TF46 PRO PTO WOOD CHIPPER

PRO
-SERIES-
TWINFLYWHEEL
TECHNOLOGY

OPERATOR'S MANUAL

0010340-M-EN: Rev C
Publication Date: 12-Jun-2024

WOODLAND
MILLS

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TABLE OF CONTENTS

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 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 1000 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

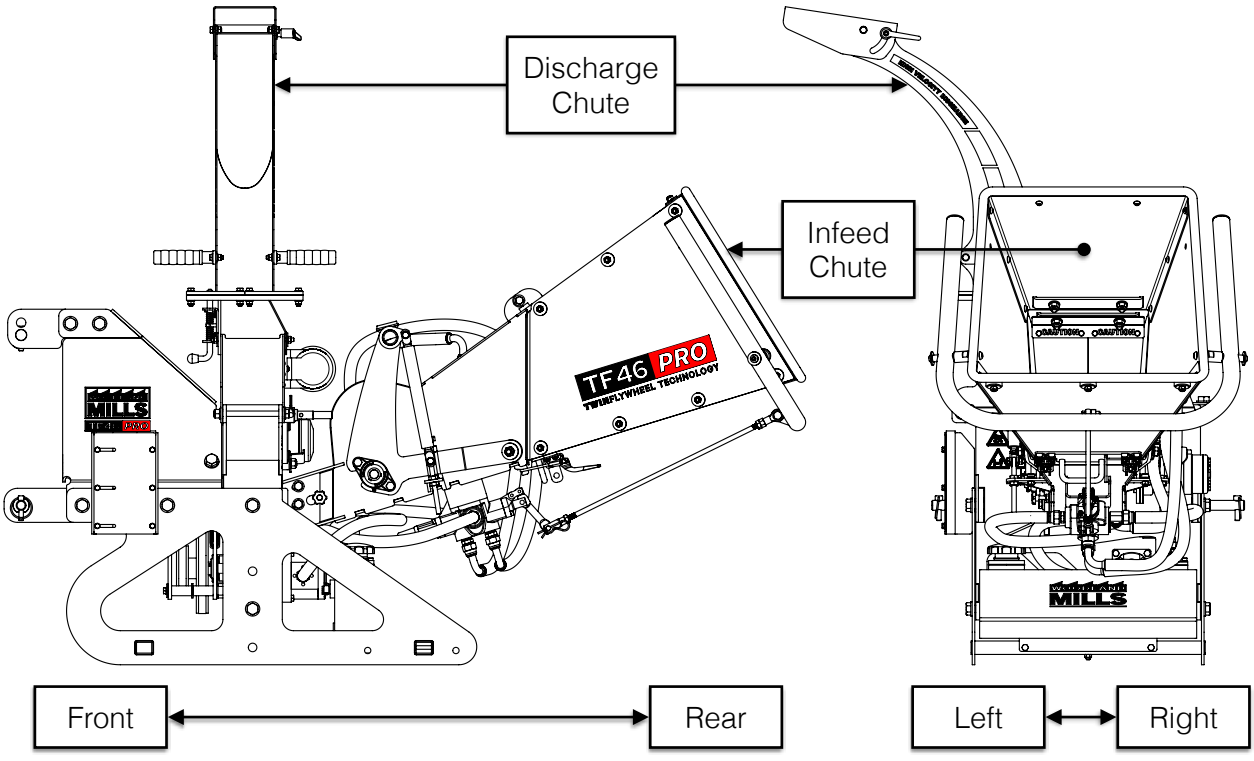
- **Keep work area clean**, free of clutter and well lit. Cluttered and dark work areas can cause accidents.
- **Do not use your wood chipper where there is a risk of causing a fire or an explosion**; e.g. in the presence of flammable liquids, gasses, or dust. Power tools create sparks which may ignite 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

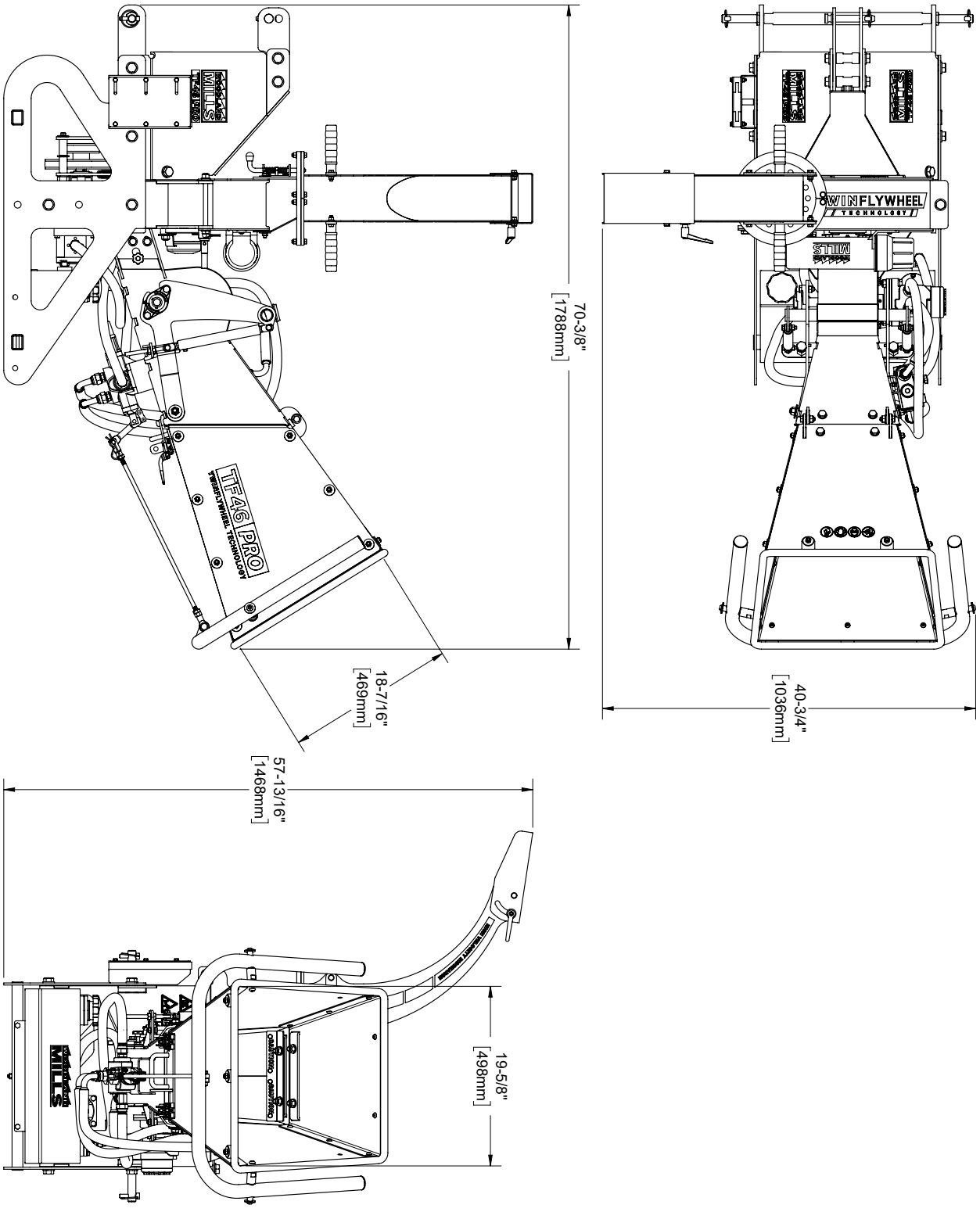
- **Always be sure the operator is familiar** with proper safety precautions and operation techniques before using machine.
- **Do not force the tool.** Tools do a better and safer job when used in the manner for which they are designed.
- **Turn off the tractor engine** and disconnect the PTO shaft 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 4" [102 mm] in diameter** or for any purpose other than chipping brush as described in this manual.

TECHNICAL SPECIFICATIONS

Component	TF46 PRO Specification
Drive System	PTO
Transport	3-Point Hitch
Minimum HP Required (at PTO)	15 hp
Infeed System	Hydraulic
Hydraulic Oil	ISO 32 / AW 32 (ISO 46 / AW 46 for warmer climates)
Hydraulic Tank Volume	3.2 gal [12 L]
Hydraulic Requirement (Tractor)	None. Self contained.
PTO Shear Bolt	M8 X 50 mm Class 8.8 [5/16-18 X 2 in Grade 5] Hex Bolt
Blade Quantity and Dimensions	Four (4); 5.71 X 2.72 X 5/16 in [145 X 69 X 8 mm]
Blade Hardware	Class 8.8 M10 X 16 mm Hex Head Bolts (3 per blade)
Infeed Roller Diameter	5-5/16 in [134 mm] at Tooth Tip
Infeed Chute Dimensions (W x H)	19-5/8 X 18-7/16 in [498 X 469 mm]
Product Weight	620 lb [281 kg]
Product Shipping Weight	718 lb [326 kg]

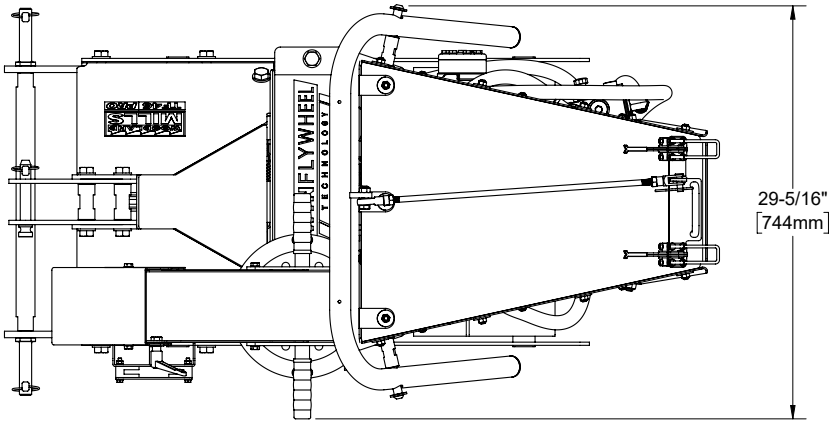


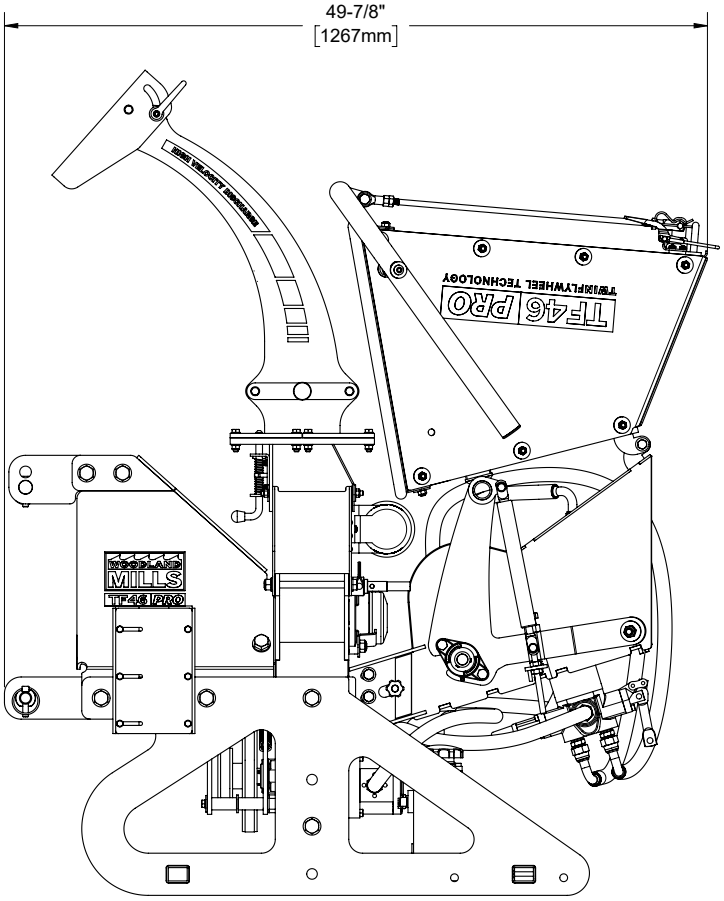
i. OVERALL DIMENSIONS—OPERATING STATE

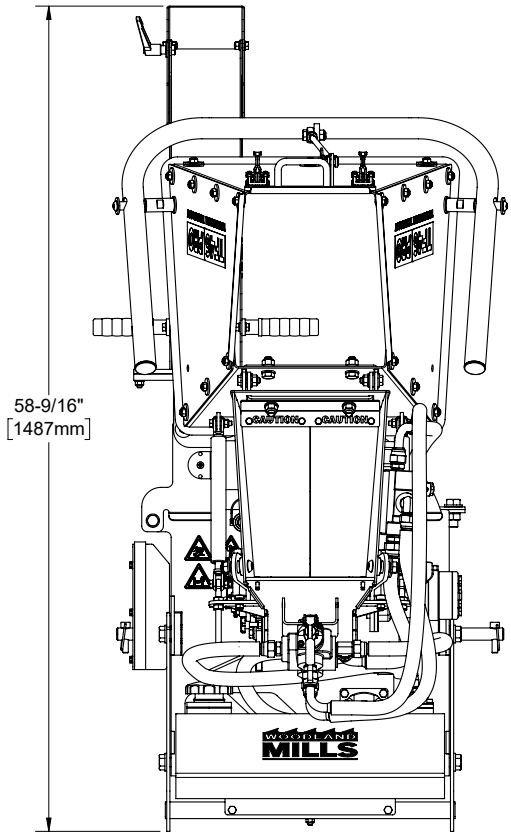


ii. OVERALL DIMENSIONS—STORED STATE

The discharge chute must be rotated so that it is angled towards the left side of the chipper in order to allow room for the infeed chute to be flipped upward when the machine is in its stored state. See section, ***Storage***, for more information.

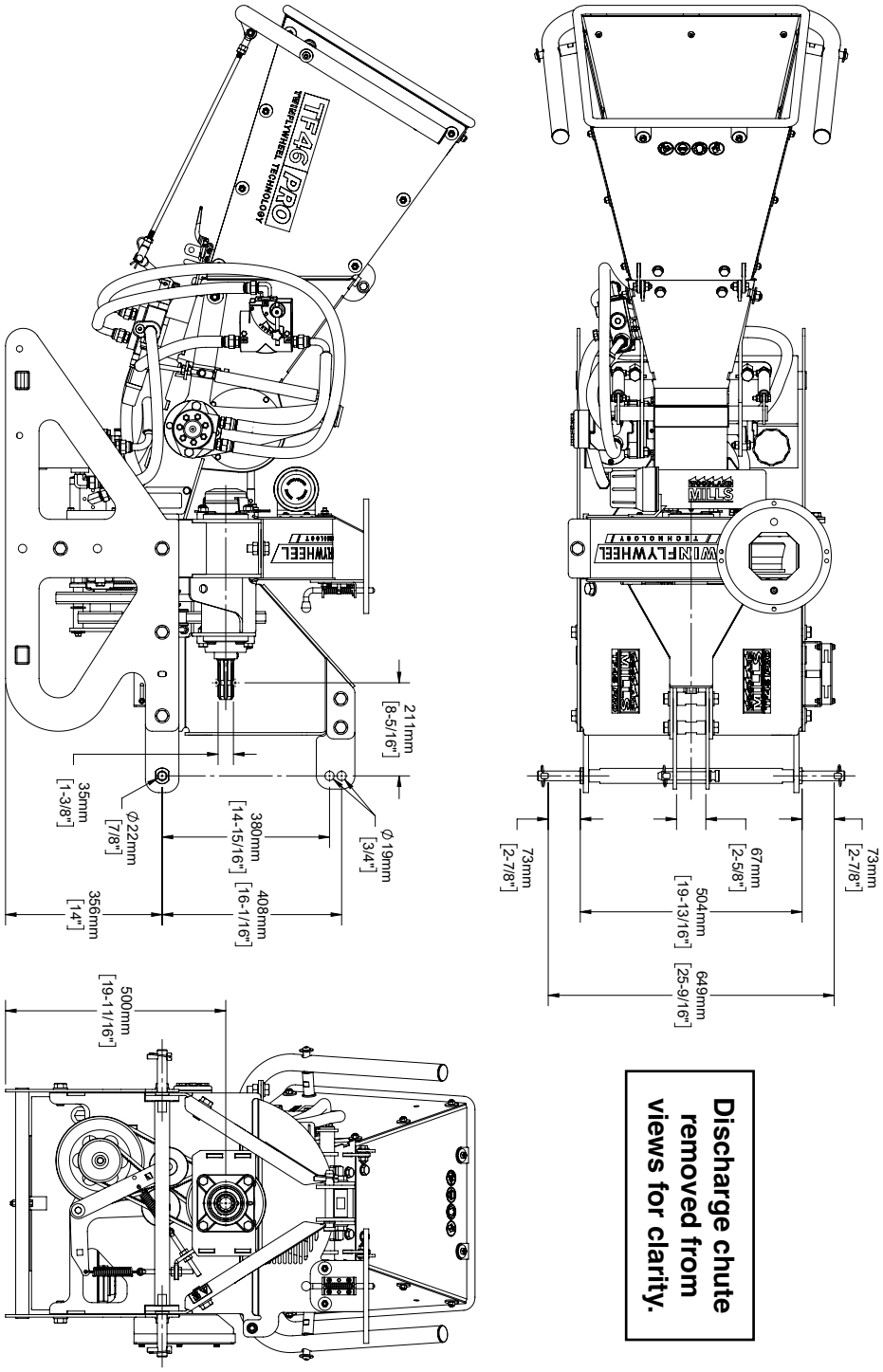






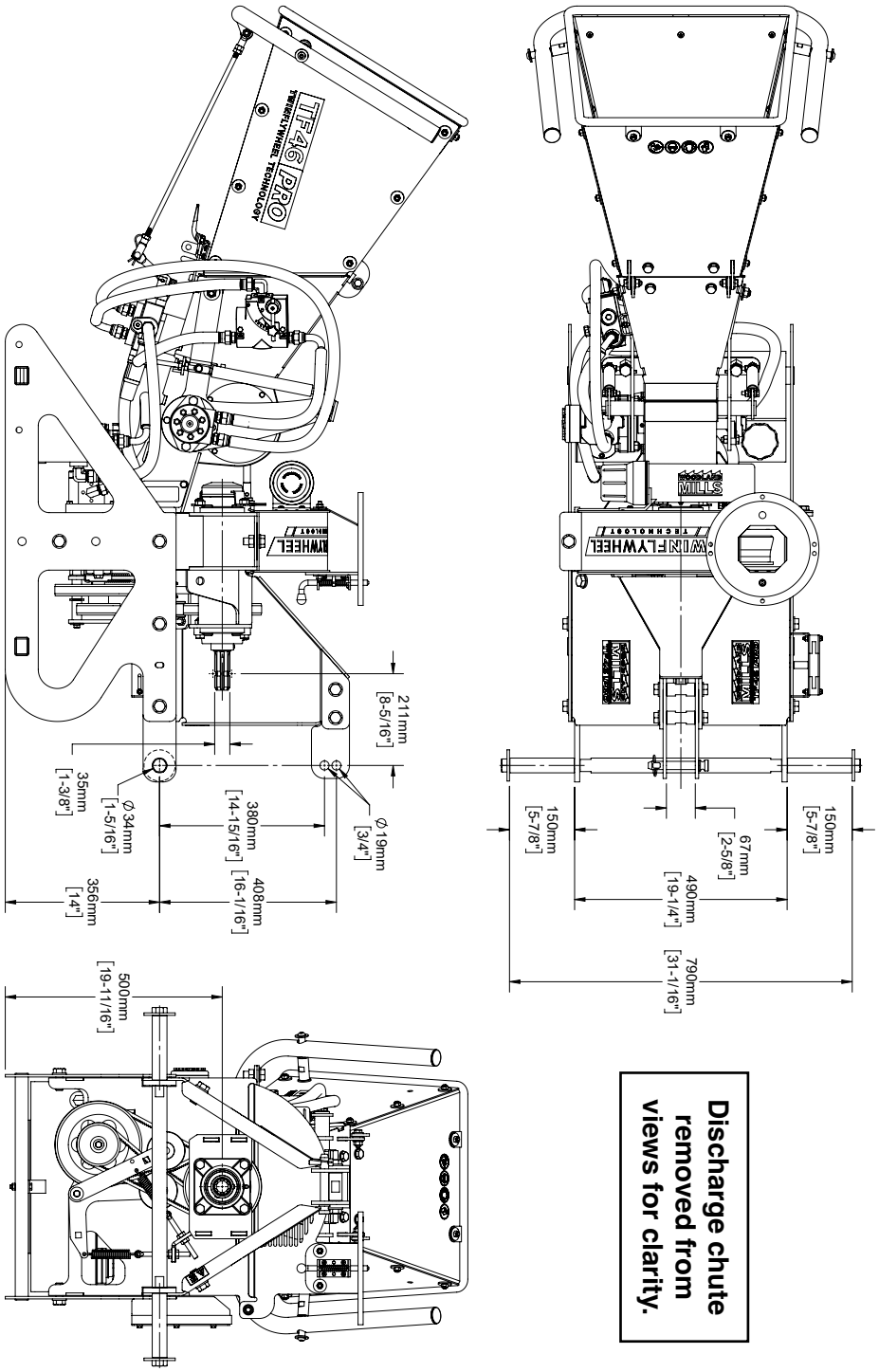
iii. 3-POINT HITCH DIMENSIONS

The TF46 PRO wood chipper has a Category 1, 3-point hitch system that is designed to work with tractors rated at 15-30 PTO horsepower. Upper hitch pin is ¾" [19 mm] diameter and the lower hitch pins are ⅞" [22 mm] diameter.



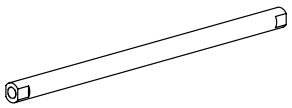
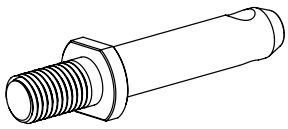
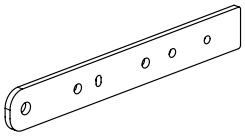
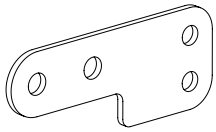
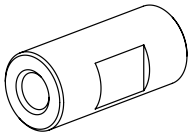
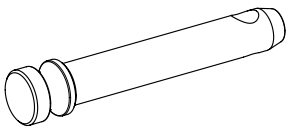
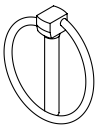
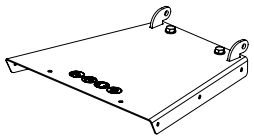
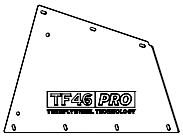
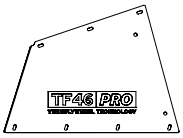
iv. QUICK-HITCH ADAPTER DIMENSIONS

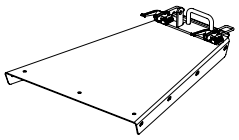
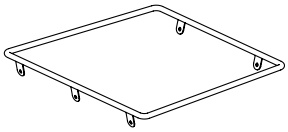
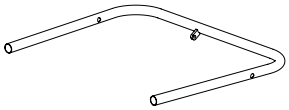
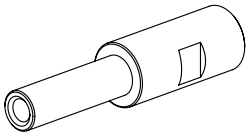
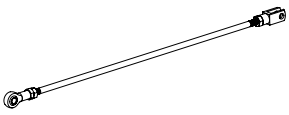
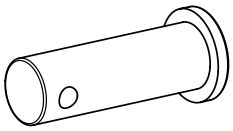
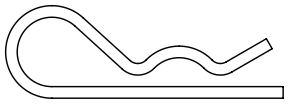
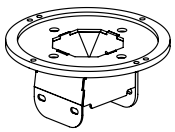
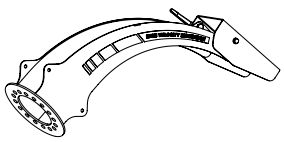
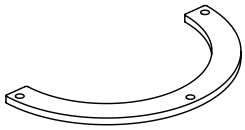
The TF46 PRO wood chipper includes adapters that extend the lower hitch pins' useable length to work with quick-hitch enabled tractors. Upper hitch pin is ¾" [19 mm] diameter and the lower hitch adapter pins are 1-5/16" [34 mm] diameter.

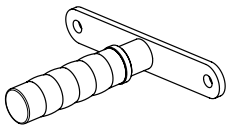
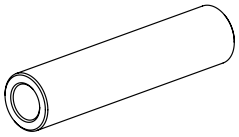
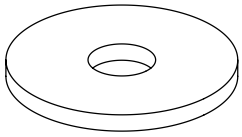


COMPONENT LISTS

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

1x	Connecting Rod [0006809]	
2x	Lower Hitch Pin [0001738]	
2x	Lower Hitch Arm [0006832]	
2x	Upper Hitch Plate [0007029]	
2x	Upper Hitch Bushing [0009856]	
1x	Upper Hitch Pin [0001156]	
3x	Linch Pin [0004705]	
1x	Infeed Chute Top Panel Assembly	
1x	Infeed Chute Right Side Panel [0010327]	
1x	Infeed Chute Left Side Panel [0010328]	

1x	Infeed Chute Bottom Panel Assembly	
1x	Round Edge Bar [0010334]	
1x	Control Arm [0010335]	
2x	Control Arm Spacer [0008193]	
1x	Linkage Rod Assembly	
1x	Clevis Pin 10 mm [0004749]	
1x	Hairpin Cotter Pin [0004760]	
1x	Discharge Chute Nozzle [0006698]	
1x	Discharge Chute Assembly	
2x	Discharge Chute Retainer [0009630]	

2x	Discharge Chute Handle with Grip	
2x	Quick-Hitch Adapter [0007078]	
2x	Quick-Hitch Adapter Flange [0011352]	

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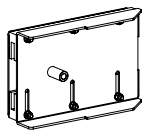
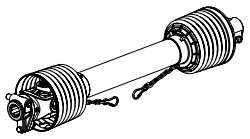
1x	Chainsaw Holder Assembly	
1x	PTO Shaft [0010500]	

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.

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	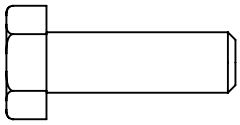	
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	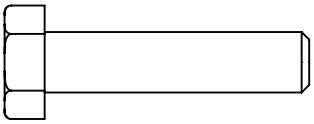	
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	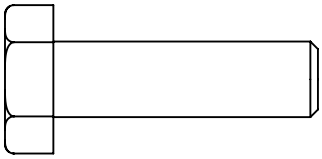	
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	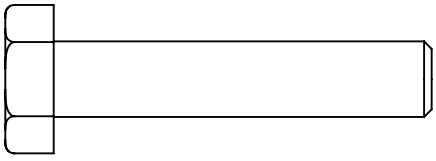	

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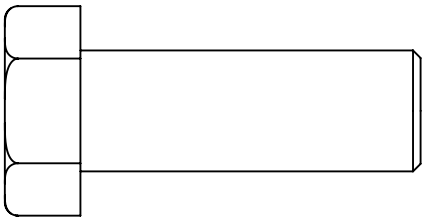
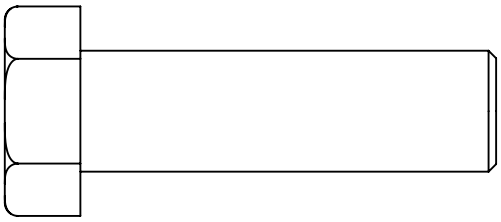
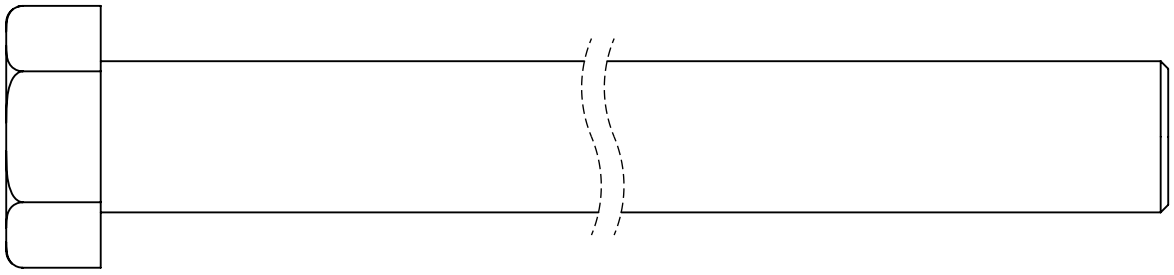


4x	HHB-MCA110FCJ	M16 X 2 X 55 mm HEX BOLT

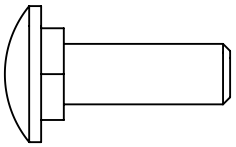


2x	HHB-MCF265PCJ	M20 X 2.5 X 210 mm HEX BOLT

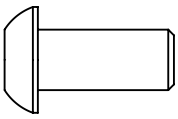


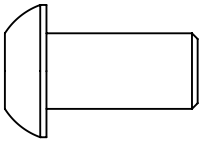
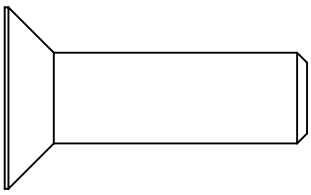
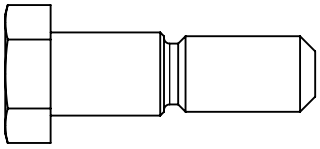
*Note: bolt length is not 1:1 as it will not fit on the page at full scale.

4x	SNC-MBJ080FCJ	M8 X 1.25 X 25 mm CARRIAGE BOLT



19x	BHS-MBJ073FCM	M8 X 1.25 X 18 mm BUTTON HEAD SCREW



4x	**BHS-MBM075FCM**	**M10 X 1.5 X 20 mm BUTTON HEAD SCREW**
		
2x	**HFH-MBR095FCM**	**M12 X 1.75 X 40 mm FLAT HEAD SCREW**
		
2x	**HHS-MBM057069AJ**	**M10 X 1.5 X 20 mm HEX HEAD SHOULDER SCREW**
		

SCALES

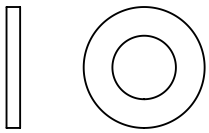
Ruler scales are also provided below to double-check bolt and screw lengths when necessary.

CENTIMETRES / MILLIMETRES

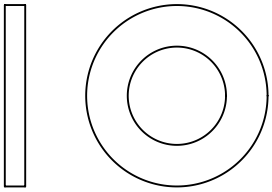
INCHES

WASHERS

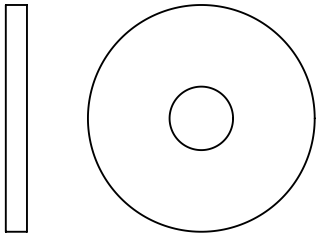
20x	**FTW-MBJ000AJ** **M8 FLAT WASHER**



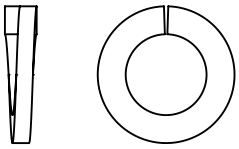
6x	**FTW-MBR000NA** **M12 NYLON FLAT WASHER**



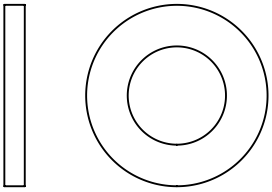
23x	**FDW-MBJ079000AJ** **M8 FENDER WASHER, 30 mm OD**



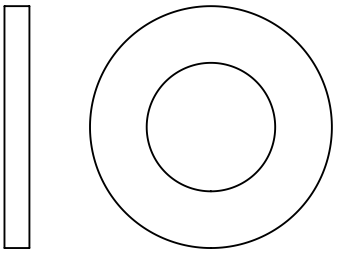
1x	**SLW-MBMAJ** **M10 SPLIT LOCK WASHER**



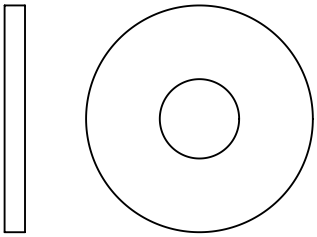
2x	**FTW-MBR000AJ** **M12 FLAT WASHER**



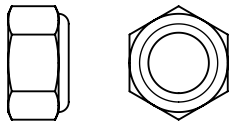
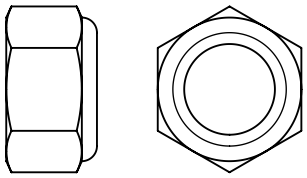
12x	**SLW-MCA000AJ** **M16 FLAT WASHER**

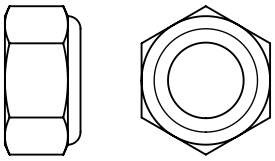
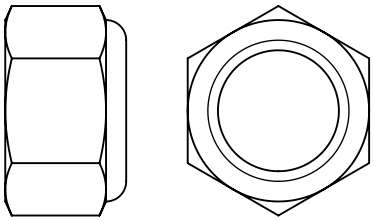


5x	**FDW-MBM075000AJ** **M10 FENDER WASHER, 30 mm OD**



NUTS

33x	**HLN-MBJCH** **M8 X 1.25 LOCK NUT**
	
2x	**HLN-MBRCH** **M12 X 1.75 LOCK NUT**
	

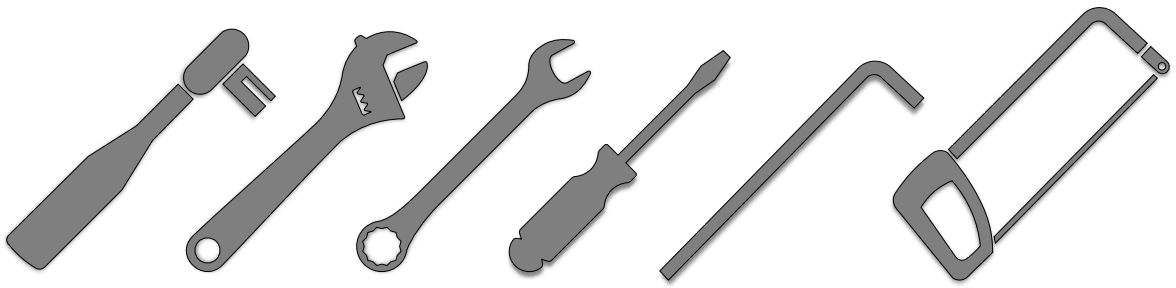
3x	**HLN-MBMCH** **M10 X 1.5 LOCK NUT**
	
4x	**HLN-MCACH** **M16 X 2 LOCK NUT**
	

ASSEMBLY

1. TOOLS REQUIRED

Tool	Specification
Wrench/Socket	13 mm (2X)
Wrench/Socket	16 mm (2X)
Wrench/Socket	17 mm
Wrench/Socket	24 mm or Adjustable Wrench
Wrench	27 mm or Adjustable Wrench
Hex Key	Set of Metric Hex Keys (e.g. 2-10 mm)
Hacksaw*	Any metal-cutting saw (Sawzall, etc.)

