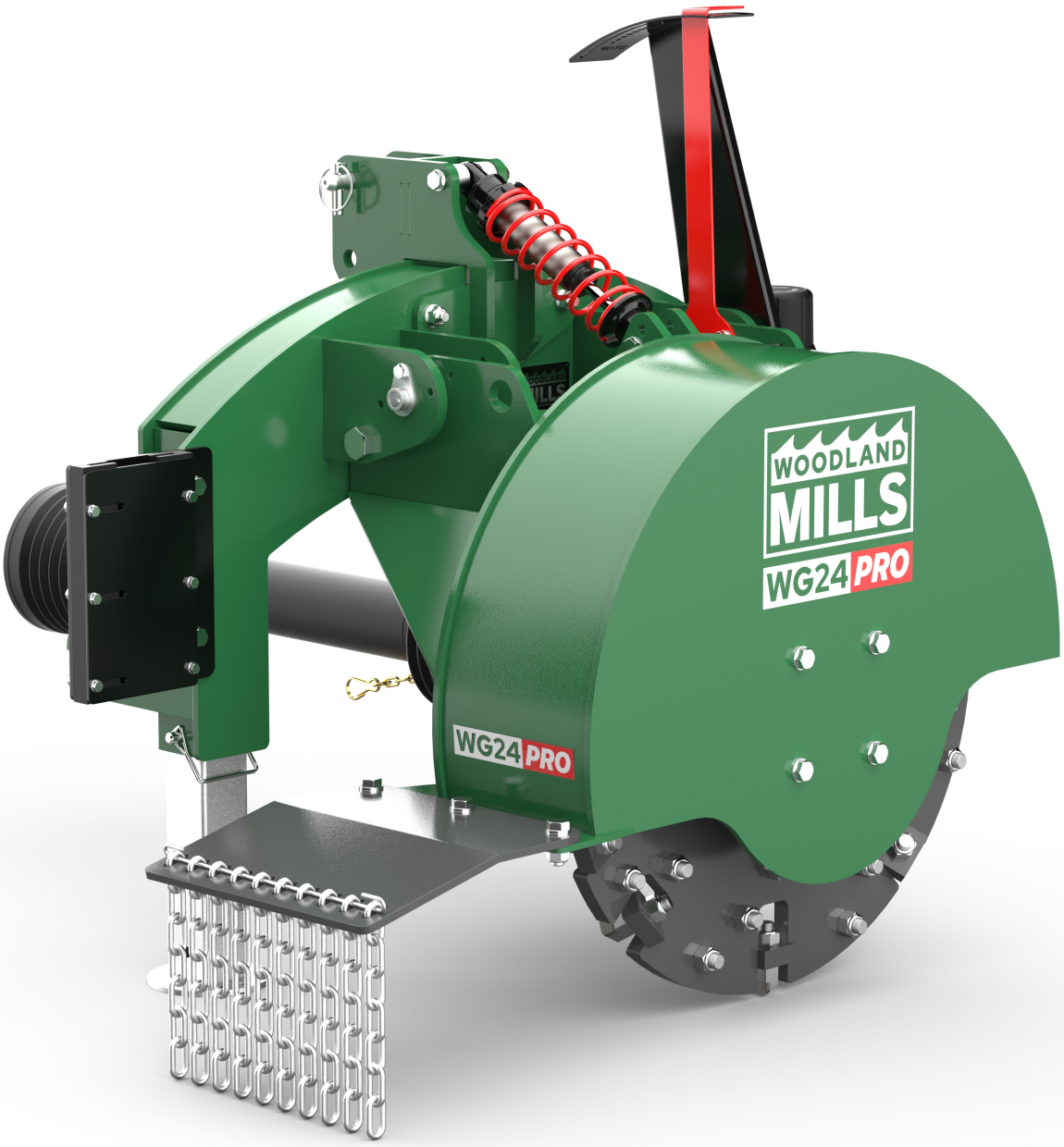
WG24 PRO PTO STUMP GRINDER



OPERATOR'S MANUAL

0010926-M-EN: Rev A
Publication Date: 20-Nov-2024

WOODLAND MILLS

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INTRODUCTION

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

OWNER'S RECORD

Please take a moment to record the following information about your stump grinder. 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 not be 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 with the product.

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

SAFETY, WARNING & INFORMATION SYMBOLS

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

Symbol	Description
	Refer to instruction/operator's manual
	Wear protective gloves
	Wear safety footwear
	Wear eye protection
	Wear a face shield
	Wear a mask
	Wear ear protection
	Lift point
	Lifting hazard
	General warning

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

INTENDED USE

This stump grinder is designed for grinding stumps using a tractor's Power Take-Off (PTO) at an operating rpm of 540.

TECHNICAL SPECIFICATIONS

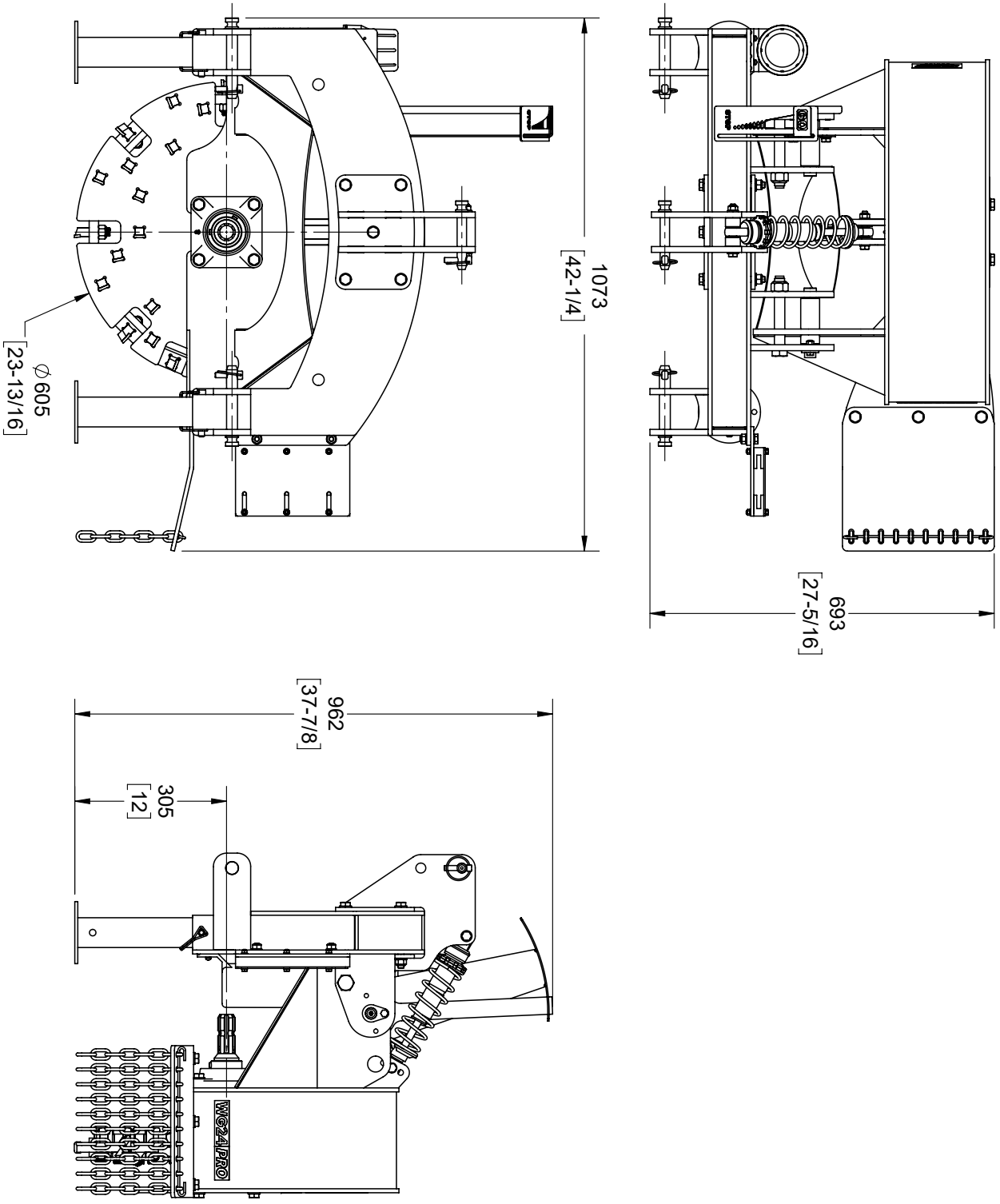
Item	Specification
Tractor Compatibility	Category 1
Recommended Horsepower	15 - 45 hp
Flywheel Diameter	24 in [610 mm]
Number of Teeth	34
Tooth	Grade 8.8 Carbide Steel, Bolt-in
Tooth Torque Specification	160 ft•lb [215 N•m]
Required PTO Speed	540 rpm
Maximum Cutting Depth Per Pass	5 in [127 mm]
Maximum Depth Below Grade	6 in [152 mm]
Product Weight	473 lb [215 kg]
Shipping Weight	533 lb [242 kg]

TOOLS REQUIRED

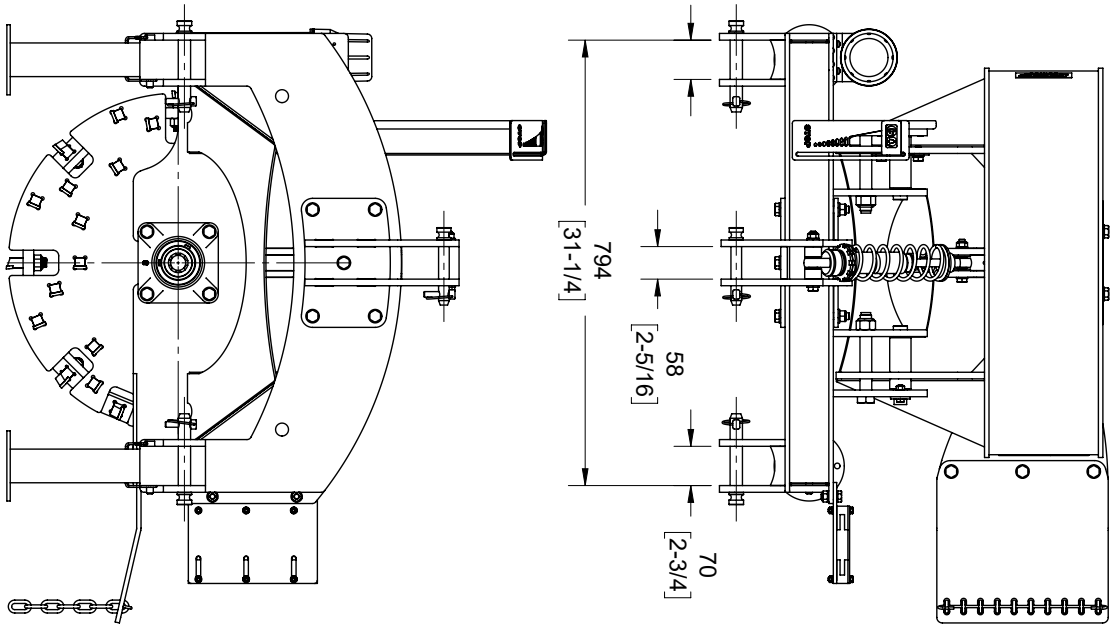
Tool	Specification	Use
Phillips Head Screwdriver	No. 3	Assembly
Wrench/Socket	13 mm (2X)	Assembly
Wrench/Socket	16 mm (2X)	PTO Clutch Run-In
Wrench/Socket	17 mm	PTO Clutch Lock Pin
Wrench/Socket	18 mm	Assembly
Wrench/Socket	19 mm	Assembly
Wrench/Socket	24 mm	Tooth Replacement
Torque Wrench	Capable of 160 ft•lb [215 N•m]	Multiple
Calliper*	Vernier, Dial, or Digital	PTO Clutch Run-In
Hacksaw**		PTO Trimming
Coloured Pencil/Marker		PTO Clutch Run-In

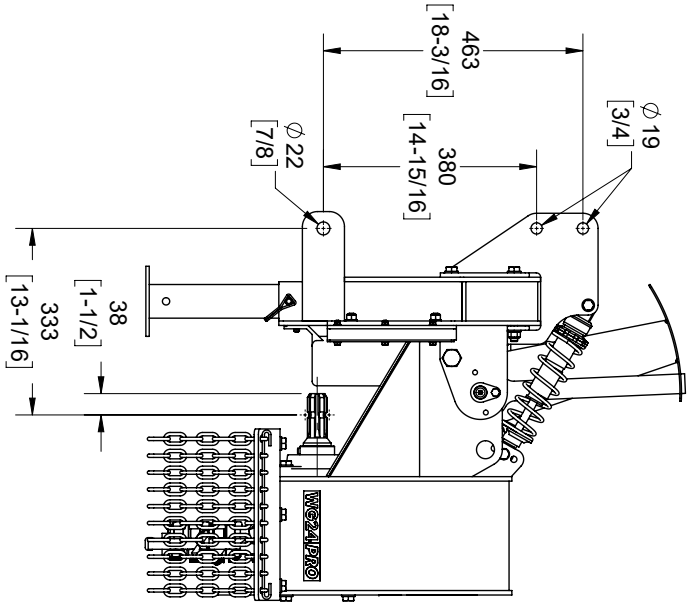
* Recommended but not required.
** Only if PTO shaft requires trimming. See ***Trimming the PTO Shaft*** section for more detail.

OVERALL DIMENSIONS



3-POINT HITCH DIMENSIONS





GENERAL SAFETY RULES

WARNING!

Read and understand all instructions. Failure to follow all instructions listed below may result in electric shock, fire, and/or serious injury.

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.

