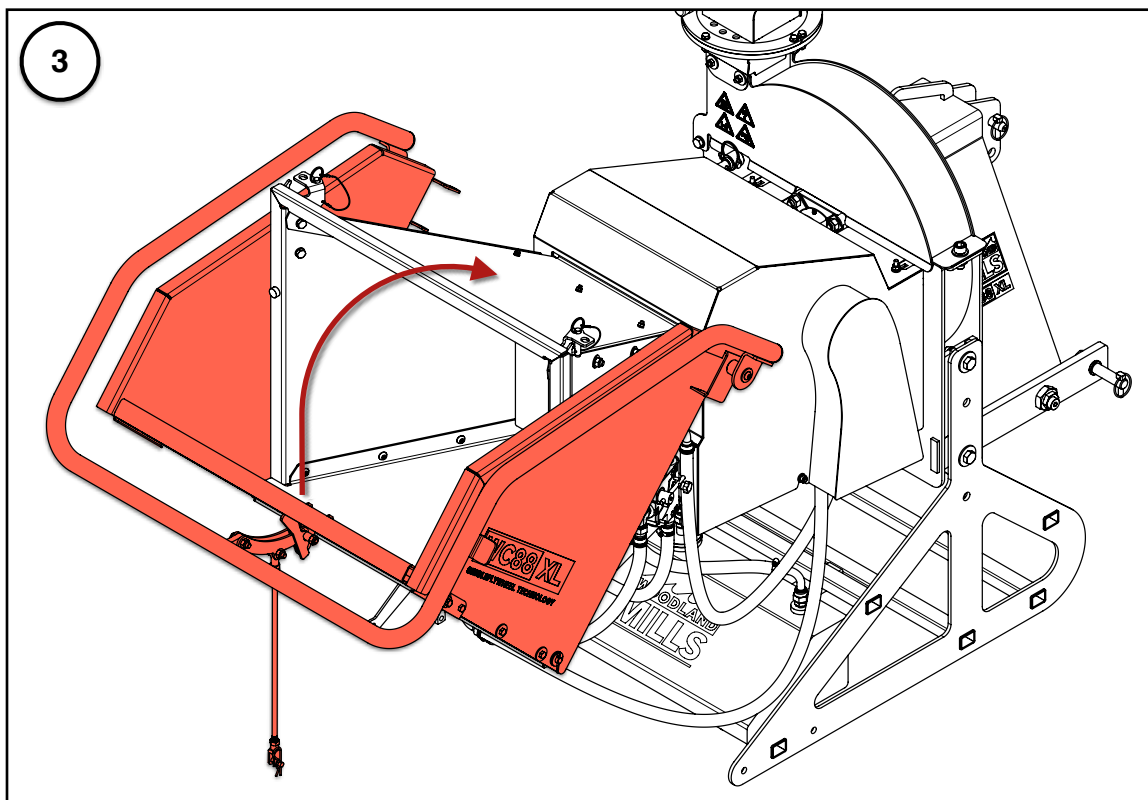
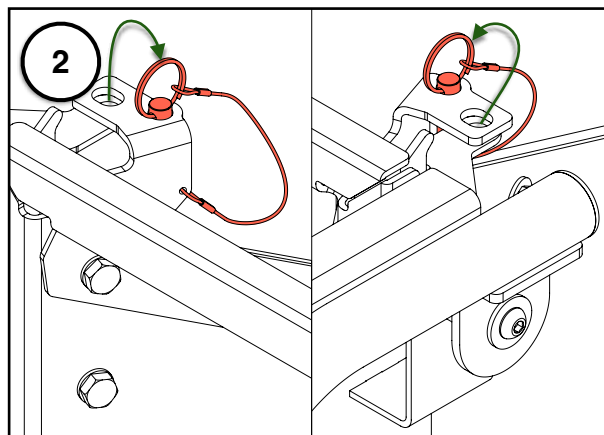
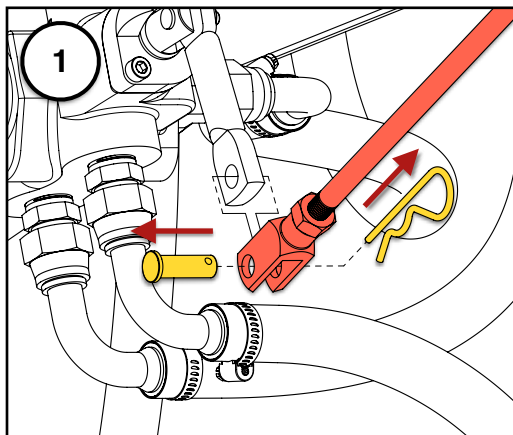


Shear Bolt Yoke 3

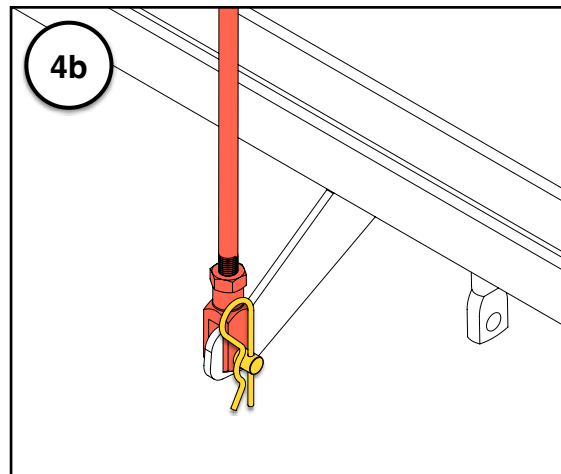
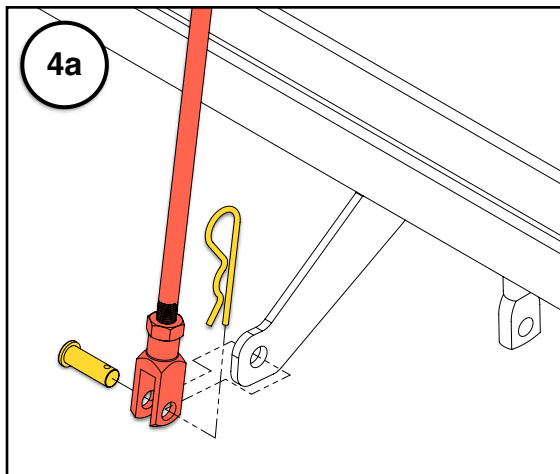
STORAGE

When the wood chipper is not in use, it can be stored to utilize a smaller footprint to save space. Follow these steps to put the wood chipper in its storage state:

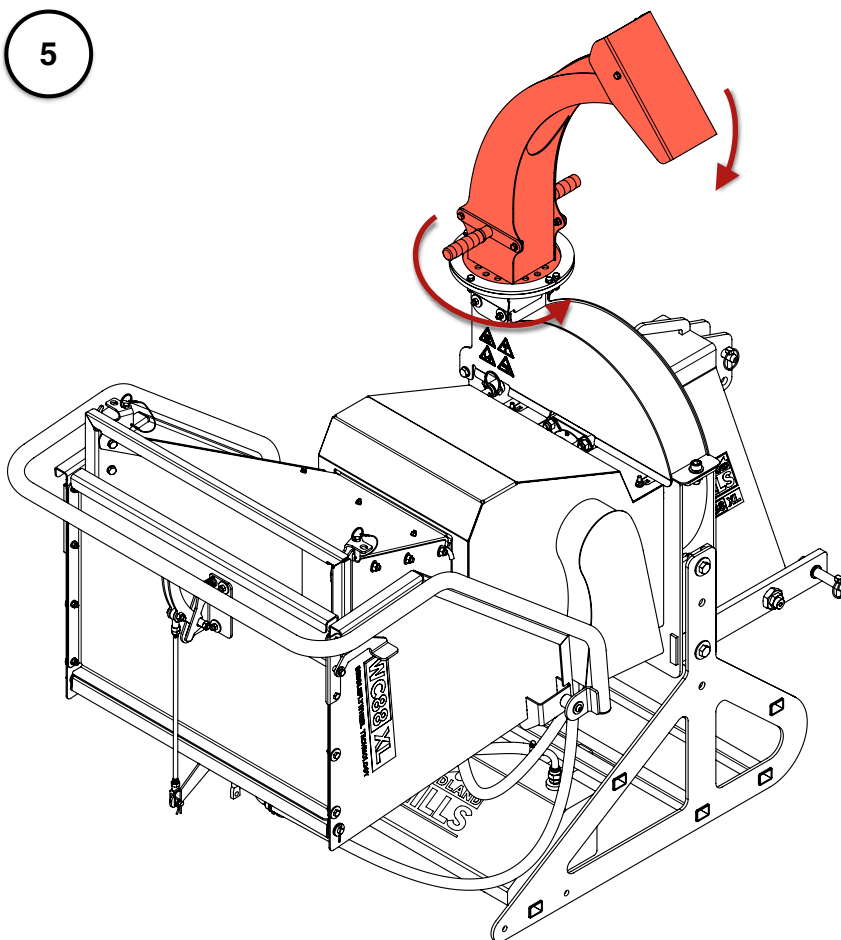
1. Disconnect the control arm linkage from the directional control valve.
2. Move the locking pins on the strike plates from the panel holes to the open holes.
3. Rotate the feed hopper up 90° until it comes to rest against the infeed chute.



4. Connect the linkage to the mount on the underside of the infeed chute and reinstall the clevis pin and cotter pin.
5. Rotate the discharge chute so that it points to the right and then rotate the deflector until it points down.