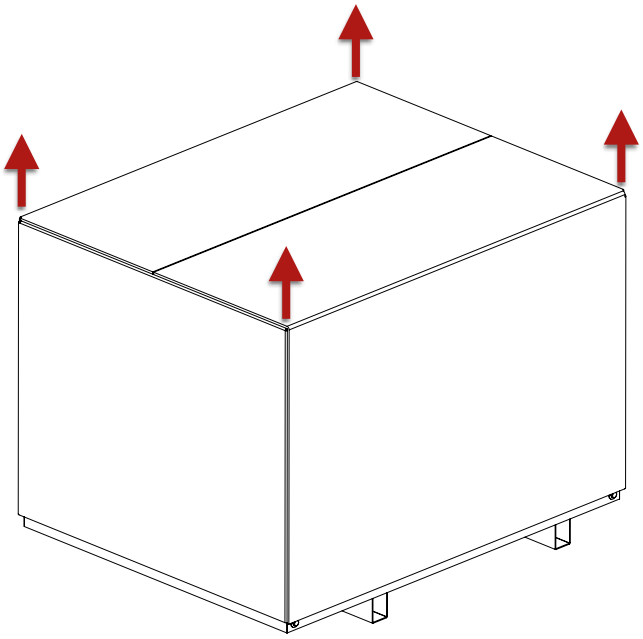
* Only if PTO shaft requires trimming. See ***TRIMMING THE PTO SHAFT*** section for more detail.

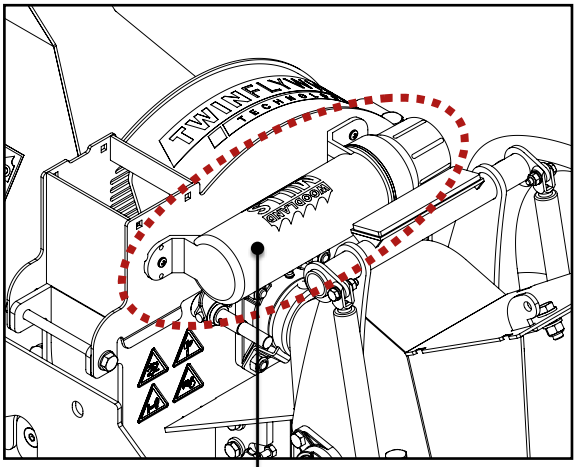


2. UNPACKING

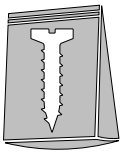
A. UNBOXING THE CRATE

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 top portion of the crate.





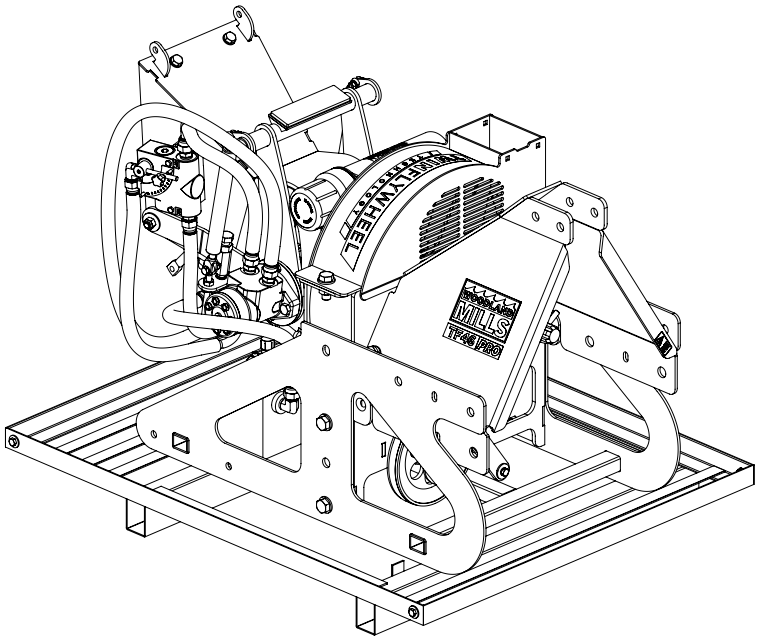
Assembly hardware stored inside manual tube



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

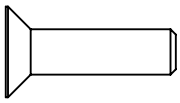
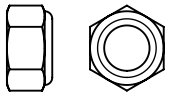
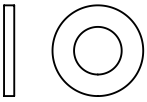
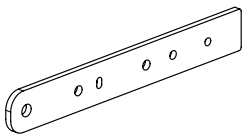
Hardware for assembly is stored inside the manual tube.

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.

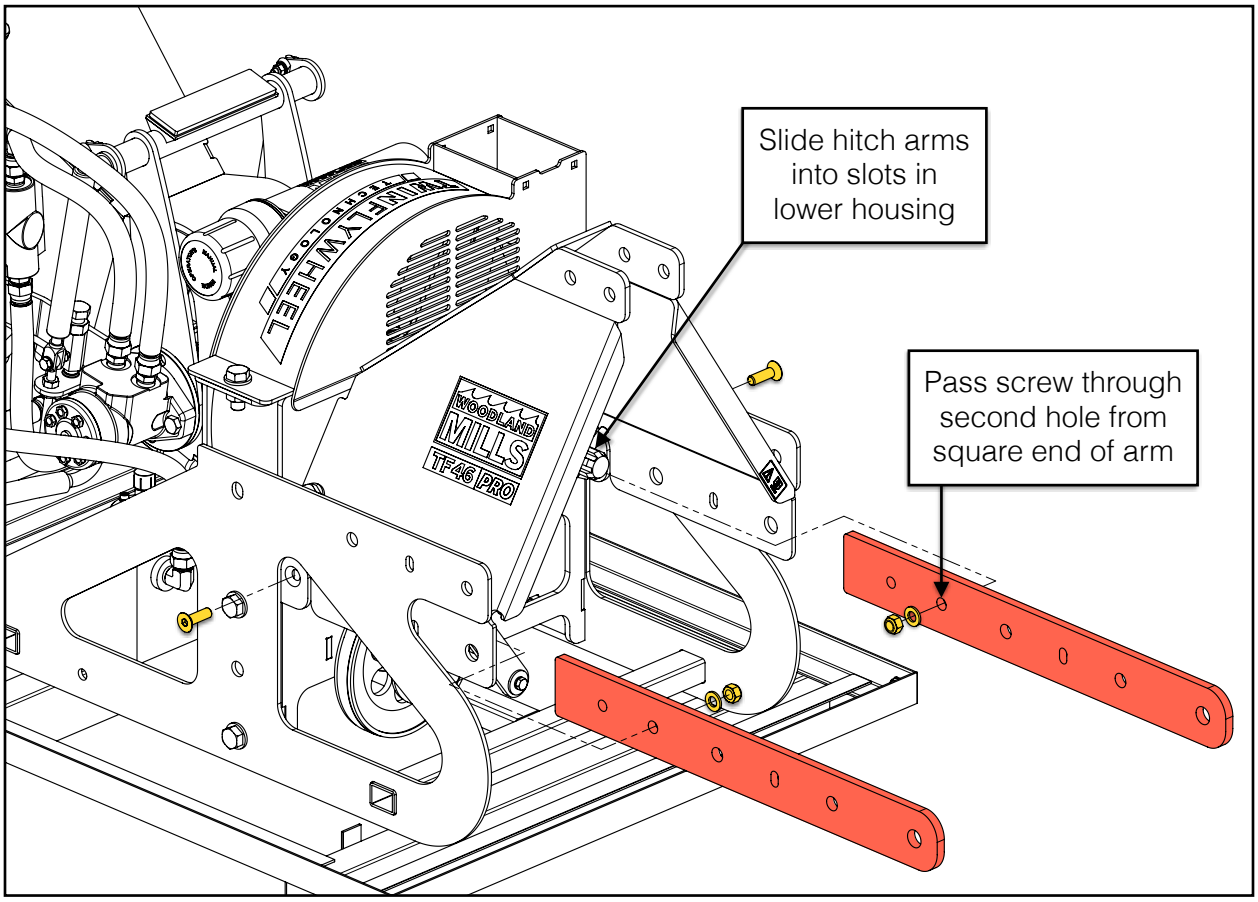


B. LOWER HITCH

Before the chipper can be raised to its final operating height, the lower hitch arms and upper hitch plates need to be installed. Use the components and hardware listed in the table below to first assemble the lower hitch arms to the chipper.

2x	M12 X 40 mm Flat Head Screw		2x	M12 Lock Nut	
2x	M12 Flat Washer		2x	Lower Hitch Arm	

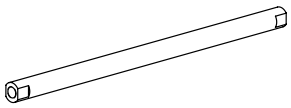
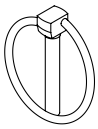
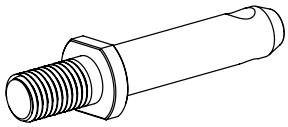
Slide each of the lower hitch arms into the rectangular slots in the lower flywheel housing, located under the belt guard. Use one (1) M12 X 40 mm flat head screw, one (1) M12 flat washer, and one (1) M12 lock nut to secure each arm. Ensure the screws are threaded through the second hole from the *square end* of the hitch arm. Fully tighten the hardware.



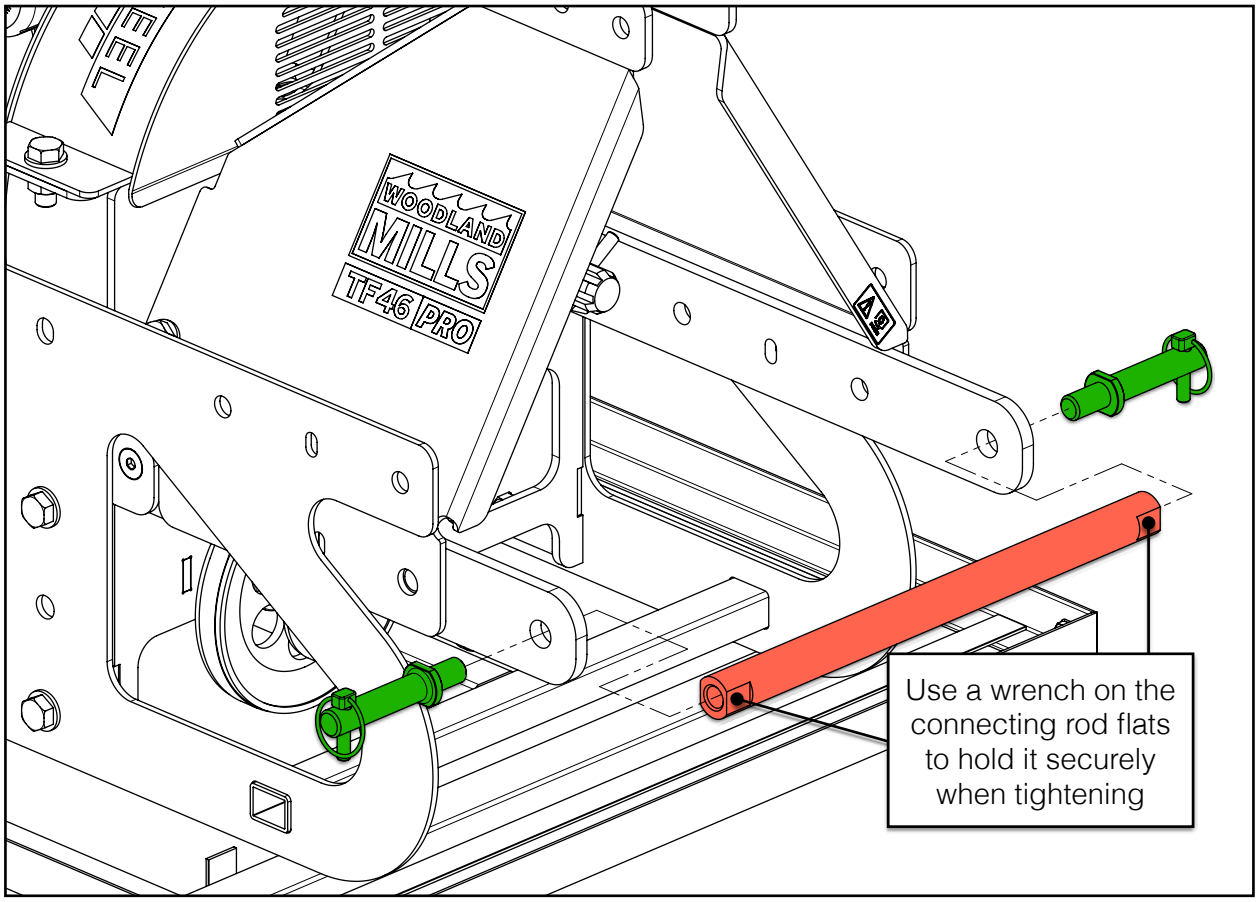
C. CONNECTING ROD

****If using a tractor quick-hitch attachment, skip this page and proceed to the next page.****

Using the components listed in the table below, assemble the connecting rod between the lower hitch arms.

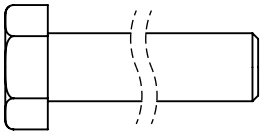
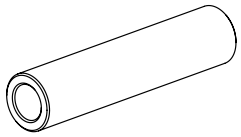
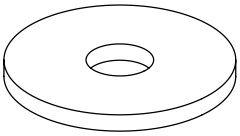
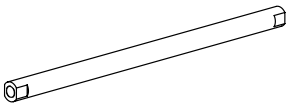
1x	Connecting Rod		2x	Linch Pin	
2x	Lower Hitch Pin				

Position the connecting rod between the two (2) lower hitch arms and then thread one (1) lower hitch pin into each end, securing it to the arms. The flats at both ends of the connecting rod will accommodate a 1-⅛ in [28 mm] wrench to prevent it from rotating when tightened.

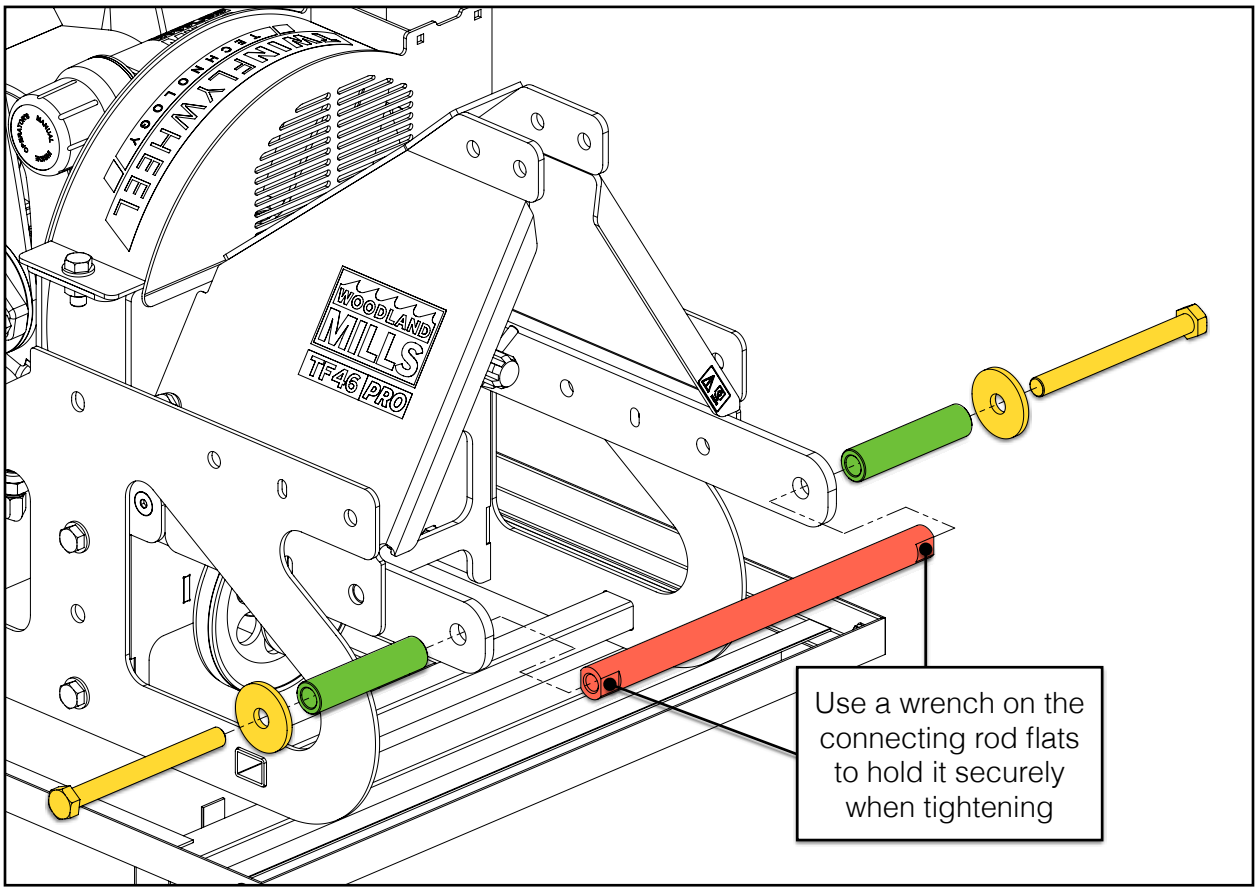


****Quick-hitch attachment user assembly instructions only.****

Using the components listed in the table below, assemble the connecting rod between the lower hitch arms for a setup that accommodates quick-hitches.

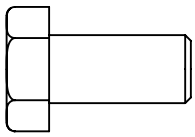
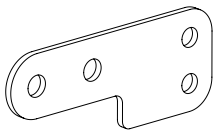
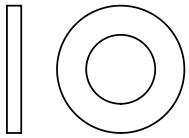
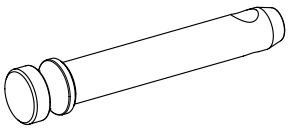
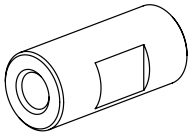
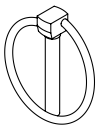
2x	M20 X 210 mm Hex Bolt		2x	Quick-Hitch Adapter	
2x	Quick-Hitch Adapter Flange		1x	Connecting Rod	

Position the connecting rod between the two (2) lower hitch arms. Secure it with one (1) M20 X 210 mm hex bolt, one (1) quick-hitch adapter flange, and one (1) quick-hitch adapter at each end. The flats at both ends of the connecting rod will accommodate a 1-⅛ in [28 mm] wrench to prevent it from rotating while both bolts are tightened.

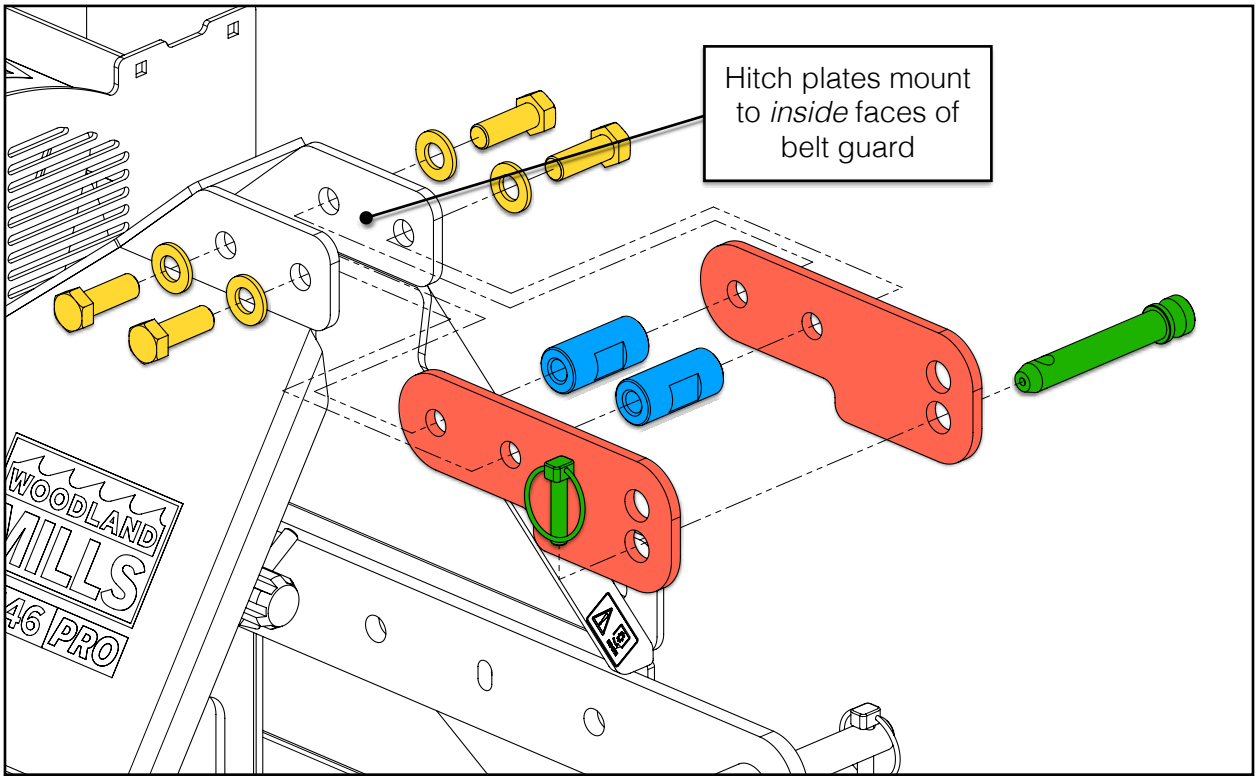


D. UPPER HITCH

Using the hardware and components listed in the table below, assemble the upper hitch plates to the belt guard.

4x	M16 X 45 mm Hex Bolt		2x	Upper Hitch Plate	
4x	M16 Flat Washer		1x	Upper Hitch Pin	
2x	Upper Hitch Bushing		1x	Linch Pin	

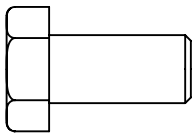
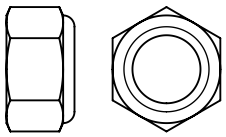
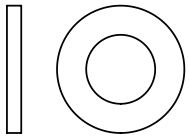
Assemble the plates to the belt guard using four (4) M16 X 45 mm hex bolts, four (4) M16 flat washers, and two (2) hitch bushings. The upper hitch plates mount to the *inner faces* of the belt guard with the bushings between them.



When tightening the hardware, hold the bushings still with an adjustable or 15/16 in [24 mm] wrench and turn the hex bolts with a second wrench or ratchet. Fully tighten all the hardware.

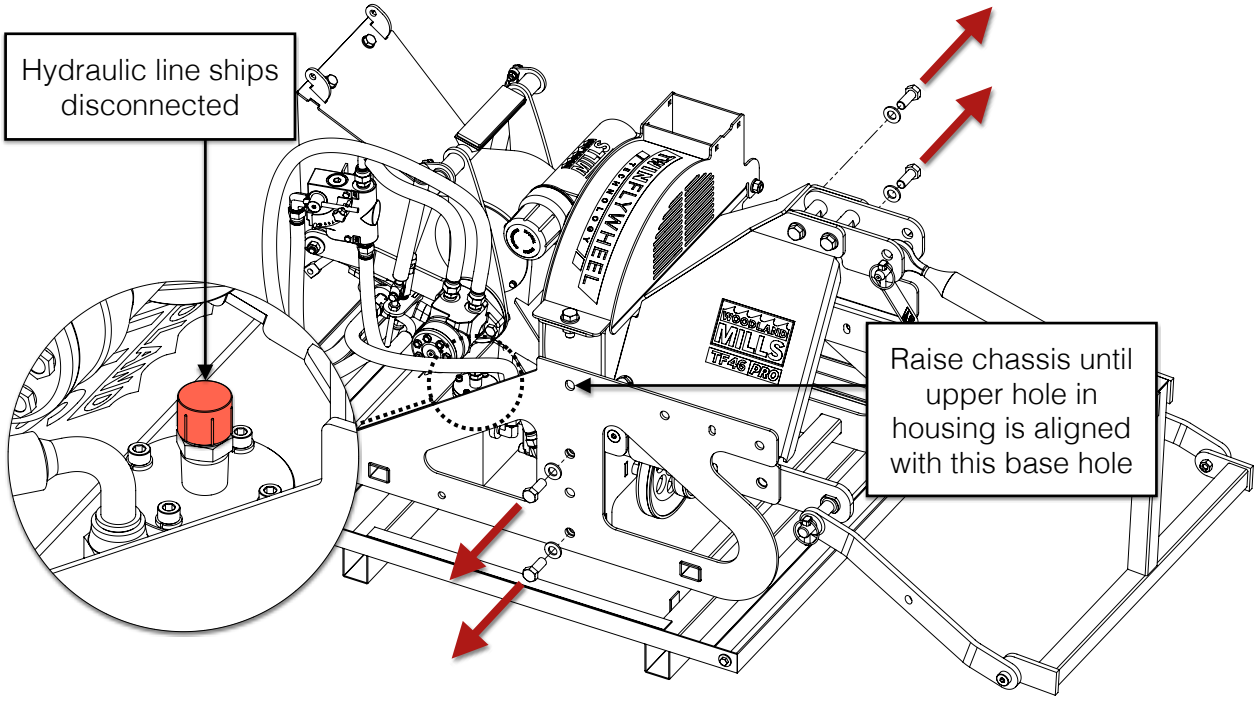
E. SETTING THE MOUNTING BASE

With the hardware listed in the table below, connect the lower hitch arms to the base after lifting the chassis.

4x	M16 X 50 mm Hex Bolt		4x	M16 Lock Nut	
8x	M16 Flat Washer				

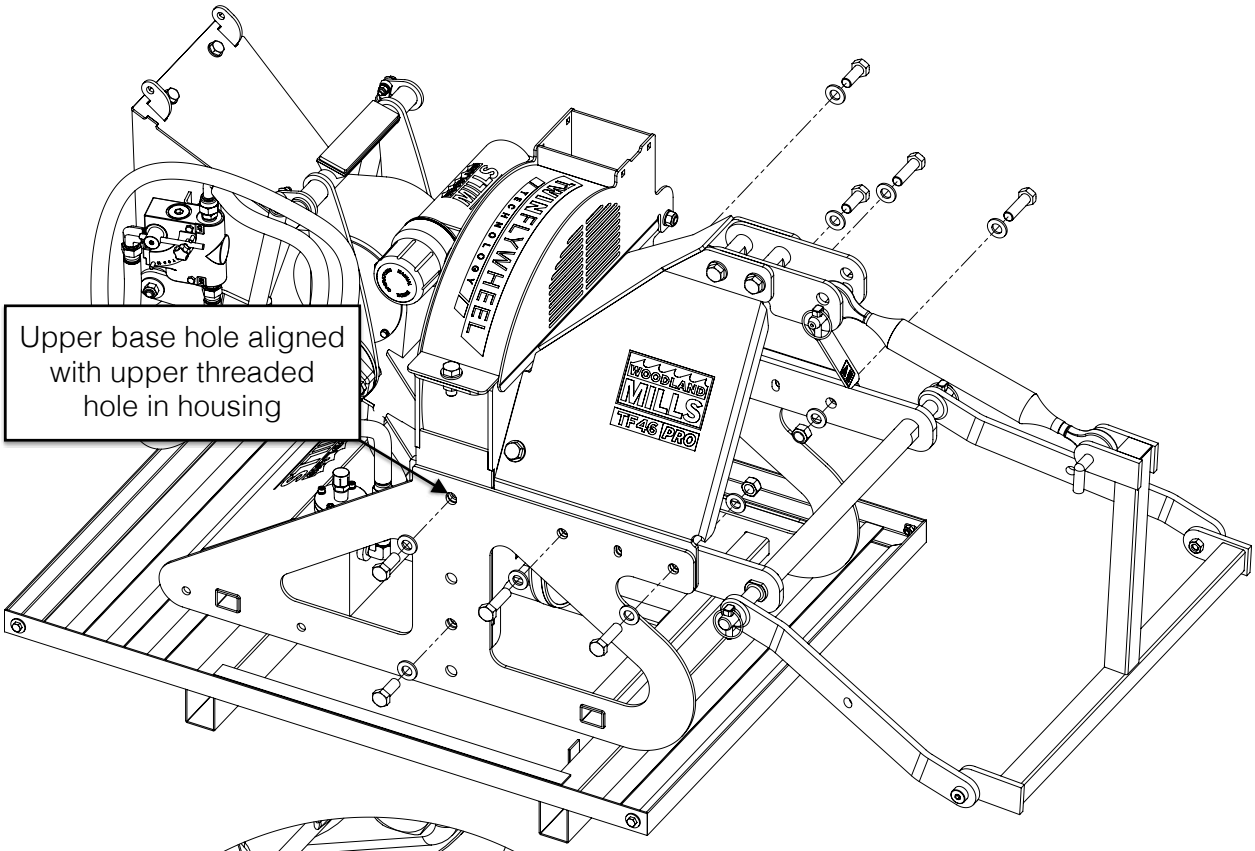
With the wood chipper still resting on the skid, attach the tractor's 3-point hitch and raise it until the base barely lifts off the skid—not more than an ⅛ in [3 mm].

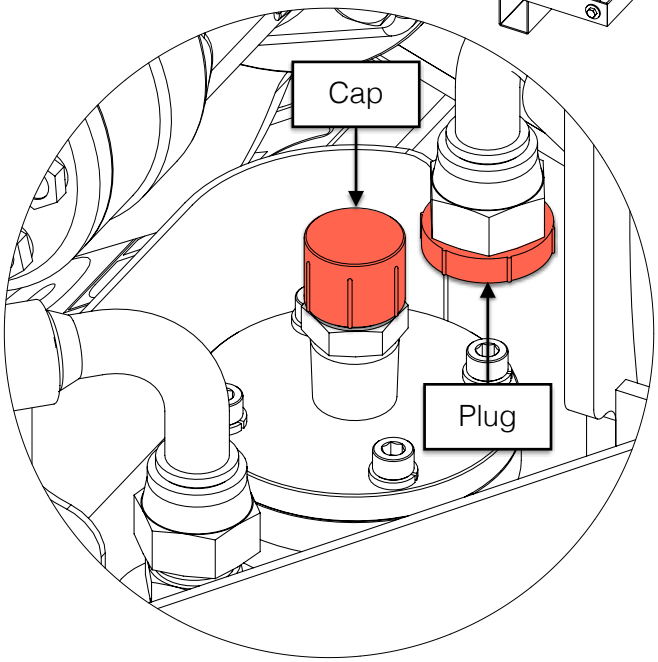
Remove the four (4) M16 X 40 mm hex bolts and M16 flat washers (2 per side) that connect the base assembly to the lower flywheel housing and the now-separated base assembly will drop back down onto the skid.



With the base separated, use the tractor's 3-point hitch to raise the chipper chassis up until the uppermost threaded holes in the side of the flywheel housing are aligned with the uppermost base holes.