- All Federal and State laws and any regulation having jurisdiction covering the safety requirements for use of the machine take precedence over the statements in this manual. Users of this machine must adhere to such regulations.
- Only people that have read and understood these instructions are permitted to use the stump grinder.
- Inspect the stump grinder and tractor at the beginning of every working day and repair any defects.
- Stop the engine and make sure that the machine will not start accidentally while repairing defects or performing maintenance.
- Do not disable or remove the stump grinder's safety devices.
- Always locate and mark buried wires, cables, and pipelines prior to grinding.

PERSONAL SAFETY

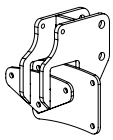
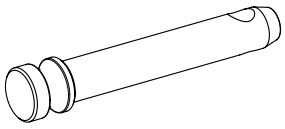
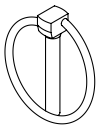
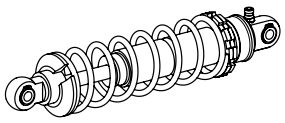
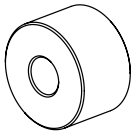
- **Stay alert**, watch what you are doing and use common sense when operating machinery. Do not use a machine when you are tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating machinery may result in serious personal injury.
- **Dress properly.** Do 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 which 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, hardhat, gloves, dust collection systems, and hearing protection when appropriate.
- **Do not overreach.** Keep proper footing and balance at all times.
- **Remove adjusting keys or wrenches** before connecting to the power supply or turning on the machine. A wrench or key that is left attached to a rotating part of the machine may result in personal injury.
- **Never conduct any maintenance or make any other adjustments while the tractor engine is running.** Always shut the tractor engine off, remove the ignition key, and keep the engine off before carrying out any of the following procedures. Consult your tractor's operator manual for safe shutdown procedures to prevent accidental ignition.
- **Never** allow passengers to ride on the stump grinder.

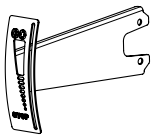
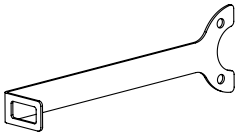
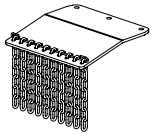
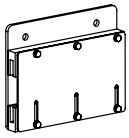
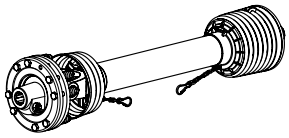
MACHINE USE AND CARE

- **Always be sure the operator is familiar** with proper safety precautions and operation techniques before using machine.
- **Do not force the machine.** Machines do a better and safer job when used in the manner for which they are designed.
- **Storing the machine**. When the machine is not in use, store it in a dry, secure place or keep it well-covered and out of the reach of children. Inspect the machine for good working condition prior to storage and before each use.
- **Maintain the machine.** It is recommended that the general condition of the machine be examined before it is used. Keep your machine in good working order by adopting a program of conscientious repair and maintenance in accordance with the recommended procedures found in this manual. If any abnormal vibrations or noise occurs, turn the machine off immediately and have the problem corrected before further use.
- **Cleaning.** Use a pressure washer to clean the carbide teeth while taking care not to pressure-wash the bearings as this could introduce water into areas of the machine that may cause malfunction or damage.
- **Use only accessories that are recommended** by the manufacturer. Accessories that may be suitable for another machine may create a risk of injury when used on this machine.
- **Always** operate the machine with all safety devices and guards in place and in good 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 the machine running unattended.**
- **Never use the machine to grind anything other than stumps** or for any purpose other than grinding stumps as described in this manual.

COMPONENT LISTS

Verify all component and hardware quantities are correct prior to assembling the stump grinder.

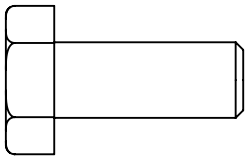
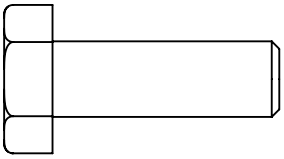
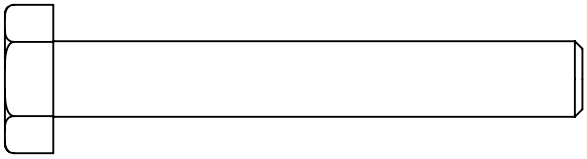
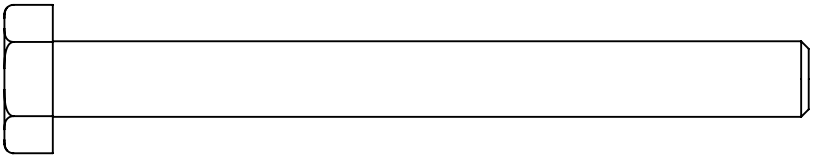
1x	**Top Link Bracket [0010930]**	
1x	**Upper Hitch Pin [0001156]**	
1x	**Linch Pin [0004705]**	
1x	**Shock Absorber [0011619]**	
2x	**Shock Absorber Spacer [0009995]**	

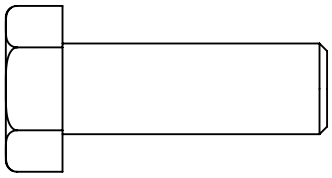
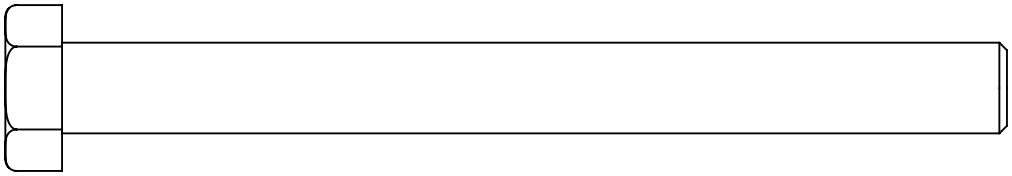
1x	**Draw Speed Indicator Gauge [0009993]**	
1x	**Draw Speed Indicator [0009994]**	
1x	**Deflector Assembly**	
1x	**Chainsaw Holder Assembly**	
1x	**PTO Shaft [0011800]**	

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.

4x	**HHB-MBM075FCJ**	**M10 X 1.5 X 20 mm HEX BOLT**
		
2x	**HHB-MBM085FCJ**	**M10 X 1.5 X 30 mm HEX BOLT**
		
1x	**HHB-MBM125PCJ**	**M10 X 1.5 X 70 mm HEX BOLT**
		
1x	**HHB-MBM155PCJ**	**M10 X 1.5 X 100 mm HEX BOLT**
		

3x	HHB-MBR090FCJ	M12 X 1.75 X 35 mm HEX BOLT
		
3x	HHB-MBR090FCJ	M12 X 1.75 X 35 mm HEX BOLT
		

SCALES

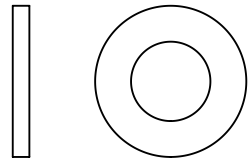
Ruler scales are also provided below to double-check bolt and screw lengths when necessary.

CENTIMETRES / MILLIMETRES

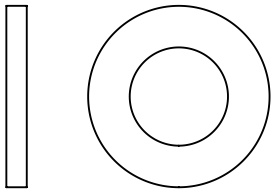
INCHES

WASHERS

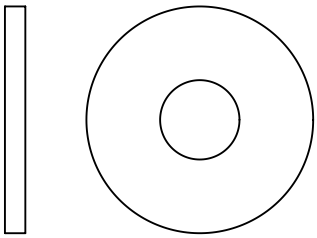
12x	FTW-MBM000AJ M10 FLAT WASHER



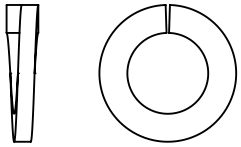
16x	FTW-MBR000AJ M12 FLAT WASHER



2x	FDW-MBM079000AJ M10 FENDER WASHER, 30 mm OD

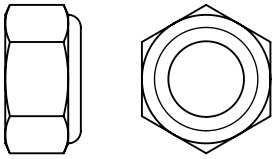


4x	SLW-MBMAJ M10 SPLIT LOCK WASHER

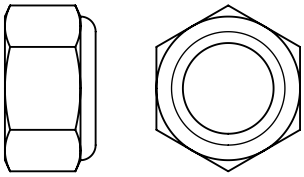


NUTS

4x	HLN-MBMCH M10 X 1.5 LOCK NUT



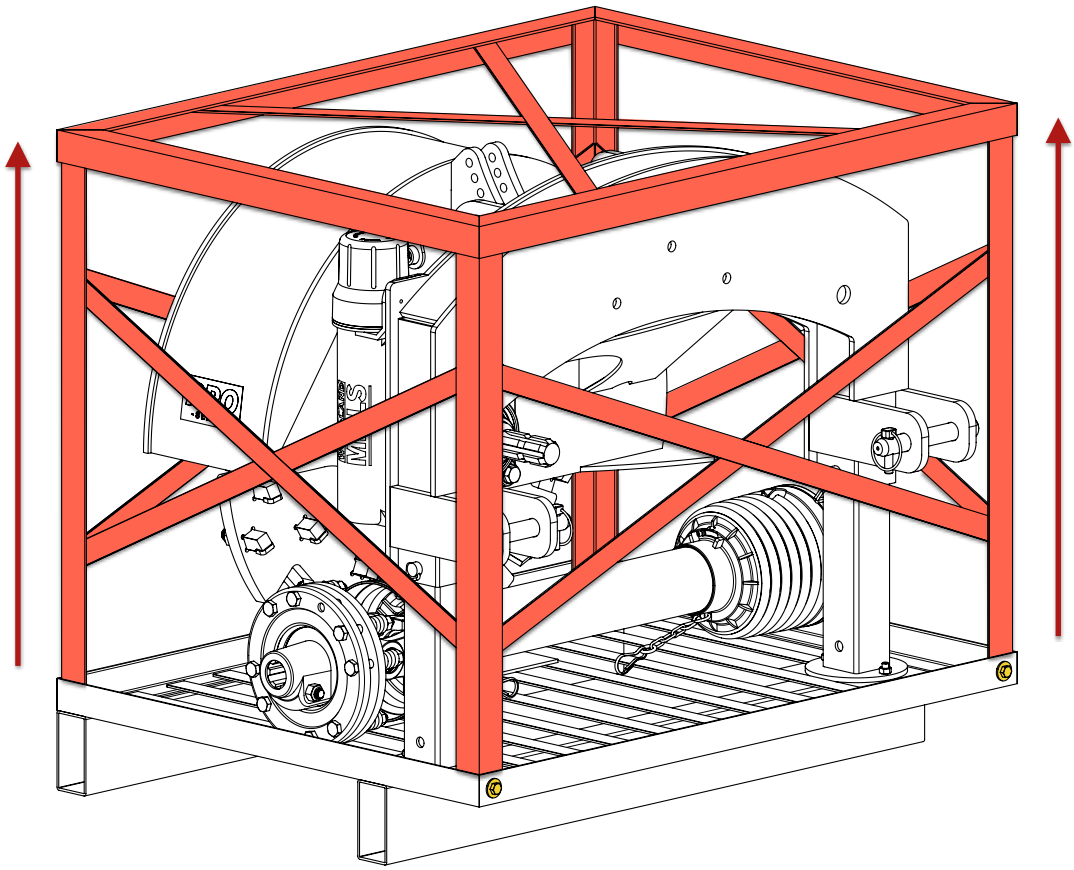
8x	HLN-MBRCH M12 X 1.75 LOCK NUT



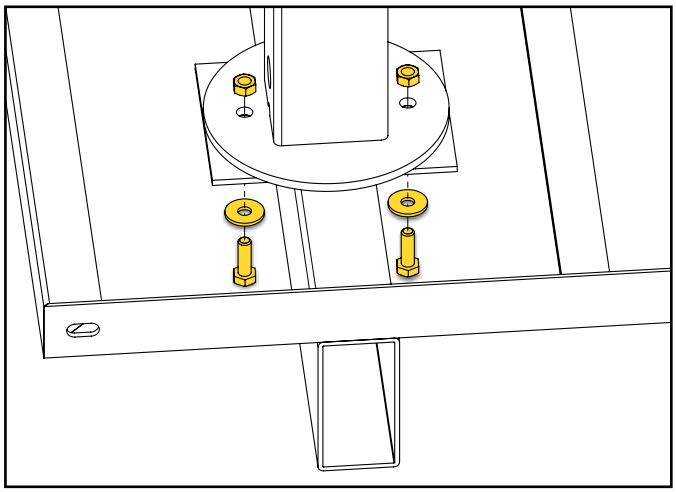
ASSEMBLY

1. UNPACKING

Unfasten the M8 X 25 mm hex bolts from the four (4) bottom corners of the crate and remove the top frame.

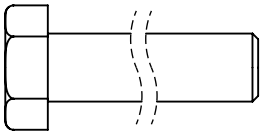
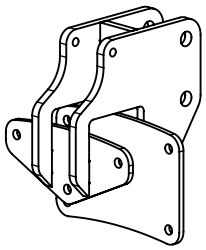
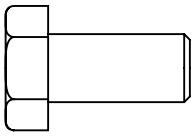
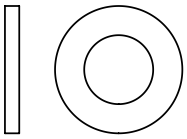
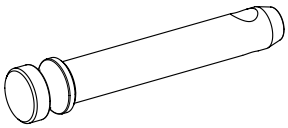
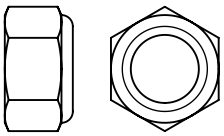
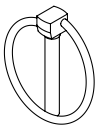


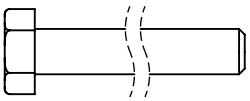
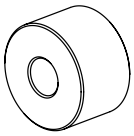
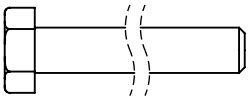
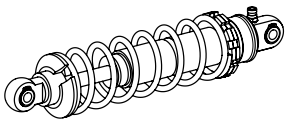
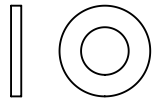
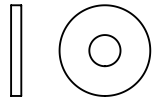
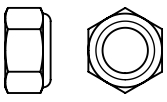
Unfasten the two (2) M8 X 25 mm hex bolts securing both support legs to the bottom crate frame.