5

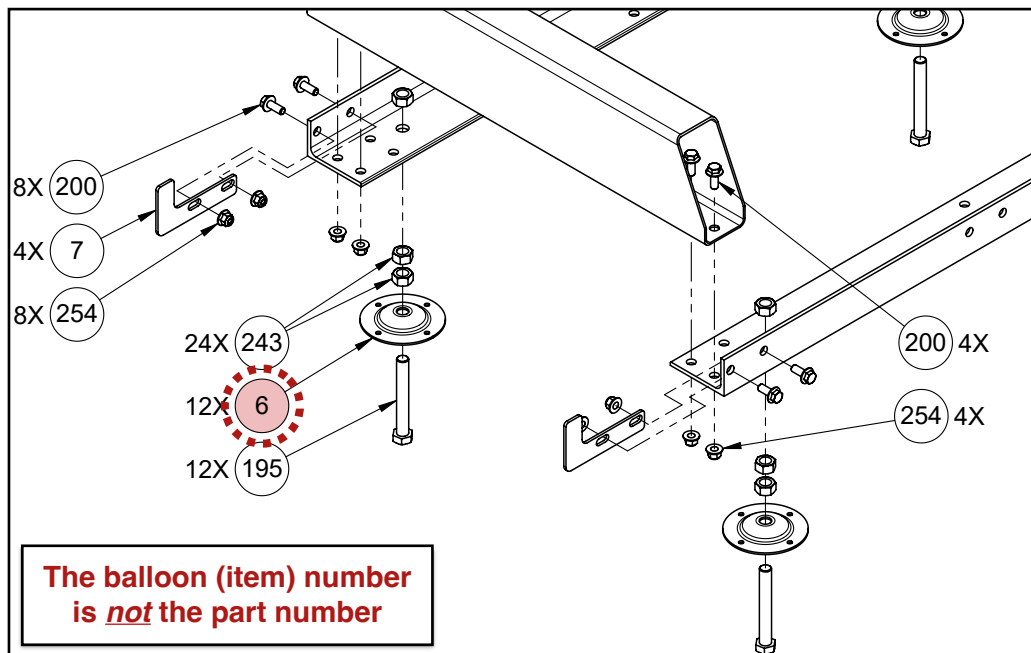


TROUBLESHOOTING

Problem/Issue	Possible Causes	Resolution Options
Brush is feeding too slowly	1. Infeed roller control set too low. 2. PTO RPM below 540. 3. Blades are dull. 4. Improper bed plate gap.	1. Increase infeed roller control to a higher value. Refer to page 54. 2. Adjust tractor RPMs to 540 at output. 3. Reverse, sharpen, or replace blades. Refer to page 62 & page 64. 4. Re-set bed plate gap. Refer to page 65.
Brush exiting discharge chute is stringy	1. Blades are dull. 2. Brush is excessively sappy.	1. Reverse, sharpen, or replace blades. Refer to page 62 & page 64. 2. Clean blades and bed plate.
Excessive clogging	1. Blades are dull. 2. Improper bed plate gap. 3. PTO RPM below 540.	1. Reverse, sharpen, or replace blades. Refer to page 62 & page 64. 2. Re-set bed plate gap. Refer to page 65. 3. Clean blades and bed plate. 4. Adjust tractor RPMs to 540 at output.
Drive belts slipping or squeaking	1. Belt tension not set properly. 2. Belts are old/worn.	1. Adjust belts' tension. Refer to page 69. 2. Replace belts. Refer to page 71.
Excessive noise coming from flywheel bearings	1. Bearings not sufficiently lubricated. 2. Bearings are worn.	1. Grease bearings. Refer to page 74. 2. Replace bearings. Please contact Woodland Mills for bearing replacement instructions.
Red control arm falls into neutral or reverse	1. Directional control valve not adjusted properly.	1. Adjust directional control valve set screw. Refer to page 73.

REPLACEMENT PARTS ORDERING

When ordering replacement parts, first locate the balloon number(s) from the appropriate ***exploded assembly view*** as shown in the example below:



Next, turn to the ***Parts List*** section and locate the balloon number in the “**Item**” column:

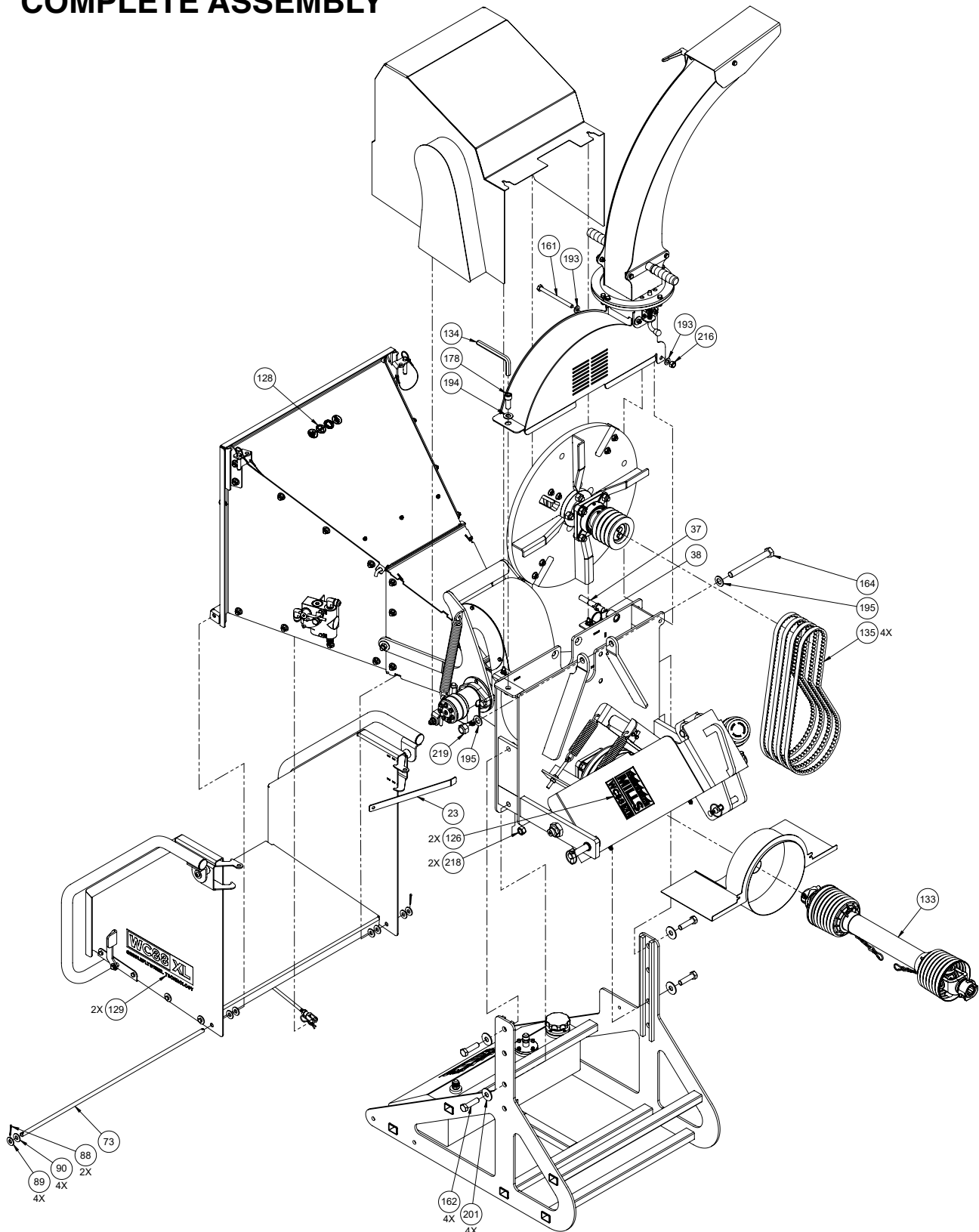
PARTS LIST

Item	Quantity		Part No.	Description
	14 hp	9.5 hp		
1	4	4	0001073	TRACK RAIL, 58.5 mm TALL
2	2	2	0001075	LOG BUNK, END
3	2	2	0001080	LOG BUNK, MID
4	1	1	0001084	LOG BUNK, CENTER
5	2	2	0001072	REINFORCEMENT PLATE, 90 X 200 mm
6	12	12	0001071	LEVELLING FOOT BASE
7	4	4	0001055	CARRIAGE STOP
8	1	1	0001062	LOG CLAMP SHAFT AND BRACKET WELDMENT