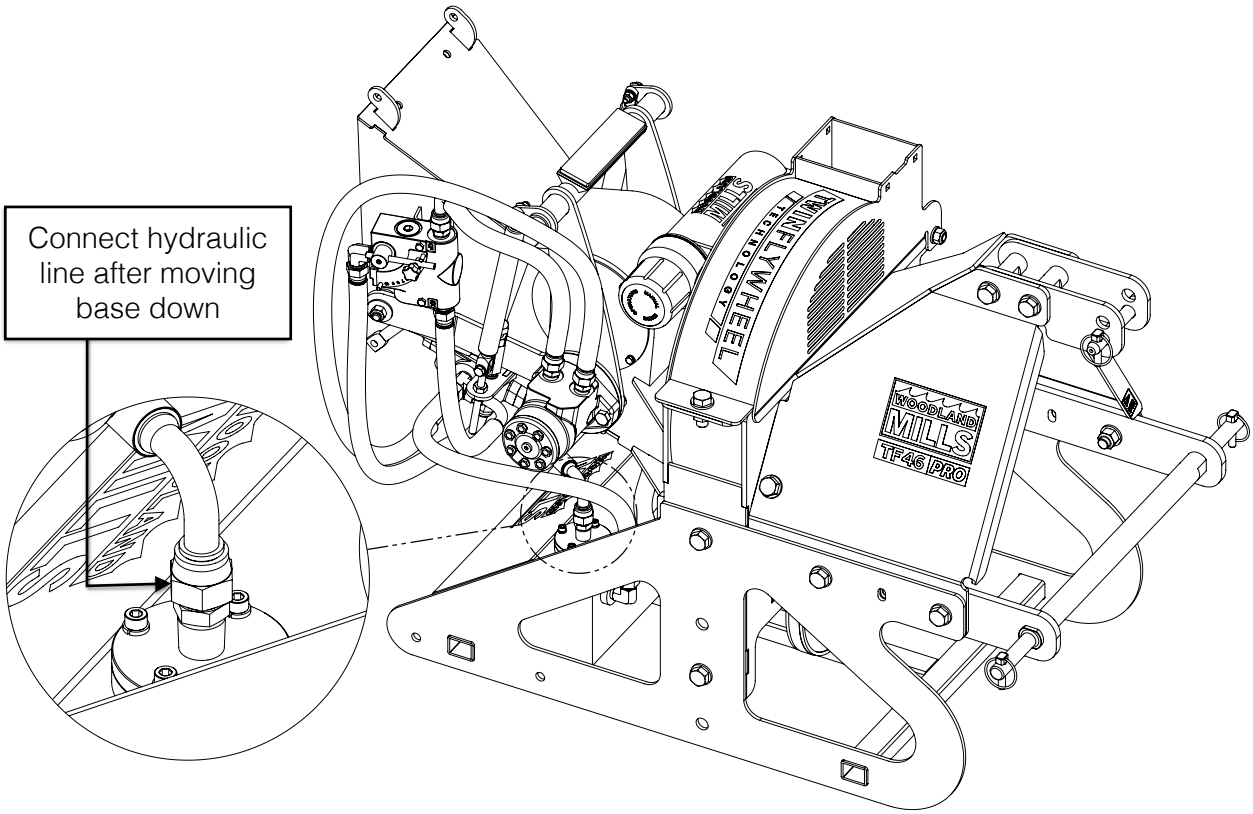
With the holes aligned, reinstall the four (4) M16 X 40 mm hex bolts and M16 flat washers. Then install four (4) M16 X 50 mm hex bolts, eight (8) M16 flat washers, and four (4) M16 lock nuts to secure the lower hitch arms to the base. Fully tighten all the hardware after the hardware is installed.





The disconnected hydraulic line ships with a red plastic plug threaded into the open end. The exposed tank line is fitted with a red cap. Remove both plug and cap.

Connect the hydraulic line to the tank that originates from the pump beneath the lower flywheel housing and securely tighten the fitting.



With the base secure and hydraulic line connected, slide the crate skid out from under the wood chipper and discard it.

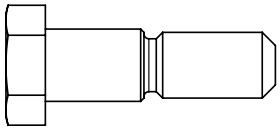
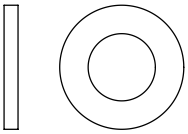
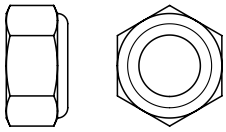
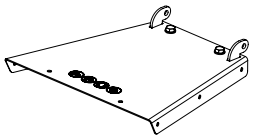
WARNING!

The hydraulic tank ships empty from the factory. The user must add the recommended hydraulic fluid per the table in the section, ***TECHNICAL SPECIFICATIONS***, prior to using the chipper.

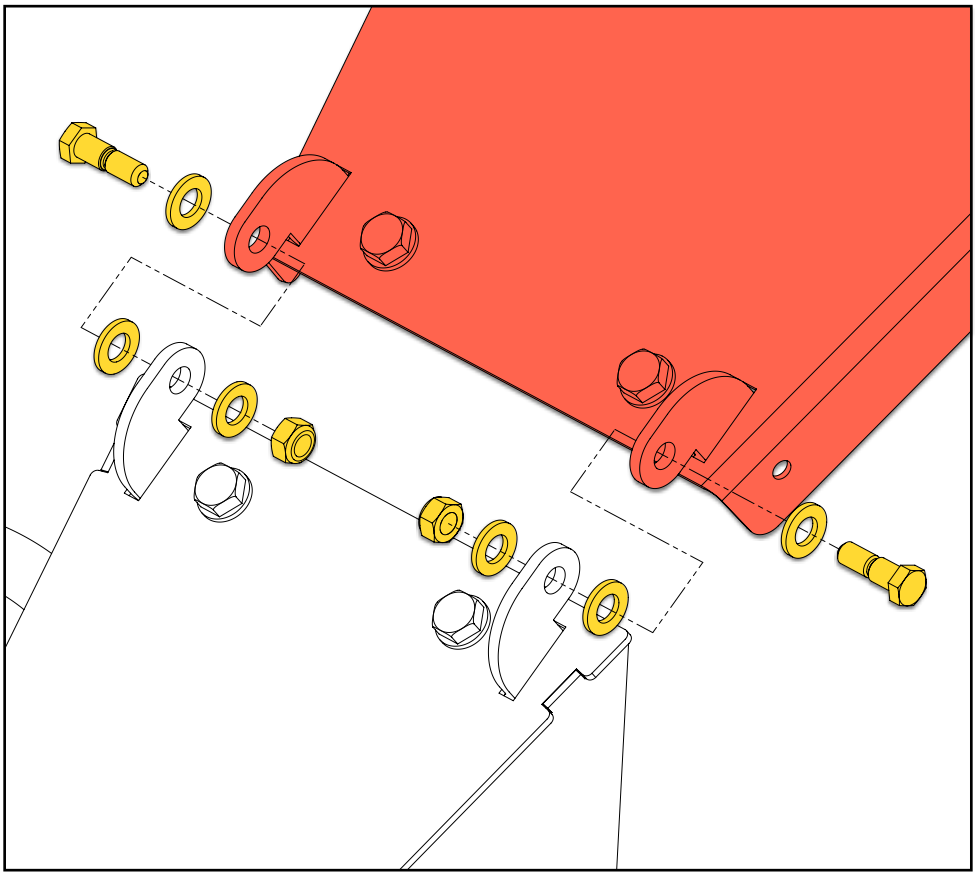
3. INFEED CHUTE

A. TOP PANEL

Assemble the infeed chute top panel to the lower flywheel housing using the components and hardware listed in the table below. Note that the infeed chute top panel and hinge bracket come pre-assembled.

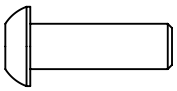
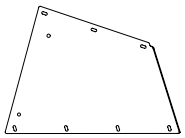
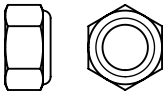
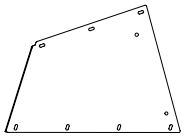
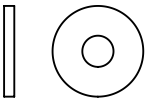
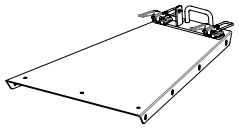
2x	M10 X 15 X 20 mm Shoulder Bolt		6x	M12 Nylon Flat Washer	
2x	M10 Lock Nut		1x	Infeed Chute Top Panel	

Fasten the top panel to the lower flywheel housing using two (2) M10 X 15 X 20 mm shoulder screws, six (6) M12 nylon flat washers, and two (2) M10 lock nuts to form the hinge. Tighten the hardware enough so that the hinge moves with some effort but not too tight that the nylon washers are crushed.

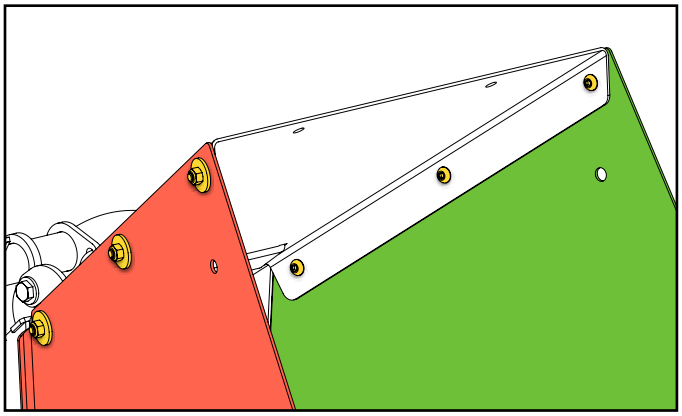


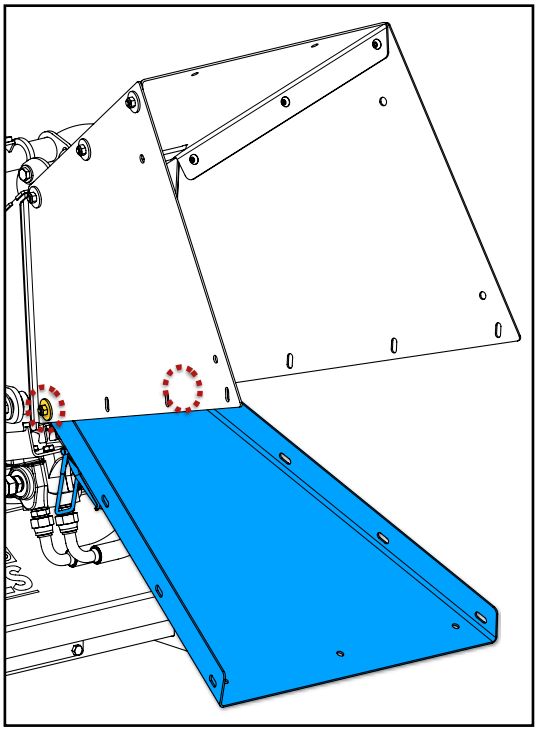
B. SIDE PANELS AND BOTTOM PANEL

With the top panel bolted to the hinge, assemble each side panel to the sides of the top panel using the M8 X 18 mm button head screws, M8 lock nuts, and M8 fender washers. Use a hex key for the screws and a socket/wrench for the lock nuts.

8x	M8 X 18 mm Button Head Screw		1x	Infeed Chute Right Side Panel	
8x	M8 Lock Nut		1x	Infeed Chute Left Side Panel	
8x	M8 X 30 mm Fender Washer		1x	Infeed Chute Bottom Panel	

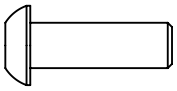
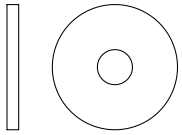
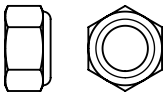
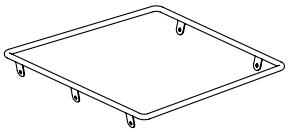
Install three (3) screws per side along the top edge. Do not fully tighten the screws. Be sure to assemble the screws with the heads on the inside of the chute pointing outwards. Next, install the bottom panel using only the first bolt per side as shown below (right). This will allow it to swing up to join the side panels in the coming steps. Note that the infeed chute bottom panel and latches come pre-assembled.





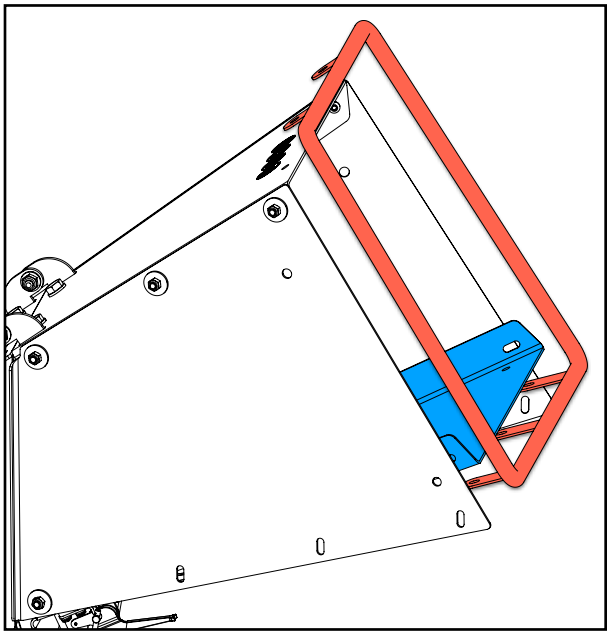
C. EDGE BAR

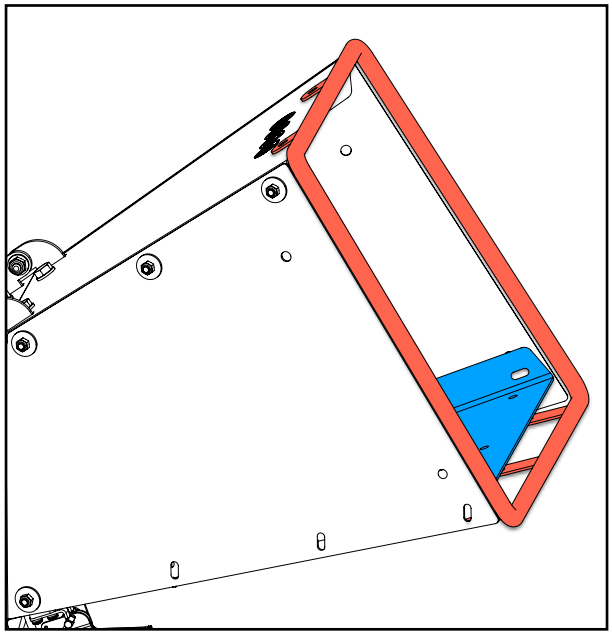
Assemble the round edge bar to the infeed chute using the hardware listed below.

11x	M8 X 18 mm Button Head Screw		11x	M8 X 30 mm Fender Washer	
11x	M8 Lock Nut		1x	Infeed Chute Round Edge Bar	

The round edge bar is designed to add additional strength to the infeed panels as well as act as a rounded edge, eliminating branches from getting caught on the edge of the infeed panels.

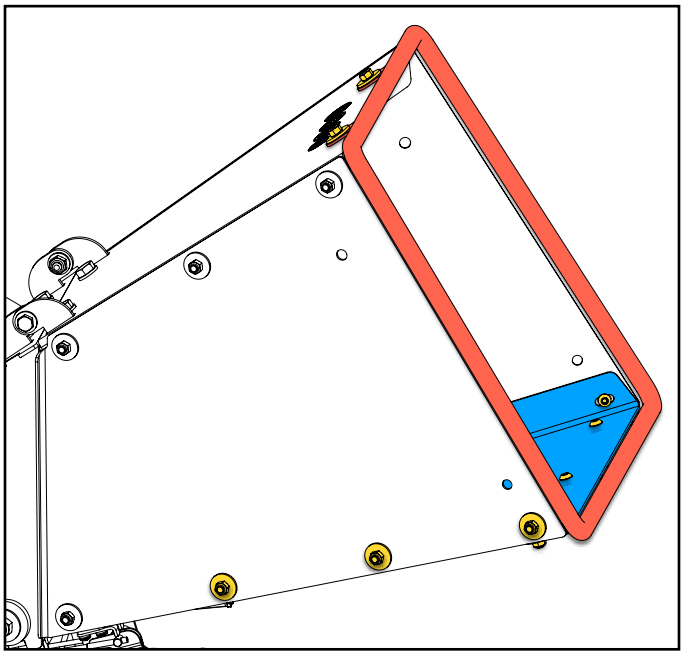
Swing the bottom panel up and fit the top and bottom tabs of the round edge bar over the outside faces of the top and bottom panels as shown below.

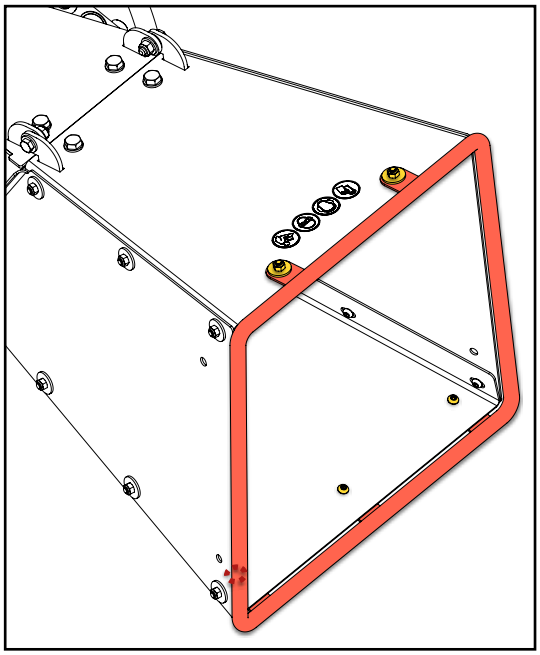




With the edge bar in place, assemble the panels to the edge bar. Use a hex key for the button head screws and a socket/wrench for the lock nuts. Install the remaining eleven (11) M8 X 18 mm button head screws, M8 lock nuts, and M8 X 30 mm fender washers as shown below to secure the panels and edge bar in place.

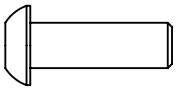
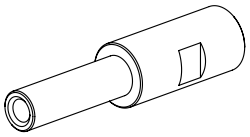
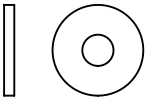
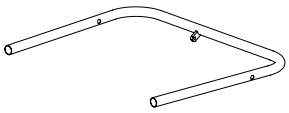
Fully tighten *all* the infeed chute screws.





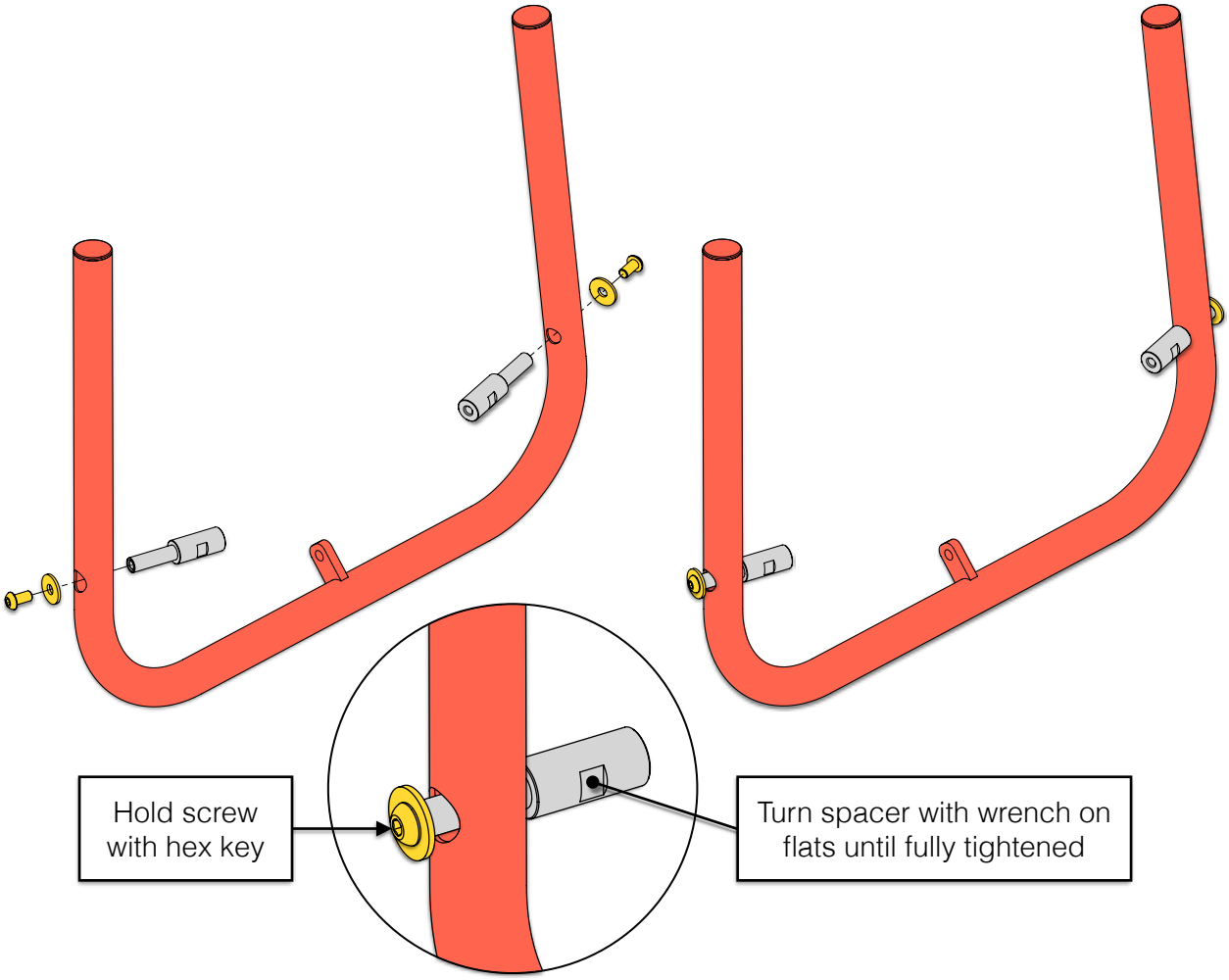
D. CONTROL ARM

The large red infeed control arm is attached to the infeed chute using the hardware below.

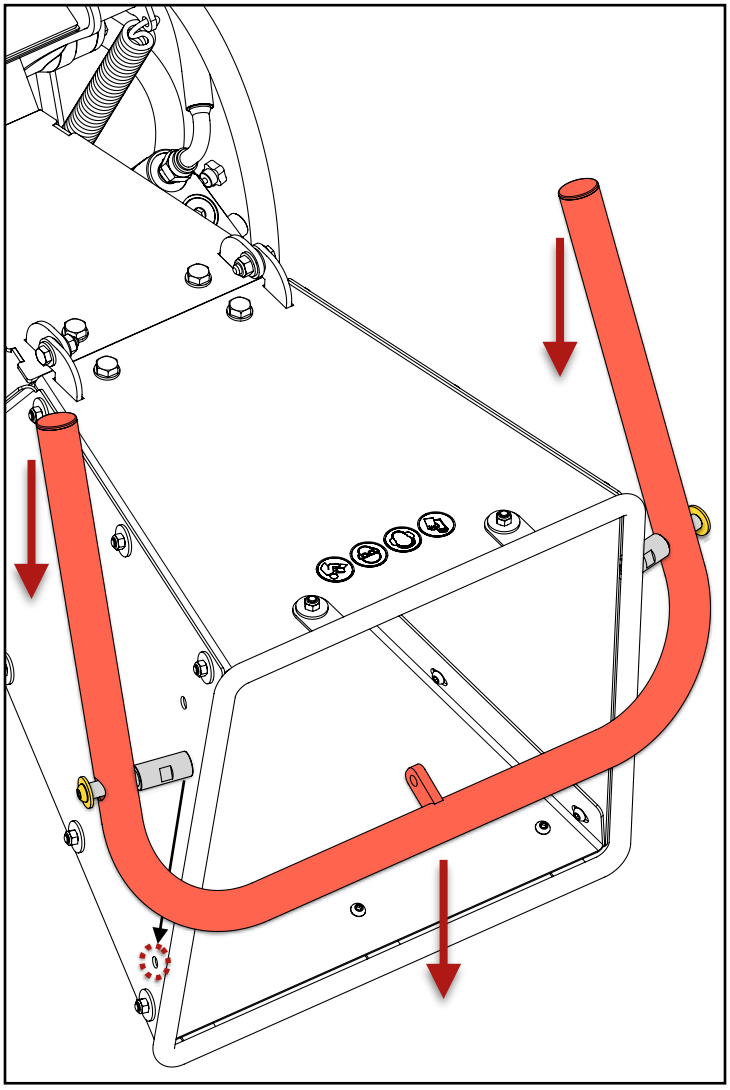
4x	M10 X 20 mm Button Head Screw		2x	Control Arm Spacer	
4x	M10 X 30 mm Fender Washer		1x	Control Arm	

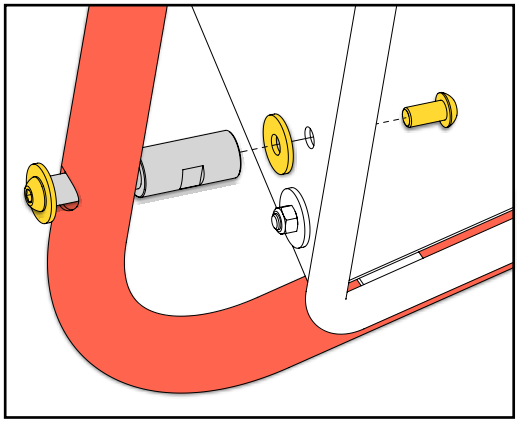
Insert the control arm spacers into the holes in the control arm and secure each with one (1) M10 X 20 button head screw and one (1) M10 X 30 mm fender washer

When tightening the hardware, hold button head screw still with a 6 mm hex key and turn the spacer with a ¾ in [19 mm] wrench using the flats milled into each side. Fully tighten all the hardware. The spacers will sit loose in the control arm once fully tightened—this is normal.

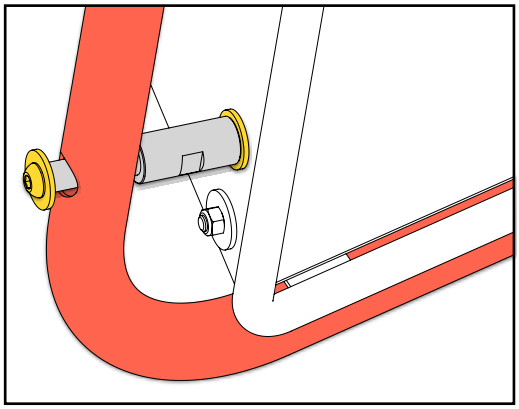


While holding the control arm by the spacers, slide it down over the top of the infeed chute until the spacers are aligned with the holes in the side panels (below left).





USE 1 M10 X 30 FENDER WASHER BETWEEN THE SPACER AND CHUTE



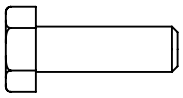
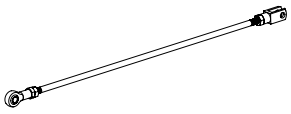
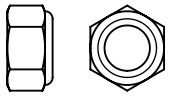
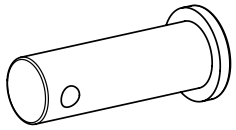
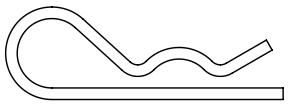
HOLD INNER SCREW WITH HEX KEY AND TURN SPACER WITH WRENCH ON FLATS UNTIL FULLY TIGHTENED

With the spacers aligned with the holes in the infeed chute side panels, place one (1) M10 X 30 mm fender washer between the spacer and side panel, and then secure it with one (1) M10 X 20 mm button head screw from inside the infeed chute. Repeat for the other side.

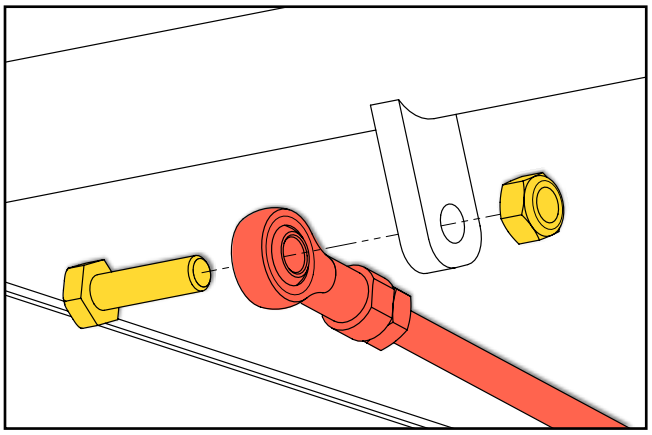
When tightening the two (2) inner button head screws, hold the button head screw inside the infeed chute still with a 6 mm hex key and turn the spacer with a ¾ in [19 mm] wrench. Fully tighten the hardware on both sides.

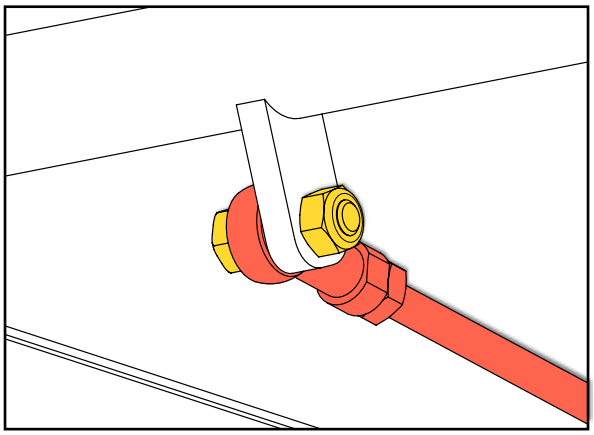
E. CONTROL ARM LINKAGE

With the control arm fastened to the infeed chute, the linkage assembly can now be connected between it and the hydraulic directional control valve.

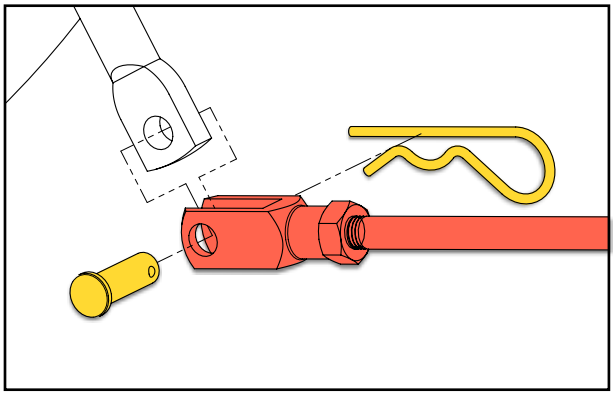
1x	M10 X 35 mm Hex Bolt		1x	Control Arm Linkage Assembly	
1x	M10 Lock Nut		1x	10 mm Clevis Pin	
			1x	Hairpin Cotter Pin	

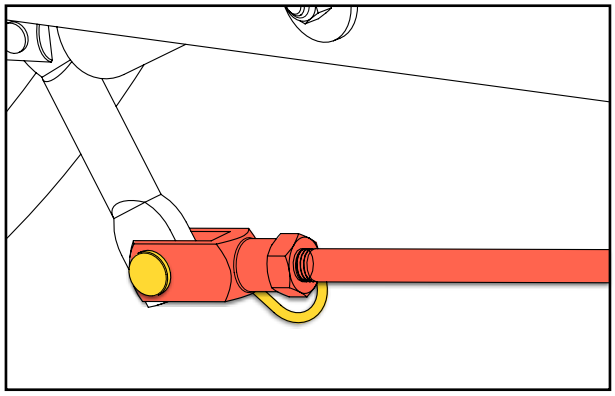
Fasten the rod end bearing to the red control arm with the M10 X 35 mm hex bolt and M10 lock nut as shown below.



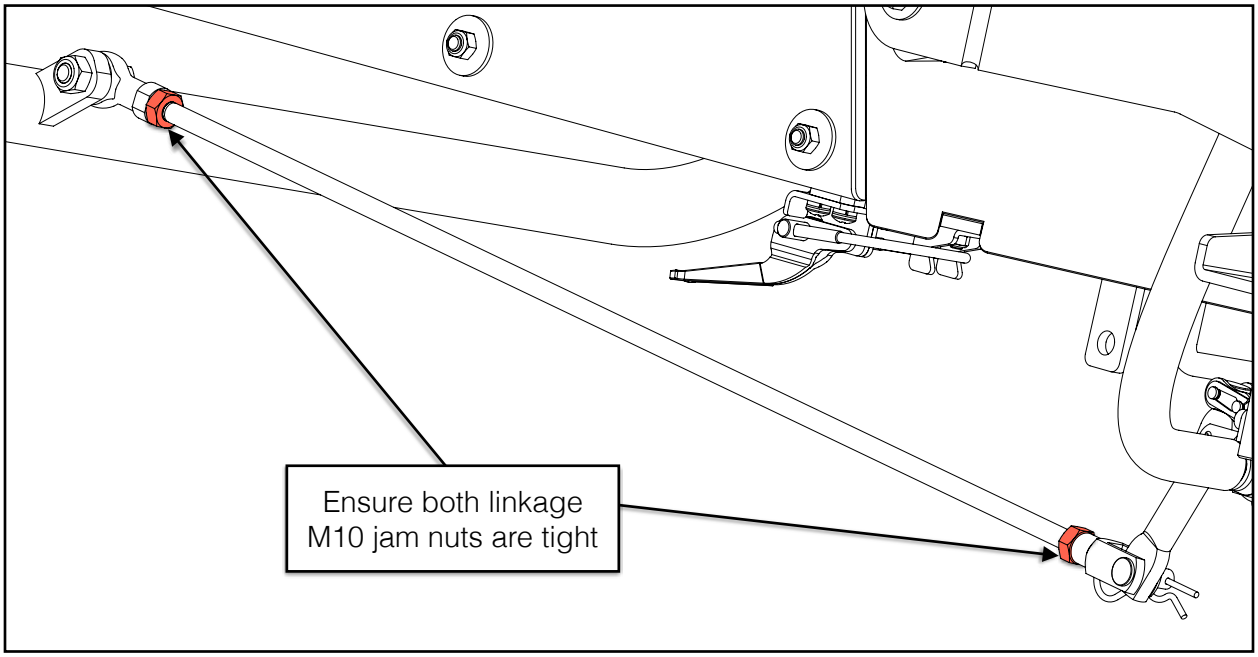


On the opposite end of the linkage, secure the clevis rod end to the the hydraulic directional control valve actuator using the clevis pin and hairpin cotter pin.