2. TOP LINK & SHOCK ABSORBER

Using the hardware and components listed below, assemble the top link to the back frame and then assemble the shock absorber between the top link and the flywheel housing.

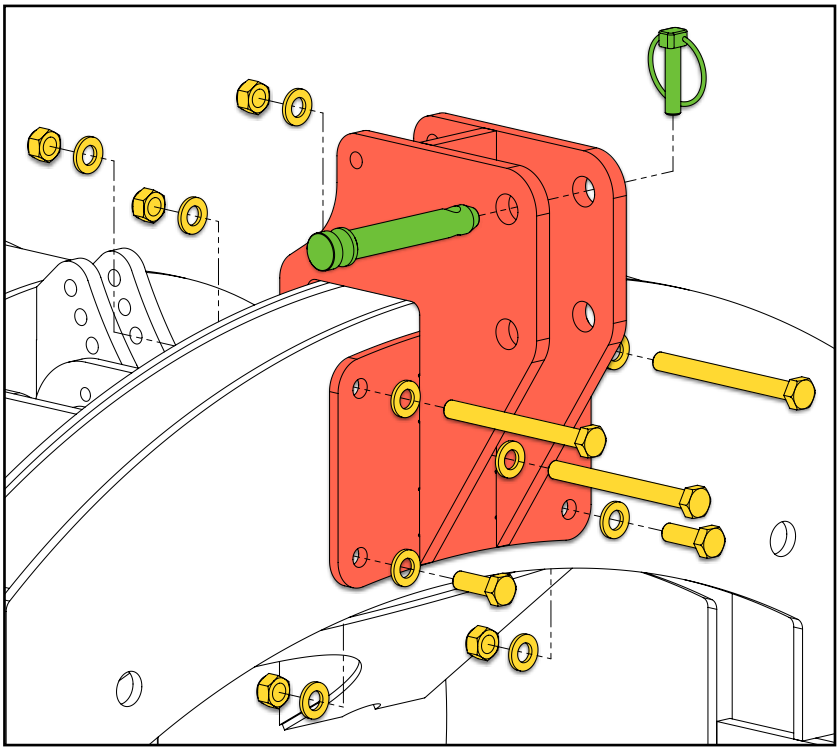
3x	M12 X 125 mm Hex Bolt		1x	Top Link	
2x	M12 X 35 mm Hex Bolt				
10x	M12 Flat Washer		1x	Upper Hitch Pin	
5x	M12 Lock Nut		1x	Linch Pin	

1x	M10 X 100 mm Hex Bolt		2x	Shock Absorber Spacer	
1x	M10 X 70 mm Hex Bolt		1x	Shock Absorber	
4x	M10 Flat Washer				
2x	M10 X 30 mm Fender Washer				
2x	M10 Lock Nut				

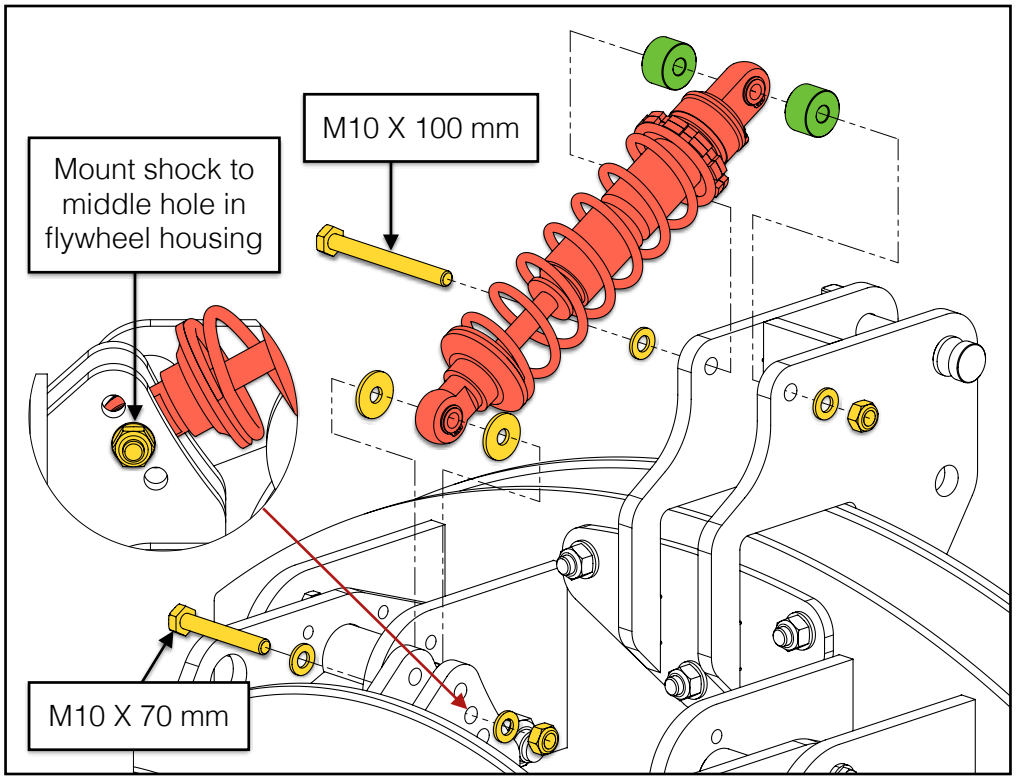
Assemble the top link to the back frame using three (3) M12 X 125 mm hex bolts, two (2) M12 X 35 mm hex bolts, ten (10) M12 flat washers, and five (5) M12 lock nuts.

Torque all bolts to 65 ft•lb [88 N•m].

Finally, insert the upper hitch pin through the upper set of holes in the top link and secure it with a linch pin.

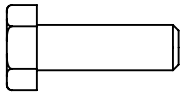
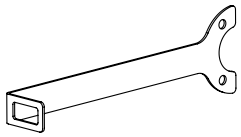
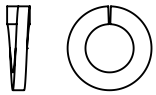
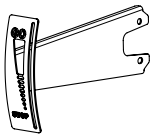
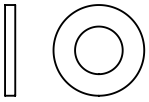


Assemble the upper end of the shock absorber to the top link with the spacers using one (1) M10 X 100 mm hex bolt, two (2) M10 flat washers, and one (1) M10 lock nut. Assemble the lower end of the shock to the *middle hole in the flywheel housing* using one (1) M10 X 70 mm hex bolt, two (2) M10 flat washers, two (2) M10 X 30 mm fender washers, and one (1) M10 lock nut. Fully tighten all the hardware.

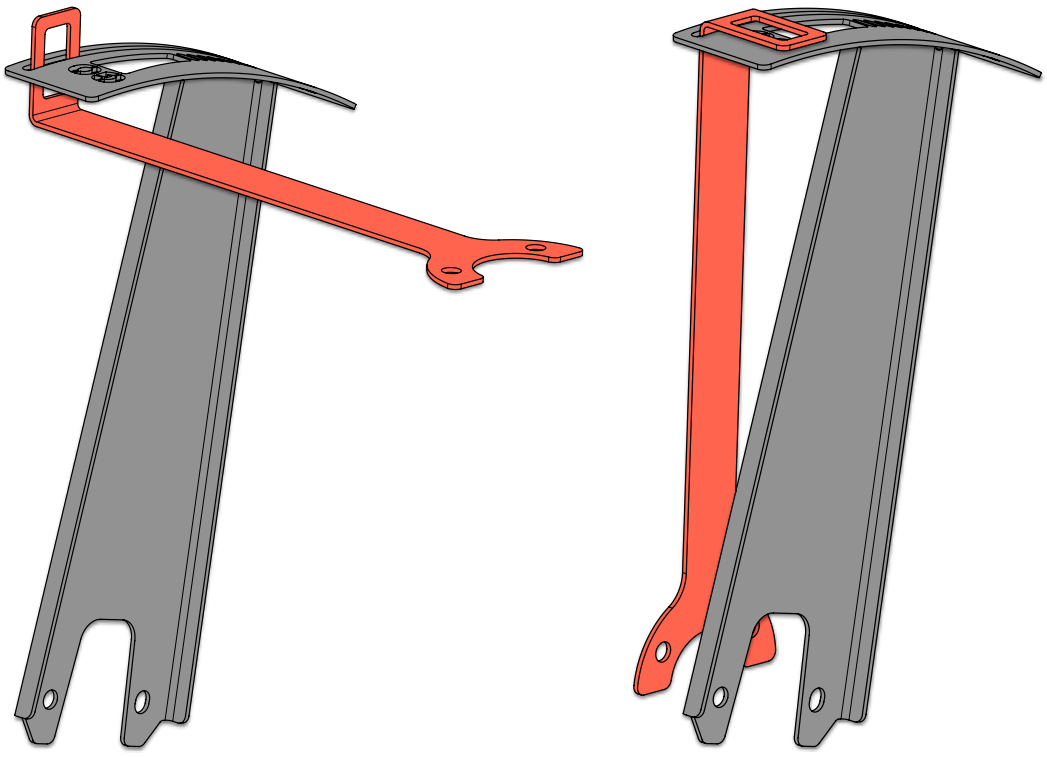


3. DRAW SPEED INDICATOR

Using the hardware listed below, assemble the draw speed indicator and indicator gauge to the flywheel housing and back frame respectively.

4x	M10 X 20 mm Hex Bolt		1x	Draw Speed Indicator	
4x	M10 Split Lock Washer		1x	Draw Speed Indicator Gauge	
4x	M10 Flat Washer				

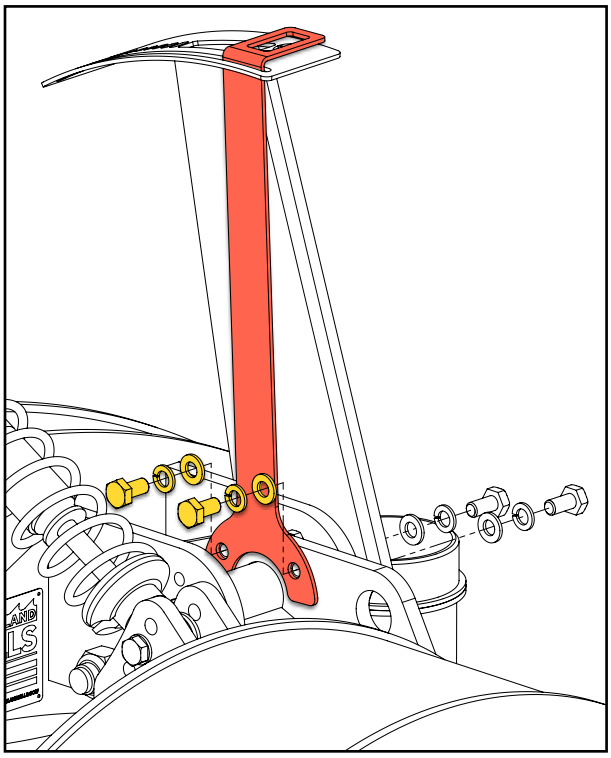
Before the indicator and gauge can be installed to the stump grinder, they must first be loosely assembled together as shown:

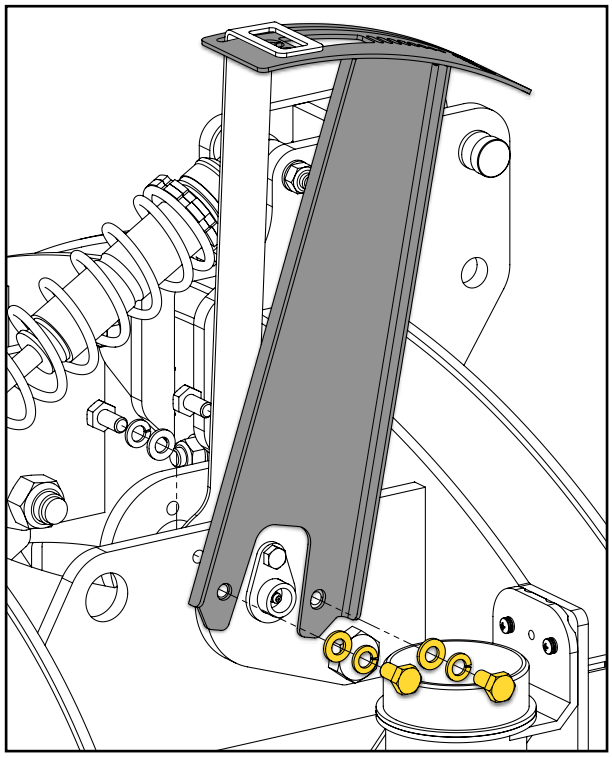


Holding the indicator perpendicular to the gauge, insert the view window tab of the indicator up though the bottom of the long slot in the gauge. Then rotate the indicator back down until they are parallel with each other.

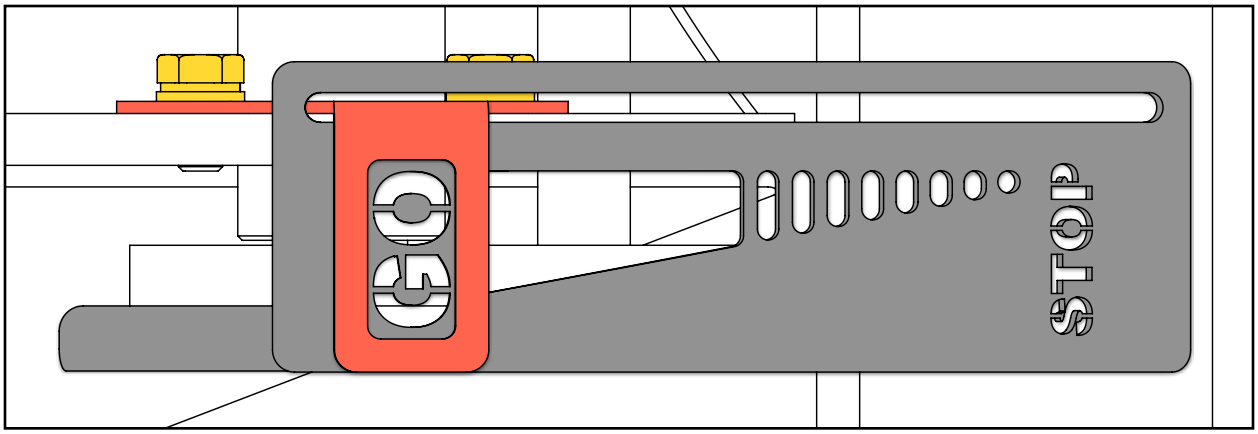
Using four (4) M10 X 20 mm hex bolts, four (4) M10 lock washers, and four (4) M10 flat washers, assemble the indicator to the housing and then the indicator gauge to the back frame.