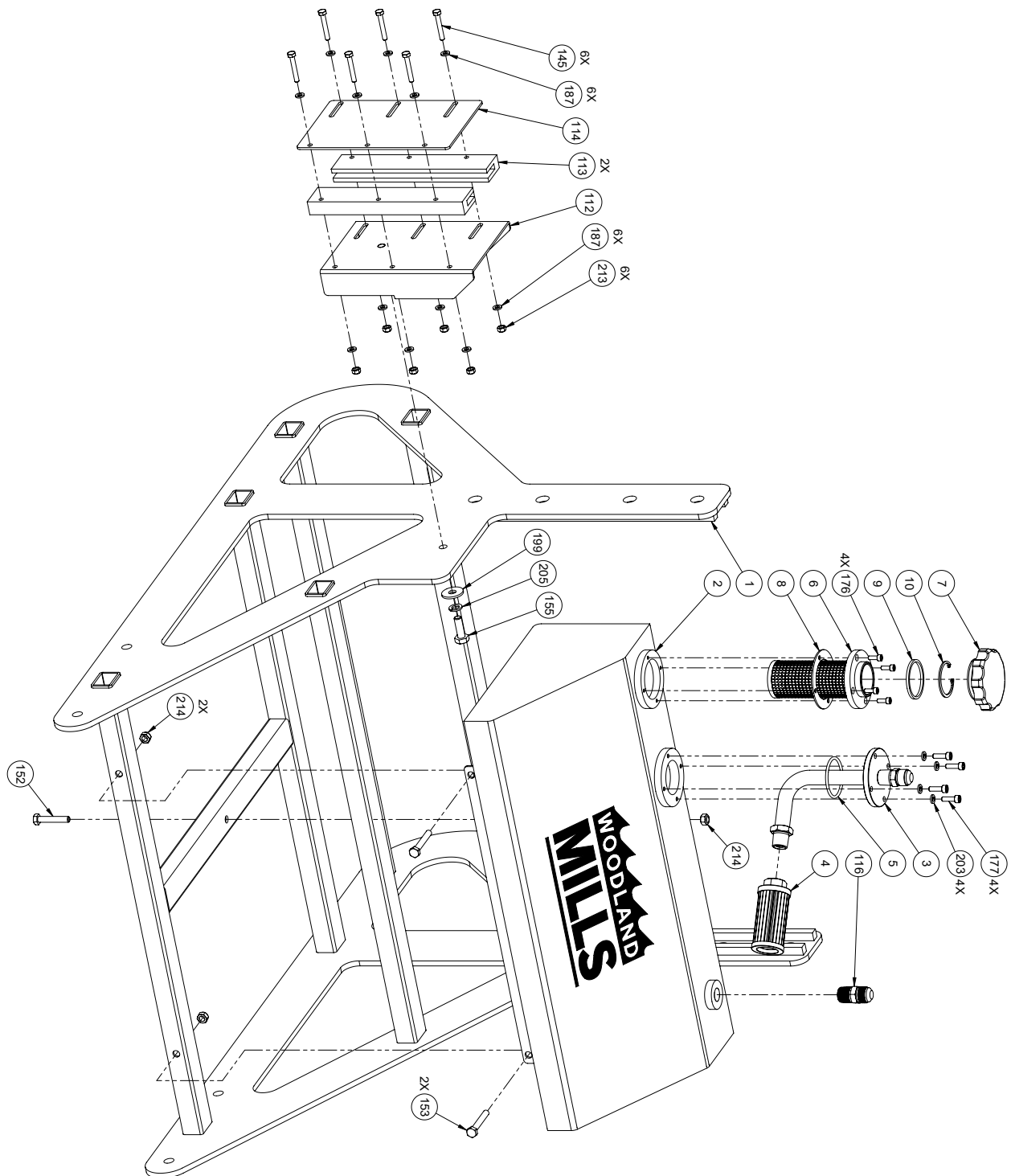
Record the part number (e.g. 0001071, HHB-MBM080FCJ, etc.) in the “**Part No.**” column.

Contact Woodland Mills through the website or via phone/email. If possible, include the invoice or sales number from the purchased product so an associated account can be located. If the account has multiple addresses on file, please indicate to which address the replacement part(s) will be shipped.

EXPLODED ASSEMBLY VIEWS COMPLETE ASSEMBLY

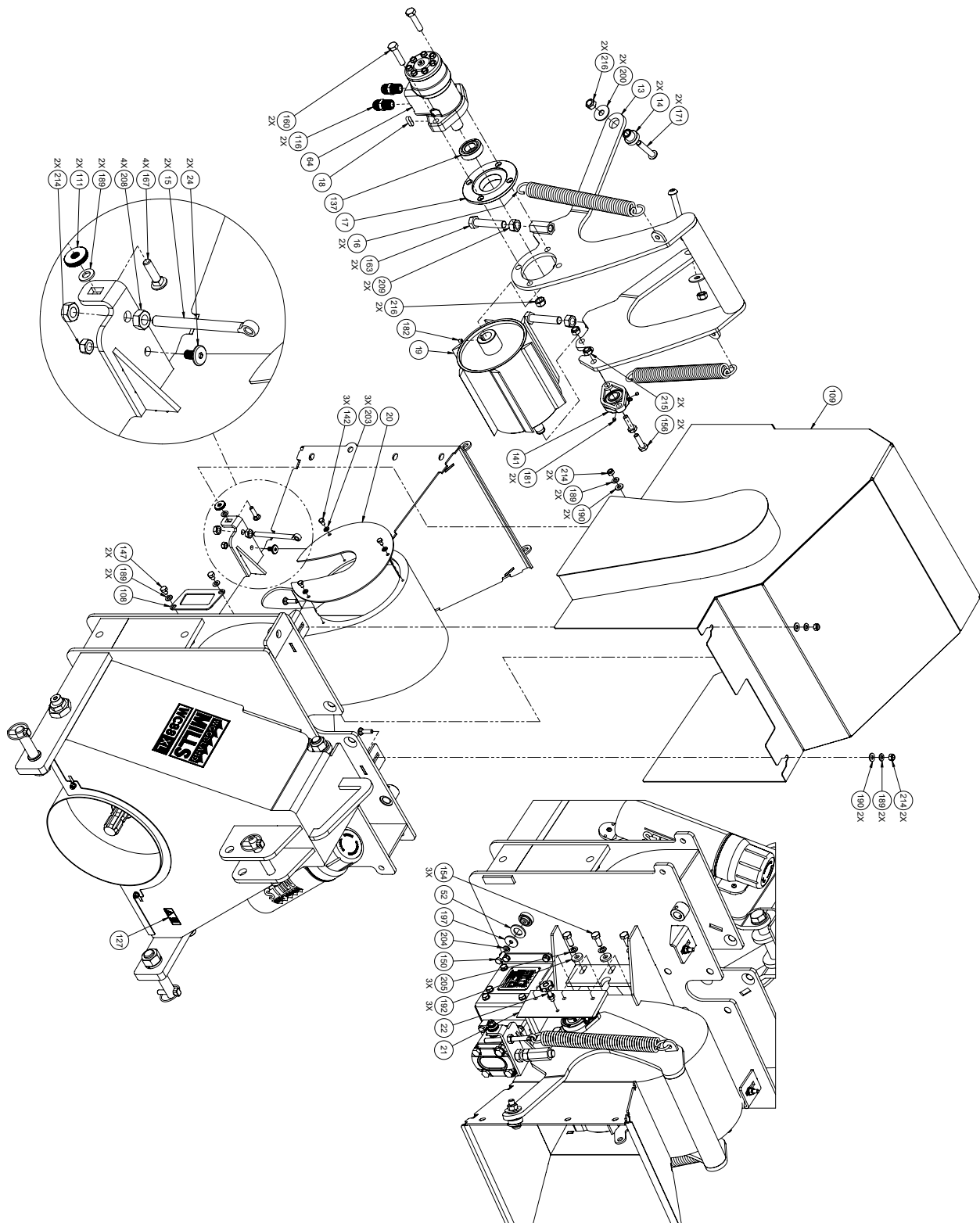


BASE

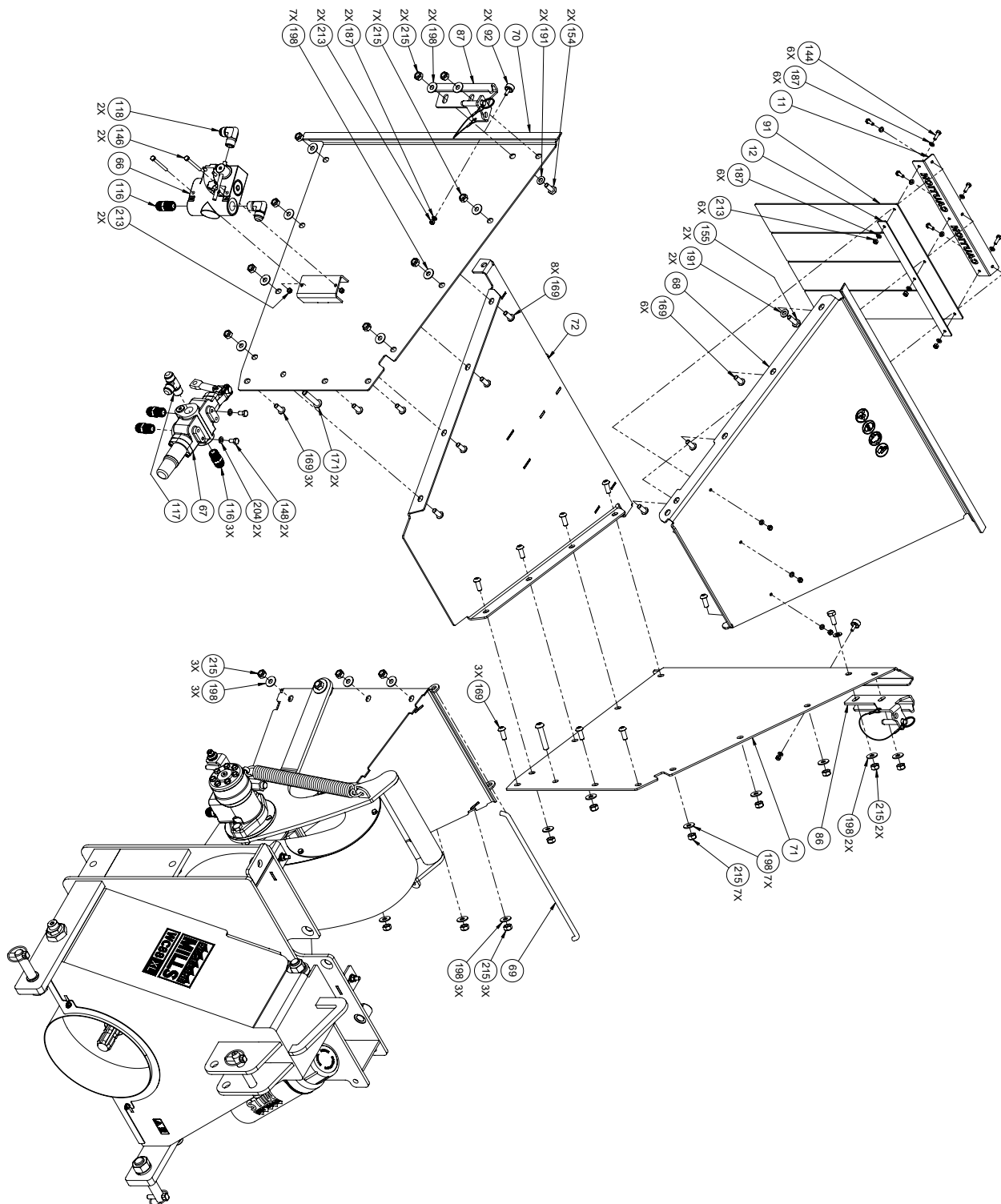


[illegible]