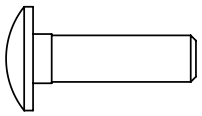
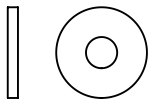
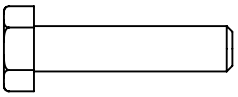
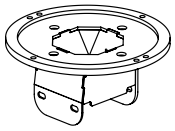
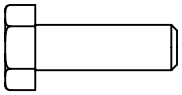
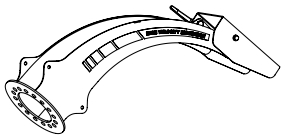
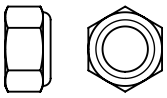
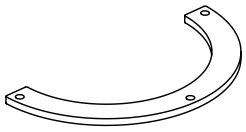
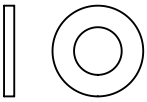
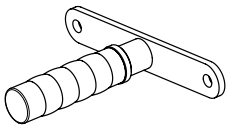


Once the linkage has been assembled, ensure both M10 jam nuts are tight.

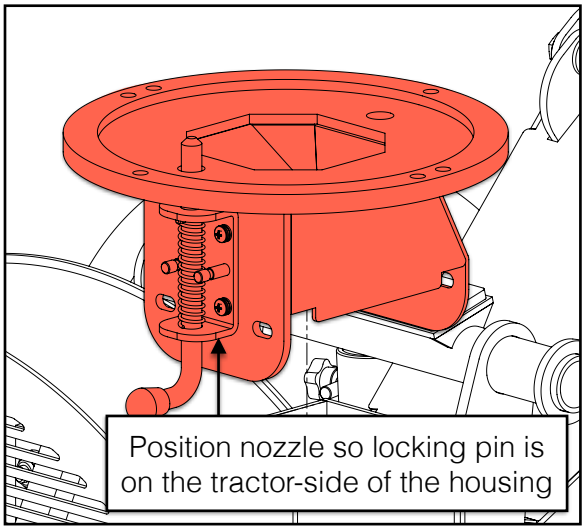


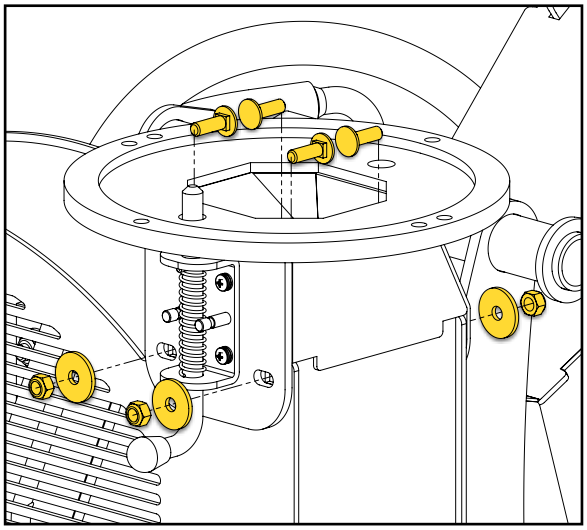
4. DISCHARGE CHUTE

The discharge chute comes partially assembled. With the components and hardware listed below, assemble the discharge chute to the upper flywheel housing.

4x	M8 X 25 mm Carriage Bolt		4x	M8 X 30 mm Fender Washer	
6x	M8 X 35 mm Hex Head Bolt		1x	Nozzle	
4x	M8 X 25 mm Hex Head Bolt		1x	Discharge Chute Assembly	
14x	M8 Lock Nut		2x	Retainer	
20x	M8 Flat Washer		2x	Handle with Grip	

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

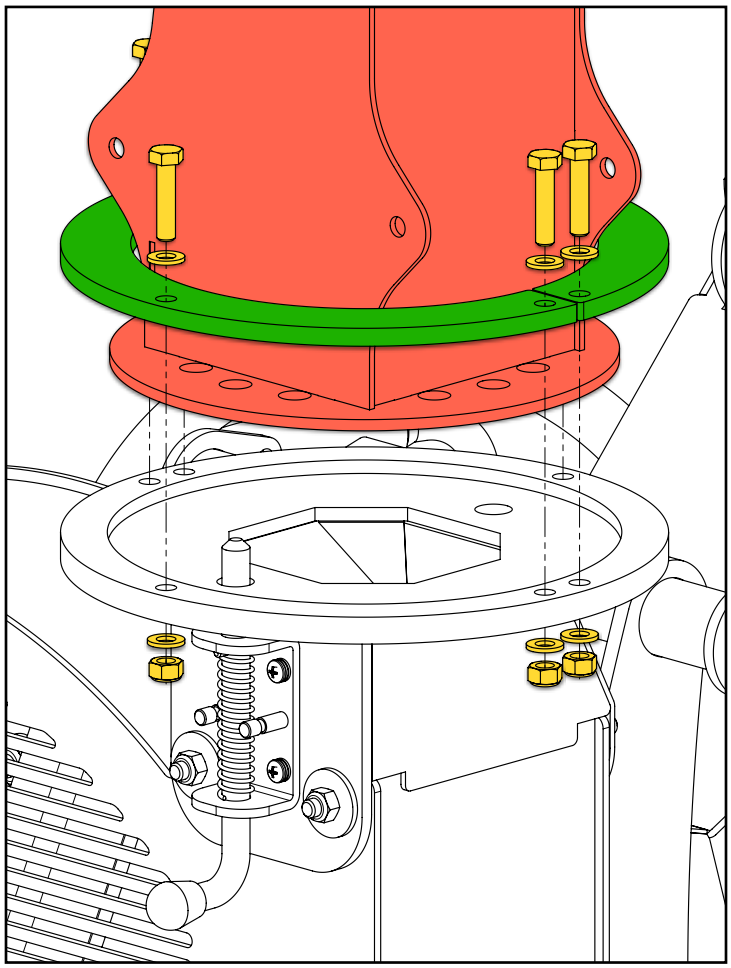




Set the discharge chute into the recess in the top of the nozzle.

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.

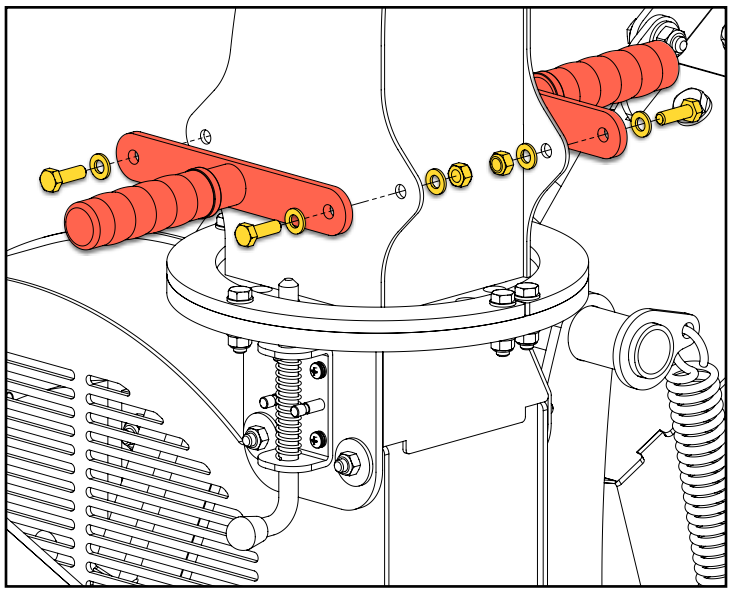
Fully tighten all the hardware.



Assemble the handles—one on each side of the discharge chute.

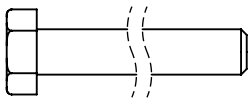
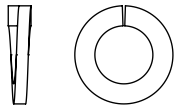
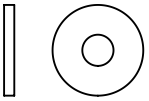
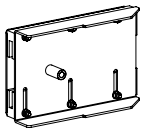
Secure each handle to the chute using two M8 X 25 mm hex bolts, four (4) M8 flat washers, and two (2) M8 lock nuts.

Fully tighten all the hardware.



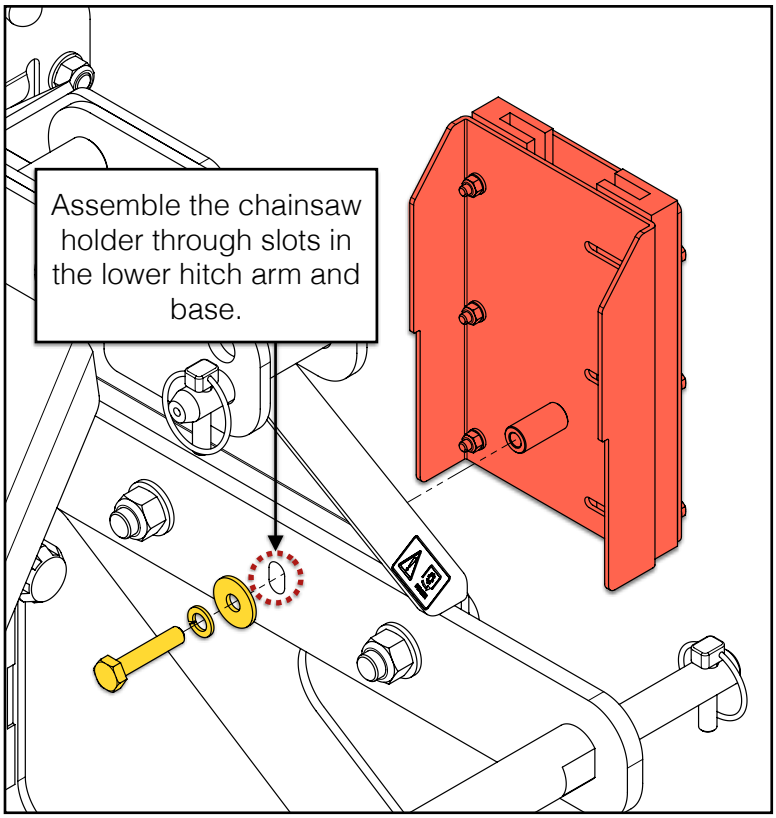
5. CHAINSAW HOLDER

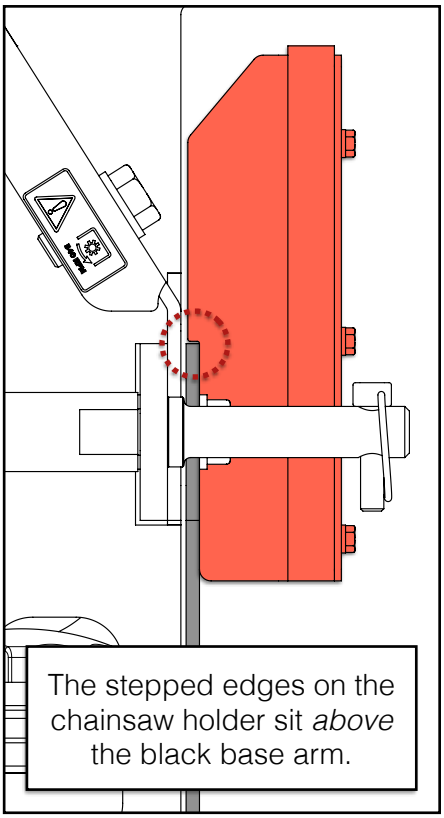
Mount the chainsaw holder assembly to the side of the chipper base using the hardware and components listed in the table below.

1x	M10 X 50 mm Hex Bolt		1x	M10 Split Lock Washer	
1x	M10 X 30 mm Fender Washer		1x	Chainsaw Holder Assembly	

The chainsaw holder can be mounted to either side of the base through the vertical slots in the lower hitch arm and base.

Assemble the holder to the base using one (1) M10 X 50 mm hex bolt, one (1) M10 X 30 mm fender washer, and one (1) M10 split lock washer through the slot as shown. Be sure the stepped edges on the chainsaw holder sit above the base arm. Fully tighten the hardware.





TRIMMING THE PTO SHAFT

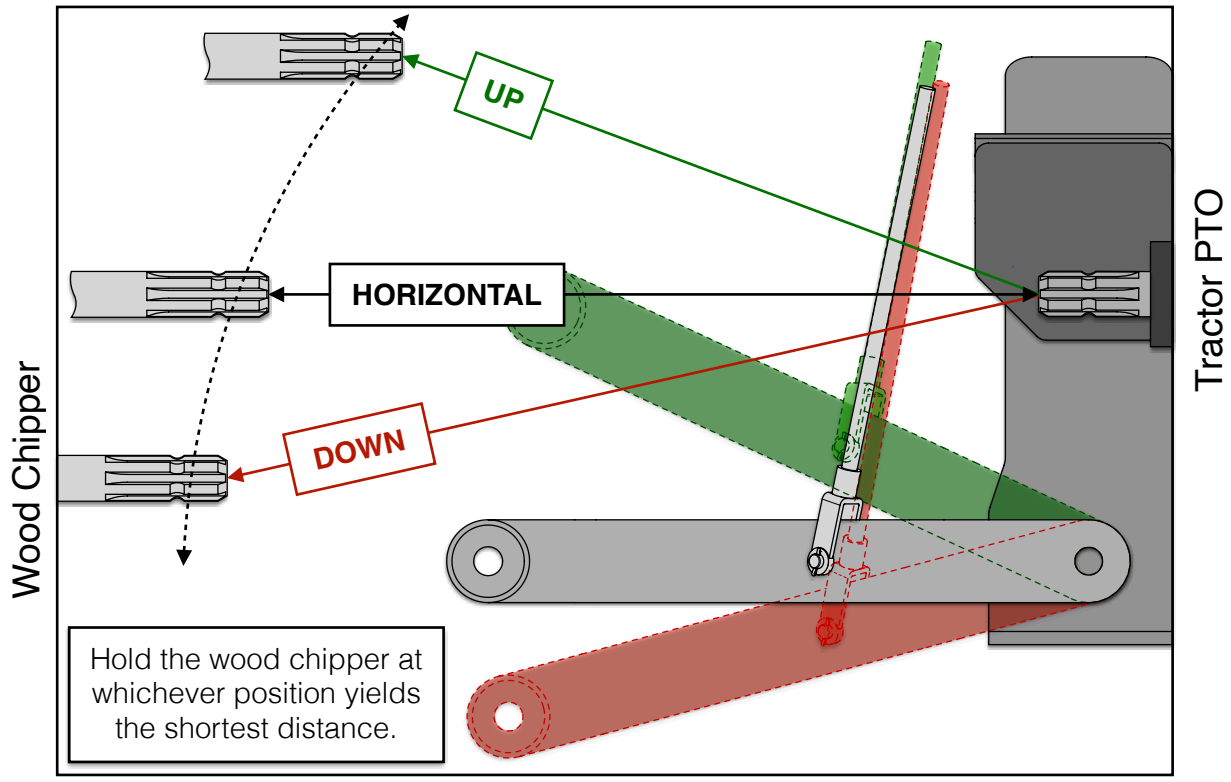
The PTO shaft may need to be trimmed depending on the tractor size and configuration. Follow the 6 steps below to ensure the PTO shaft is fitted correctly, and trimmed if necessary.

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.****

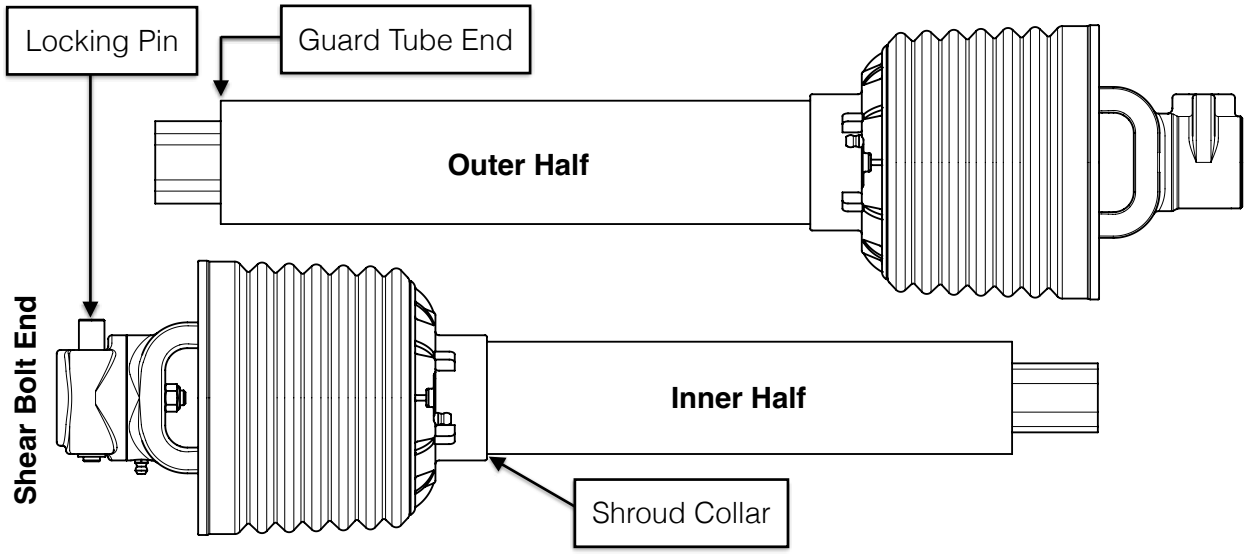


WARNING!

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.



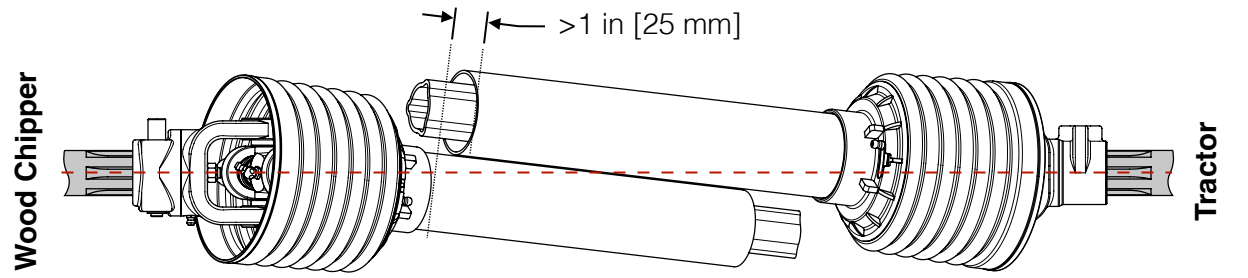
3. ATTACH THE PTO SHAFT

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

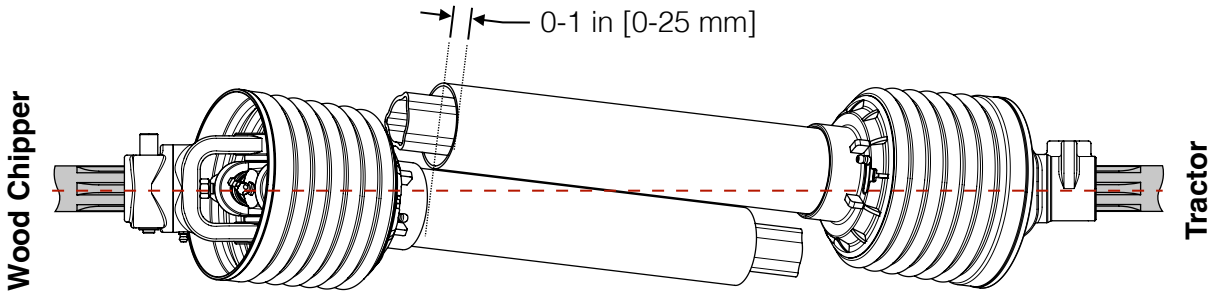
4. DETERMINE IF TRIMMING IS REQUIRED

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.

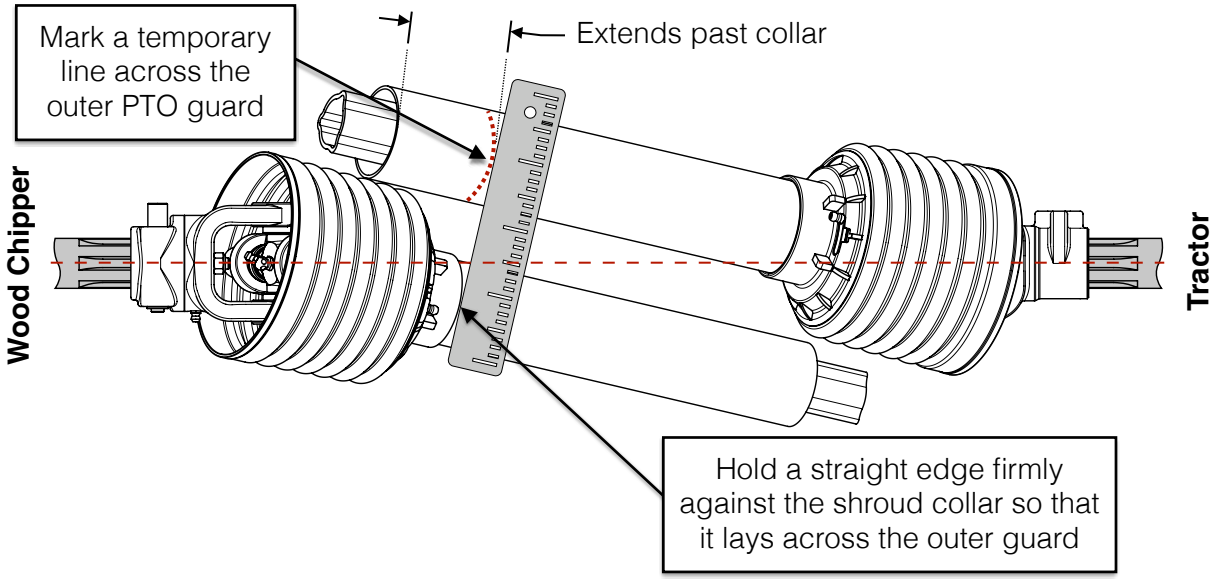
Scenario 1. If the distance between the shroud collar and the guard tube end is ***greater than* 1 in [25 mm]**, the PTO shaft does not require trimming. Remove the PTO shaft from the tractor and wood chipper and proceed to Step 6.



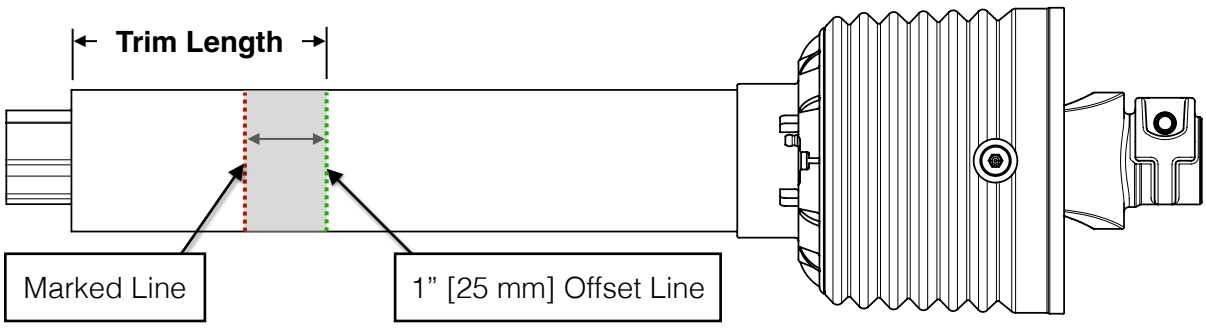
Scenario 2. If the distance between the shroud collar and the guard tube end is ***between 0 and* 1 in [25 mm]**, the PTO shaft requires a 1 in [25 mm] trim. Proceed to Step 5 using 1 in [25 mm] as the "**Trim Length"**.



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.

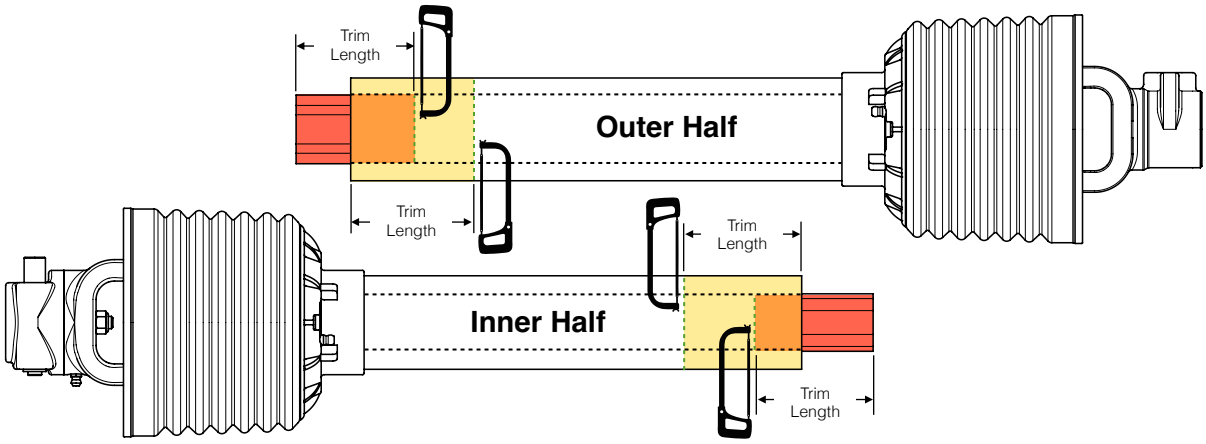


Measure 1 in [25 mm] past the marked line to the guard tube end to determine the trim length. This is the "**Trim Length**" by which the PTO shaft needs to be trimmed. Proceed to Step 5.



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	
➡ TF46 PRO	3.2	12	
TF68 PRO	5	18.9	
TF810 PRO	5	18.9	

ii. Attach the wood chipper to a tractor and take the appropriate measurements to trim the PTO shaft. Refer to the ***TRIMMING THE PTO SHAFT*** section of the operator's manual 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 (⅛ in [3 mm]). Refer to ***SETTING THE BED PLATE GAP*** in the operator's manual 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 the ***GREASING*** section of the operator's manual 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. Alternatively, connect the tractor's quick-hitch to the wood chipper if so equipped.

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. Push the red control arm all the way in until it stops, then pull it out one click to ensure the infeed roller is in the neutral position.

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, it could damage the hydraulic pump belt 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 red control arm away from the operator at the top of the arm until it stops (forward position). This will start the infeed roller rotating. Set the infeed roller control to the desired speed.

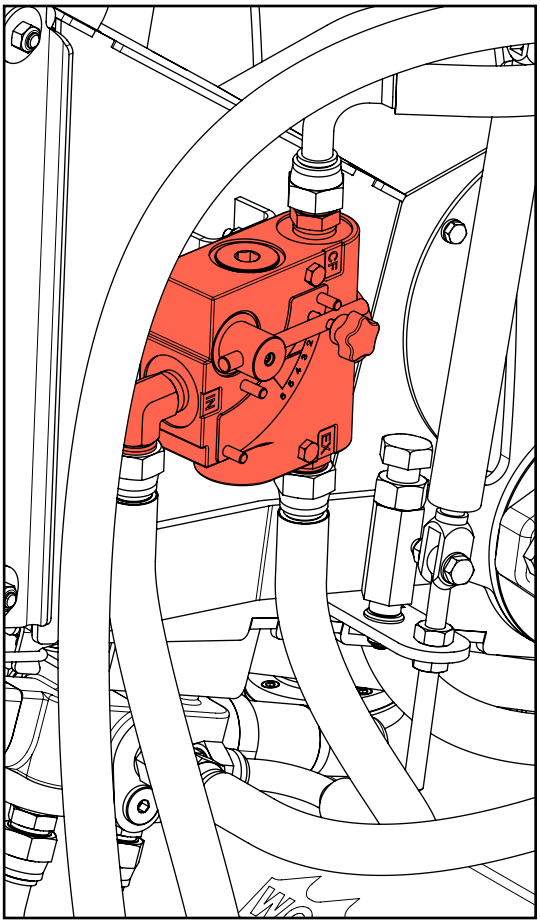
i. With the wood chipper now running and the infeed roller rotating, it is safe to begin chipping. Start by feeding smaller diameter branches until better acquainted with the machine and its operation. Once comfortable, begin feeding in larger pieces. Adjust the infeed roller control as necessary to 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. INFEED ROLLER CONTROL

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

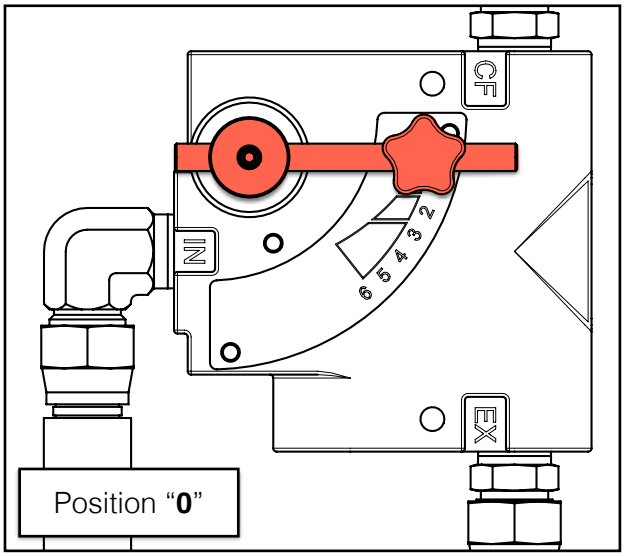


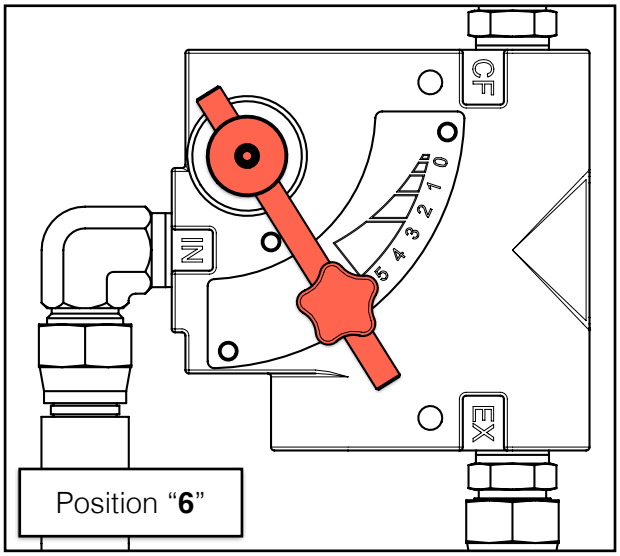
Rotating the valve arm as shown in the pictures below will increase or decrease the roller speed without load and will create a pulsating action once loaded with a branch.

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.

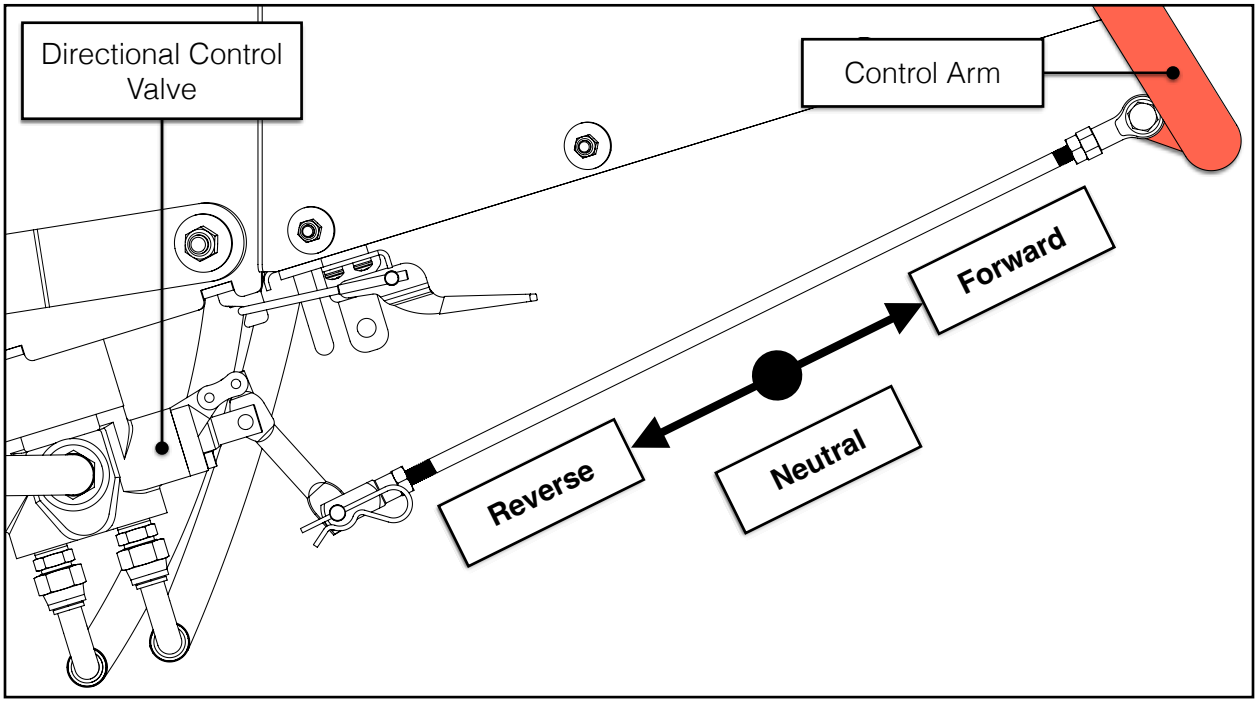
If the tractor is unable to keep up with the workload, rotating the valve arm throughout its range will create a pulsating action—*dependent on branch size and workload*—that will allow larger material to be chipped when horsepower is limited.