****Remove the cap from the manual tube if extra clearance is needed.****



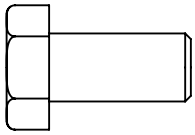
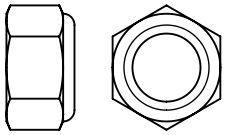
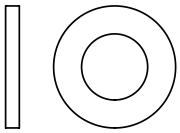
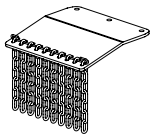


With all the fasteners tight, the "GO" text should be centred in the indicator view window.

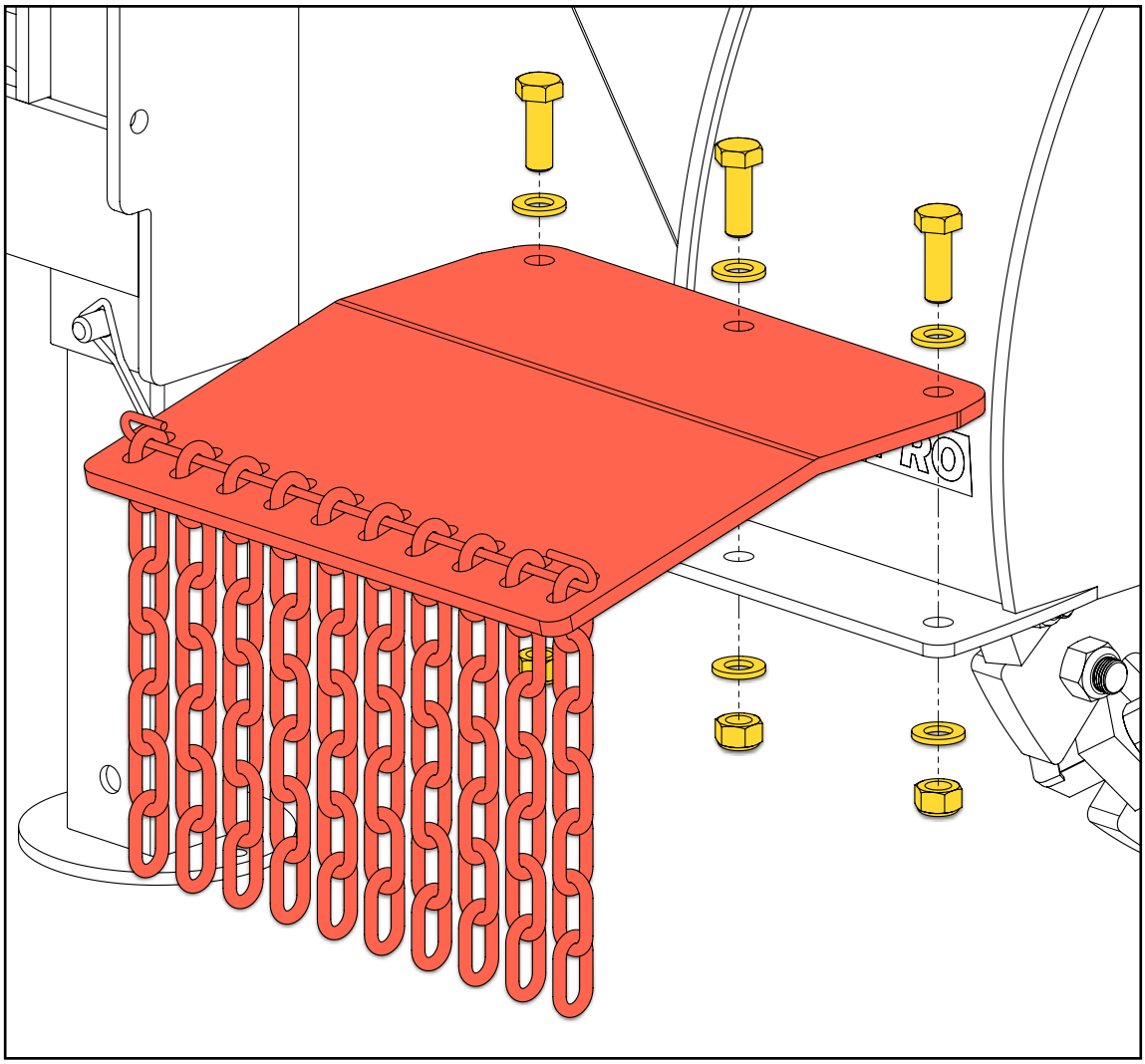


4. DEFLECTOR

Using the hardware listed below, assemble the deflector to the flywheel housing.

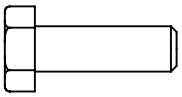
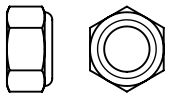
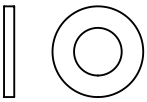
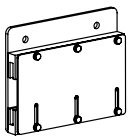
3x	M12 X 35 mm Hex Bolt		3x	M12 Lock Nut	
3x	M12 Flat Washer		1x	Deflector Assembly	

Using three (3) M12 X 35 mm bolts, three (3) M12 flat washers, and three (3) M12 lock nuts, assemble the chainsaw holder assembly to the back frame. Fully tighten the hardware.

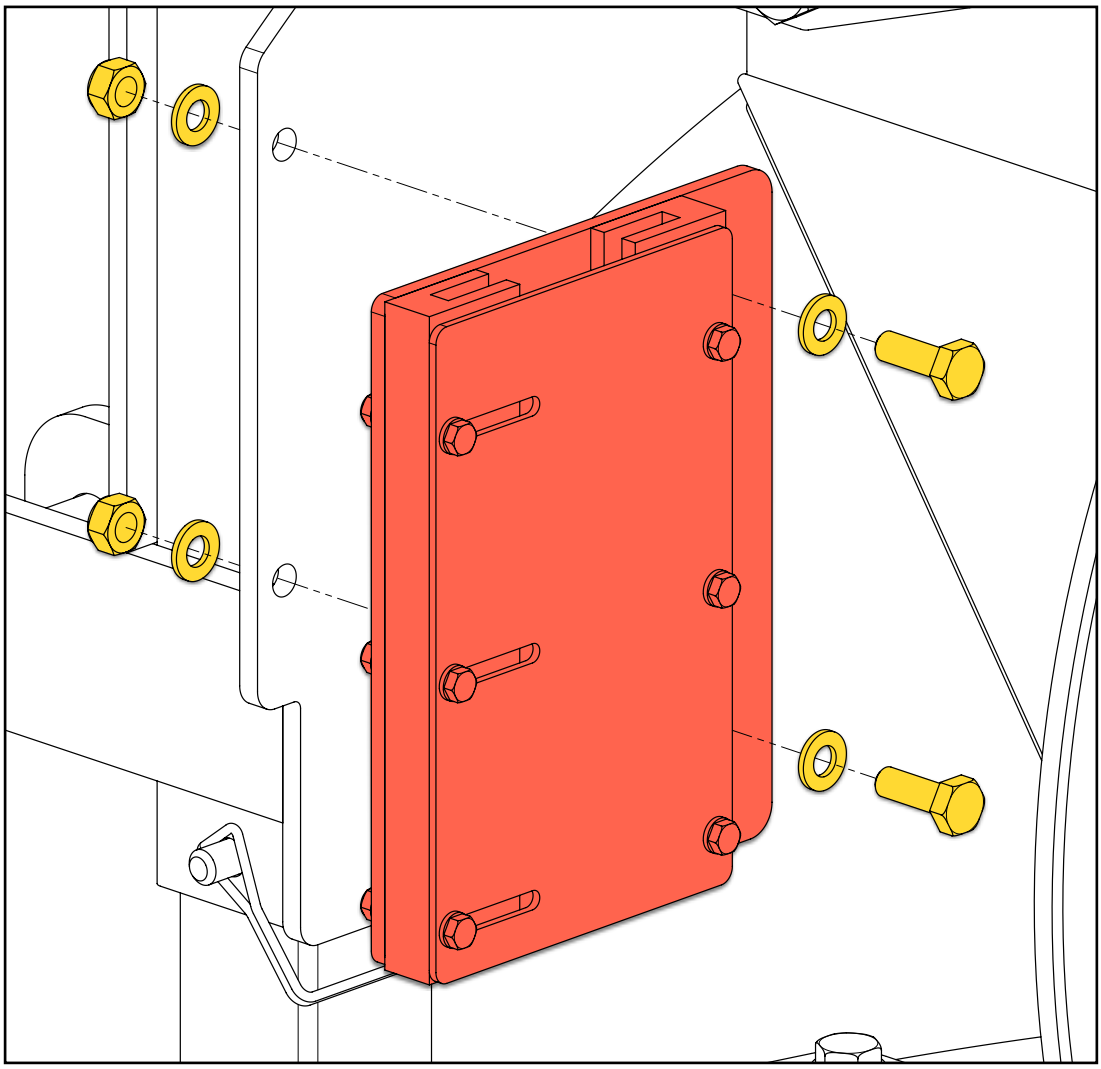


5. CHAINSAW HOLDER

Using the hardware listed below, assemble the chainsaw holder to the back frame.

2x	M10 X 30 mm Hex Bolt		4x	M10 Lock Nut	
2x	M10 Flat Washer		1x	Chainsaw Holder Assembly	

Using two (2) M10 X 30 mm bolts, two (2) M10 flat washers, and two (2) M10 lock nuts, assemble the chainsaw holder assembly to the back frame. Fully tighten the hardware.



TRIMMING THE PTO SHAFT

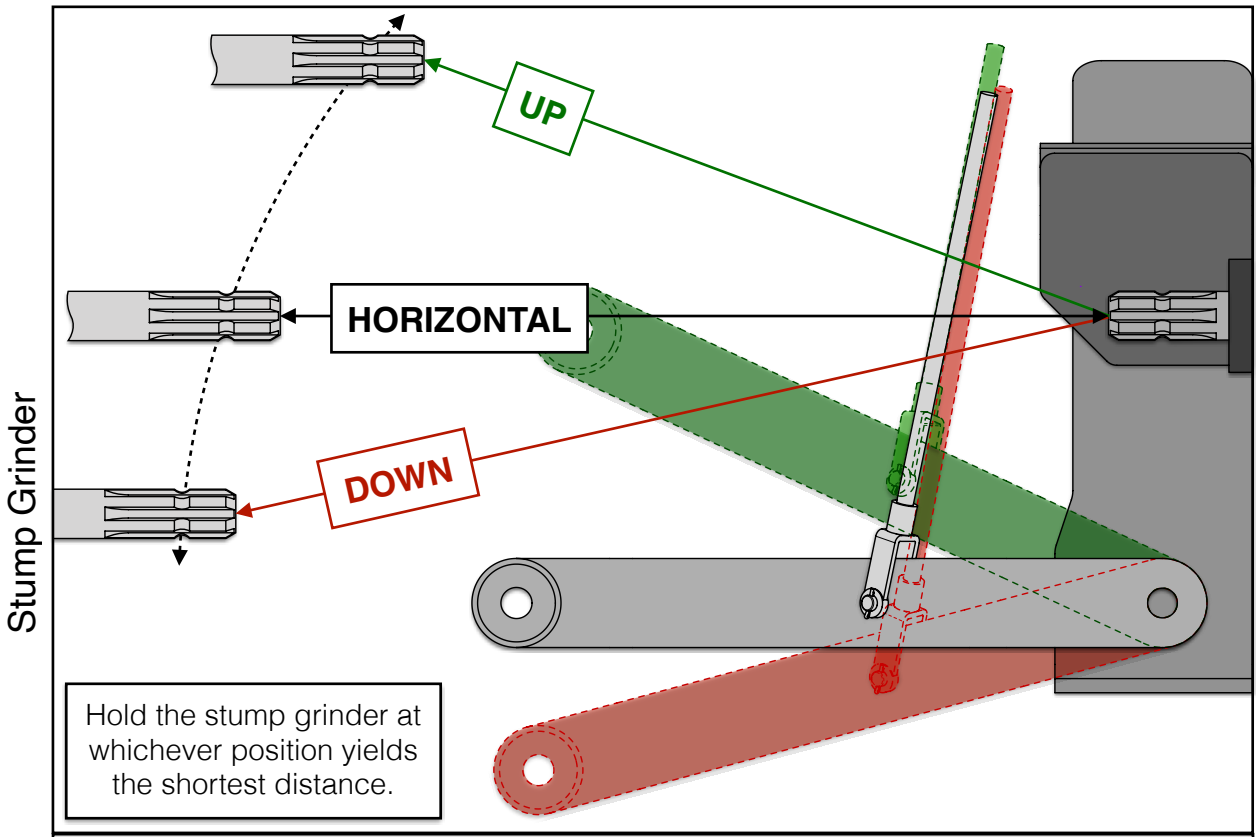
The PTO shaft may need to be trimmed depending on the tractor size and configuration. Follow the 6 steps below to ensure the PTO shaft is fitted correctly, and trimmed if necessary.