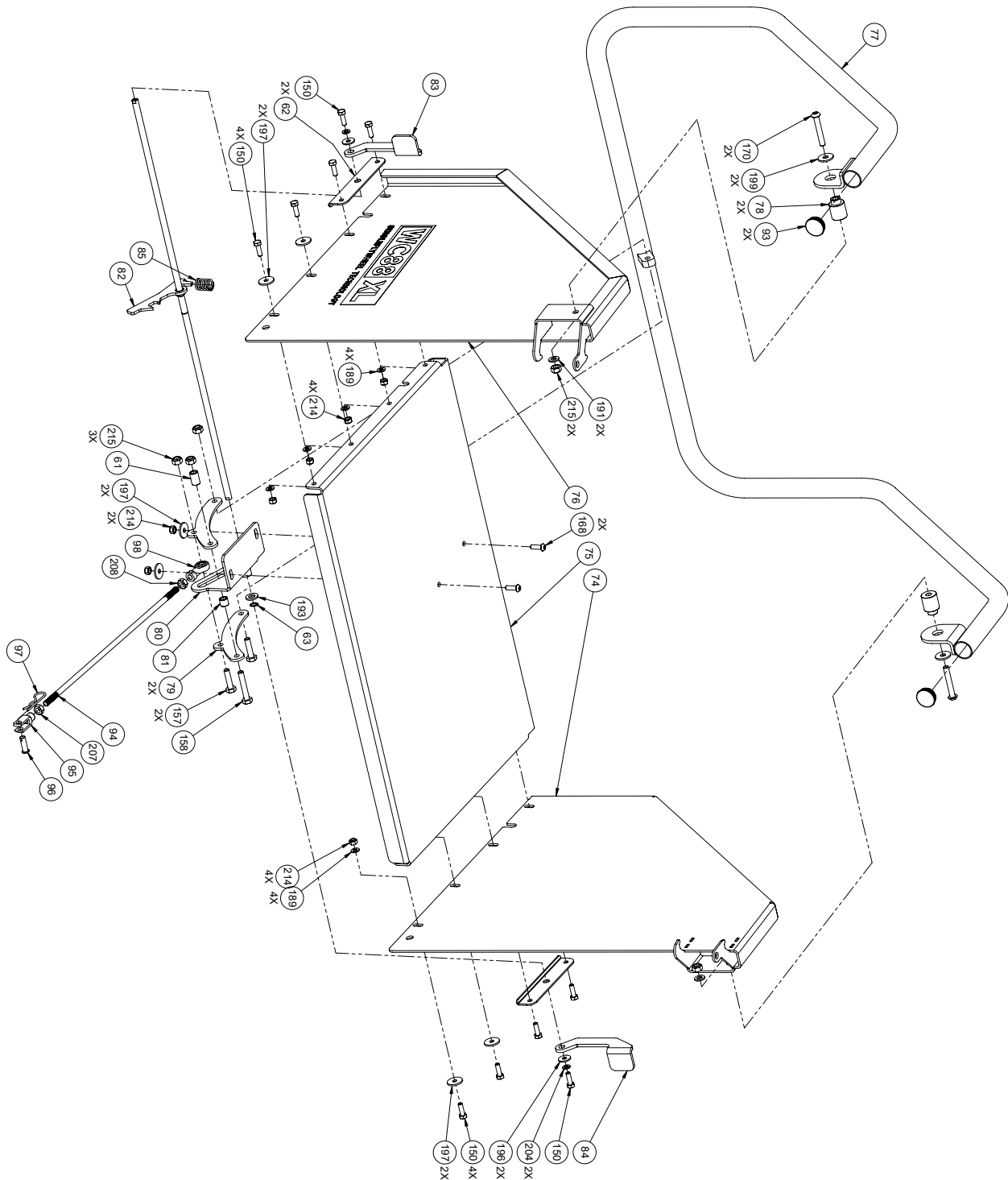
LOWER FLYWHEEL HOUSING SWINGARM



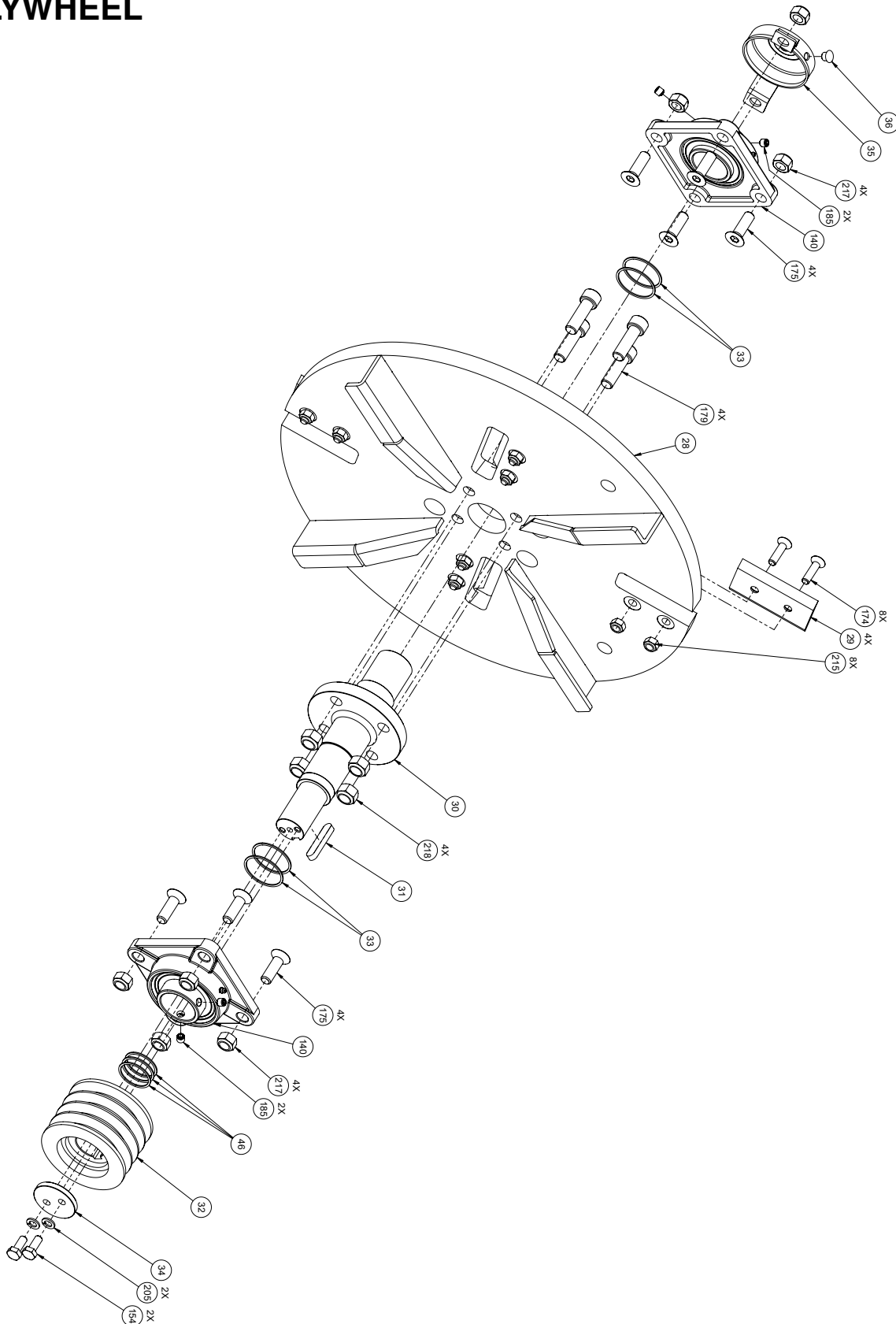
21-May-2026



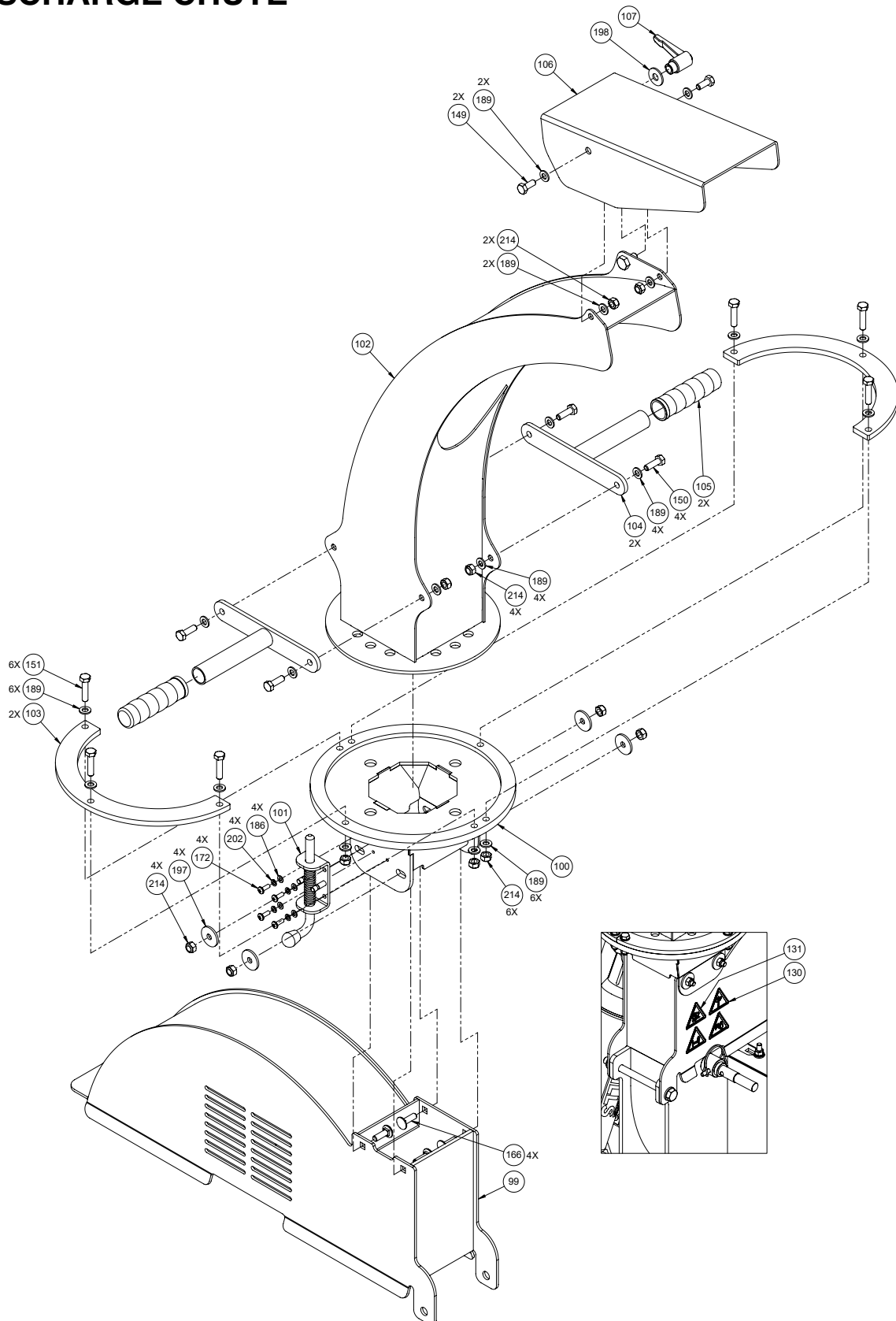
21-May-2026



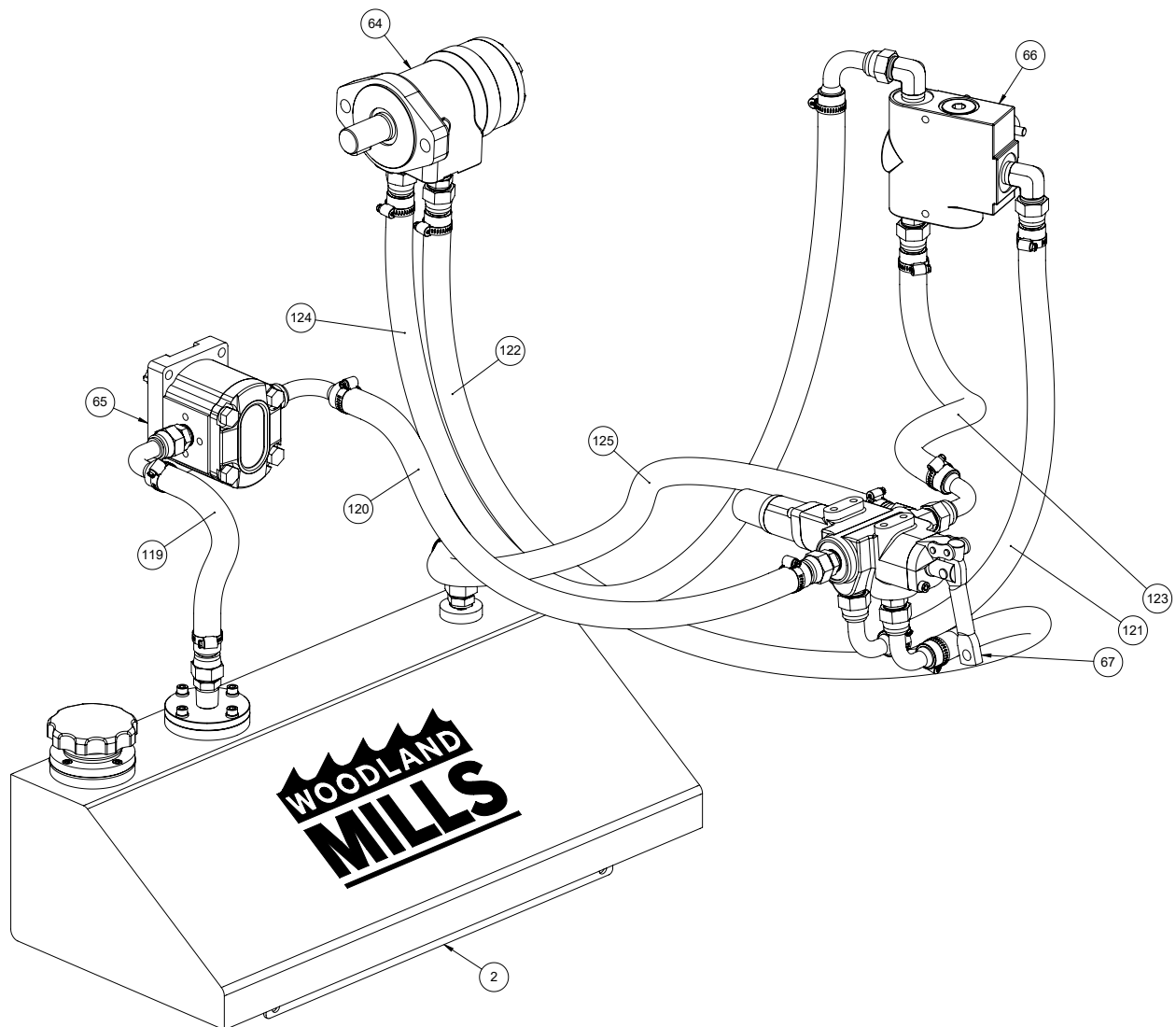
FLYWHEEL



DISCHARGE CHUTE

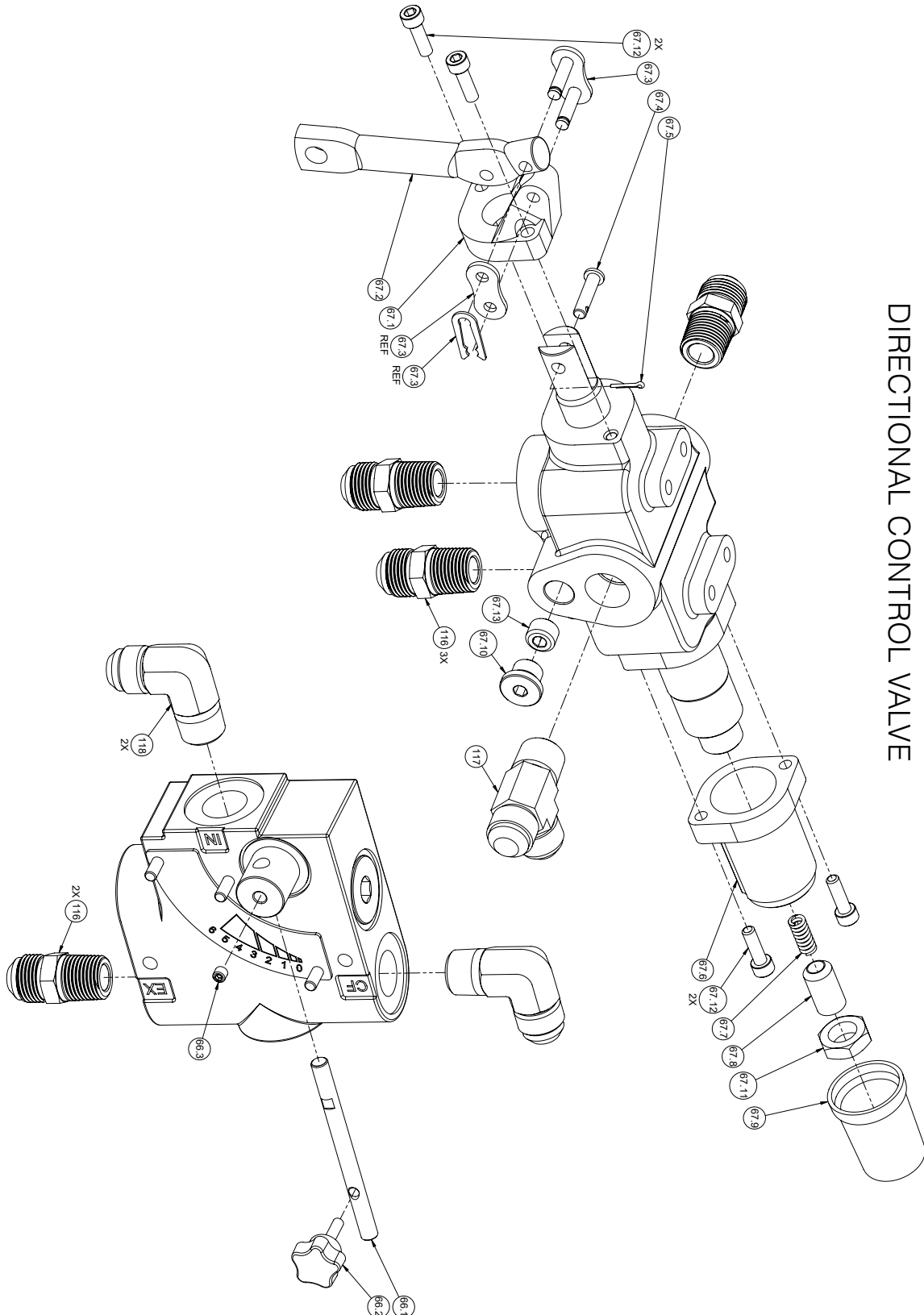


HYDRAULICS



CONTROL VALVES

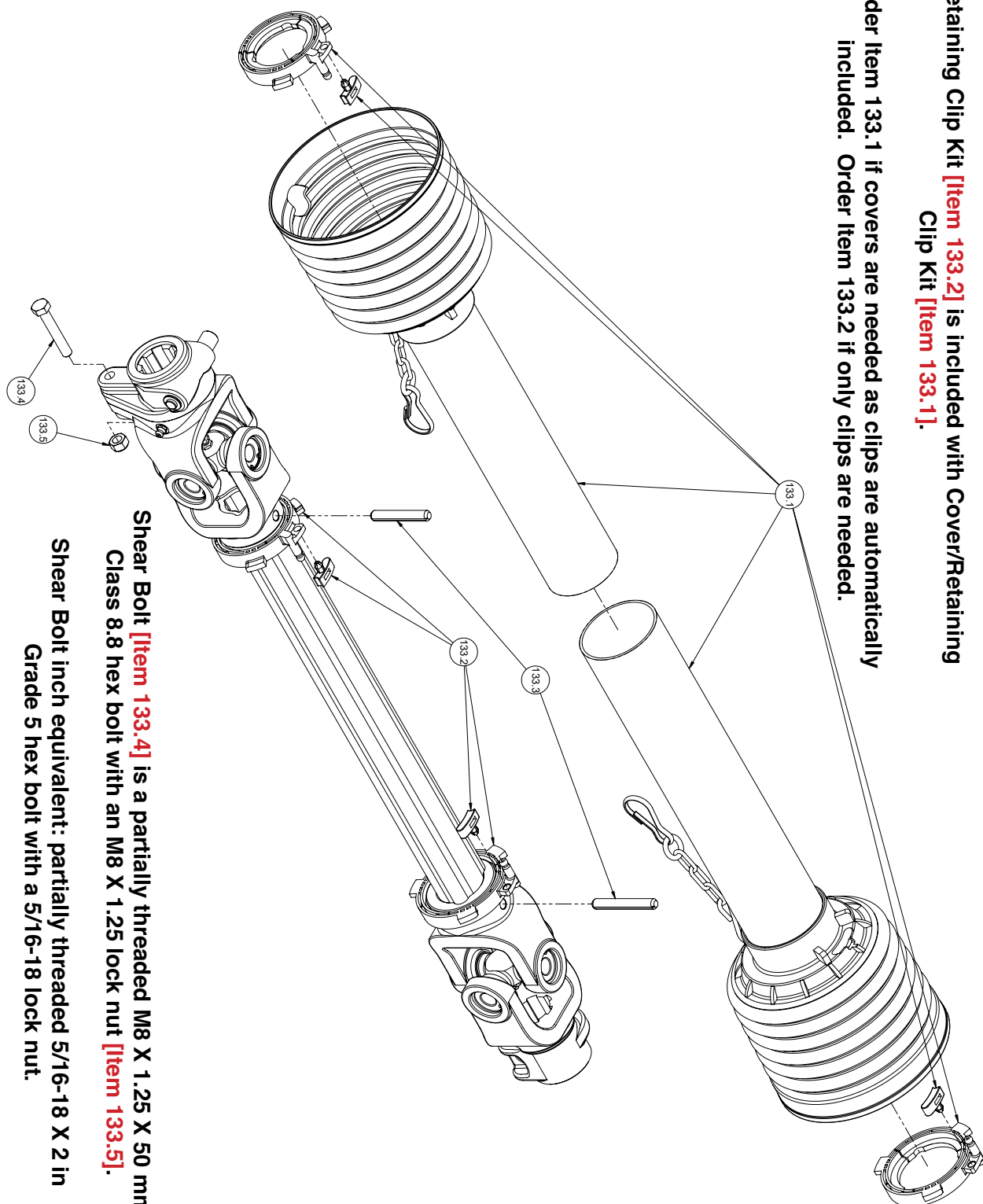
VARIABLE FLOW CONTROL VALVE



PTO SHAFT

Retaining Clip Kit [Item 133.2] is included with Cover/Retaining Clip Kit [Item 133.1].

Order Item 133.1 if covers are needed as automatically included. Order Item 133.2 if only clips are needed.



Shear Bolt [Item 133.4] is a partially threaded M8 X 1.25 X 50 mm Class 8.8 hex bolt with an M8 X 1.25 lock nut [Item 133.5].

Shear Bolt inch equivalent: partially threaded 5/16-18 X 2 in Grade 5 hex bolt with a 5/16-18 lock nut.

PARTS LIST

Item	Qty	Part No.	Description
1	1	0012386	BASE
2	1	0001168	HYDRAULIC TANK, 20 L [5.3 gal]
3	1	0001164	HYDRAULIC TANK INTAKE LINE
4	1	0001752	HYDRAULIC INTAKE FILTER, 1/2 NPT
5	1	0004841	O-RING, 50 mm ID / 57 mm OD, 3.5 mm THK