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 can be set to three (3) different rotation settings—*forward*, *neutral* and *reverse*—by pushing or pulling the red control arm. 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:

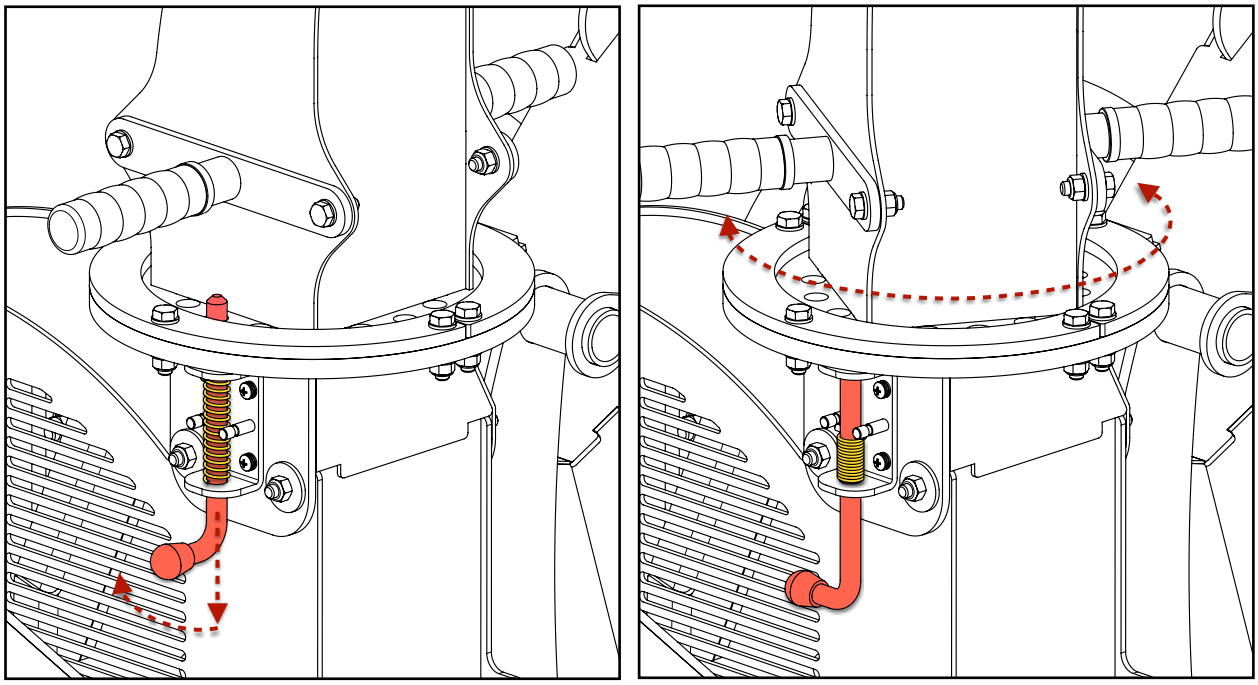


To change the speed of the infeed roller, place the red control arm in the *neutral* position. This stops the infeed roller from rotating. The speed control valve can now be moved to the desired position/speed. Reengage the infeed roller via the control arm.

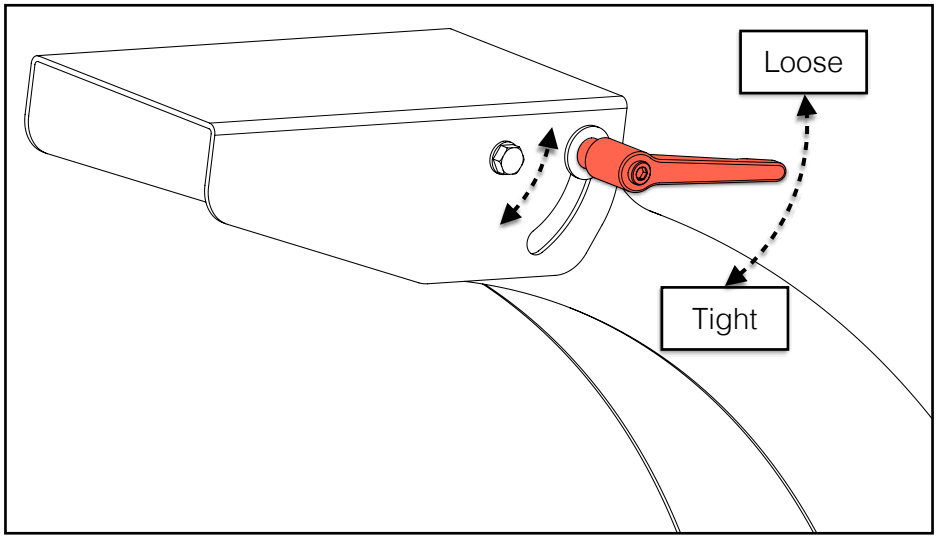
See maintenance section, ***ADJUSTING THE CONTROL ARM***, if the control arm feels too loose or stiff, or if it falls into neutral or reverse unexpectedly.

4. DISCHARGE CHUTE

To rotate the discharge chute, push down on the spring-loaded locking pin all the way 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 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 4 in [102 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 infer 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:

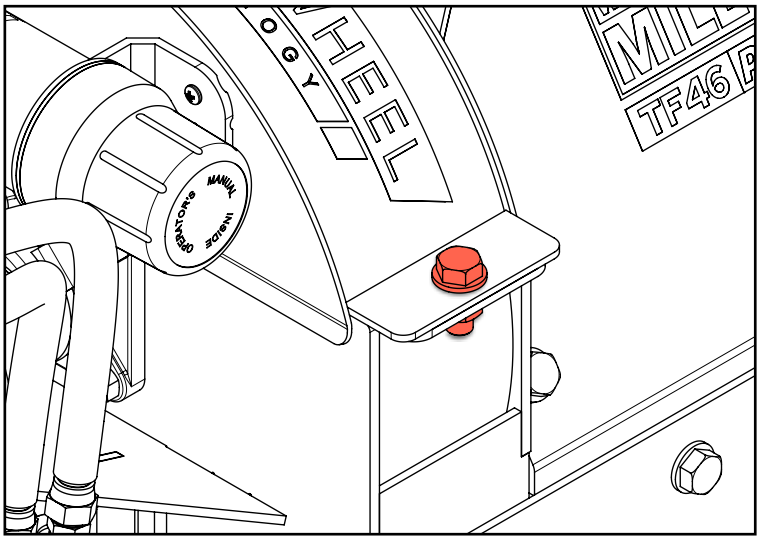
1. Move the tractor throttle to the SLOW/IDLE position.
2. Disengage the PTO lever and turn off the tractor engine.
3. Allow time for the wood chipper to come to a complete stop.

   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.

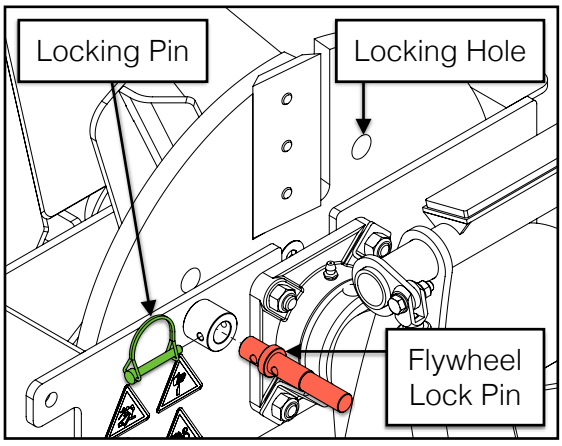
MAINTENANCE
REPLACING BLADES

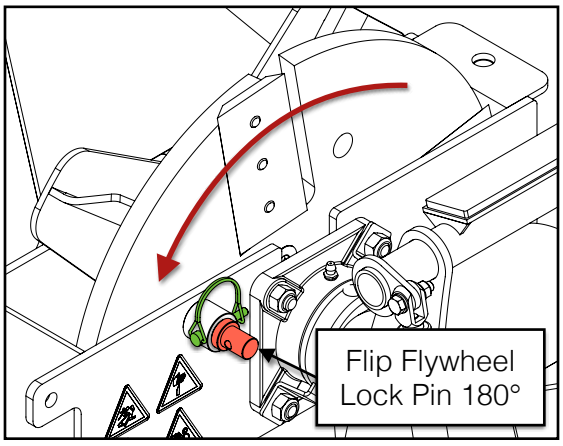
Follow these steps when replacing blades. The TF46 PRO wood chipper uses four (4) reversible hardened steel blades. Each blade is 5.71 X 2.72 X 5/16" [145 X 69 X 8 mm] in size.

1. If installed, disconnect the PTO shaft from the tractor for safety.
2. Open the upper flywheel housing using a 24 mm socket/wrench by removing the M16 X 40 mm bolt and flat washer securing the upper and lower housings together.



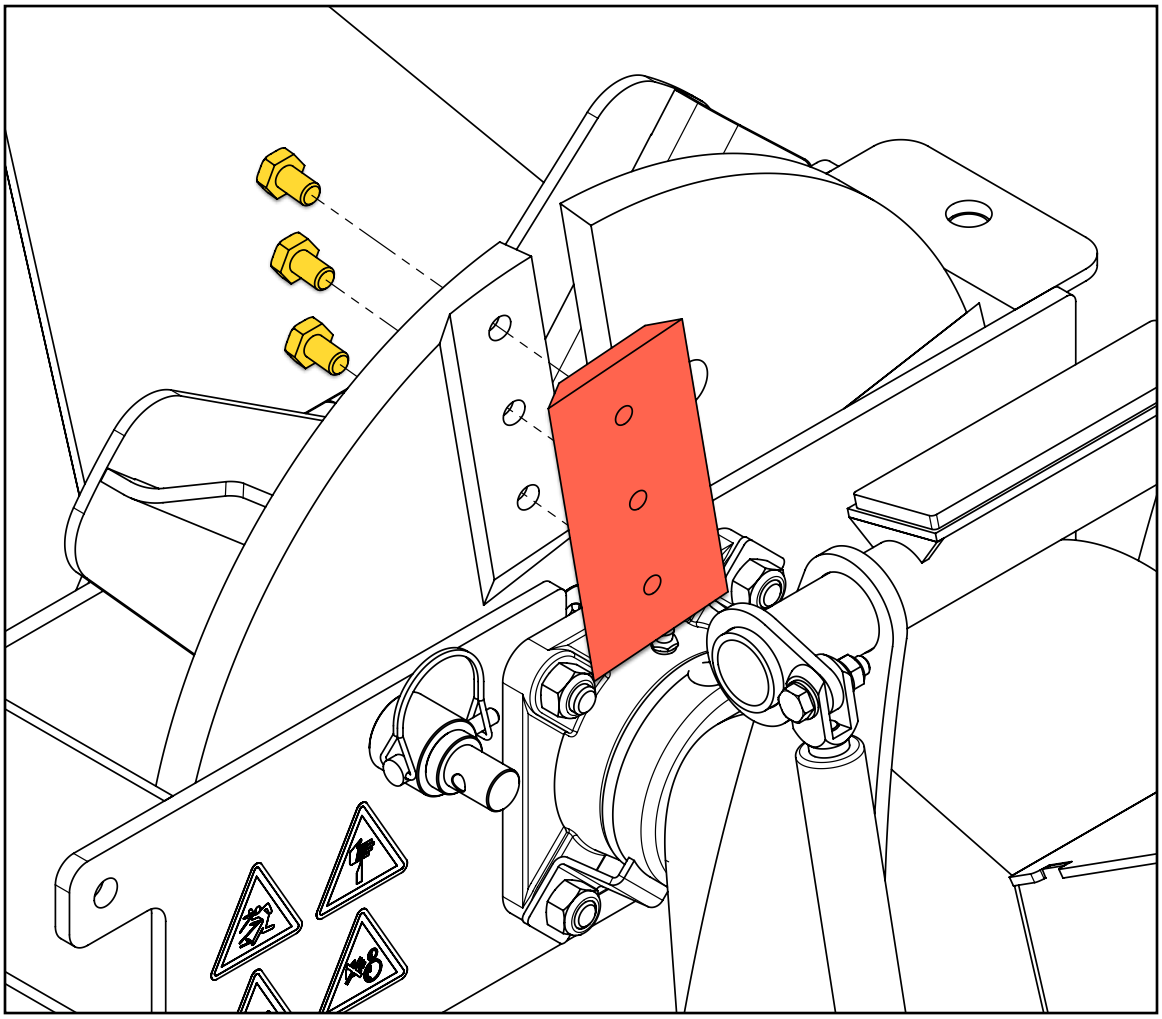
3. With the flywheel exposed, manually rotate it so that one of the four (4) locking holes in the flywheel (near the front of the blade) approximately lines up with the flywheel lock pin at the rear of the housing. Remove the small locking pin from the flywheel lock pin and flip the flywheel lock pin 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.





Upper flywheel housing removed from images for clarity.

4. Remove the three (3) M10 X 16 mm hex head bolts that fasten the blade to the flywheel using a socket/wrench. 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.

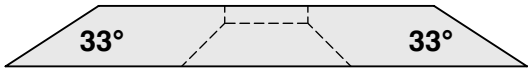


5. Repeat Steps 3 & 4 above to remove the remaining three blades. If this is the first time the blades have been removed following either the original wood chipper purchase or a recent blade sharpening, the blades can be reversed to utilize the other cutting edge. Or, the entire blade can be removed and sharpened or it can be replaced with a new blade. Torque the M10 X 16 mm hex head bolts to 40-45 ft•lb [54-60 N•m] when installing 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 TF46 PRO 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.



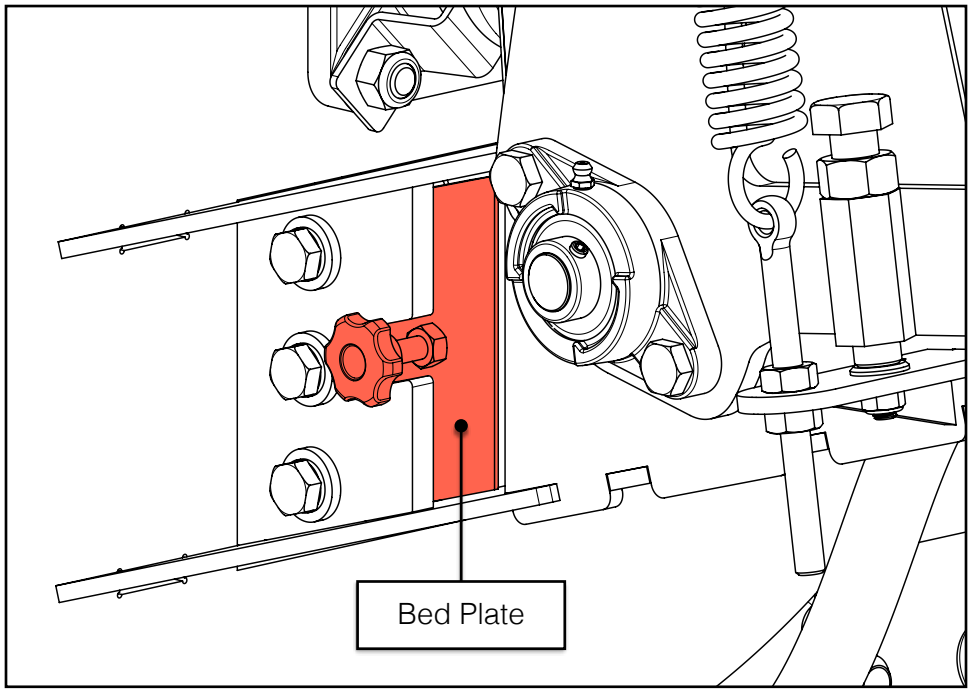
Blade Profile

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.

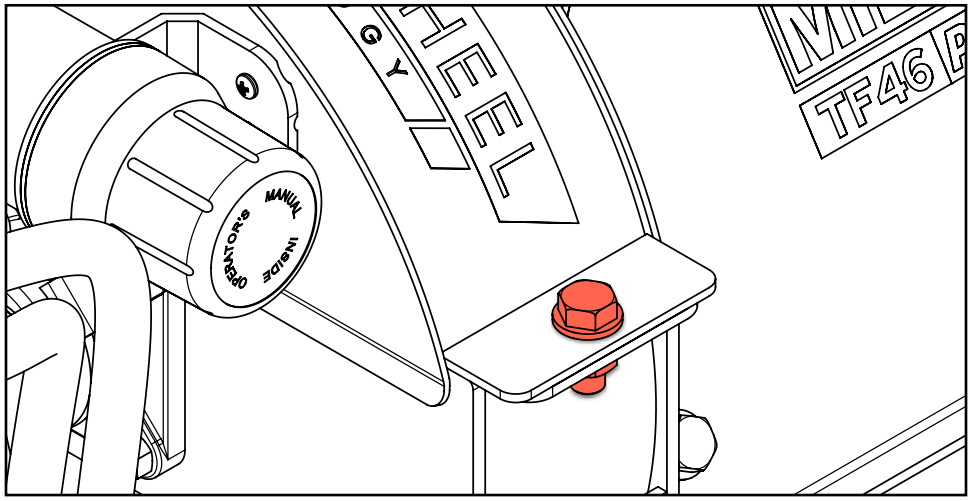
SETTING THE BED PLATE GAP

The bed plate (also known as the *anvil plate*) is located on the left side of the flywheel housing (when facing the infeed chute). For ideal chipping performance, use the bed plate gap tool to set the gap between the bed plate and the blades.

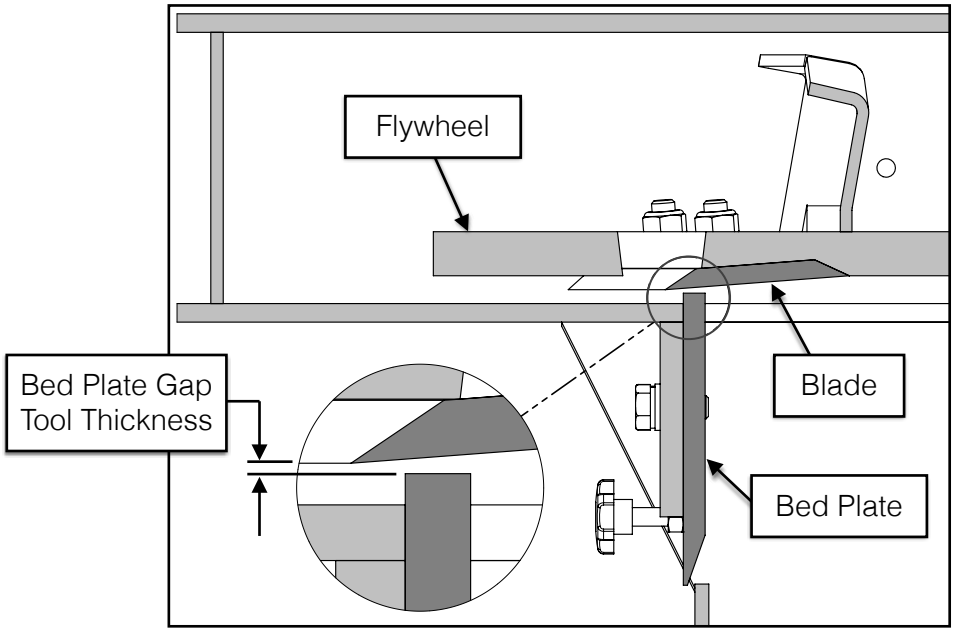
Follow the steps below to set the gap correctly.



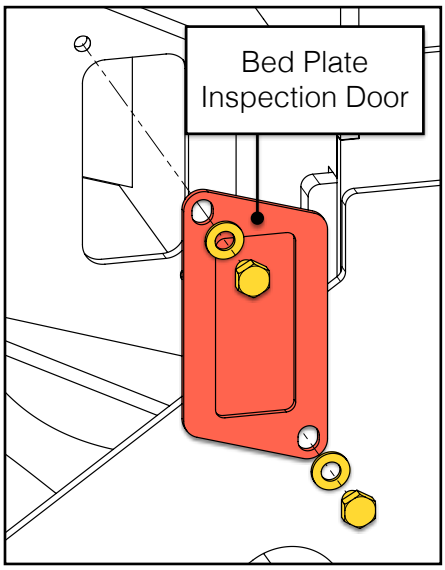
1. If installed, disconnect the PTO shaft from the tractor for safety.
2. Open the upper flywheel housing using a 24 mm socket/wrench by removing the M16 X 40 mm bolt and flat washer securing the upper and lower housings together.

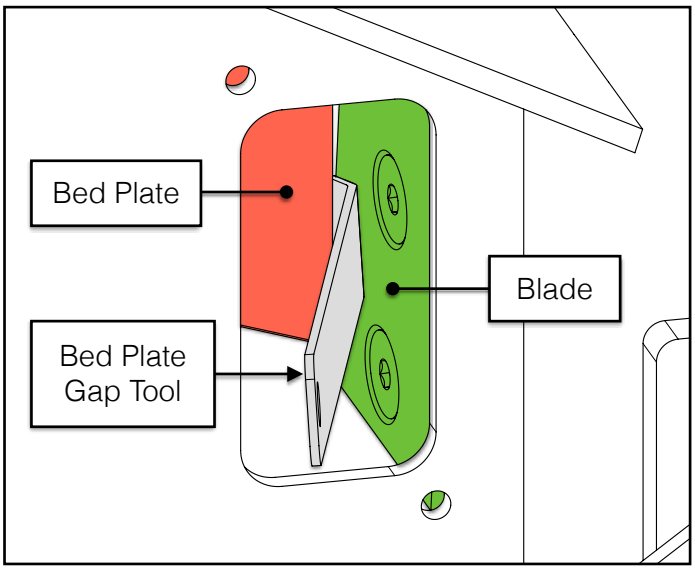


3. Remove the two (2) M8 X 10 mm hex bolts securing the bed plate inspection door located on the right-side of the lower indeed housing. With the bed plate inspection door removed, a clear view of the bed plate and its relationship to the blades can be seen. Use a flashlight for better viewing if necessary.
4. 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, noting 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.



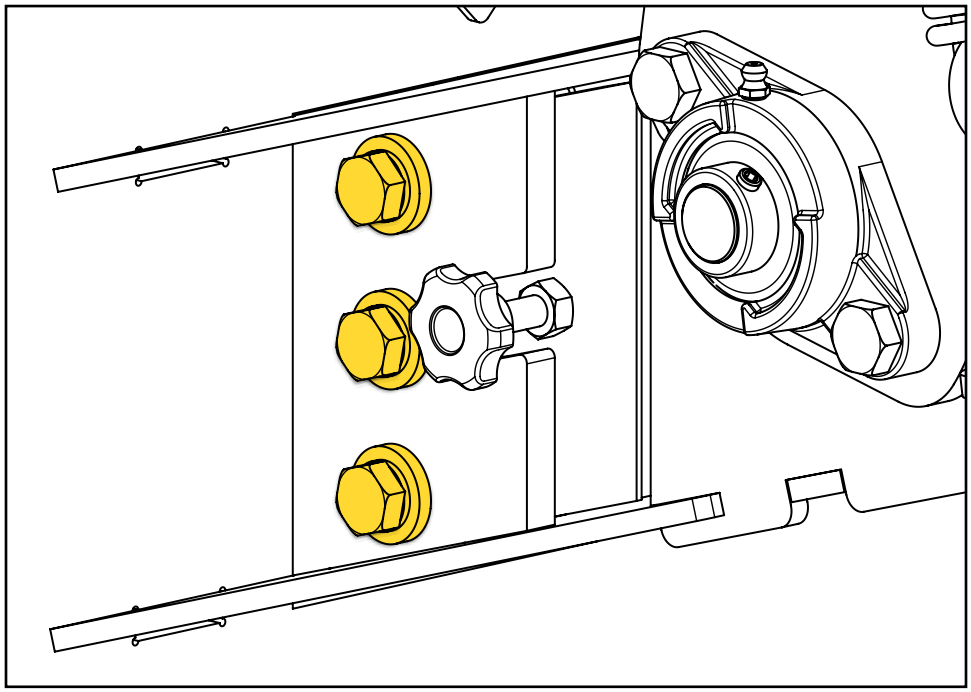
Place the bed plate gap tool between the bed plate and blade. Verify that the gap is consistent vertically from the top of the bed plate to the bottom.





5. Loosen the three (3) M10 X 25 mm hex bolts securing the bed plate to the lower flywheel housing so 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.



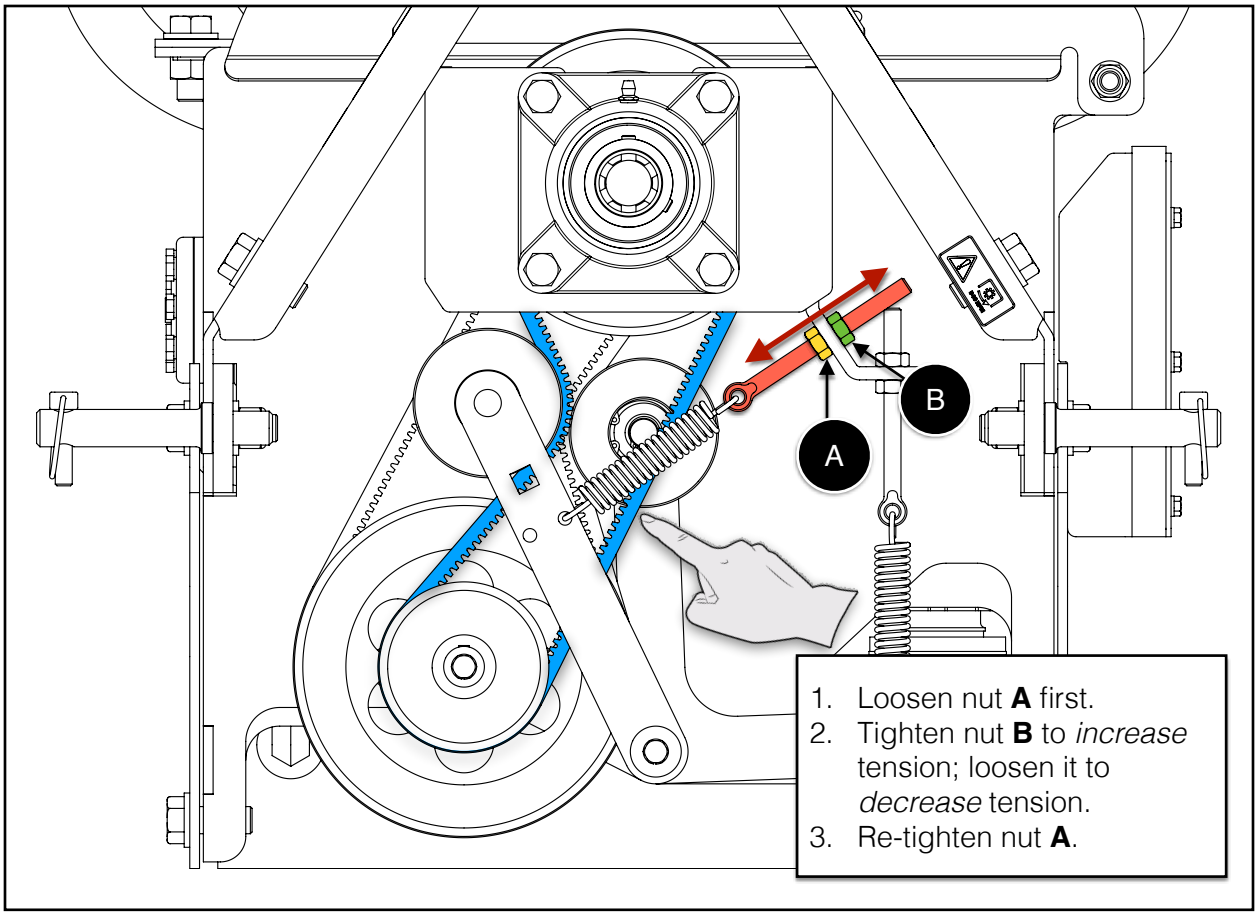
6. Snug the three (3) M10 X 25 mm bed plate hex bolts once the gap has been set correctly for the blade closest to the bed plate..
7. Rotate the flywheel by hand and check the gap at each blade. Again, the bed plate gap tool should fit between the bed plate and the blade from the top of the bed plate to the bottom.
8. 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].
9. Close the upper flywheel housing and secure it to the lower housing by reinstalling the M16 X 40 mm bolt and flat washer.
10. Reinstall the bed plate inspection door and torque the two (2) M8 X 10 mm hex bolts to 225 in•lb [25 N•m].

ADJUSTING THE BELTS' TENSION

HYDRAULIC PUMP BELT

The hydraulic pump belt is the belt *closest* to the tractor. Check the condition and tension of the belt after every 30 hours of operation. It is self-tensioning via an extension spring. 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 belt and pulleys.
2. Check the pump belt tension by pressing on it with your finger. There should not be any free slack in the belt. It should be under firm tension.
3. If the pump belt requires more tension, the *upper right-side* eyebolt can be adjusted by loosening and tightening the M10 hex nuts as shown below. This will stretch the spring and increase the tension until the belt is firm.

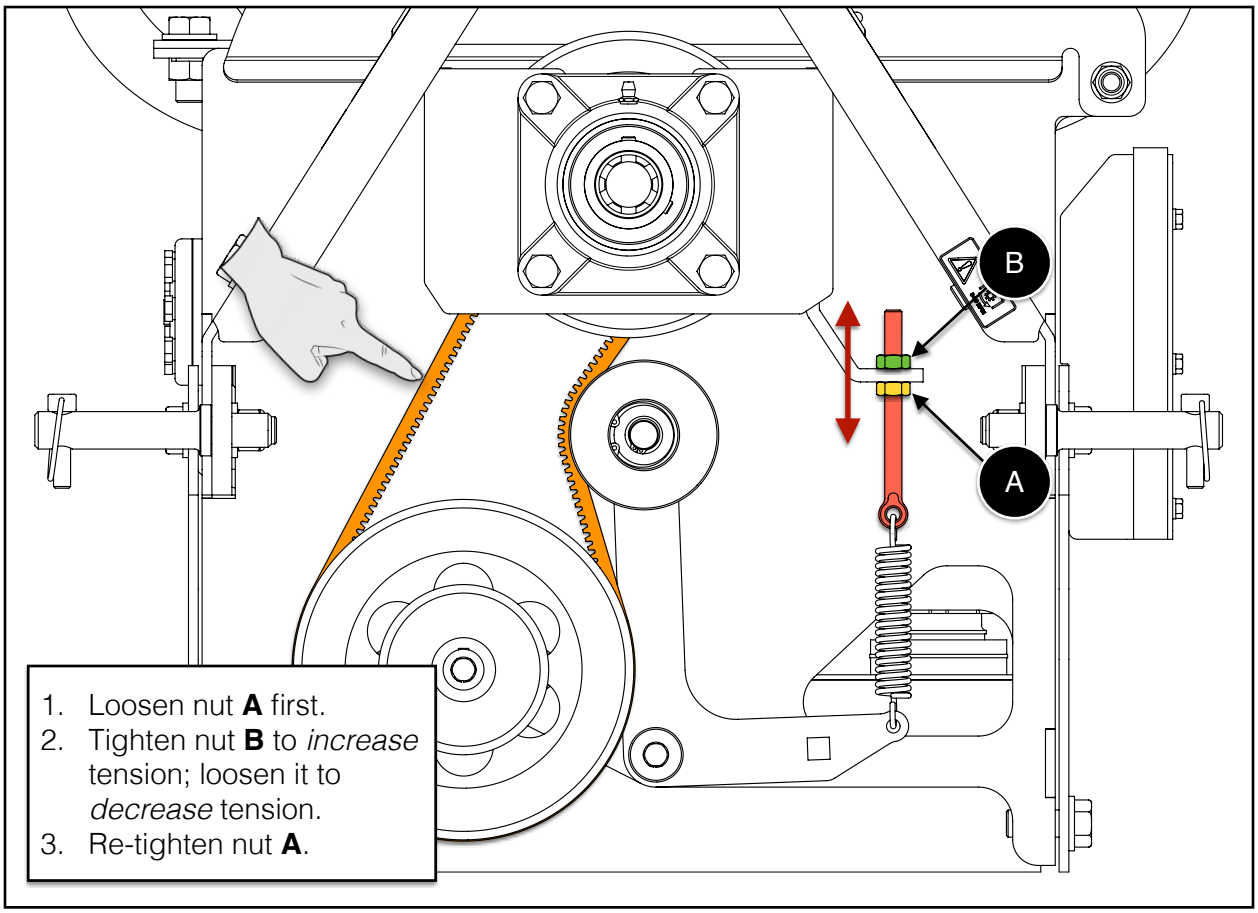


Adjusting Hydraulic Pump Belt Tension
[Connecting rod removed from image for clarity]

PADDLE FLYWHEEL BELT

The paddle flywheel belt is the belt *farthest* from the tractor. Check the condition and tension of the belt after every 30 hours of operation. It is self-tensioning via an extension spring. 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 belt and pulleys.
2. Check the paddle flywheel belt tension by pressing on it with a finger. There should not be any free slack in the belt. It should be under firm tension.
3. If the paddle flywheel belt requires more tension, the *upper* left-*side* eyebolt can be adjusted by loosening and tightening the M8 hex nuts as shown below. This will stretch the spring and increase the tension until the belt is firm.