1. FIND THE SHORTEST DISTANCE

1. Attach the stump grinder 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 stump grinder 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 stump grinder at that position for the next step***.

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

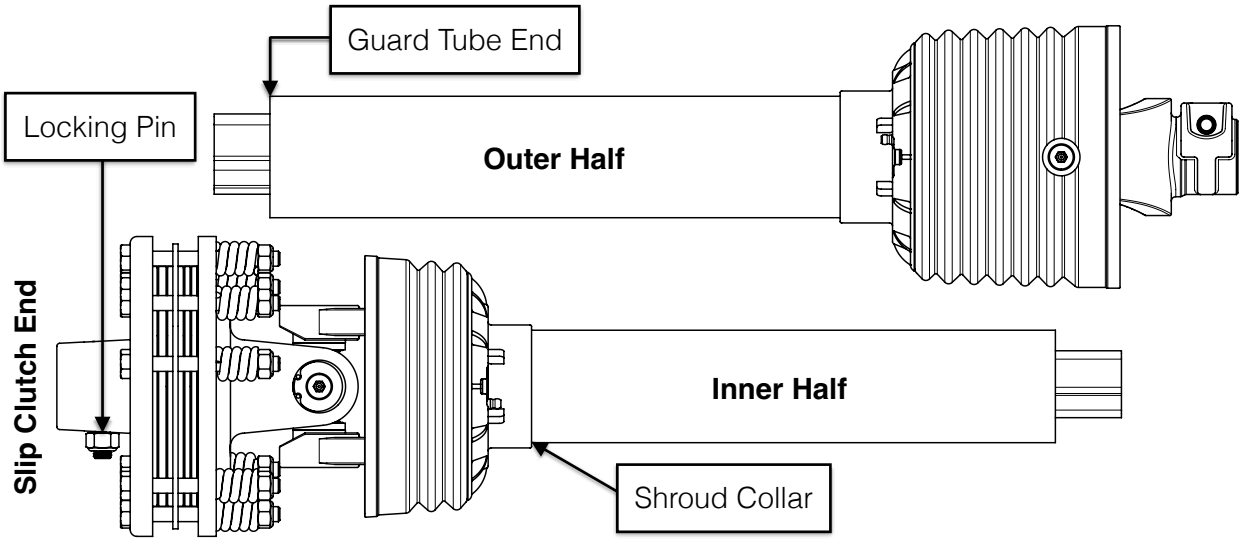


WARNING!

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.



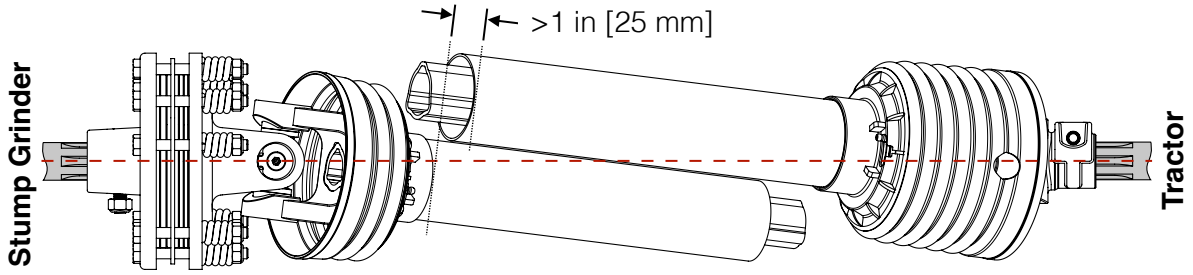
3. ATTACH THE PTO SHAFT

Attach the slip clutch end to the stump grinder and the outer half to the tractor as separate pieces. Install the locking pin and thread the locking pin nut on loosely—it is unnecessary to fully tighten it during this step.

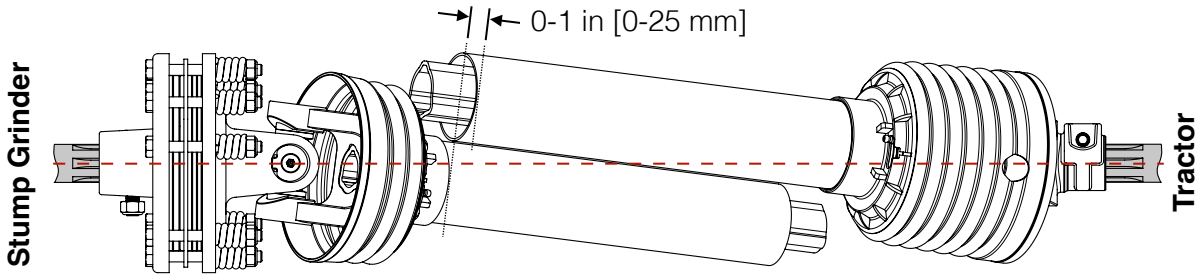
4. DETERMINE IF TRIMMING IS REQUIRED

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:

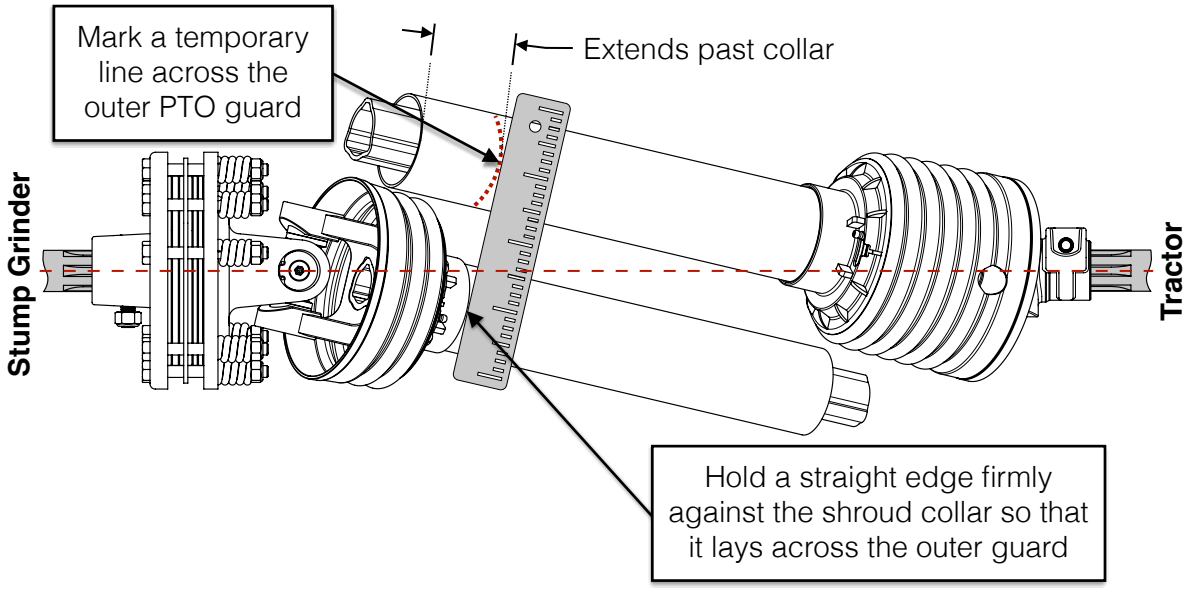
Scenario 1. If the distance between the shroud collar and the guard tube end is ***greater than 1 in [25 mm]***, the PTO shaft does not require trimming. Remove the PTO shaft from the tractor and stump grinder and proceed to Step 6.



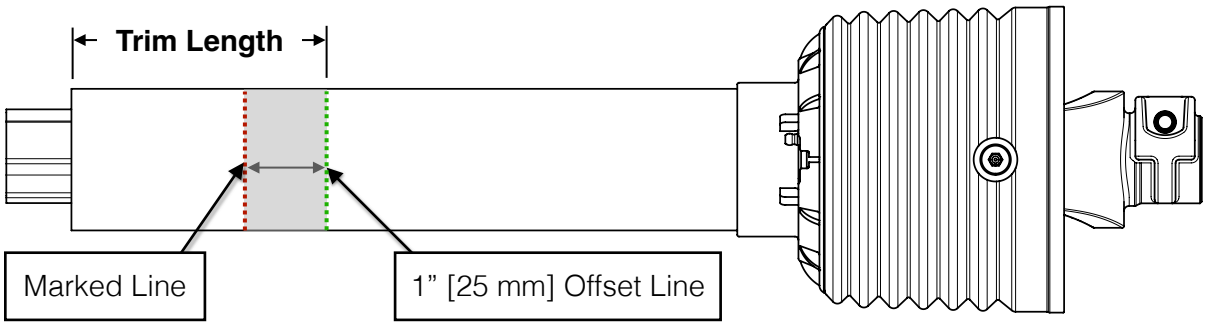
Scenario 2. If the distance between the shroud collar and the guard tube end is ***between 0 and* 1 in [25 mm]**, the PTO shaft requires a 1 in [25 mm] trim. Proceed to Step 5 using 1 in [25 mm] as the "**Trim Length"**.



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.

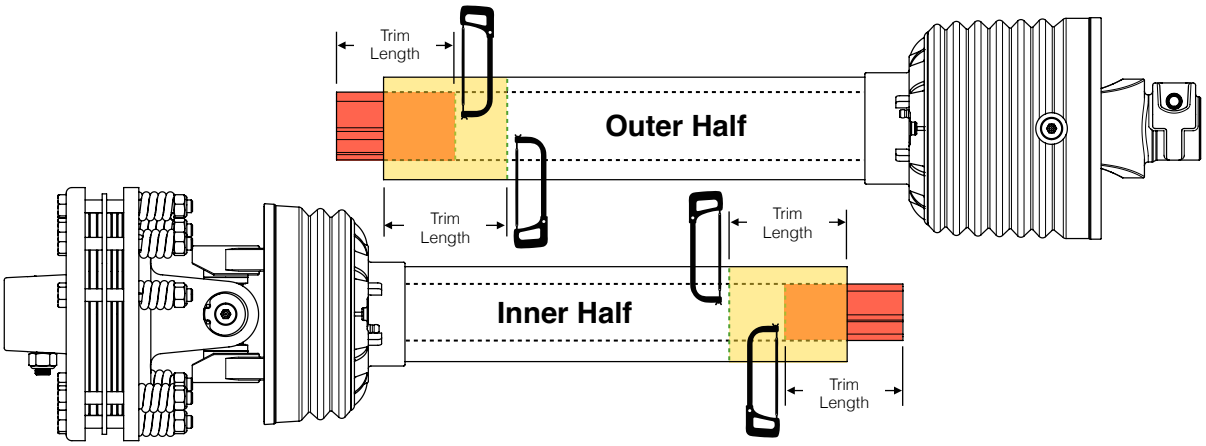


Measure 1 in [25 mm] past the marked line to the guard tube end to determine the trim length. This is the "**Trim Length**" by which the PTO shaft needs to be trimmed. Proceed to Step 5.



5. TRIM THE PTO SHAFT

Remove both halves of the PTO shaft from the tractor and stump grinder. 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 SHAFT

1. Slide the halves back together, ensuring they telescope in-and-out freely.
2. Slide the slip clutch end onto the stump grinder. Install the locking pin and fully tighten the locking pin nut. 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.

PTO SHAFT CLUTCH RUN-IN

The stump grinder is shipped with a slip clutch PTO shaft. Follow the steps below before using your stump grinder to ensure the PTO shaft clutch friction plates are set properly.

****This procedure should be performed periodically throughout ownership as the friction plates can stick together—particularly after long periods of inactivity—which could prevent the plates from slipping during operation as designed. This could result in higher than normal torque being applied and damage the triangular shafts, which is *not covered under warranty*.****

1. Connect the PTO shaft to the stump grinder and tractor *with the clutch end of the PTO shaft mounted to the stump grinder*. Insert the locking pin on the clutch yoke and tighten the nut using a wrench/socket.
2. Using a coloured pencil or marker, scribe a line across the exposed edges of both sets of clutch friction plates.
3. Using a wrench/socket, loosen all eight (8) spring tension nuts uniformly until the ends of the nuts are flush with the ends of the bolts (**Fig. A**).