6	1	0005188	OIL SCREEN, 50 mm DIA X 120 mm LG SCREEN
7	1	0005183	OIL SCREEN CAP, 85 mm DIA, M48 X 2 THD
8	1	0005187	GASKET, OIL SCREEN, 55 mm ID
9	1	0005186	GASKET, OIL SCREEN CAP, 48 mm ID
10	1	0005185	RETAINING RING, INTERNAL, 46 mm BORE (48.5 mm GROOVE)
11	1	0012384	CURTAIN BRACKET
12	1	0012383	CURTAIN PLATE
13	1	0012477	SWINGARM
14	2	0006493	SWINGARM PIVOT BUSHING, 10 mm SHOULDER
15	4	0006059	EYEBOLT, DIN444, M10 X 1.5, 120 mm LG
16	2	0001812	EXTENSION SPRING, HOOK ENDS, 33 mm OD, 5 mm DIA WIRE, 285 mm LG
17	1	0001179	HYDRAULIC MOTOR ADAPTER PLATE, 6205-2RS BEARING
18	1	0004846	PARALLEL KEY, 8 X 7 mm, 25 mm LG
19	1	0006494	INFEED ROLLER
20	1	0001201	INFEED ROLLER COVER PLATE
21	1	0012478	BED PLATE, 198 X 92 X 9.4 mm
22	1	0001191	KNOB, MULTI-LOBE, 32 mm OD, M8 X 1.25, 30 mm LG, M8 WLD HEX NUT
23	1	0010411	BED PLATE GAP TOOL
24	2	0001733	STRIKE PLATE BOLT, 20 mm HEAD DIA, M8 X 1.25 THD
25	2	0001576	HITCH PIN, LOWER, CAT 1, M24 X 2, 7/8 in [22 mm] DIA, 2-1/2 in [64 mm] USEABLE LG
26	1	0001156	HITCH PIN, UPPER, CAT 1, 3/4 in [19 mm] DIA, 3-1/2 in [90 mm] USEABLE LG