Adjusting Paddle Flywheel Belt Tension
[Connecting rod, pump belt, and tensioner removed from image for clarity]

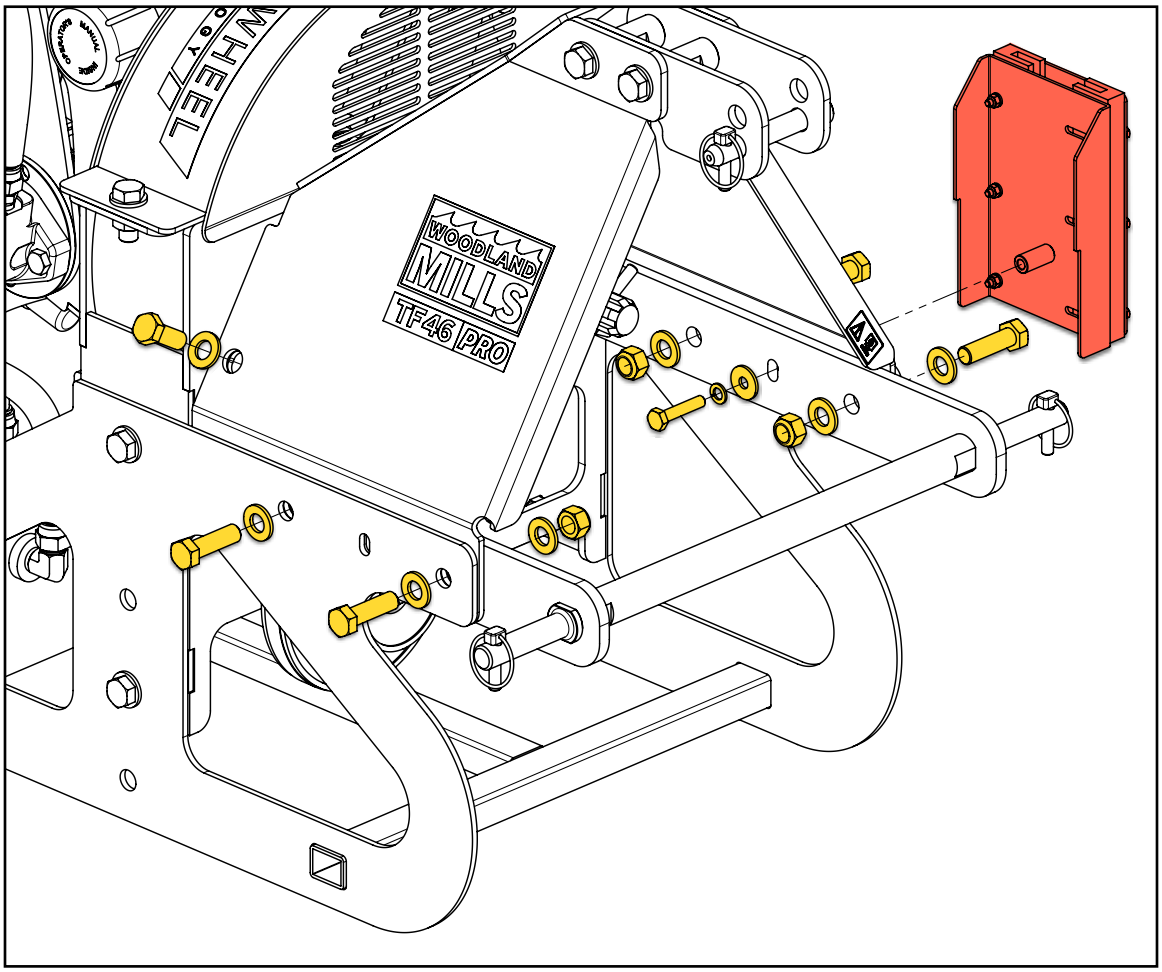
REPLACING THE BELTS

Check the condition and tension of both belts after every 30 hours of operation. If the infeed roller is not rotating—or rotating slowly—the hydraulic pump belt could be slipping. A squealing noise may also be heard. In either case, these conditions can occur due to a worn belt or improper belt tension (see the previous section, ***ADJUSTING THE BELT TENSION***). It is recommended *both* belts be replaced at the same time to reduce future maintenance.

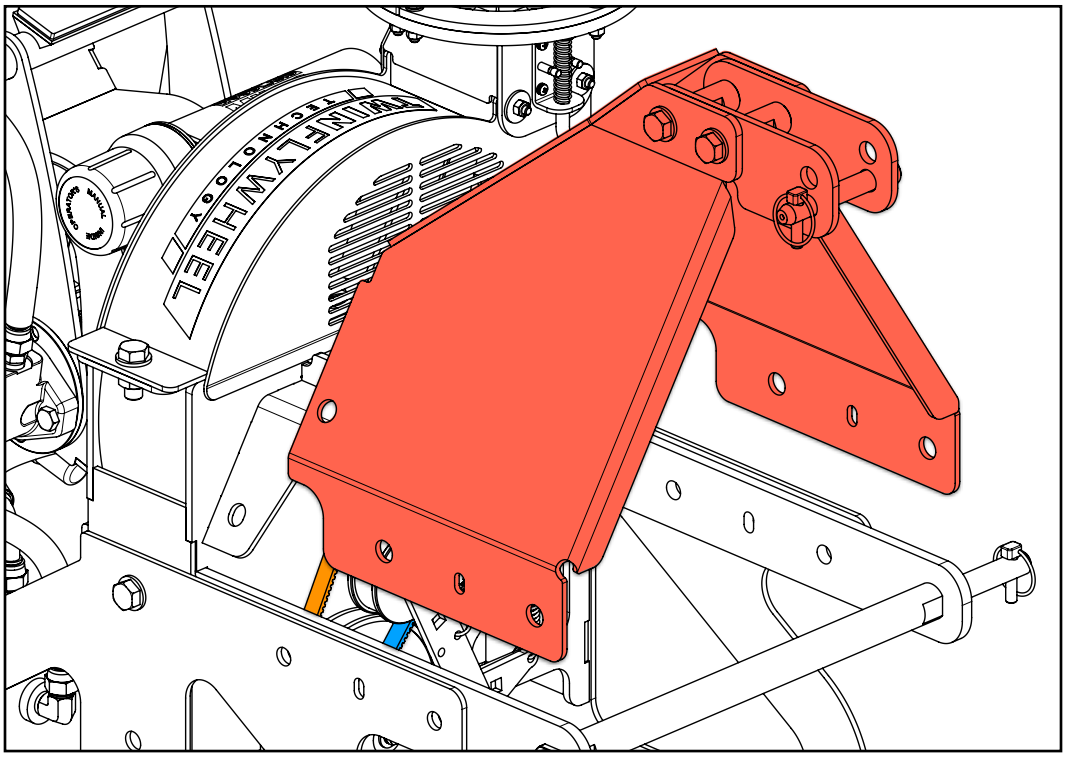
- *Hydraulic Pump Belt*: **BX40**
- *Paddle Flywheel Belt*: **BX41**

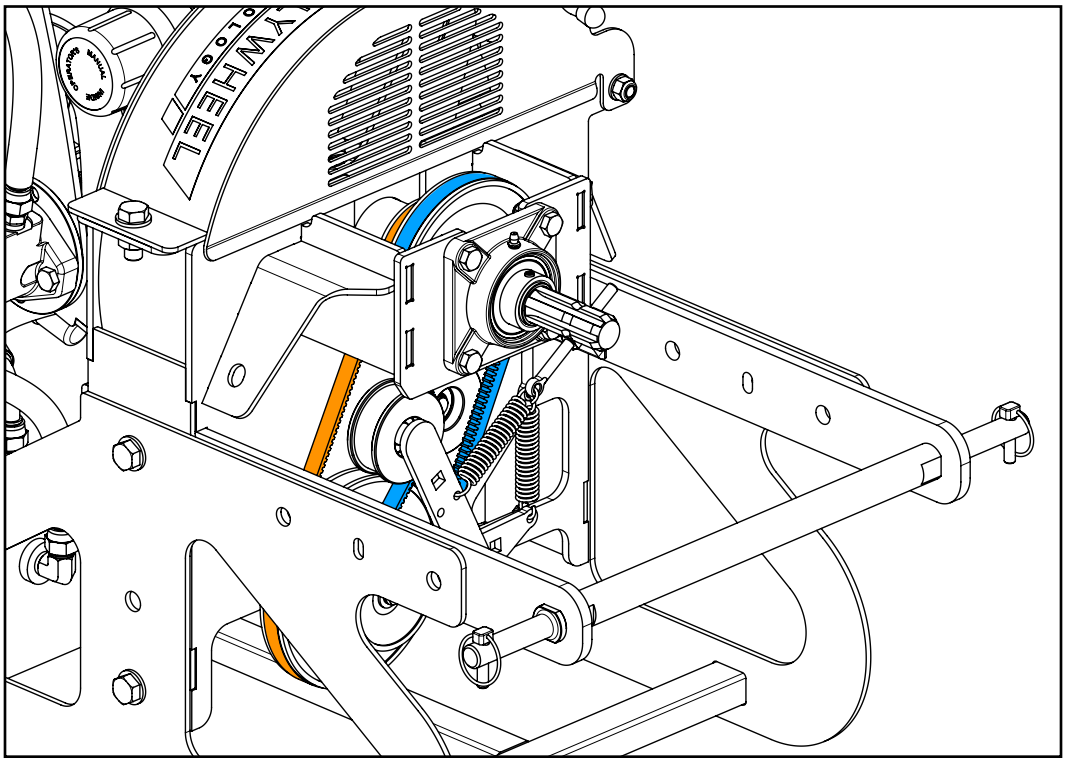
To replace the worn belts, follow the steps below:

1. If installed, disconnect the PTO shaft from the wood chipper for safety.
2. Remove the four (4) M16 X 55 mm hex bolts on the lower hitch arms, the two (2) M16 X 40 mm hex bolts on the belt guard, the chainsaw holder, and their respective washers and lock nuts.

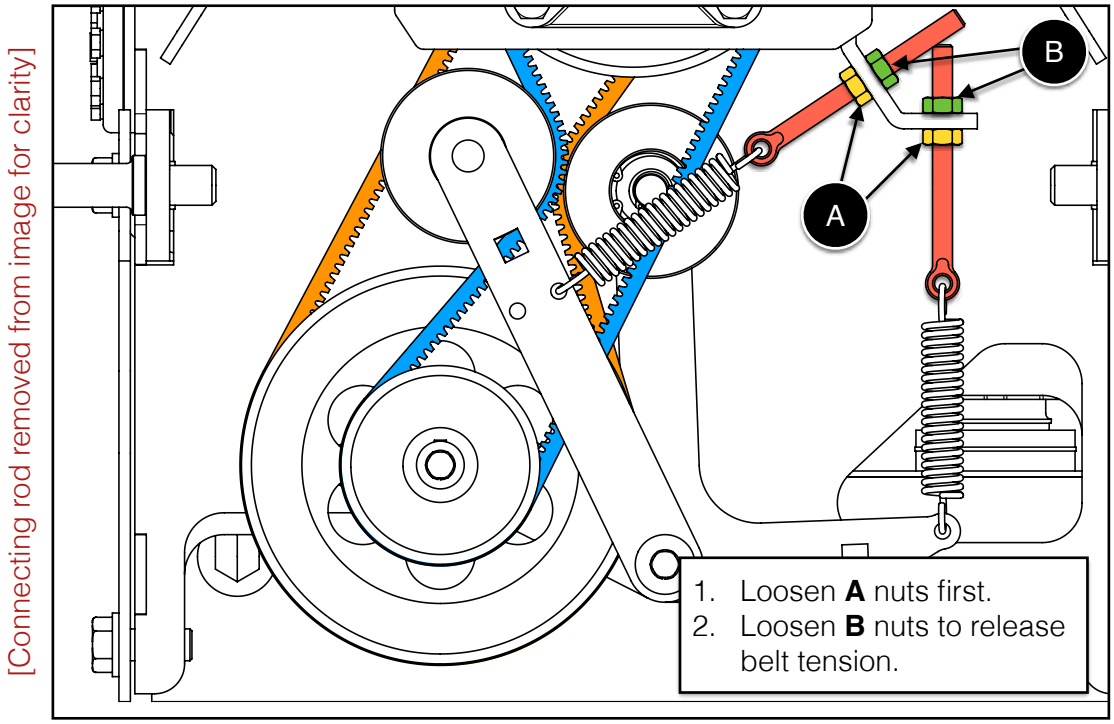


3. Leave the upper hitch attached to the belt guard. Pull the belt guard away from the lower flywheel housing to expose the belts and then set it aside.

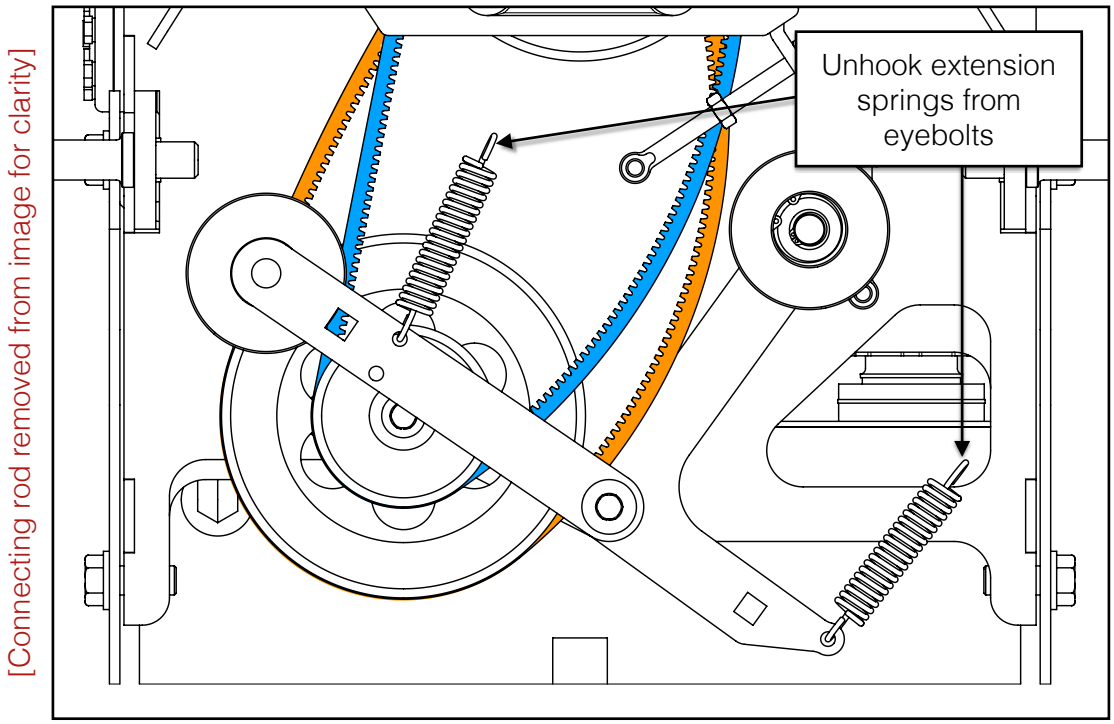




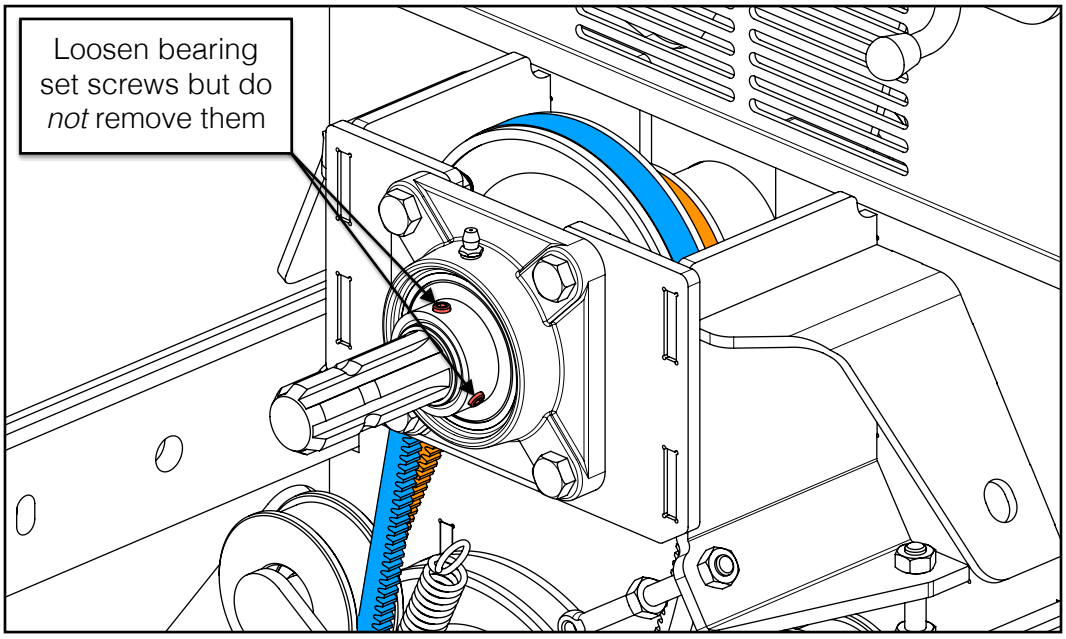
4. Loosen the two (2) jam nuts on both of the belt tensioner eyebolts until the tension on the extension springs is completely released.



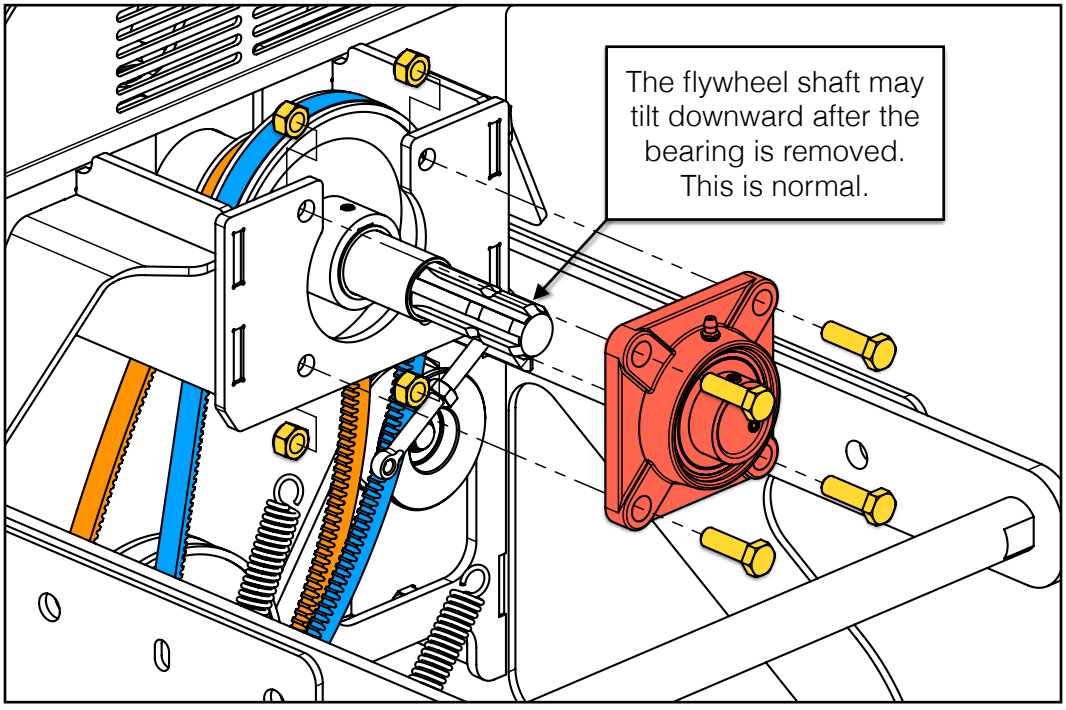
5. Unhook the extension springs from the eyebolts and allow the belt tension arms to rotate downward until they come to rest.



6. Loosen—*do not remove*—the two (2) M8 set screws on the rear bearing's collar.

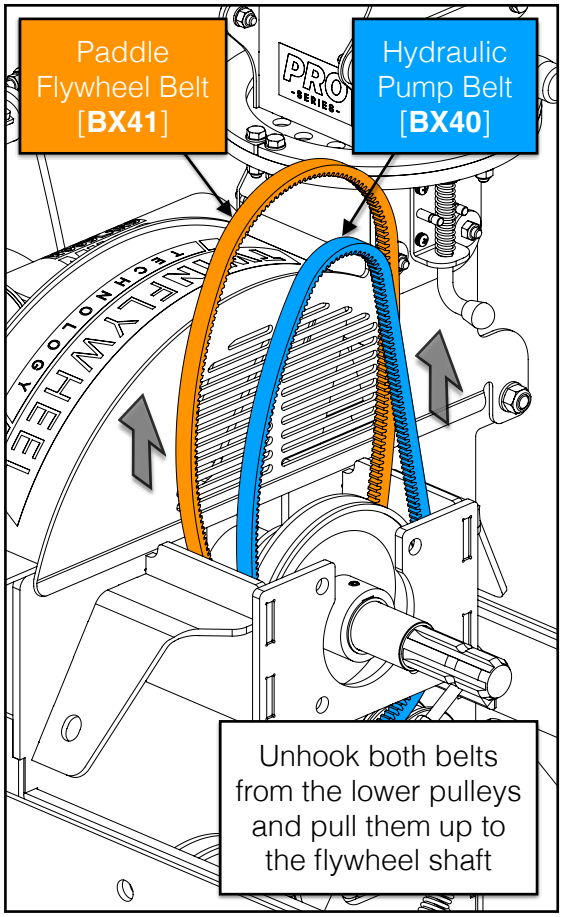


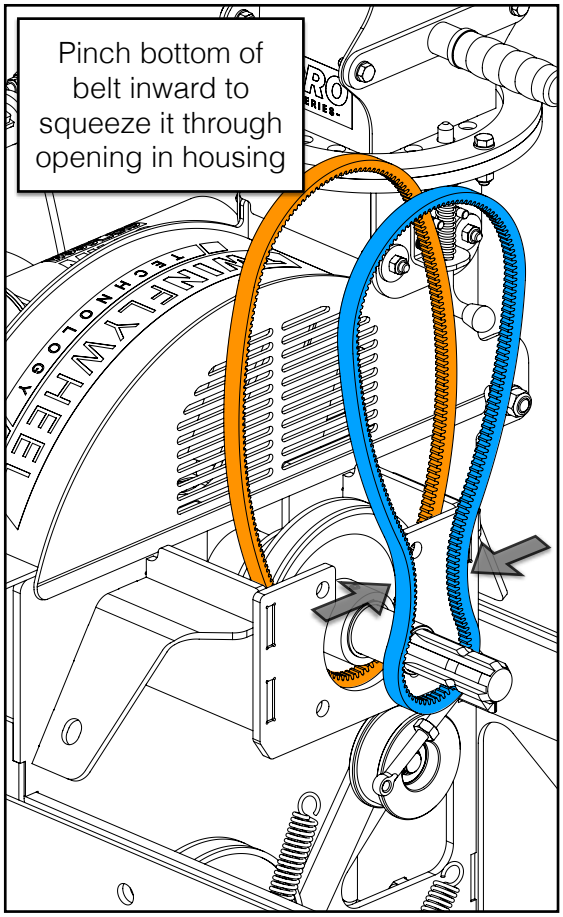
7. Remove the four (4) M12 X 40 mm hex bolts and lock nuts used to mount the bearing and slide it off the flywheel shaft. The shaft may tilt downward once the bolts are removed but this normal.



8. Unhook both belts from the lower pulleys and pull them up to the flywheel shaft as shown ***below-left***. Remove the hydraulic pump belt (front) first. Pinch the bottom of the belt inward and squeeze it through the opening between the flywheel shaft and housing as shown ***below-right***. Then repeat the procedure to remove the paddle flywheel belt (rear).

   Note: the shaft may have to be lifted up and supported by hand as each belt is removed.



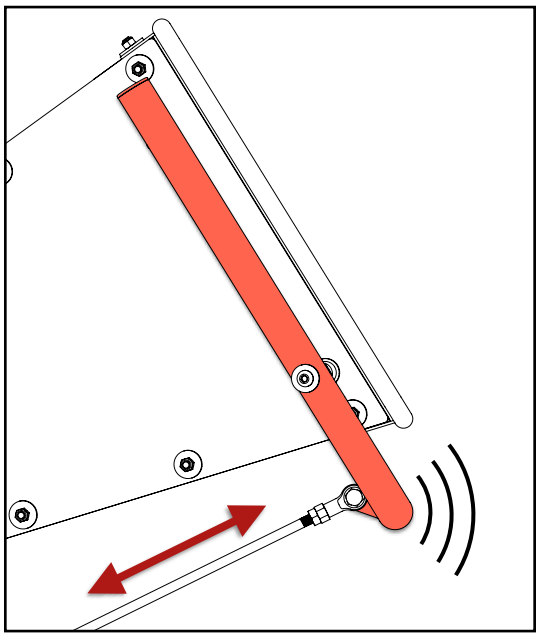


9. Reverse the steps to install new belts. Remember to install the paddle flywheel belt (rear) first before installing the hydraulic pump belt (front).

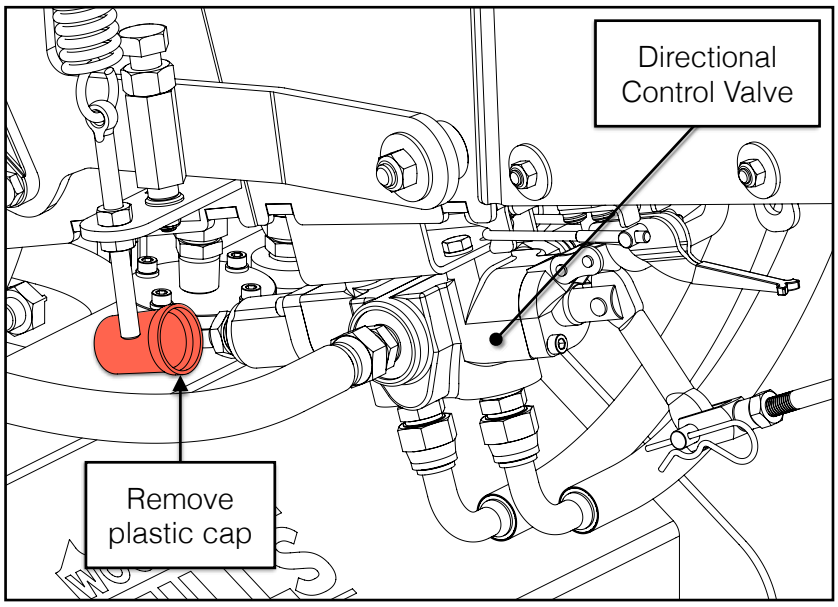
   ****Note: When reinstalling the bearing, be sure to torque the four (4) M12 X 40 mm hex bolts and lock nuts to 65 ft·lb [88 N·m].****

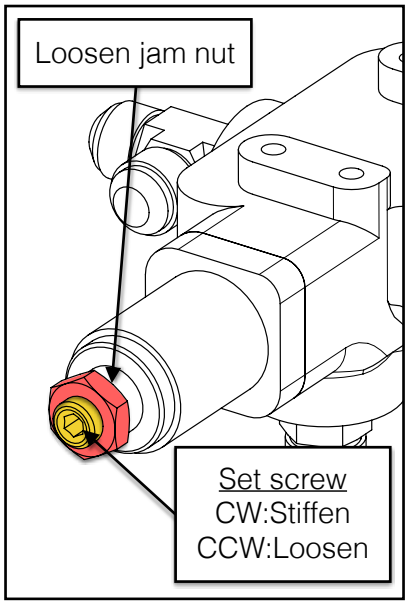
ADJUSTING THE CONTROL ARM

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 [⅞ in] wrench. Use a 6 mm hex key and turn the set screw ***clockwise to stiffen*** the movement of the arm, ***counter-clockwise to loosen*** it. Tighten the jam nut and replace the cap after the control arm movement feels satisfactory.

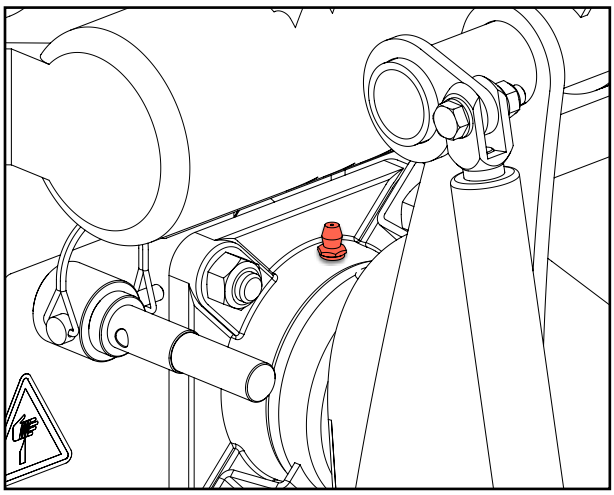
GREASING

BEARINGS & OUTPUT SHAFT

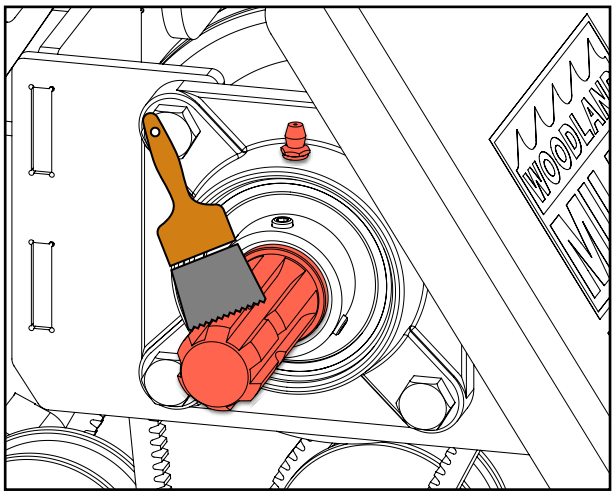
The wood chipper has five (5) grease points with Zerk fittings: two (2) flywheel shaft bearings, one (1) infeed roller bearing, and two (2) pump shaft bearings. Check each grease point prior to use and add grease as needed.

Also, periodically brush grease onto the flywheel shaft spline for ease of PTO shaft assembly & removal, to prevent rust buildup, and to prevent the two shafts from seizing together.

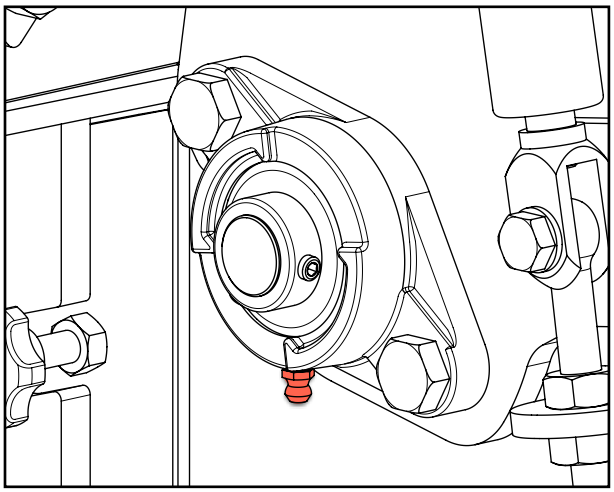
****Warning: These 5 grease points come pre-greased from the factory. *Do not add grease to the Zerk fittings on a new wood chipper*. Over-greasing can damage the bearing seals.****



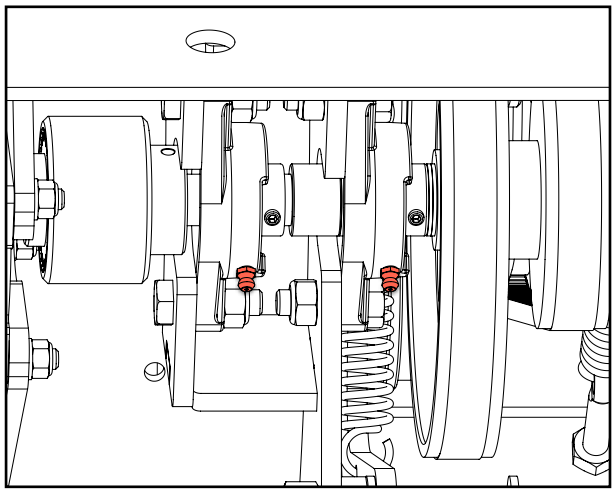
Front Flywheel Shaft Bearing



Rear Flywheel Shaft Bearing and Flywheel Shaft Spline



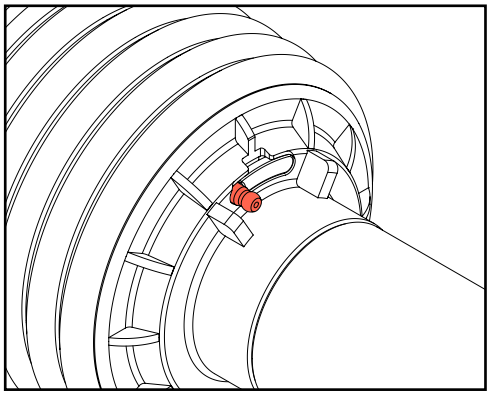
Infeed Roller Bearing



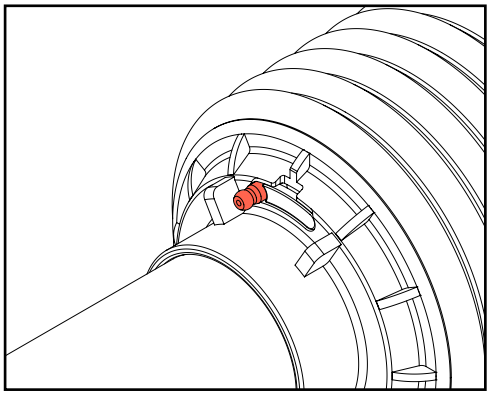
Pump Shaft Bearings (2x Underside)

PTO SHAFT

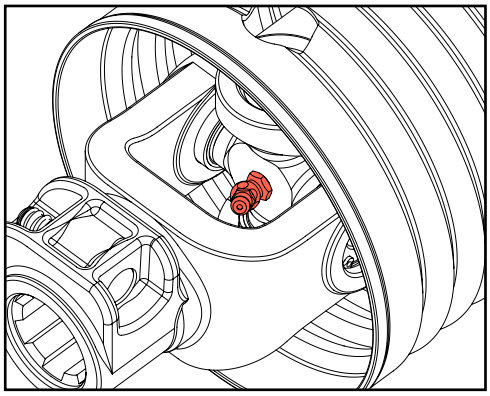
The PTO shaft has seven (7) grease points that are accessible from the outside: one (1) on each of the inner and outer guards, two (2) on the tractor yoke, and three (3) on the shear pin yoke. Check each grease point prior to use and add grease as needed.