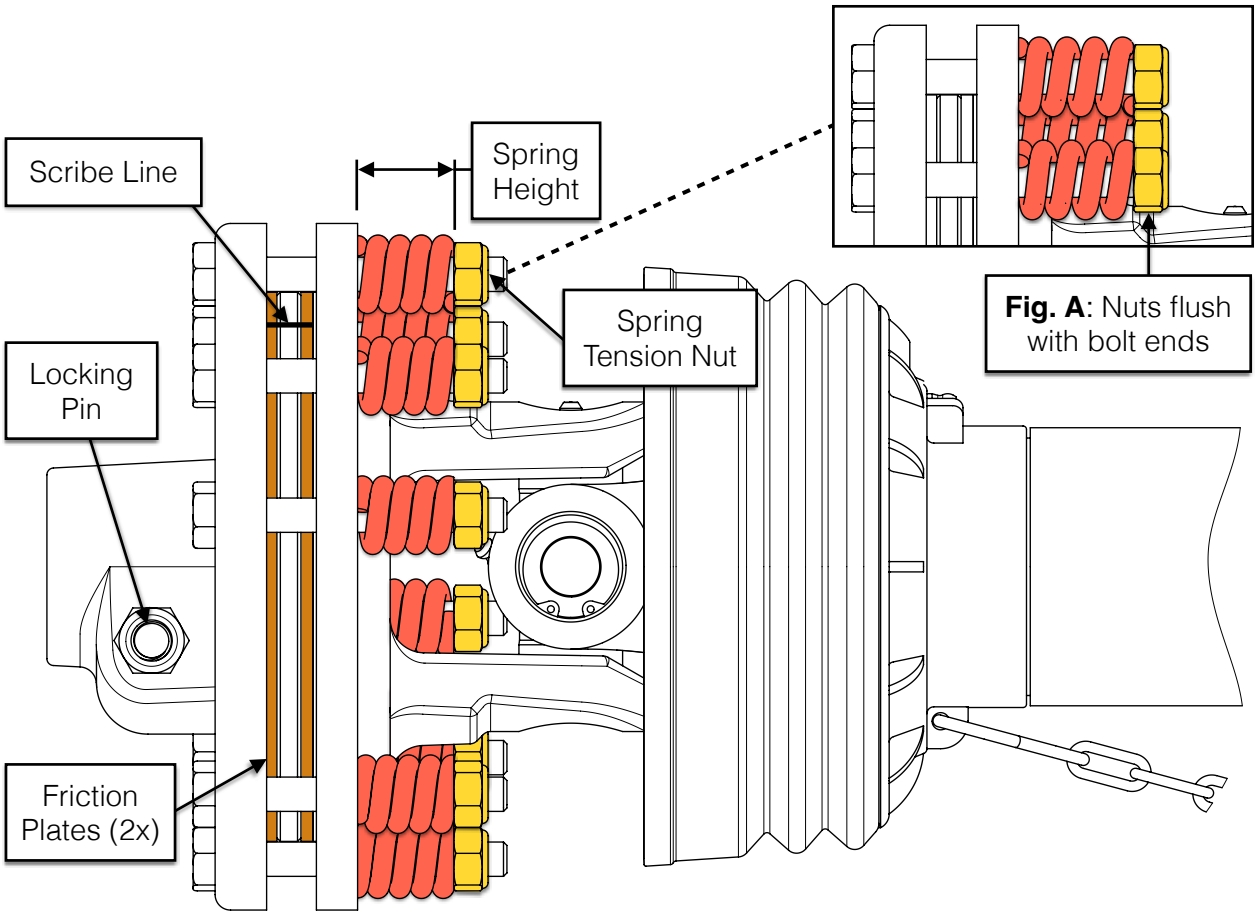


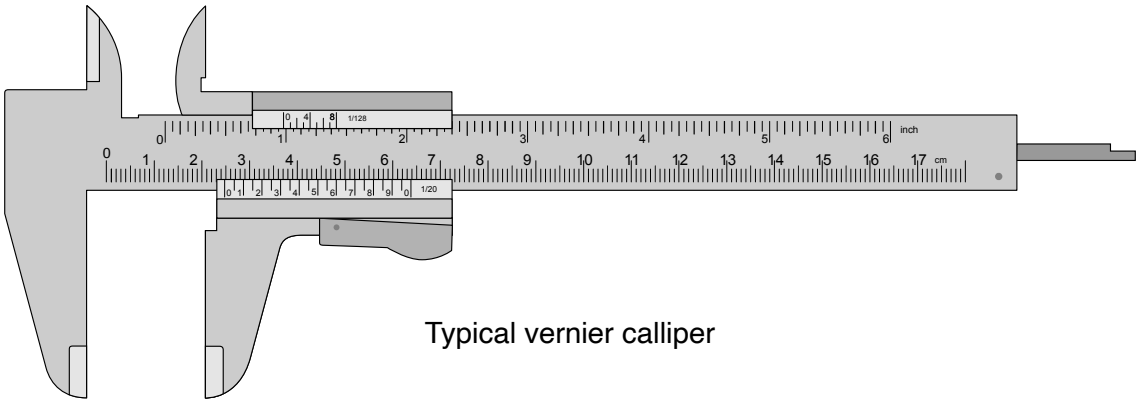
Fig. A: Nuts flush with bolt ends

4. Start the tractor and engage the PTO for 2-3 seconds to permit slippage of clutch surfaces. Disengage the PTO then re-engage a second time for 2-3 seconds. Disengage the PTO again, shut off the tractor, and remove the key. Wait for all components to stop rotating before removing the PTO shaft from tractor.
5. Inspect the clutch and ensure that the scribed markings made across the clutch plates have changed position. Slippage has not occurred if the marks on the clutch plates are still aligned. A clutch that has not slipped must be disassembled to separate the clutch plates.
6. Tighten all eight (8) nuts until the proper spring height dimension values are achieved per the "**PTO Shaft Clutch Spring Height vs. Horsepower**" table below for the PTO output horsepower. It is recommended that a calliper (either digital, dial, or vernier—similar to the one shown below) be used to accurately verify the spring height measurements. After setting all eight (8) spring heights, the PTO shaft is now ready for use.

PTO Shaft Clutch Spring Height vs. Horsepower

PTO Shaft	Clutch Flange Dia	PTO hp	Spring Height
5S.FF2	7-⅝" (200 mm)	15-20 hp	1.26" (31.9 mm)
		25 hp	1.25" (31.7 mm)
		30 hp	1.24" (31.4 mm)
		35 hp	1.22" (31.1 mm)
		45 hp	1.20" (30.5 mm)

All ratings are at 540 rpm PTO speed

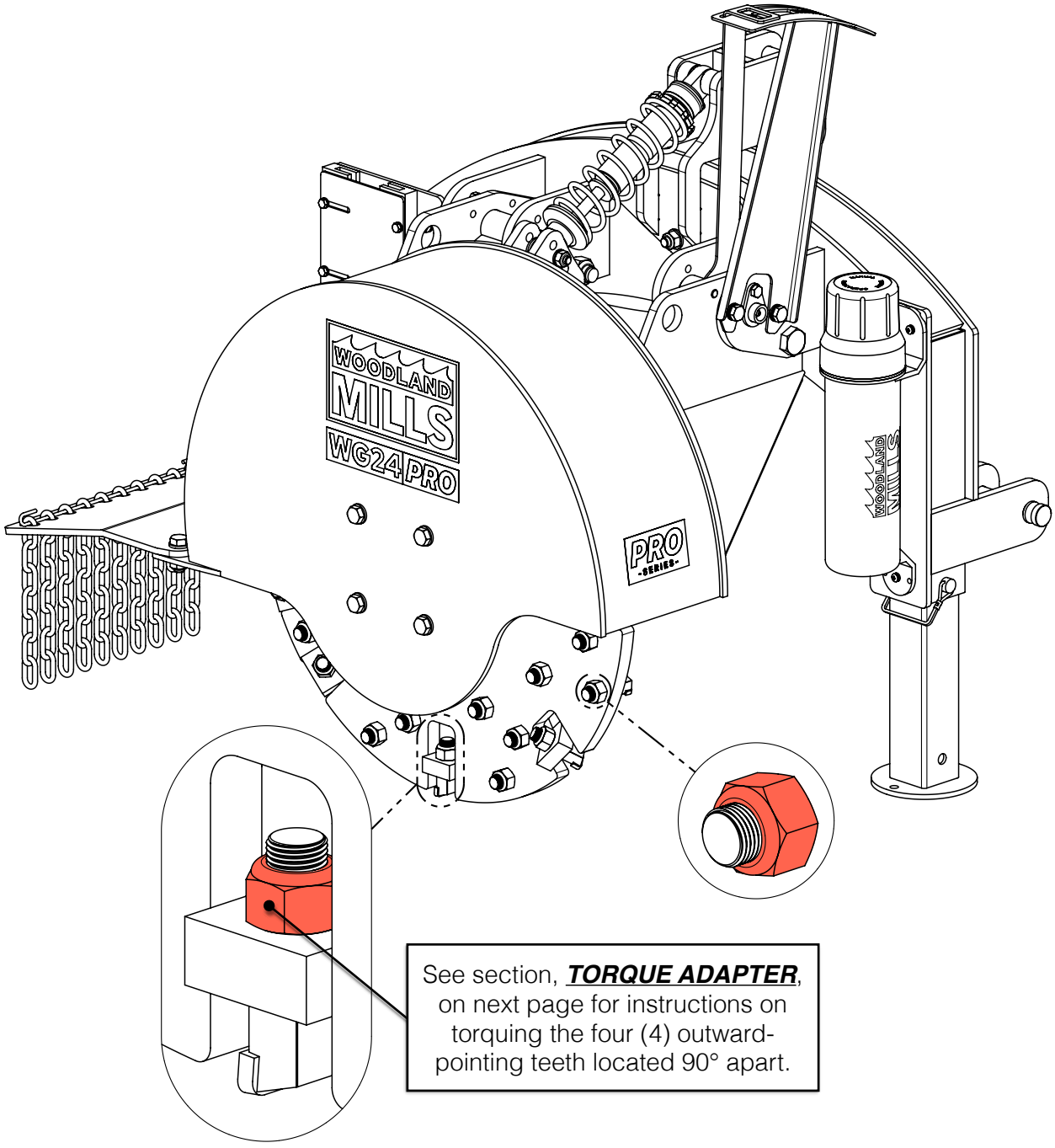


Typical vernier calliper

7. The clutch should be checked during the first hour of use and periodically each week thereafter. Excessive clutch plate slippage, burning odour, or visible smoking should *never* be observed during use.

FLYWHEEL TOOTH TORQUING

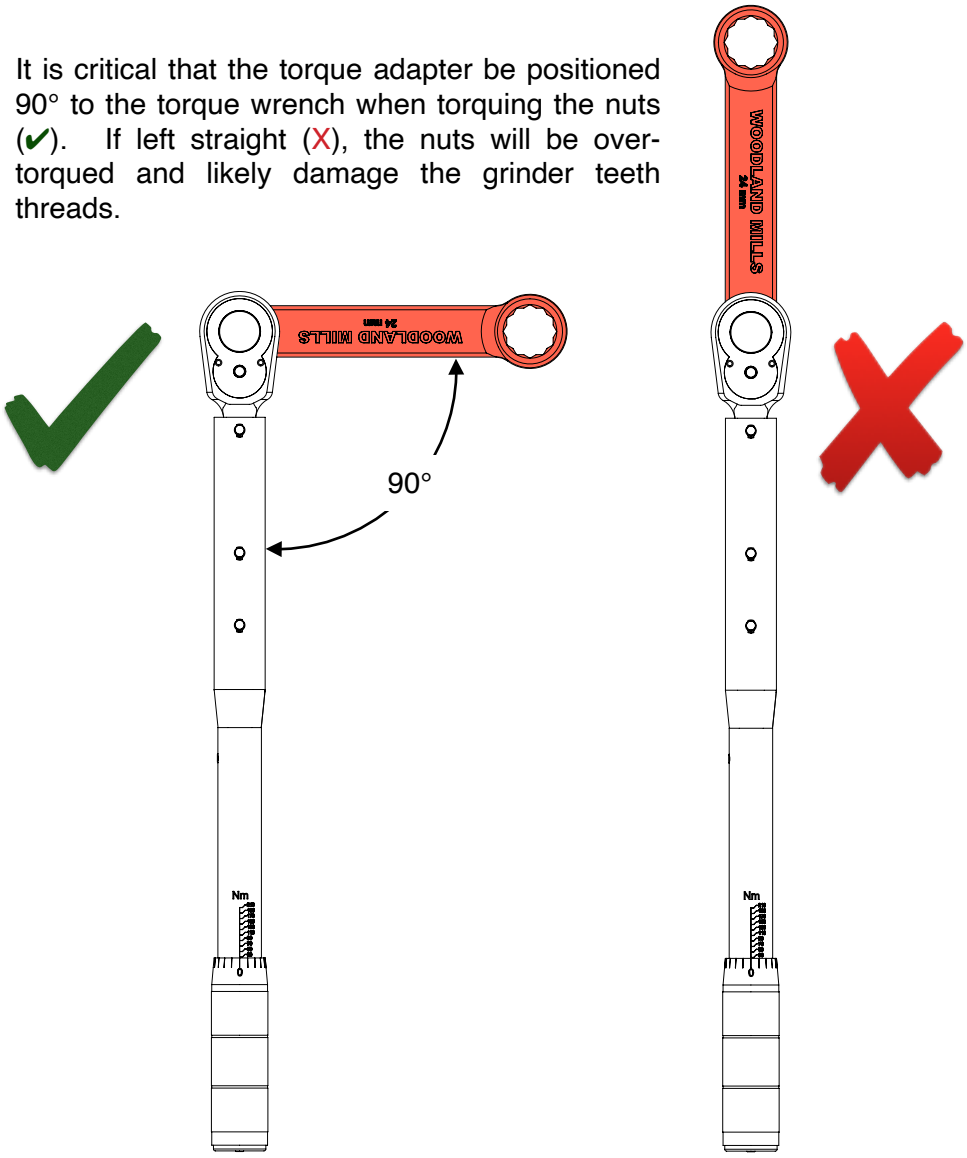
Prior to each operation, ensure all 34 teeth are torqued to 160 ft•lb [215 N•m] using a torque wrench with a 24 mm socket.