27	3	0004705	LINCH PIN, 10 mm DIA, 38 mm USABLE LG, 45 mm LG
28	1	0001272	FLYWHEEL
29	4	0001273	FLYWHEEL BLADE, 113 X 69 X 8 mm
30	1	0001269	FLYWHEEL SHAFT
31	1	0004852	PARALLEL KEY, 12 X 8 mm, 60 mm LG
32	1	0001874	V-BELT PULLEY, 4-GROOVE, 40 mm SHAFT, 120 mm DIA
33	4	0001158	SPACER, 50.6 ID X 56 OD X 1.5 mm LG
34	1	0001270	FLYWHEEL SHAFT RETAINING PLATE
35	1	0001184	FLYWHEEL SHAFT COVER, UCF210 BEARING
36	1	0001795	FLYWHEEL SHAFT COVER PLUG
37	1	0001796	FLYWHEEL LOCKING PIN
38	1	0004728	LOCKING PIN, ROUND, 1/4 in DIA, 1-3/8 in USABLE LG, 2 in LG
39	1	0001264	PUMP SHAFT
40	1	0011486	PUMP SHAFT HOUSING
41	1	0010962	PUMP SHAFT HOUSING FACE PLATE
42	1	0011490	PUMP SHAFT HOUSING BOTTOM
43	1	0001571	FLEXIBLE SHAFT COUPLING, 24 mm SHAFT TO 12 mm SPLINED SHAFT
44	1	0004848	PARALLEL KEY, 8 X 8 mm, 40 mm LG
45	1	0001271	PUMP SHAFT SPACER, 40 ID X 51.5 OD X 18 mm LG
46	5	0001734	SPACER, 40.6 ID X 46 OD X 1.5 mm LG
47	1	0004851	PARALLEL KEY, 12 X 10 mm, 60 mm LG
48	1	0001875	V-BELT PULLEY, 4-GROOVE, 40 mm SHAFT, 250 mm DIA