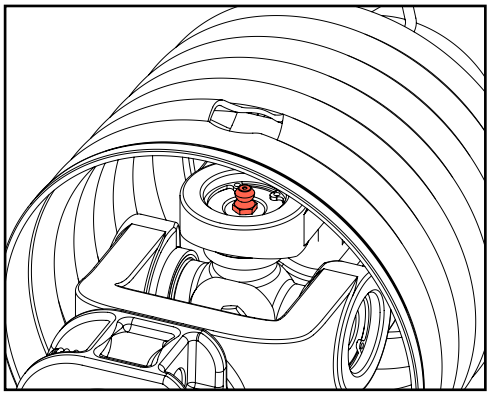
Inner Cover



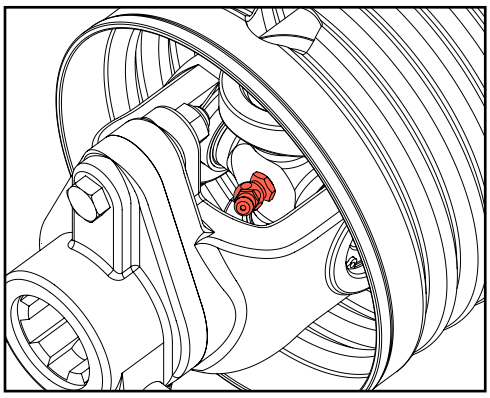
Outer Cover



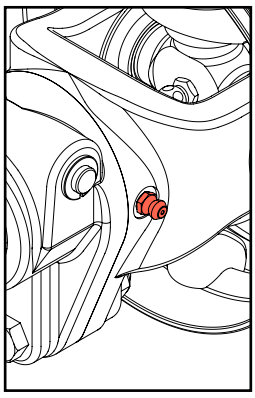
Tractor Yoke 1



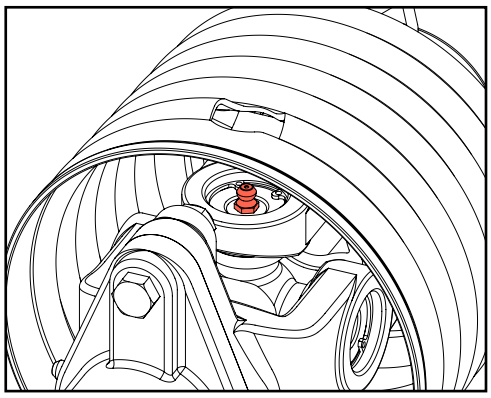
Tractor Yoke 2



Shear Bolt Yoke 1



Shear Bolt Yoke 2

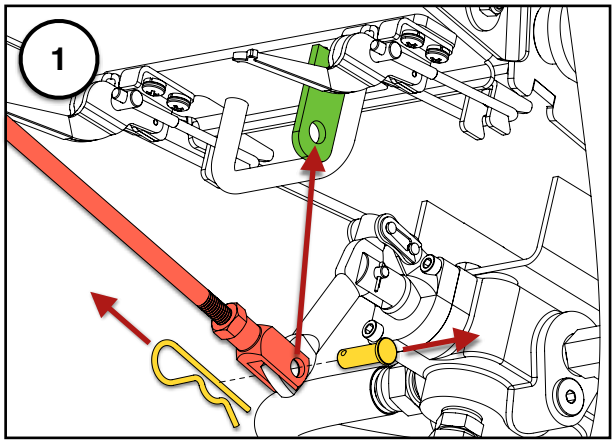


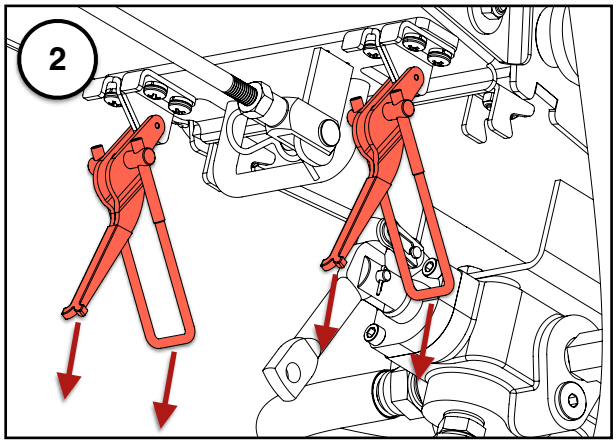
Shear Bolt Yoke 3

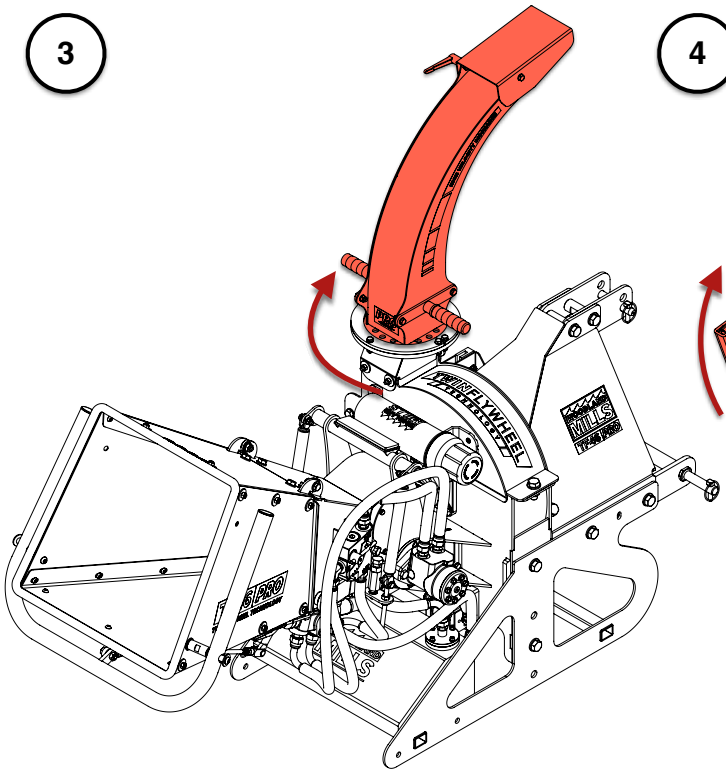
STORAGE

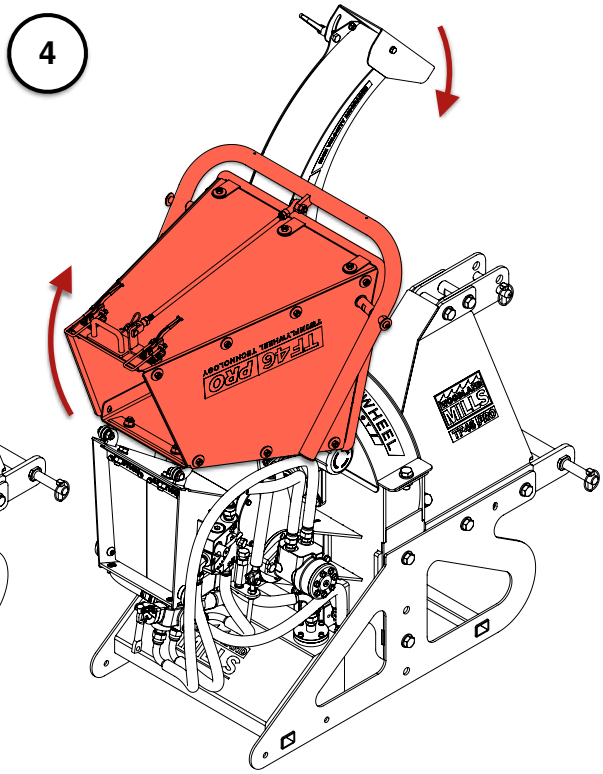
When the wood chipper is not in use, it can be stored to utilize a smaller footprint to save space. Follow these steps to put the wood chipper in its storage state:

1. Disconnect the control bar linkage from the directional control valve and reconnect it to the tab on the underside of the infeed chute bottom panel.
2. Disengage the two (2) latches on the underside of the infeed chute bottom panel.
3. Rotate the discharge chute so that it is angled towards the left side of the machine.
4. Swing the infeed chute up until it is resting on the swingarm. Tilt the deflector down.







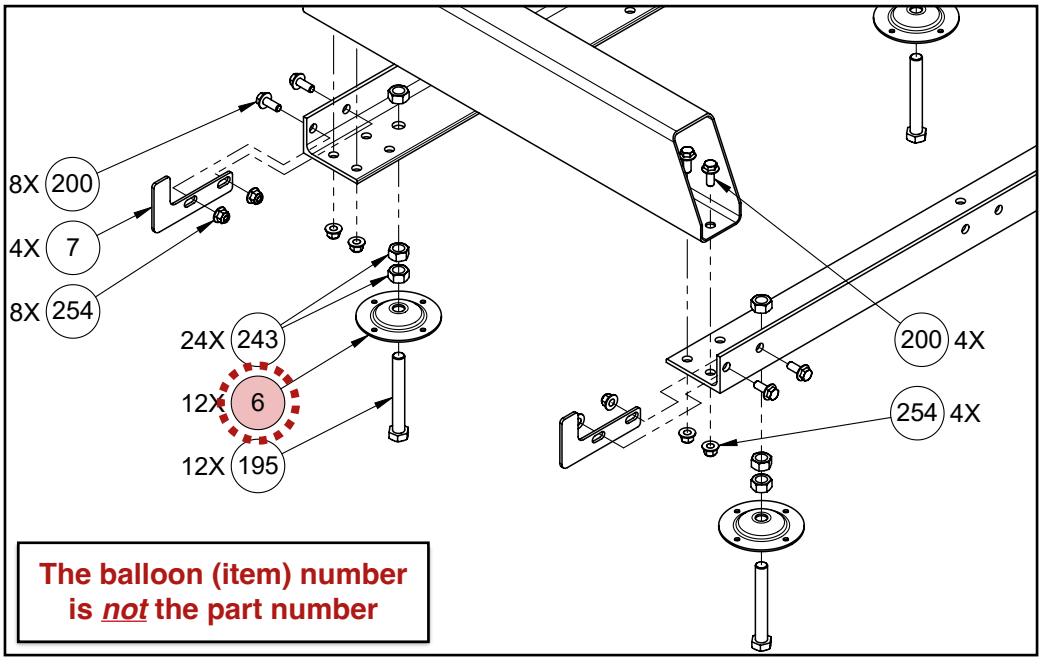


TROUBLESHOOTING

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 46. 2. Adjust tractor RPMs to 540 at output. 3. Reverse, sharpen, or replace blades. Refer to page 50 & page 52. 4. Re-set bed plate gap. Refer to page 53.
Brush exiting discharge chute is stringy	1. Blades are dull. 2. Brush is excessively sappy.	1. Reverse, sharpen, or replace blades. Refer to page 50 & page 52. 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 50 & page 52. 2. Re-set bed plate gap. Refer to page 53. 3. Clean blades and bed plate. 4. Adjust tractor RPMs to 540 at output.
Hydraulic pump belt slipping or squeaking	1. Belt tension not set properly. 2. Belt is old/worn.	1. Adjust belt tension. Refer to page 56. 2. Replace belt. Refer to page 58.
Excessive noise coming from flywheel bearings	1. Bearings not sufficiently lubricated. 2. Bearings are worn.	1. Grease bearings. Refer to page 64. 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 63.

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:

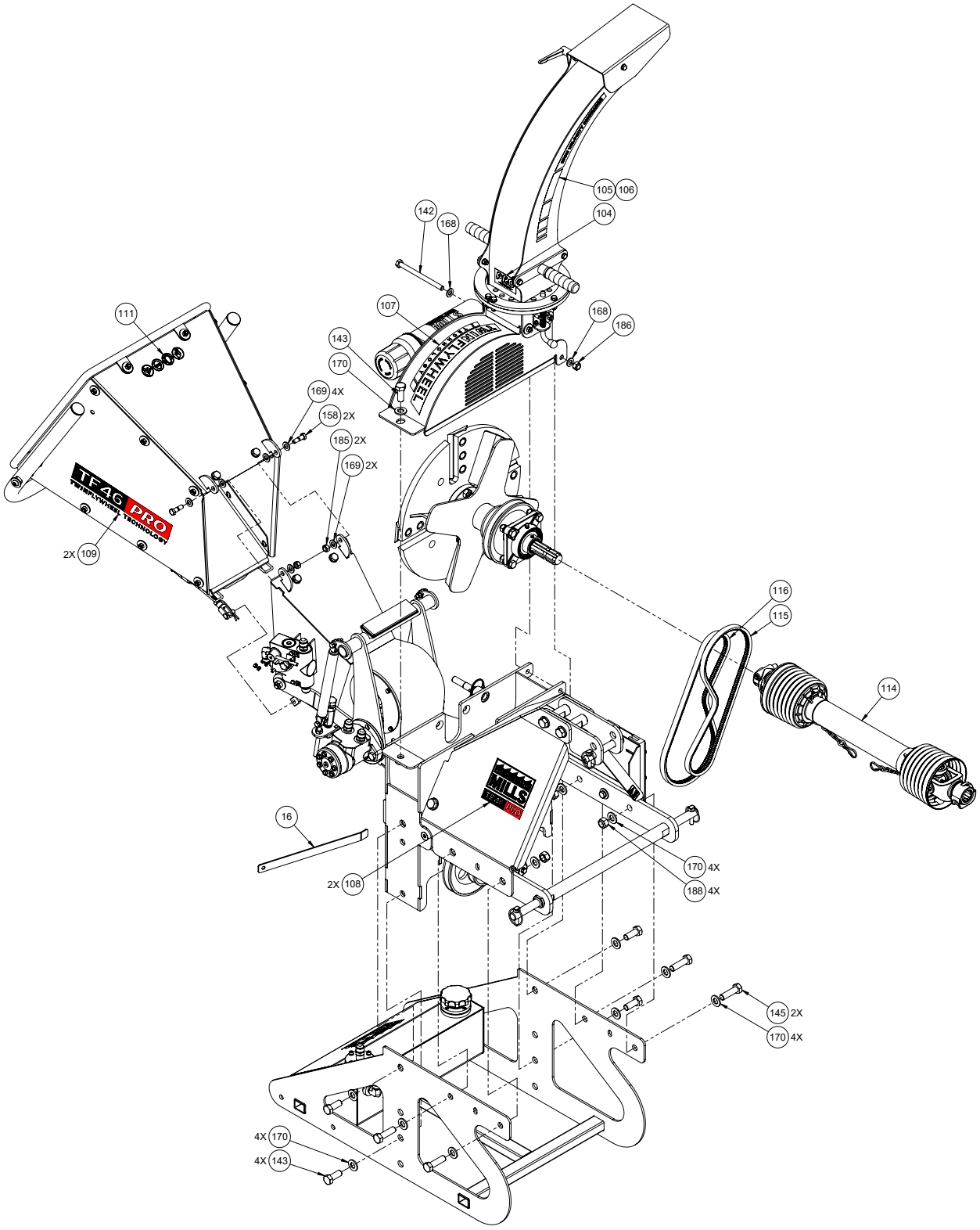
PARTS LIST

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

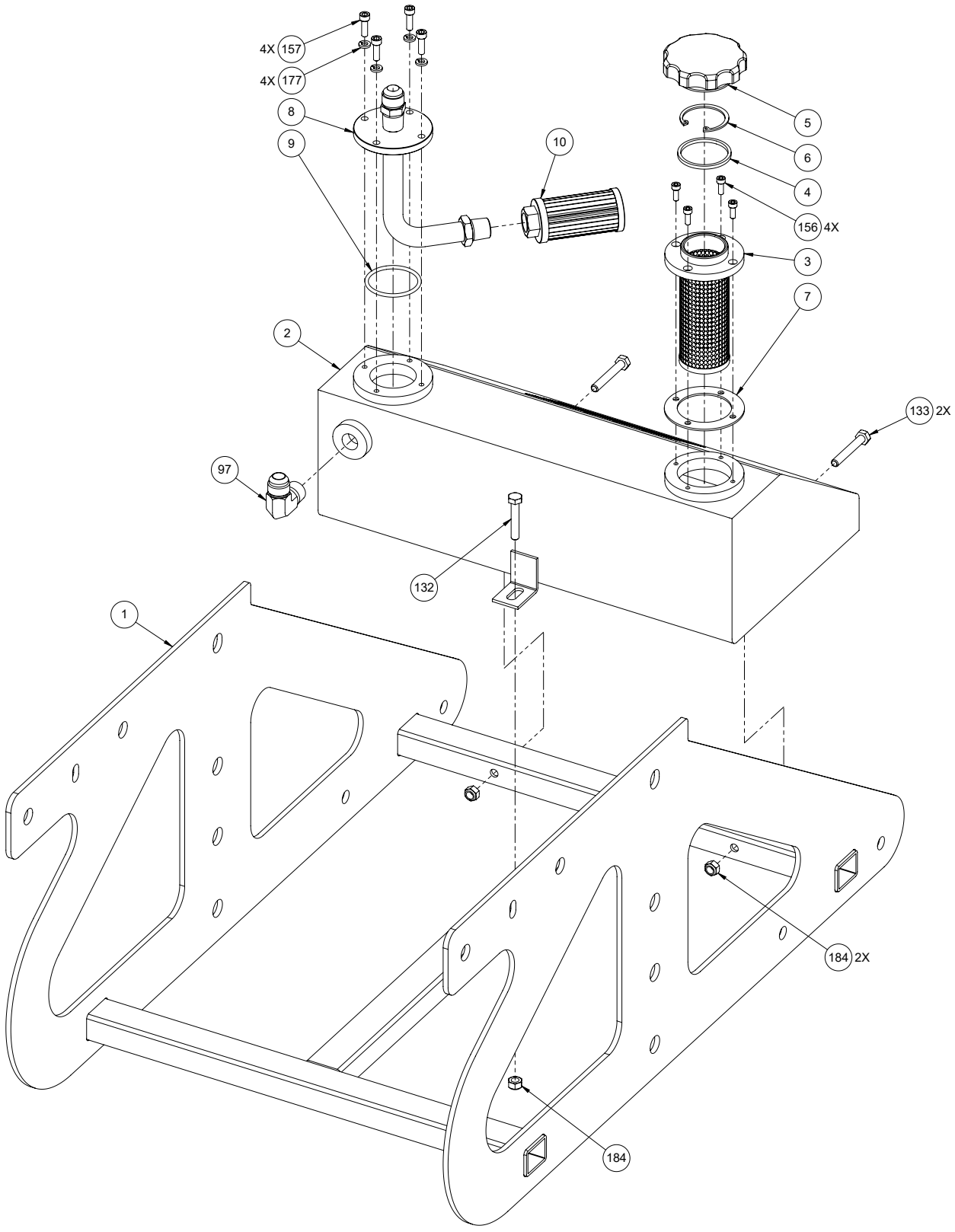
Record the part number (e.g. *0001071, HHB-MBM080FCJ, etc.*) in the "**Part No.**" column.

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.

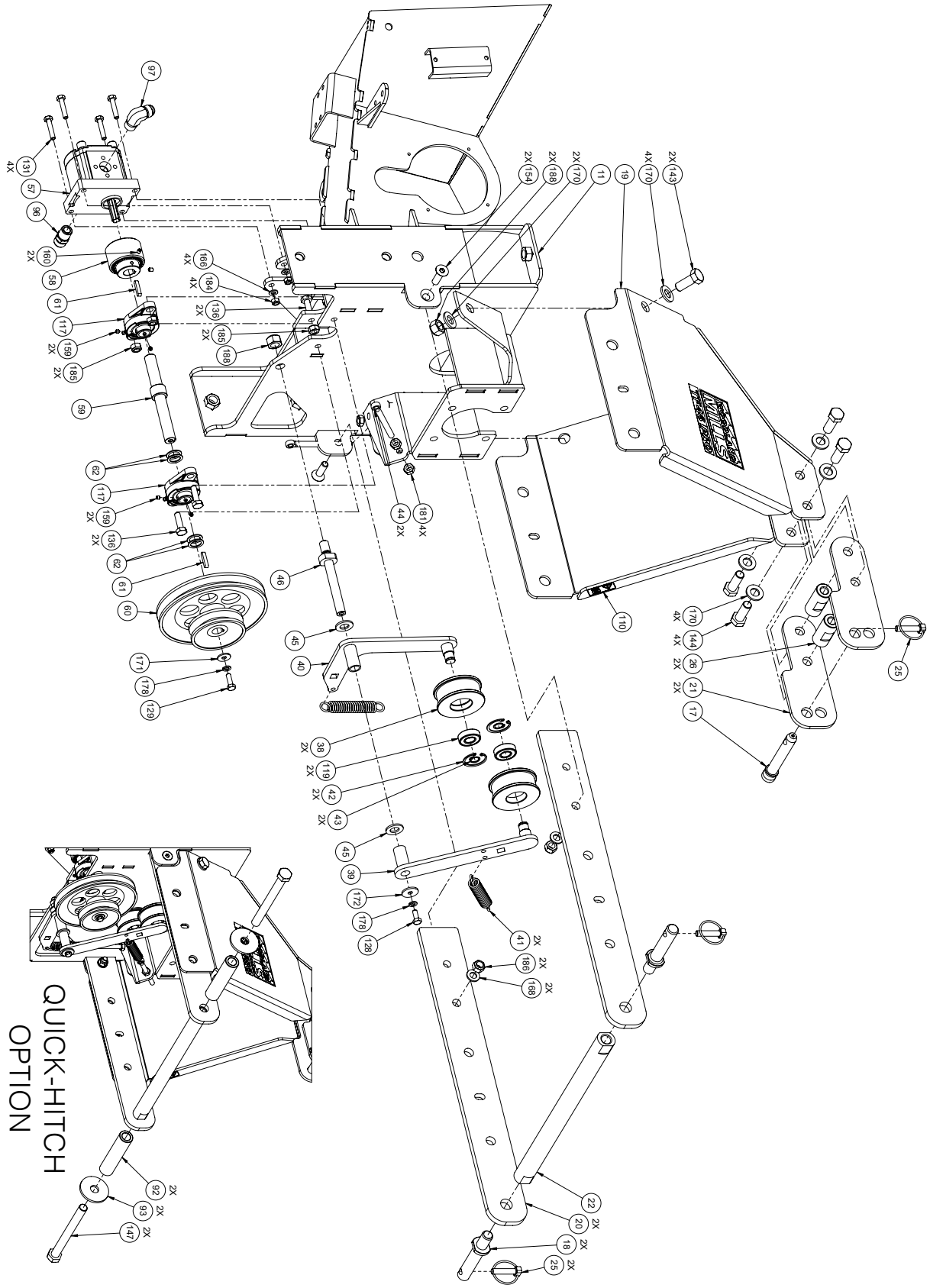
EXPLODED ASSEMBLY VIEWS
COMPLETE ASSEMBLY