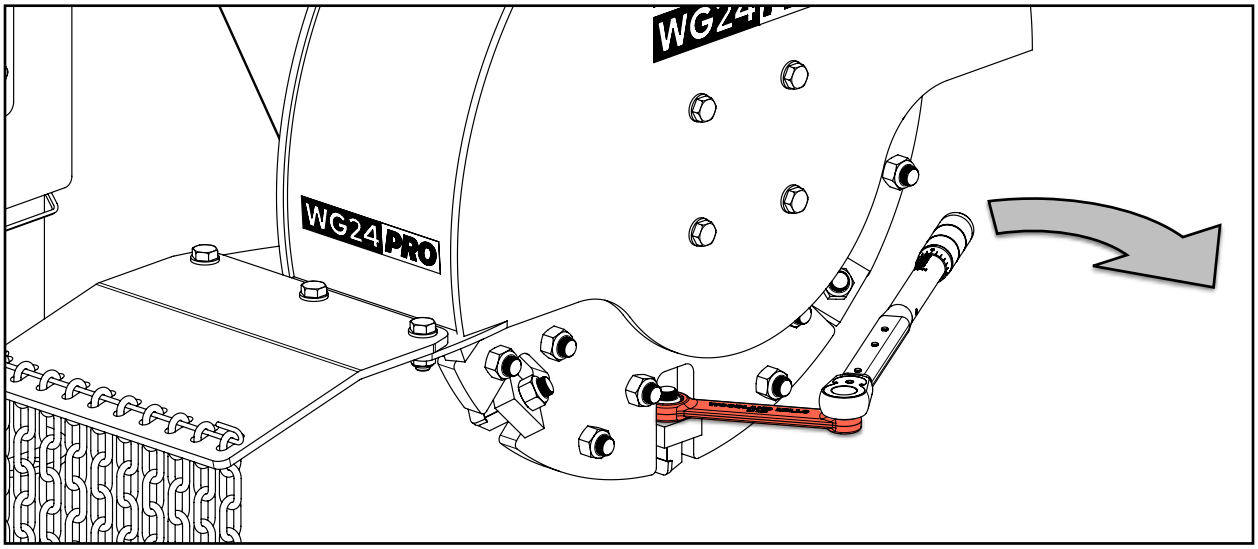
TORQUE ADAPTER

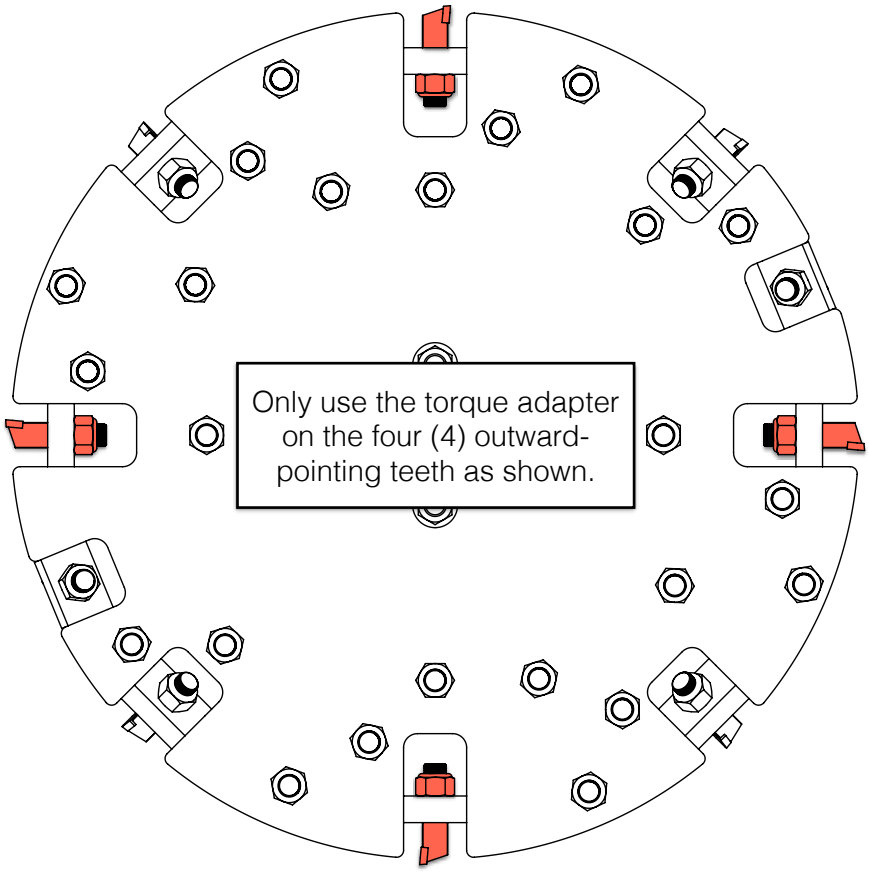
The stump grinder ships with a 24 mm torque adapter to assist torquing the four (4) outward-pointing teeth. It connects directly to a ½ in drive torque wrench. Use a ⅜-to-½ in socket adapter if the torque wrench is ⅜ in drive.

It is critical that the torque adapter be positioned 90° to the torque wrench when torquing the nuts (✔). If left straight (X), the nuts will be over-torqued and likely damage the grinder teeth threads.



Slide the torque adapter and torque wrench over the nut and torque the nut by rotating it clockwise. Repeat the process for all four (4) of the outward-pointing teeth. Ensure the torque adapter remains 90° to the torque wrench throughout the entire process.





OPERATION

PRE-START CHECKLIST

1. Prior to operation, ensure all 34 teeth are torqued to 160 ft•lb [215 N•m] using a torque wrench with a 24 mm socket. Refer to section "***FLYWHEEL TOOTH TORQUING***" for detailed instructions.
2. With the stump grinder attached to your tractor, take the appropriate measurements to trim the PTO shaft. Refer to section "***TRIMMING THE PTO SHAFT***" for detailed instructions.

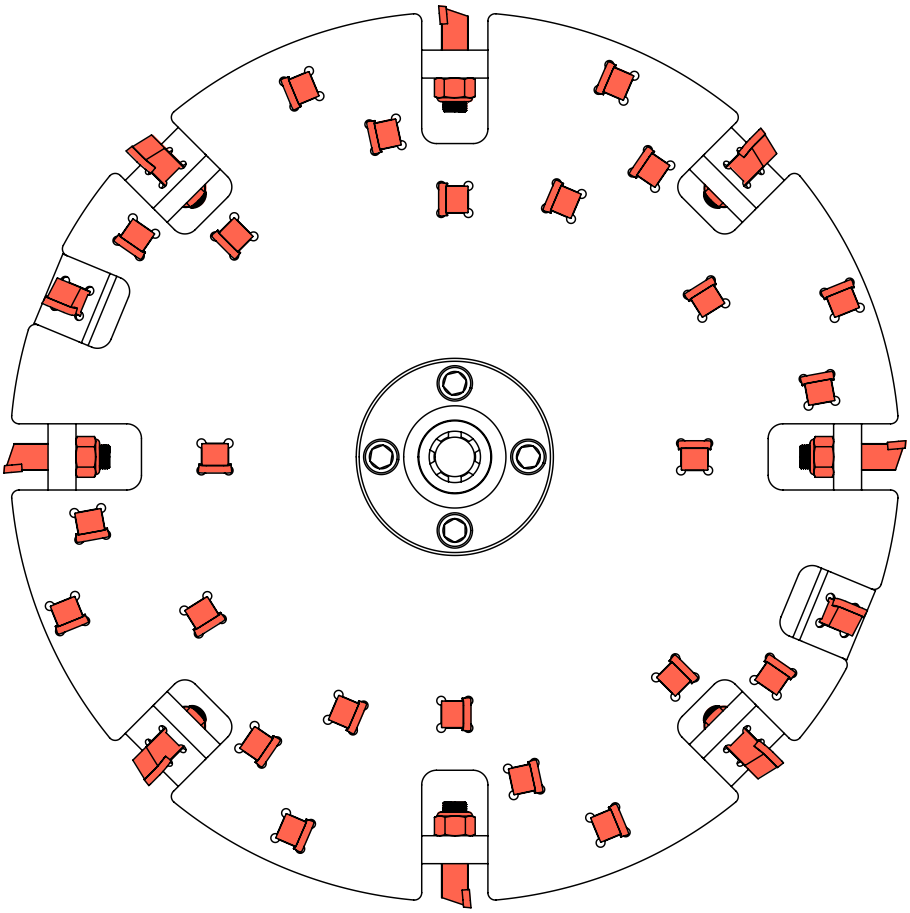
   ****Note: Failure to do so may result in severe damage to the implement and is *not* covered under warranty.****
3. Perform the clutch run-in procedure prior to using the stump grinder. Refer to the procedure in section "***PTO SHAFT CLUTCH RUN-IN***" for detailed instructions.
4. The stump grinder has bearings fitted with Zerk fittings for greasing. The PTO shaft is fitted with two (2) Zerk fittings, one on each yoke. The PTO shaft and all bearings come pre-greased and do not require greasing on initial start up. Refer to section "***MAINTENANCE***" for detailed maintenance instructions.
5. Read the "***STUMP GRINDING PROCEDURE***" section of this manual before operating the stump grinder. It is important to grind stumps correctly to ensure optimal grinding performance and safe operation.

STARTUP

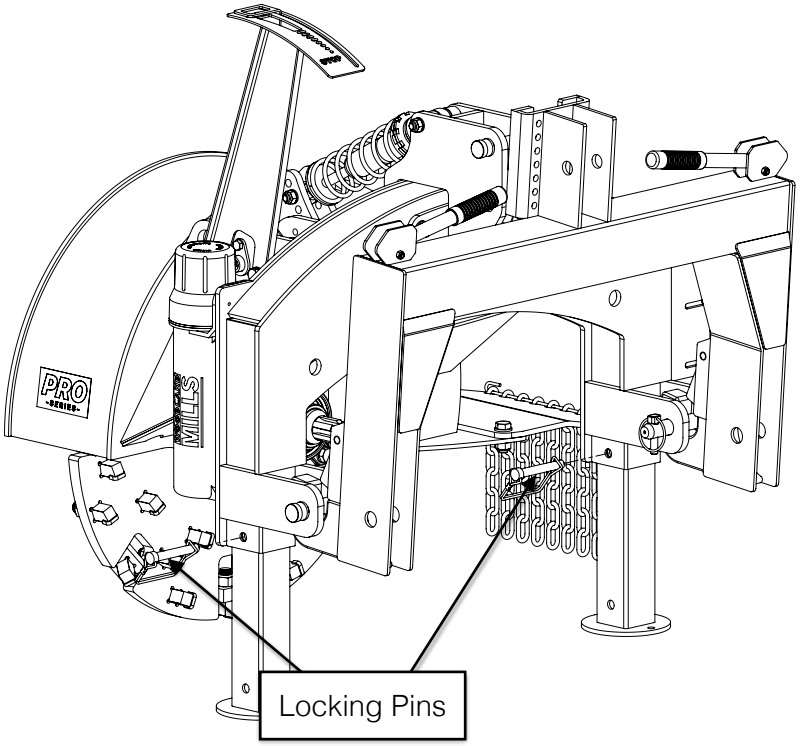
WARNING!

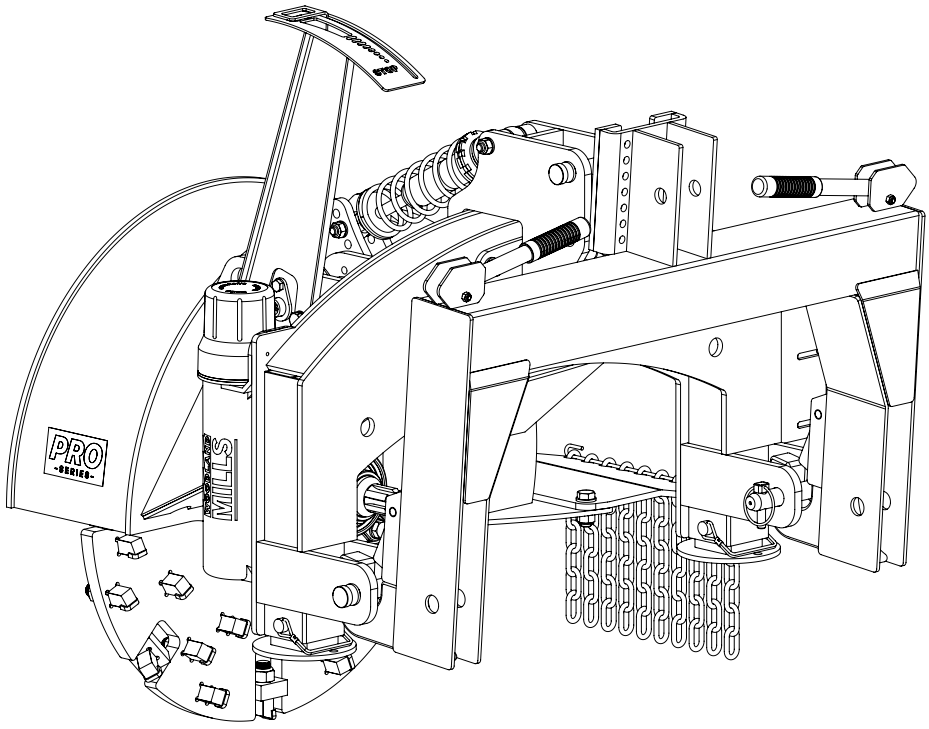
To avoid death or serious injury, do not grind stumps containing embedded foreign objects such as nails, wire, metal fragments, etc.

1. Wear heavy-duty work gloves, ANSI-approved goggles behind a full face shield, steel-toed work boots, and a dust mask.
2. Install the included Category 1 or Category 2 hitch pins based on the tractor's specs. Securely attach the stump grinder to the tractor's 3-point hitch system or quick-hitch and install the PTO shaft.
3. Prior to each daily use, check all 34 teeth and ensure they are not loose, missing, or damaged, and are torqued to the proper specification. Torque any undamaged loose teeth to 160 ft•lb [215 N•m] using a torque wrench with a 24 mm socket.

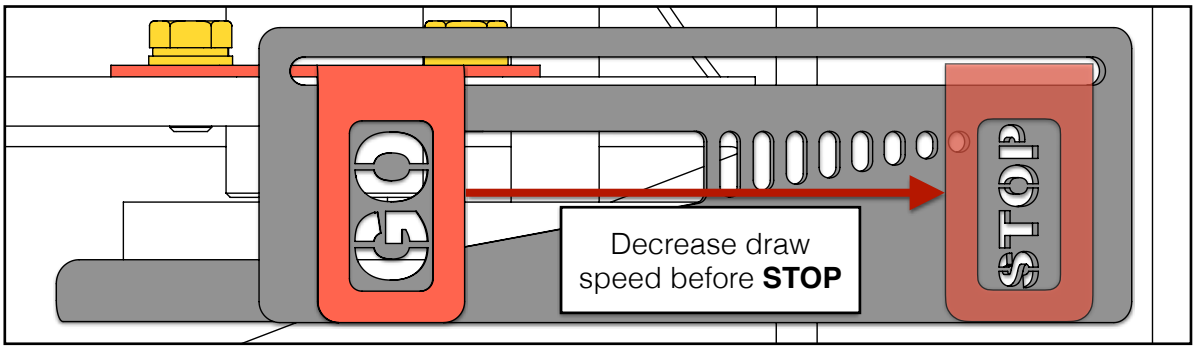


4. Remove the leg locking pins, slide the legs up inside the back frame tubes, then reinstall the pins to secure the legs in place.