Item	Qty	Part No.	Description
49	2	0006080	SLOTTED NUT, ROUND, M40 X 1.5
50	1	0001265	BELT TENSIONER ARM
51	1	0003552	BUSHING, BELT TENSIONER ARM, 20 ID X 35 OD X 44 mm LG
52	1	0003882	SPACER, 20 ID X 32 OD X 3 mm LG, POM
53	1	0001266	ROLLER SHAFT, 19 mm DIA, 63.6 mm LG
54	1	0001267	ROLLER, 38 mm DIA, 96 mm LG
55	2	0004798	RETAINING RING, EXTERNAL, 17 mm SHAFT (16.2 mm GROOVE)
56	2	0001268	SINGLE ROLLER SHAFT LOCKING PLATE
57	2	0001873	EXTENSION SPRING, HOOK ENDS, 33 mm OD, 5 mm DIA WIRE, 165 mm LG
58	2	0001577	ECCENTRIC BUSHING, M30 X 3.5, 30 mm LG, 16 mm THRU, 3 mm ECCENTRICITY
59	1	0012372	BELT GUARD
60	1	0012373	LOWER FLYWHEEL HOUSING
61	1	0013170	SPACER, 10 ID X 16 OD X 25 mm LG
62	2	0012937	BRAKE LEVER GUIDE PLATE
63	1	0004795	RETAINING RING, EXTERNAL, 12 mm SHAFT (11.5 mm GROOVE)
64	1	0004861	HYDRAULIC MOTOR, CW, 154 cc [9.4 in ³ /rev], 2-HOLE 1/2 in NPT ALIGNED PORTS, 25
65	1	0004868	HYDRAULIC GEAR PUMP, 10 mL/r, SPLINED SHAFT
66	1	0004875	VARIABLE FLOW CONTROL VALVE, 1/2 in NPT, 0-16 gal/min
66.1	1	0007518	LEVER ARM, VARIABLE FLOW CONTROL VALVE
66.2	1	0007519	KNOB, MULTI-LOBE, 25 mm OD, M6 X 1, 20 mm LG
66.3	1	CPS-MBE051GR	SET SCREW, CUP POINT, GR 45H, M6 X 1, 6 mm LG
67	1	0004872	DIRECTIONAL CONTROL VALVE, 1/2 NPT
67.1	1	0005487	ACTUATOR MOUNT, DIRECTIONAL CONTROL VALVE
67.2	1	0005486	ACTUATOR, 82 mm LG, DIRECTIONAL CONTROL VALVE
67.3	1	0005477	MASTER LINK, NO. 60 CHAIN
67.4	1	0005482	CLEVIS PIN, 6 mm DIA, 20 mm USABLE LG, 25 mm LG
67.5	1	0005483	COTTER PIN, 2 mm DIA, 10 mm LG
67.6	1	0005494	REAR COVER, DIRECTIONAL CONTROL VALVE
67.7	1	0005481	COMPRESSION SPRING, CLOSED GROUND ENDS, 8 mm OD, 1.5 mm DIA WIRE, 23
67.8	1	0005489	ADJUSTMENT SCREW, M14 X 1.5, 25 mm LG, DIRECTIONAL CONTROL VALVE
67.9	1	0005488	CAP, DIRECTIONAL CONTROL VALVE
67.10	1	0007182	PRESSURE RELEASE PLUG, DIRECTIONAL CONTROL VALVE
67.11	1	THN-MBYCC	HEX NUT, THIN, CLS 4, M14 X 1.5
67.12	4	SHC-MBE075FCP	SHCS, CLS 12.9, M6 X 1, 20 mm LG, FULL
67.13	1	FTS-MBY059GR	SET SCREW, FLAT TIP, GR 45H, M14 X 1.5, 10 mm LG
68	1	0012374	INFEED CHUTE TOP PANEL
69	1	0011998	INFEED CHUTE TOP PANEL RETAINER
70	1	0012379	INFEED CHUTE RIGHT SIDE PANEL
71	1	0012378	INFEED CHUTE LEFT SIDE PANEL
72	1	0012377	INFEED CHUTE BOTTOM PANEL
73	1	0012380	FEED HOPPER HINGE SHAFT
74	1	0012936	FEED HOPPER LEFT SIDE PANEL
75	1	0012948	FEED HOPPER BOTTOM PANEL
76	1	0012935	FEED HOPPER RIGHT SIDE PANEL
77	1	0012451	CONTROL ARM
78	2	0006898	CONTROL ARM SPACER
79	2	0011646	BRAKE LINKAGE ROD PLATE
80	1	0012592	BRAKE MOUNT
81	1	0011520	SPACER, 10 ID X 16 OD X 14 mm LG
82	1	0012931	BRAKE ARM
83	1	0012940	BRAKE LEVER, RH

Item	Qty	Part No.	Description
84	1	0012939	BRAKE LEVER, LH
85	1	0012462	COMPRESSION SPRING, CLOSED GROUND ENDS, 22.5 mm OD, 2.8 mm DIA WIRE,
86	1	0012464	INFEED CHUTE STRIKE PLATE W/ LOCKING PIN, LEFT
87	1	0012467	INFEED CHUTE STRIKE PLATE W/ LOCKING PIN, RIGHT
88	2	0004758	COTTER PIN, 4 mm DIA, 32 mm LG
89	4	0012381	SPACER, 13.5 ID X 30 OD X 3 mm THK
90	4	0012387	SPACER, 13.5 ID X 30 OD X 2.7 mm THK, NYLON
91	1	0012385	CURTAIN
92	2	0011095	BUMPER, REINFORCED, 20 mm DIA X 10 mm H, M6 X 1 mm, 18 mm LG THD
93	2	0001781	PLASTIC END CAP, ROUND, 38 mm DIA
94	1	0012468	LINKAGE ROD, CONTROL ARM, 470 mm LG
95	1	0004834	CLEVIS ROD END, M10 X 1.5 THD, 10 mm ID, 10 mm JAW OPENING
96	1	0004749	CLEVIS PIN, 10 mm DIA, 24 mm USABLE LG, 30 mm LG
97	1	0004760	COTTER PIN, HAIRPIN, 10-16 mm CLEVIS, 3 mm WIRE DIA
98	1	0004888	ROD END BEARING, 10 mm, M10 X 1.5 FEM THD
99	1	0011516	UPPER FLYWHEEL HOUSING
100	1	0006465	DISCHARGE CHUTE NOZZLE, 281.5 mm DIA
101	1	0001172	LOCK PIN ASSEMBLY, 12 mm DIA
102	1	0011686	DISCHARGE CHUTE
103	2	0002191	DISCHARGE CHUTE RETAINER PLATE, 281.5 mm DIA
104	2	0001718	DISCHARGE CHUTE ROTATION HANDLE, 170 mm C-C
105	2	0001030	HANDLE GRIP, GROOVED, 26 mm ID, 108 mm LG
106	1	0002200	DISCHARGE CHUTE DEFLECTOR
107	1	0001786	HANDLE, ADJUSTABLE POS, 78 X 54 mm, M10 X 1.5 FEM THD
108	1	0007106	INSPECTION WINDOW COVER
109	1	0012469	LOWER FLYWHEEL HOUSING GUARD
110	1	0011492	PULLEY COVER, BOTTOM
111	2	0010439	KNOB, KNURLED, 24 mm OD, M8 X 1.25, THRU HOLE
112	1	0006813	CHAINSAW HOLDER BRACKET
113	2	0002361	CHAINSAW HOLDER NYLON GUIDE
114	1	0002363	CHAINSAW HOLDER CLAMPING PLATE
115	1	0001655	MANUAL TUBE
116	9	0005124	FITTING, ADAPTER, 1/2 in NPT MALE TO 5/8 in JIC (7/8-14 UNF) MALE
117	1	0004911	FITTING, TEE, 1/2 NPT TO 7/8-14 (2X)
118	2	0005115	FITTING, ELBOW, 90°, 1/2 NPT TO 7/8-14 THD
119	1	0012714	HYDRAULIC HOSE ASSEMBLY, STR AND ELB FITTINGS, 270 mm LG
120	1	0012717	HYDRAULIC HOSE ASSEMBLY, STR AND ELB FITTINGS 975 mm LG
121	1	0003298	HYDRAULIC HOSE ASSEMBLY, STR AND ELB FITTINGS, 500 mm LG
122	1	0012724	HYDRAULIC HOSE ASSEMBLY, STR AND ELB FITTINGS, 1390 mm LG
123	1	0012727	HYDRAULIC HOSE ASSEMBLY, STR AND ELB FITTINGS, 400 mm LG
124	1	0012723	HYDRAULIC HOSE ASSEMBLY, STR AND ELB FITTINGS, 1165 mm LG
125	1	0012730	HYDRAULIC HOSE ASSEMBLY, STR AND ELB FITTINGS, 780 mm LG
126	2	0012701	LABEL, WC88XL W/ WOODLAND MILLS LOGO
127	1	0010603	LABEL, PTO 540 RPM WARNING LABEL
128	1	0010920	LABEL, MANDATORY SYMBOLS
129	2	0012700	LABEL, WC88XL SINGLE FLYWHEEL TECHNOLOGY
130	1	0010921	LABEL, CHIPPER INFEED WARNING SYMBOLS
131	1	0010922	LABEL, CHIPPER DISCHARGE WARNING SYMBOLS
132	1	0012240	SERIAL NUMBER PLATE, PTO, EU
133	1	0010500	PTO SHAFT, SHEAR PIN, 4S-SERIES
133.1	1	0010540	GUARD KIT, PTO SHEAR BOLT, 4S-SERIES