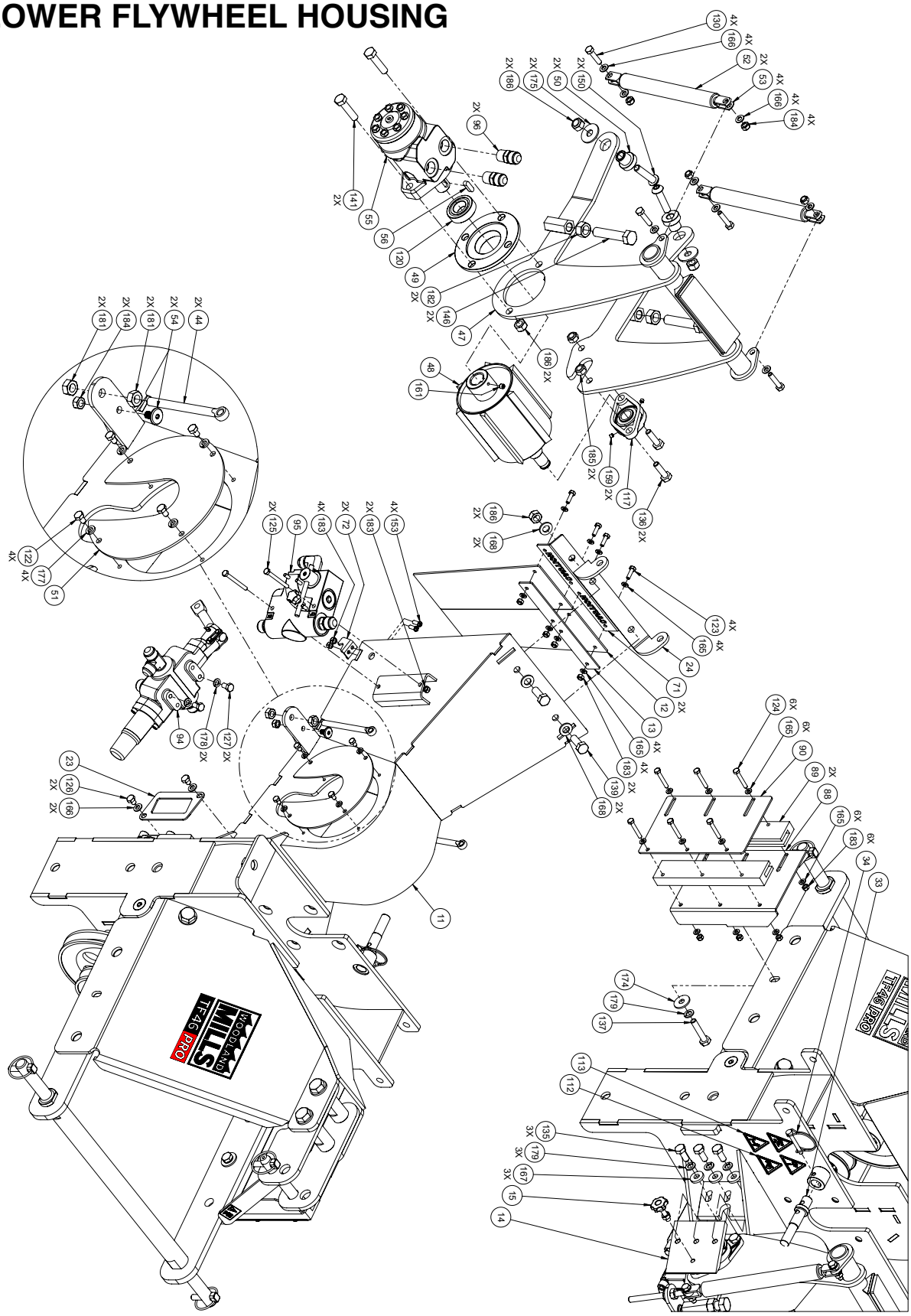
BASE



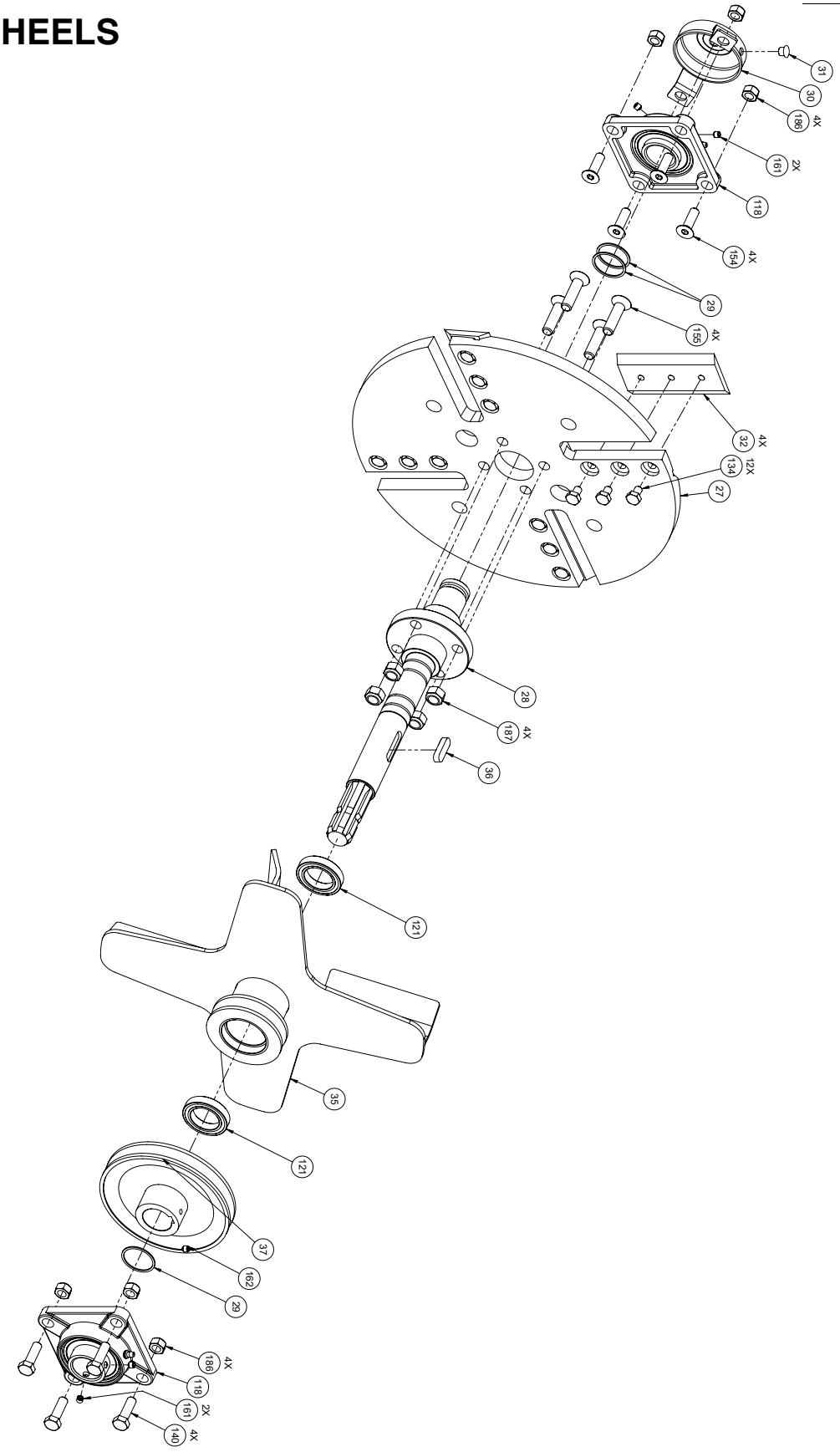
LOWER FLYWHEEL HOUSING BELT GUARD



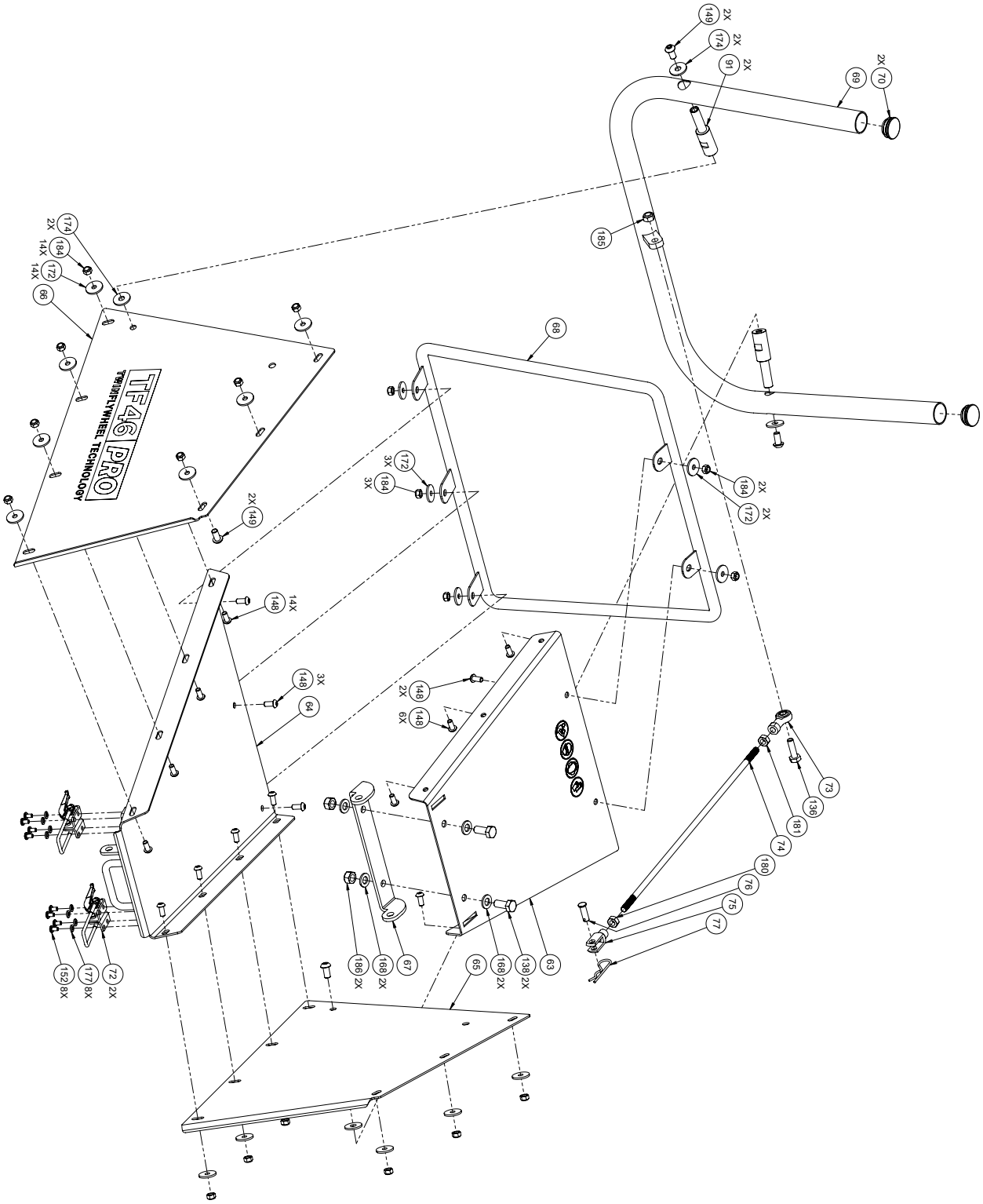
LOWER FLYWHEEL HOUSING



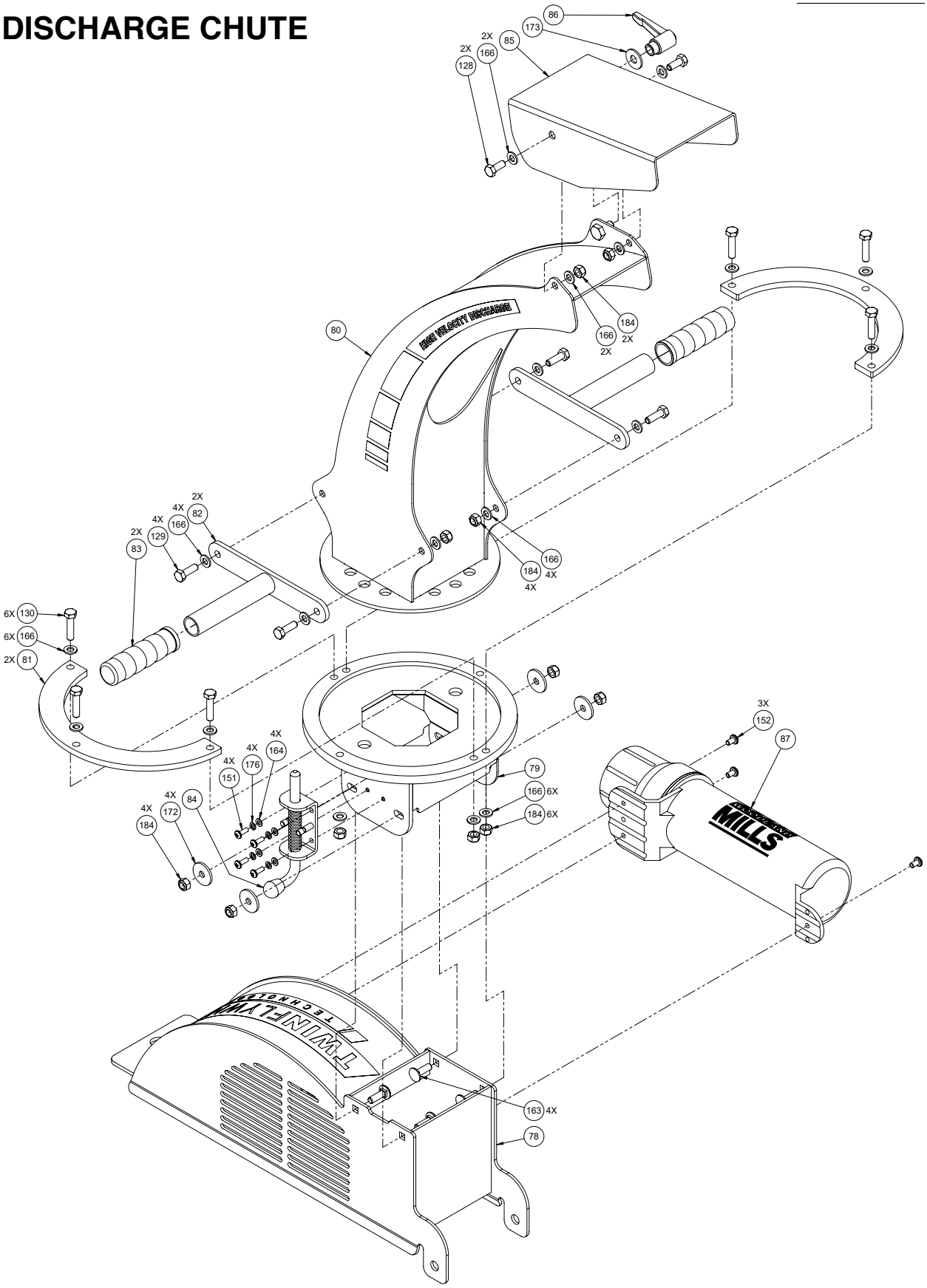
FLYWHEELS


31
30
186 4X
161 2X
118
154 4X
29
155 4X
32 4X
134 12X
27
28
187 4X
36
121
35
121
37
162
29
186 4X
118
161 2X
140 4X

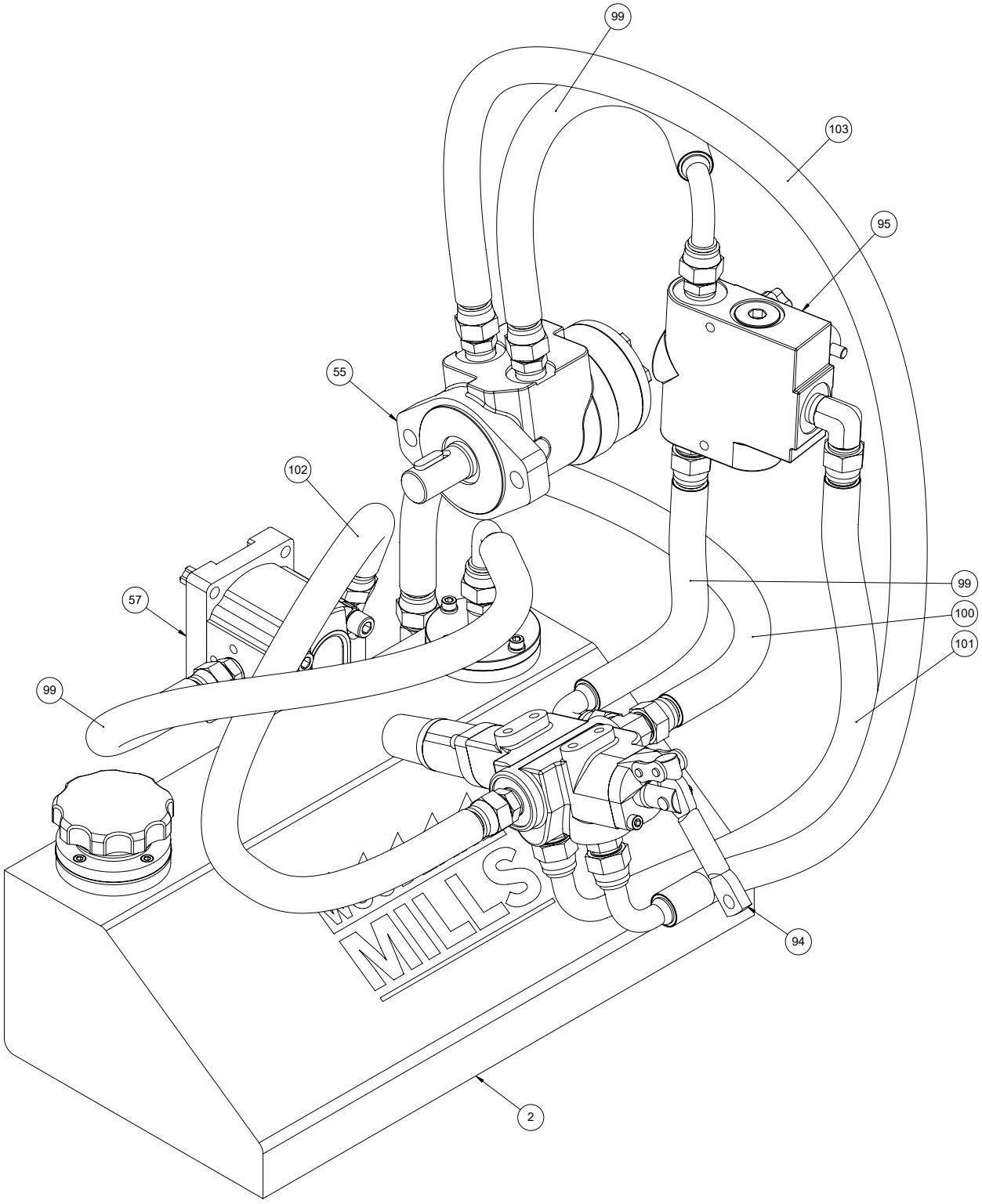
INFEED CHUTE



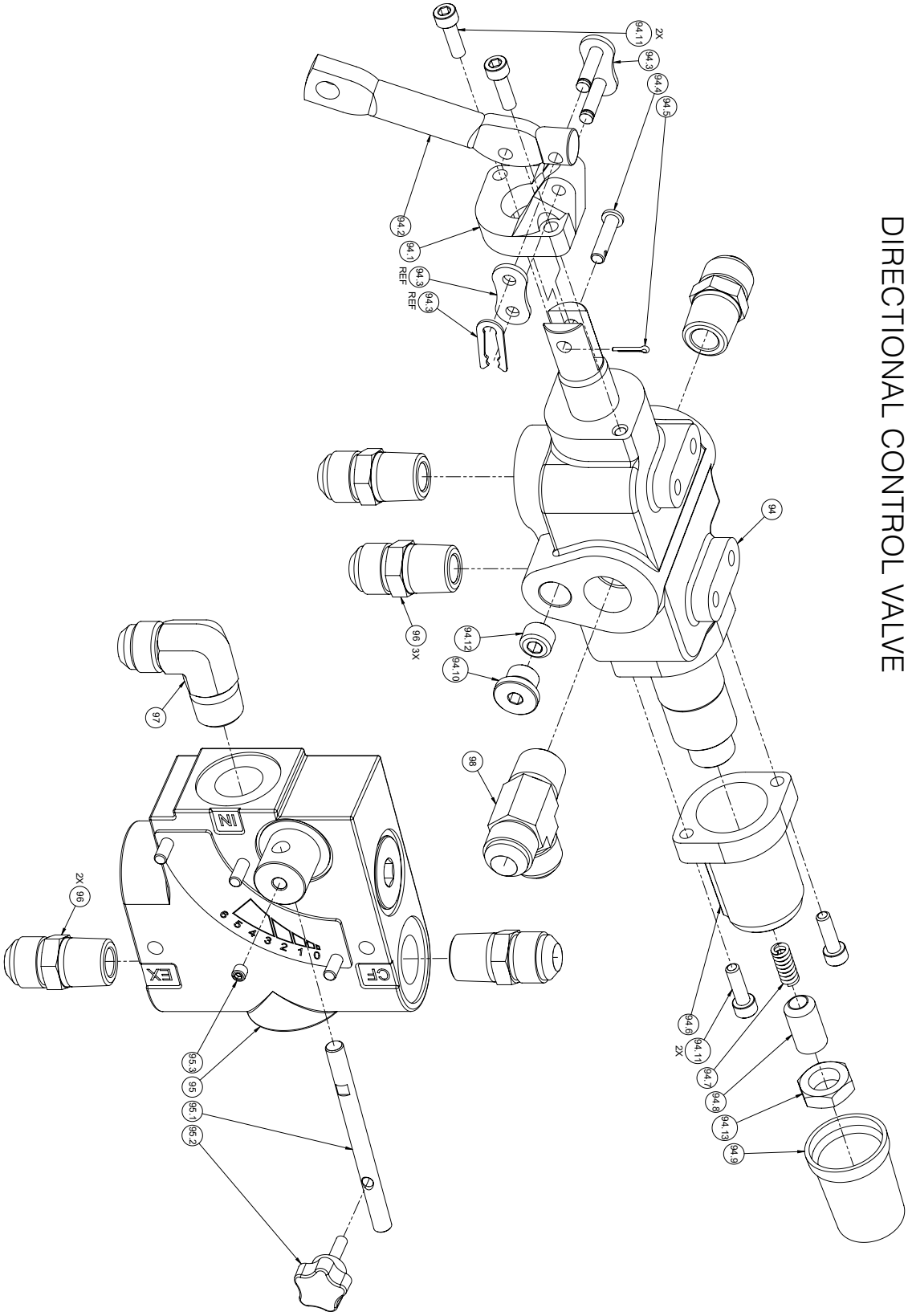
DISCHARGE CHUTE



HYDRAULIC LINES



CONTROL VALVES



PTO SHAFT

Item 114.2 [Guard Bearing Kit] is included with Item 114.1 [Guard Kit].

Order 114.1 if guards are needed as bearings are automatically included. Order 114.2 if only bearings are needed.

Item 114.4 [Shear Bolt] 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 114.5].

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	0007102	BASE
2	1	0002957	HYDRAULIC TANK, 12 L [3 Gal]
3	1	0005188	OIL SCREEN, 50 mm DIA X 120 mm LG SCREEN
4	1	0005186	GASKET, OIL SCREEN CAP, 48 mm ID
5	1	0005183	OIL SCREEN CAP, 85 mm DIA, M48 X 2 THD
6	1	0005185	RETAINING RING, INTERNAL, 46 mm BORE (48.5 mm GROOVE)
7	1	0005187	GASKET, OIL SCREEN, 55 mm ID
8	1	0001164	HYDRAULIC TANK INTAKE LINE
9	1	0004841	O-RING, 50 mm ID / 57 mm OD, 3.5 mm THK
10	1	0001752	HYDRAULIC INTAKE FILTER, 1/2 NPT
11	1	0010341	LOWER FLYWHEEL HOUSING
12	2	0001727	CURTAIN
13	1	0001728	CURTAIN PLATE
14	1	0001730	BED PLATE, 126 X 103.6 X 9.4 mm
15	1	0001191	KNOB, MULTI-LOBE, 32 mm OD, M8 X 1.25, 30 mm LG, M8 WLD HEX NUT
16	1	0010411	BED PLATE GAP TOOL
17	1	0001156	HITCH PIN, UPPER, CAT 1, 3/4 in [19 mm] DIA, 3-1/2 in [90 mm] USEABLE LG
18	2	0001738	HITCH PIN, LOWER, CAT 1, M20 X 2.5, 7/8 in [22 mm] DIA, 3 in [75 mm] USEABLE LG
19	1	0006831	BELT GUARD
20	2	0006832	3-POINT HITCH LOWER ARM
21	2	0007029	3-POINT HITCH UPPER ARM
22	1	0006809	CONNECTING ROD
23	1	0007106	INSPECTION WINDOW COVER
24	1	0001711	INNER HINGE, INFEED CHUTE
25	3	0004705	LINCH PIN, 10 mm DIA, 38 mm USABLE LG, 45 mm LG
26	2	0009856	UPPER HITCH BUSHING
27	1	0002819	FLYWHEEL
28	1	0006845	FLYWHEEL SHAFT
29	3	0001734	SPACER, 40.6 ID X 46 OD X 1.5 mm LG
30	1	0001731	FLYWHEEL SHAFT COVER, UCF208 BEARING
31	1	0001795	FLYWHEEL SHAFT COVER PLUG
32	4	0002821	FLYWHEEL BLADE, 145 X 69 X 8 mm, TAPPED
33	1	0001796	FLYWHEEL LOCKING PIN
34	1	0004728	LOCKING PIN, ROUND, 1/4 in DIA, 1-3/8 in USABLE LG, 2 in LG
35	1	0006841	PADDLE FLYWHEEL
36	1	0004850	PARALLEL KEY, 12 X 8 mm, 40 mm LG
37	1	0006843	V-BELT PULLEY, 40 mm SHAFT, 180 mm DIA
38	2	0001692	IDLER PULLEY, SINGLE BEARING, 25 mm WD, 80 mm DIA
39	1	0005563	BELT TENSIONER ARM, PADDLE FLYWHEEL BELT
40	1	0006854	BELT TENSIONER ARM, PUMP BELT
41	2	0001192	EXTENSION SPRING, HOOK ENDS, 21 mm OD, 3 mm DIA WIRE, 100 mm LG
42	2	0004816	RETAINING RING, INTERNAL, 40 mm BORE (42.5 mm GROOVE)
43	2	0004797	RETAINING RING, EXTERNAL, 16 mm SHAFT (15.2 mm GROOVE)
44	4	0006059	EYEBOLT, DIN444, M10 X 1.5, 120 mm LG
45	2	0005560	SPACER, 17 ID X 32 OD X 3 mm LG

Item	Qty	Part No.	Description
46	1	0005561	IDLER PIVOT PIN, 16 mm DIA, 111.5 mm LG, M16 X 2 THD
47	1	0010338	SWINGARM
48	1	0001717	INFEED ROLLER
49	1	0001179	HYDRAULIC MOTOR ADAPTER PLATE, 6205-2RS BEARING
50	2	0006493	SWINGARM PIVOT BUSHING, 10 mm SHOULDER
51	1	0001729	INFEED ROLLER COVER PLATE
52	2	0011001	GAS SPRING, PULLING, 500 N [112.4 lbf], 120 mm [4.72 in] STROKE, M8 X 1.25
53	4	0009822	CLEVIS ROD END, M8 X 1.25 THD, 10 mm ID, 9 mm JAW OPENING
54	2	0001733	STRIKE PLATE BOLT, 20 mm HEAD DIA, M8 X 1.25 THD
55	1	0004861	HYDRAULIC MOTOR, CW, 154 cc [9.4 in3/rev], 2-HOLE 1/2 in NPT ALIGNED PORTS, 25 mm SFT
56	1	0004846	PARALLEL KEY, 8 X 7 mm, 25 mm LG
57	1	0004867	HYDRAULIC GEAR PUMP, 8 mL/r, SPLINE SHAFT
58	1	0002185	FLEXIBLE SHAFT COUPLING, 20 mm SHAFT TO 12 mm SPLINED SHAFT
59	1	0006840	PUMP SHAFT
60	1	0006842	V-BELT PULLEY, DUAL, 20 mm SHAFT, 200/100 mm DIA
61	2	0004845	PARALLEL KEY, 6 X 6 mm, 32 mm LG
62	4	0002703	SPACER, 20 ID X 28 OD X 1.5 mm LG
63	1	0010325	INFEED CHUTE TOP PANEL
64	1	0010329	INFEED CHUTE BOTTOM PANEL
65	1	0010328	INFEED CHUTE LEFT SIDE PANEL
66	1	0010327	INFEED CHUTE RIGHT SIDE PANEL
67	1	0001716	OUTER HINGE, INFEED CHUTE
68	1	0010334	ROUND EDGE BAR, INFEED CHUTE
69	1	0010335	CONTROL ARM
70	2	0001781	PLASTIC END CAP, ROUND, 38 mm DIA
71	1	0001726	CURTAIN BRACKET
72	2	0001304	LATCH-STYLE TOGGLE CLAMP
73	1	0004888	ROD END BEARING, 10 mm, M10 X 1.5 FEM THD
74	1	0008197	LINKAGE ROD, CONTROL ARM, 520 mm LG
75	1	0004834	CLEVIS ROD END, M10 X 1.5 THD, 10 mm ID, 10 mm JAW OPENING
76	1	0004749	CLEVIS PIN, 10 mm DIA, 24 mm USABLE LG, 30 mm LG
77	1	0004760	COTTER PIN, HAIRPIN, 10-16 mm CLEVIS, 3 mm WIRE DIA
78	1	0002945	UPPER FLYWHEEL HOUSING
79	1	0006698	DISCHARGE CHUTE NOZZLE, 260 mm DIA
80	1	0009631	DISCHARGE CHUTE
81	2	0009630	DISCHARGE CHUTE RETAINER PLATE, 260 mm DIA, BLACK
82	2	0009212	DISCHARGE CHUTE ROTATION HANDLE, 170 mm C-C, BLACK
83	2	0001030	HANDLE GRIP, GROOVED, 26 mm ID, 108 mm LG
84	1	0001172	DISCHARGE CHUTE LOCK PIN ASSEMBLY, 12 mm DIA
85	1	0009629	DISCHARGE CHUTE DEFLECTOR
86	1	0001786	HANDLE, ADJUSTABLE POS, 78 X 54 mm, M10 X 1.5 FEM THD
87	1	0001655	MANUAL TUBE
88	1	0006813	CHAINSAW HOLDER BRACKET
89	2	0002361	CHAINSAW HOLDER NYLON GUIDE
90	1	0002363	CHAINSAW HOLDER CLAMPING PLATE
91	2	0008193	CONTROL ARM SPACER
92	2	0007078	ADAPTER PIN, QUICK-HITCH, 21 ID X 34 OD X 150 mm LG

Item	Qty	Part No.	Description
93	2	0011352	ADAPTER FLANGE, QUICK-HITCH, 21 ID X 72 OD X 6 mm THK
94	1	0004872	DIRECTIONAL CONTROL VALVE, 1/2 NPT
94.1	1	0005487	ACTUATOR MOUNT, DIRECTIONAL CONTROL VALVE
94.2	1	0005486	ACTUATOR, 82 mm LG, DIRECTIONAL CONTROL VALVE
94.3	1	0005477	MASTER LINK, NO. 60 CHAIN
94.4	1	0005482	CLEVIS PIN, 6 mm DIA, 20 mm USABLE LG, 25 mm LG
94.5	1	0005483	COTTER PIN, 2 mm DIA, 10 mm LG
94.6	1	0005494	REAR COVER, DIRECTIONAL CONTROL VALVE
94.7	1	0005481	COMPRESSION SPRING, CLOSED GROUND ENDS, 8 mm OD, 1.5 mm DIA WIRE, 23 mm LG
94.8	1	0005489	ADJUSTMENT SCREW, M14 X 1.5, 25 mm LG, DIRECTIONAL CONTROL VALVE
94.9	1	0005488	CAP, DIRECTIONAL CONTROL VALVE
94.10	1	0007182	PRESSURE RELEASE PLUG, DIRECTIONAL CONTROL VALVE
94.11	4	SHC-MBE075FCP	SHCS, CLS 12.9, M6 X 1, 20 mm LG, FULL
94.12	1	FTS-MBY059GR	SET SCREW, FLAT TIP, GR 45H, M14 X 1.5, 10 mm LG
94.13	1	THN-MBYCC	HEX NUT, THIN, CLS 4, M14 X 1.5
95	1	0004875	VARIABLE FLOW CONTROL VALVE, 1/2 in NPT, 0-16 gal/min
95.1	1	0007518	LEVER ARM, VARIABLE FLOW CONTROL VALVE
95.2	1	0007519	KNOB, MULTI-LOBE, 25 mm OD, M6 X 1, 20 mm LG
95.3	1	CPS-MBE051GR	SET SCREW, CUP POINT, GR 45H, M6 X 1, 6 mm LG
96	8	0005124	FITTING, ADAPTER, 1/2 in NPT MALE TO 7/8-14 UNF MALE
97	3	0005115	FITTING, ELBOW, 90°, 1/2 NPT TO 7/8-14 THD
98	1	0004911	FITTING, TEE, 1/2 NPT TO 7/8-14 (2X)
99	3	0003297	HYDRAULIC HOSE ASSEMBLY, STR AND ELB FITTINGS, 350 mm LG
100	1	0003299	HYDRAULIC HOSE ASSEMBLY, STR FITTINGS, 500 mm LG
101	1	0003300	HYDRAULIC HOSE ASSEMBLY, STR AND ELB FITTINGS, 600 mm LG
102	1	0003302	HYDRAULIC HOSE ASSEMBLY, STR FITTINGS, 1850 mm LG
103	1	0003303	HYDRAULIC HOSE ASSEMBLY, STR AND ELB FITTINGS, 1450 mm LG
104	1	0009634	LABEL, PRO SERIES, 80 X 45 mm
105	1	0009632	LABEL, HIGH VELOCITY DISCHARGE
106	1	0009633	LABEL, HIGH VELOCITY DISCHARGE [REVERSE]
107	1	0009635	LABEL, TWIN FLYWHEEL TECHNOLOGY
108	2	0009636	LABEL, TF46 PRO W/ WOODLAND MILLS LOGO
109	2	0009637	LABEL, TF46 PRO TWIN FLYWHEEL TECHNOLOGY
110	1	0010603	LABEL, PTO 540 RPM WARNING LABEL
111	1	0010920	LABEL, CHIPPER MANDATORY SYMBOLS
112	1	0010921	LABEL, CHIPPER INFEED WARNING SYMBOLS
113	1	0010922	LABEL, CHIPPER DISCHARGE WARNING SYMBOLS
114	1	0010500	PTO SHAFT, SHEAR PIN, 4S-SERIES
114.1	1	0010540	GUARD KIT, PTO SHEAR BOLT, 4S-SERIES
114.2	1	0010541	GUARD BEARING KIT, PTO SHEAR BOLT, 4S-SERIES
114.3	1	0010542	TRIANGULAR YOKE PIN KIT, PTO SHEAR BOLT, 4S-SERIES
114.4	1	HHB-MBJ105PCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 50 mm LG, 22 mm LG THD
114.5	1	HLN-MBJCH	LOCK NUT, CLS 8, M8 X 1.25
115	1	BX40	V-BELT, COGGED, BX40
116	1	BX41	V-BELT, COGGED, BX41
117	3	UCFL204	FLANGE BEARING, OVAL, 2-BOLT, 20 mm SFT, 90 mm C-C
118	2	UCF208	FLANGE BEARING, SQ, 4-BOLT, 40 mm SFT, 102 mm C-C

Item	Qty	Part No.	Description
119	2	6203-2RS	BALL BEARING, SEALED, 17 mm SFT, 40 mm HSG, 12 mm WD
120	1	6205-2RS	BALL BEARING, SEALED, 25 mm SFT, 52 mm HSG, 15 mm WD
121	2	6908-2RS	BALL BEARING, SEALED, 40 mm SFT, 62 mm HSG, 12 mm WD
122	4	HHB-MBE059FCJ	HEX HEAD BOLT, CLS 8.8, M6 X 1, 10 mm LG, FULL
123	4	HHB-MBE075FCJ	HEX HEAD BOLT, CLS 8.8, M6 X 1, 20 mm LG, FULL
124	6	HHB-MBE095FCJ	HEX HEAD BOLT, CLS 8.8, M6 X 1, 40 mm LG, FULL
125	2	HHB-MBE115PCJ	HEX HEAD BOLT, CLS 8.8, M6 X 1, 60 mm LG, 18 mm LG THD
126	2	HHB-MBJ059FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 10 mm LG, FULL
127	2	HHB-MBJ071FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 16 mm LG, FULL
128	3	HHB-MBJ075FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 20 mm LG, FULL
129	5	HHB-MBJ080FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 25 mm LG, FULL
130	10	HHB-MBJ090FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 35 mm LG, FULL
131	4	HHB-MBJ095FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 40 mm LG, FULL
132	1	HHB-MBJ100FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 45 mm LG, FULL
133	2	HHB-MBJ110PCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 55 mm LG, 22 mm LG THD
134	12	HHB-MBM071FCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 16 mm LG, FULL
135	3	HHB-MBM080FCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 25 mm LG, FULL
136	7	HHB-MBM090FCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 35 mm LG, FULL
137	1	HHB-MBM105FCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 50 mm LG, FULL
138	2	HHB-MBR085FCJ	HEX HEAD BOLT, CLS 8.8, M12 X 1.75, 30 mm LG, FULL
139	2	HHB-MBR090FCJ	HEX HEAD BOLT, CLS 8.8, M12 X 1.75, 35 mm LG, FULL
140	4	HHB-MBR095FCJ	HEX HEAD BOLT, CLS 8.8, M12 X 1.75, 40 mm LG, FULL
141	2	HHB-MBR105FCJ	HEX HEAD BOLT, CLS 8.8, M12 X 1.75, 50 mm LG, FULL
142	1	HHB-MBR215PCJ	HEX HEAD BOLT, CLS 8.8, M12 X 1.75, 160 mm LG, 30 mm LG THD
143	7	HHB-MCA095FCJ	HEX HEAD BOLT, CLS 8.8, M16 X 2, 40 mm LG, FULL
144	4	HHB-MCA100FCJ	HEX HEAD BOLT, CLS 8.8, M16 X 2, 45 mm LG, FULL
145	4	HHB-MCA110FCJ	HEX HEAD BOLT, CLS 8.8, M16 X 2, 55 mm LG, FULL
146	2	HHB-MCA135PCJ	HEX HEAD BOLT, CLS 8.8, M16 X 2, 80 mm LG, 38 mm LG THD
147	2	HHB-MCF265PCJ	HEX HEAD BOLT, CLS 8.8, M20 X 2.5, 210 mm LG, 46 mm LG THD
148	19	BHS-MBJ073FCM	BUTTON HEAD SCREW, CLS 10.9, M8 X 1.25, 18 mm LG, FULL
149	4	BHS-MBM075FCM	BUTTON HEAD SCREW, CLS 10.9, M10 X 1.5, 20 mm LG, FULL
150	2	BHS-MBR105FCM	BUTTON HEAD SCREW, CLS 10.9, M12 X 1.75, 50 mm LG, FULL
151	4	PPH-MBA067FCE	SCREW, PPH, CLS 4.8, M5 X 0.8, 14 mm LG, FULL
152	11	PPH-MBE059FCE	SCREW, PPH, CLS 4.8, M6 X 1, 10 mm LG, FULL
153	4	PPH-MBE071FCE	SCREW, PPH, CLS 4.8, M6 X 1, 16 mm LG, FULL
154	6	HFH-MBR095FCM	SCREW, HFH, CLS 10.9, M12 X 1.75, 40 mm LG, FULL
155	4	HFH-MBW110FCM	SCREW, HFH, CLS 10.9, M14 X 2, 55 mm LG, FULL
156	4	SHC-MBA067FCP	SHCS, CLS 12.9, M5 X 0.8, 14 mm LG, FULL
157	4	SHC-MBE075FCP	SHCS, CLS 12.9, M6 X 1, 20 mm LG, FULL
158	2	HHS-MBM057069AJ	SHLDR SCREW, HEX HEAD, ALLOY, 11 X 15 mm LG SHLDR, M10 X 1.5 X 20 mm LG THD
159	6	KCS-MBE051GR	SET SCREW, KNURLED CUP POINT, GR 45H, M6 X 1, 6 mm LG
160	2	KCS-MBE055GR	SET SCREW, KNURLED CUP POINT, GR 45H, M6 X 1, 8 mm LG
161	5	KCS-MBK055GR	SET SCREW, KNURLED CUP POINT, GR 45H, M8 X 1, 8 mm LG
162	1	KCS-MBJ055GR	SET SCREW, KNURLED CUP POINT, GR 45H, M8 X 1.25, 8 mm LG
163	4	SNC-MBJ080FCJ	CARRIAGE BOLT, SQ NECK, CLS 8.8, M8 X 1.25, 25 mm LG, FULL
164	4	FTW-MBA000AJ	FLAT WASHER, M5
165	20	FTW-MBE000AJ	FLAT WASHER, M6

Item	Qty	Part No.	Description
166	38	FTW-MBJ000AJ	FLAT WASHER, M8
167	3	FTW-MBM165AJ	FLAT WASHER, DIN7349, M10, 4 mm THK
168	12	FTW-MBR000AJ	FLAT WASHER, M12
169	6	FTW-MBR000NA	FLAT WASHER, M12, NYLON
170	21	FTW-MCA000AJ	FLAT WASHER, M16
171	1	FDW-MBJ073000AJ	FENDER WASHER, M8, 24 mm OD
172	24	FDW-MBJ079000AJ	FENDER WASHER, M8, 30 mm OD
173	1	FDW-MBM075000AJ	FENDER WASHER, M10, 26 mm OD
174	5	FDW-MBM079000AJ	FENDER WASHER, M10, 30 mm OD
175	2	FDW-MBR086000AJ	FENDER WASHER, M12, 37 mm OD
176	4	SLW-MBAAJ	SPLIT LOCK WASHER, M5
177	16	SLW-MBEAJ	SPLIT LOCK WASHER, M6
178	4	SLW-MBJAJ	SPLIT LOCK WASHER, M8
179	4	SLW-MBMAJ	SPLIT LOCK WASHER, M10
180	1	HXN-MBNCH	HEX NUT, CLS 8, M10 X 1.25
181	9	HXN-MBMCH	HEX NUT, CLS 8, M10 X 1.5
182	2	HXN-MCACH	HEX NUT, CLS 8, M16 X 2
183	16	HLN-MBECH	LOCK NUT, CLS 8, M6 X 1
184	48	HLN-MBJCH	LOCK NUT, CLS 8, M8 X 1.25
185	9	HLN-MBMCH	LOCK NUT, CLS 8, M10 X 1.5
186	19	HLN-MBRCH	LOCK NUT, CLS 8, M12 X 1.75
187	4	HLN-MBWCH	LOCK NUT, CLS 8, M14 X 2
188	7	HLN-MCACH	LOCK NUT, CLS 8, M16 X 2

NOTES

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WOODLAND
MILLS