Item	Qty	Part No.	Description
133.2	1	0010541	GUARD BEARING KIT, PTO SHEAR BOLT, 4S-SERIES
133.3	1	0010542	TRIANGULAR YOKE PIN KIT, PTO SHEAR BOLT, 4S-SERIES
133.4	1	HHB-MBJ105PCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 50 mm LG, 22 mm LG THD
133.5	1	HLN-MBJCH	LOCK NUT, CLS 8, M8 X 1.25
134	1	0014225	HEX KEY, 14 mm
135	4	BX53	V-BELT, COGGED, BX53
136	2	6003-2RS	BALL BEARING, SEALED, 17 mm SFT, 35 mm HSG, 10 mm WD
137	1	6205-2RS	BALL BEARING, SEALED, 25 mm SFT, 52 mm HSG, 15 mm WD
138	1	UCF207	FLANGE BEARING, SQ, 4-BOLT, 35 mm SFT, 92 mm C-C
139	1	UCF208	FLANGE BEARING, SQ, 4-BOLT, 40 mm SFT, 102 mm C-C
140	2	UCF210	FLANGE BEARING, SQ, 4-BOLT, 50 mm SFT, 111 mm C-C
141	1	UCFL204	FLANGE BEARING, OVAL, 2-BOLT, 20 mm SFT, 90 mm C-C
142	3	HHB-MBE059FCJ	HEX HEAD BOLT, CLS 8.8, M6 X 1, 10 mm LG, FULL
143	4	HHB-MBE063FCJ	HEX HEAD BOLT, CLS 8.8, M6 X 1, 12 mm LG, FULL
144	6	HHB-MBE075FCJ	HEX HEAD BOLT, CLS 8.8, M6 X 1, 20 mm LG, FULL
145	6	HHB-MBE095FCJ	HEX HEAD BOLT, CLS 8.8, M6 X 1, 40 mm LG, FULL
146	2	HHB-MBE115PCJ	HEX HEAD BOLT, CLS 8.8, M6 X 1, 60 mm LG, 18 mm LG THD
147	2	HHB-MBJ059FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 10 mm LG, FULL
148	2	HHB-MBJ071FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 16 mm LG, FULL
149	10	HHB-MBJ075FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 20 mm LG, FULL
150	19	HHB-MBJ080FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 25 mm LG, FULL
151	10	HHB-MBJ090FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 35 mm LG, FULL
152	1	HHB-MBJ100FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 45 mm LG, FULL
153	2	HHB-MBJ110PCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 55 mm LG, 22 mm LG THD
154	7	HHB-MBM080FCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 25 mm LG, FULL
155	3	HHB-MBM085FCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 30 mm LG, FULL
156	2	HHB-MBM090FCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 35 mm LG, FULL
157	2	HHB-MBM095FCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 40 mm LG, FULL
158	1	HHB-MBM115PCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 60 mm LG, 26 mm LG THD
159	8	HHB-MBR095FCJ	HEX HEAD BOLT, CLS 8.8, M12 X 1.75, 40 mm LG, FULL
160	2	HHB-MBR105FCJ	HEX HEAD BOLT, CLS 8.8, M12 X 1.75, 50 mm LG, FULL
161	1	HHB-MBR205PCJ	HEX HEAD BOLT, CLS 8.8, M12 X 1.75, 150 mm LG, 36 mm LG THD
162	4	HHB-MCA115PCJ	HEX HEAD BOLT, CLS 8.8, M16 X 2, 60 mm LG, 38 mm LG THD
163	2	HHB-MCA135PCJ	HEX HEAD BOLT, CLS 8.8, M16 X 2, 80 mm LG, 38 mm LG THD
164	1	HHB-MCF235PCJ	HEX HEAD BOLT, CLS 8.8, M20 X 2.5, 180 mm LG, 46 mm LG THD
165	2	SNC-MBE075FCJ	CARRIAGE BOLT, SQ NECK, CLS 8.8, M6 X 1, 20 mm LG, FULL
166	4	SNC-MBJ080FCJ	CARRIAGE BOLT, SQ NECK, CLS 8.8, M8 X 1.25, 25 mm LG, FULL
167	4	SNC-MBJ085FCJ	CARRIAGE BOLT, SQ NECK, CLS 8.8, M8 X 1.25, 30 mm LG, FULL
168	2	BHS-MBJ080FCM	BUTTON HEAD SCREW, CLS 10.9, M8 X 1.25, 25 mm LG, FULL
169	20	BHS-MBM080FCM	BUTTON HEAD SCREW, CLS 10.9, M10 X 1.5, 25 mm LG, FULL
170	2	BHS-MBM120FCM	BUTTON HEAD SCREW, CLS 10.9, M10 X 1.5, 65 mm LG, FULL
171	2	BHS-MBR115PCM	BUTTON HEAD SCREW, CLS 10.9, M12 X 1.75, 60 mm LG, 36 mm LG THD
172	4	PPH-MBA067FCE	SCREW, PPH, CLS 4.8, M5 X 0.8, 14 mm LG, FULL
173	3	PPH-MBA075FCE	SCREW, PPH, CLS 4.8, M5 X 0.8, 20 mm LG, FULL
174	8	HFH-MBM095FCM	SCREW, HFH, CLS 10.9, M10 X 1.5, 40 mm LG, FULL
175	8	HFH-MBW100FCM	SCREW, HFH, CLS 10.9, M14 X 2, 45 mm LG, FULL
176	4	SHC-MBA067FCP	SHCS, CLS 12.9, M5 X 0.8, 14 mm LG, FULL
177	4	SHC-MBE075FCP	SHCS, CLS 12.9, M6 X 1, 20 mm LG, FULL
178	1	SHC-MCA095FCP	SHCS, CLS 12.9, M16 X 2, 40 mm LG, FULL
179	4	SHC-MCA105FCP	SHCS, CLS 12.9, M16 X 2, 50 mm LG, FULL
180	2	SHS-MBR063110CP	SHLDR SCREW, SH, CLS 12.9, 16 X 55 mm LG SHLDR, M12 X 1.75 X 18 mm LG THD

Item	Qty	Part No.	Description
181	2	KCS-MBE051GR	SET SCREW, KNURLED CUP POINT, GR 45H, M6 X 1, 6 mm LG
182	1	KCS-MBE055GR	SET SCREW, KNURLED CUP POINT, GR 45H, M6 X 1, 8 mm LG
183	2	KCS-MBJ055GR	SET SCREW, KNURLED CUP POINT, GR 45H, M8 X 1.25, 8 mm LG
184	4	KCS-MBK055GR	SET SCREW, KNURLED CUP POINT, GR 45H, M8 X 1, 8 mm LG
185	4	KCS-MBN059GR	SET SCREW, KNURLED CUP POINT, GR 45H, M10 X 1.25, 10 mm LG
186	4	FTW-MBA000AJ	FLAT WASHER, M5
187	28	FTW-MBE000AJ	FLAT WASHER, M6
188	2	FTW-MBE000NA	FLAT WASHER, M6, NYLON
189	64	FTW-MBJ000AJ	FLAT WASHER, M8
190	4	FTW-MBJ000NA	FLAT WASHER, M8, NYLON
191	6	FTW-MBM000AJ	FLAT WASHER, M10
192	3	FTW-MBM165AJ	FLAT WASHER, DIN7349, M10, 4 mm THK
193	11	FTW-MBR000AJ	FLAT WASHER, M12
194	3	FTW-MCA000AJ	FLAT WASHER, M16
195	2	FTW-MCF000AJ	FLAT WASHER, M20
196	2	FDW-MBJ073000AJ	FENDER WASHER, M8, 24 mm OD
197	11	FDW-MBJ079000AJ	FENDER WASHER, M8, 30 mm OD
198	25	FDW-MBM075000AJ	FENDER WASHER, M10, 26 mm OD
199	3	FDW-MBM079000AJ	FENDER WASHER, M10, 30 mm OD
200	4	FDW-MBR086000AJ	FENDER WASHER, M12, 37 mm OD
201	4	FDW-MCA094000AJ	FENDER WASHER, M16, 45 mm OD
202	4	SLW-MBAAJ	SPLIT LOCK WASHER, M5
203	11	SLW-MBEAJ	SPLIT LOCK WASHER, M6
204	5	SLW-MBJAJ	SPLIT LOCK WASHER, M8
205	6	SLW-MBMAJ	SPLIT LOCK WASHER, M10
206	2	SLW-MCMAJ	SPLIT LOCK WASHER, M24
207	1	HXN-MBNCH	HEX NUT, CLS 8, M10 X 1.25
208	9	HXN-MBMCH	HEX NUT, CLS 8, M10 X 1.5
209	2	HXN-MCACH	HEX NUT, CLS 8, M16 X 2
210	2	HXN-MCNCH	HEX NUT, CLS 8, M24 X 2
211	2	THN-MCVCC	HEX NUT, THIN, CLS 4, M30 X 3.5
212	3	HLN-MBACH	LOCK NUT, CLS 8, M5 X 0.8
213	18	HLN-MBECH	LOCK NUT, CLS 8, M6 X 1
214	47	HLN-MBJCH	LOCK NUT, CLS 8, M8 X 1.25
215	39	HLN-MBMCH	LOCK NUT, CLS 8, M10 X 1.5
216	15	HLN-MBRCH	LOCK NUT, CLS 8, M12 X 1.75
217	8	HLN-MBWCH	LOCK NUT, CLS 8, M14 X 2
218	6	HLN-MCACH	LOCK NUT, CLS 8, M16 X 2
219	1	HLN-MCFCH	LOCK NUT, CLS 8, M20 X 2.5

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