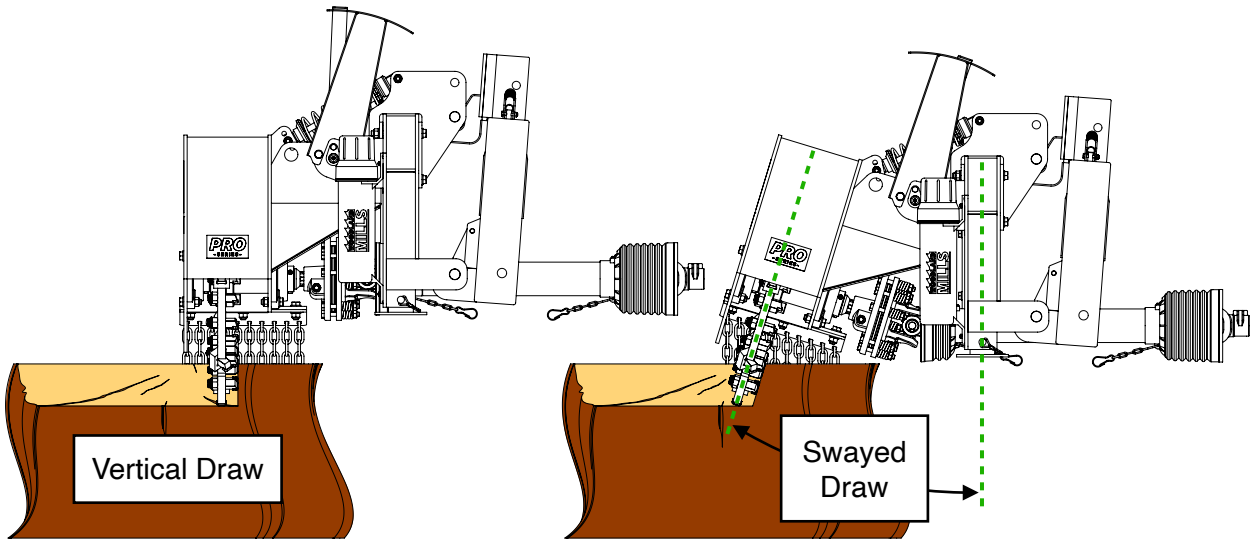




5. Reverse over a stump and lower the stump grinder so it will remove no more than 2 in [50 mm] per pass. Depth of grind should be adjusted to achieve proper grinding performance.
6. While drawing the stump grinder through a cut, use the Draw Speed Indicator to gauge the speed the tractor is pulling the grinder through the stump. If the indicator gets close to **STOP**, slow the tractor down. Always ensure the grinder is cutting properly and not jumping around erratically.

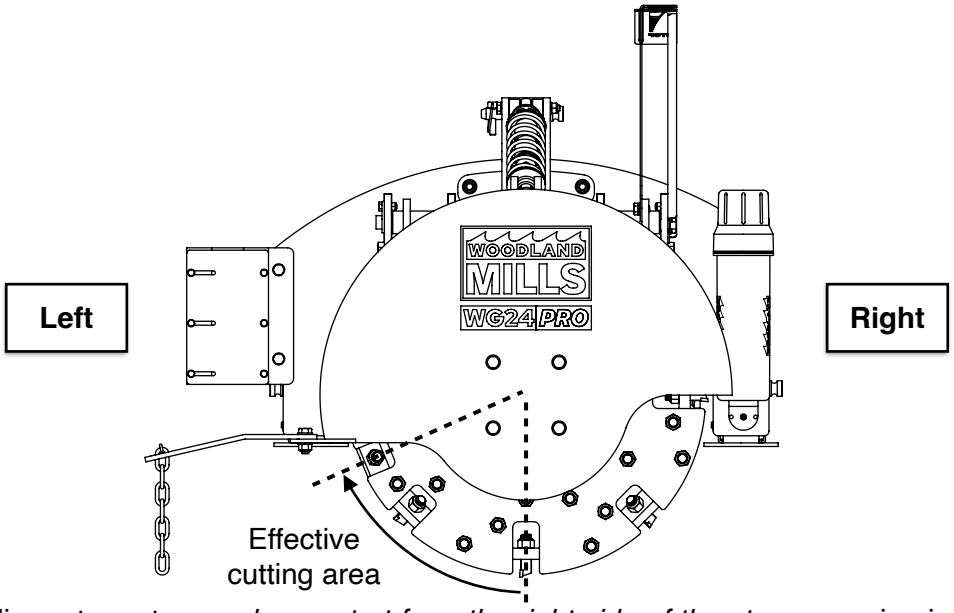


7. Once the stump is at ground level, continue to take up to 2 in [50 mm] deep passes until the stump and roots are 4-6 in [100-150 mm] below grade. Keep a watch out for foreign objects below the soil like rocks or buried metal. These can damage or break the teeth resulting in poor grinding performance.
8. During use, it is important to never let the stump grinder sway to such an extreme angle where the suspension gets fully compressed. The WG24 PRO stump grinder is designed to pull through stumps in a swayed draw orientation, however, the grinding effectiveness is diminished the more it sways. If the tractor is advancing faster than the flywheel can remove material—or if too much material is being removed per pass—immediately stop moving forward and and allow the stump grinder to swing back into a vertical draw position. Take a slower pass and/or shallower cut if necessary.

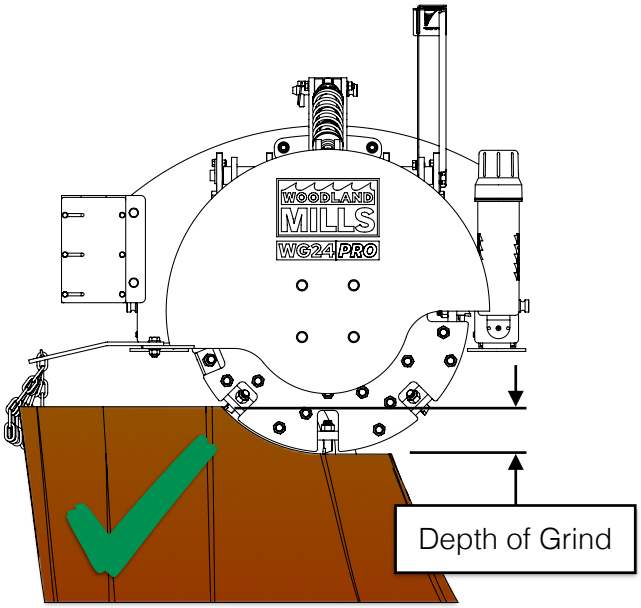


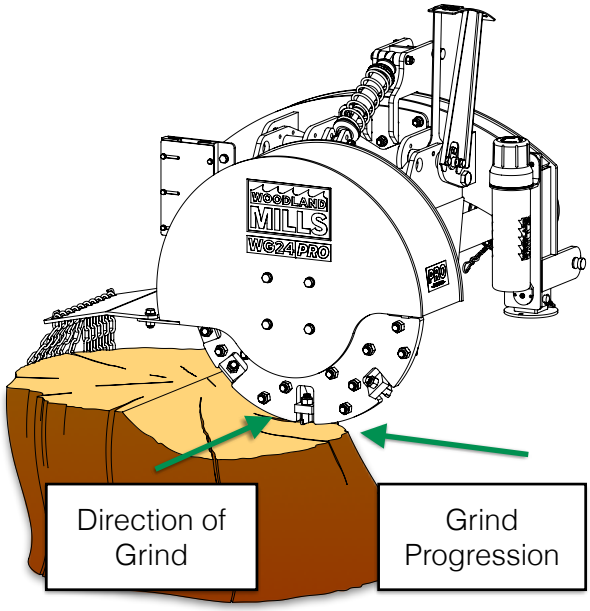
STUMP GRINDING PROCEDURE

The flywheel spins clockwise (when facing the rear of the machine) with the effective cutting area in the lower-left quadrant as shown below:



When grinding a tree stump, *always start from the right side of the stump*, moving incrementally to the left, pulling the grinder straight forward through the stump on each pass. When grinding softwoods like pine, spruce, or poplar, it may be permissible to remove upwards of 2 in [50 mm] of material per pass. However, hardwoods like oak, ash, and birch can be much more dense and the depth of grind may only be up to 1 in [25 mm]. If the chassis is swaying like described in the ***previous section***, or the grinder is vibrating or bouncing, reduce the depth of cut or feed rate accordingly.

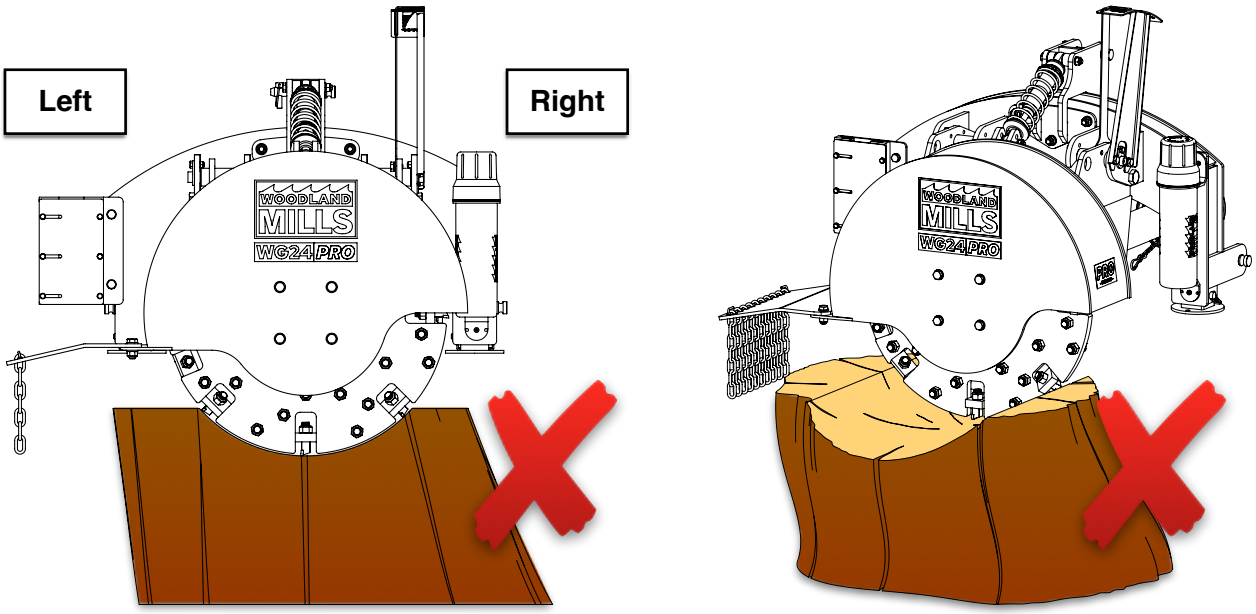




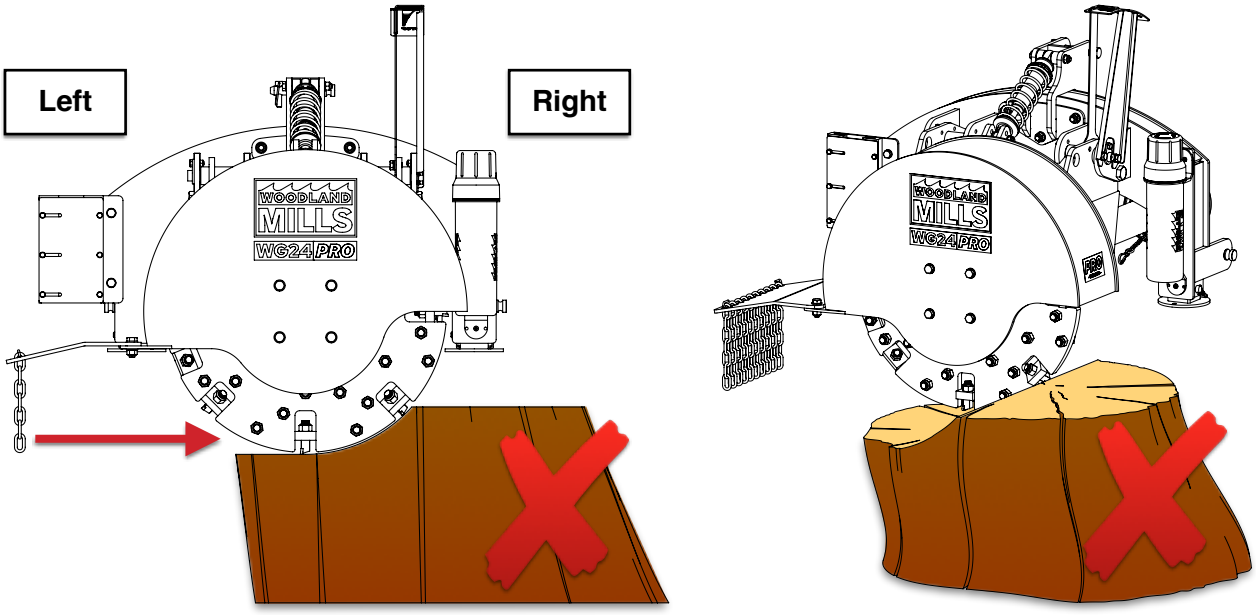
INCORRECT GRINDING PROCEDURES

It is critical that the stump grinder is never pulled through the centre of a stump or ground from left-to-right. This will induce severe vibration and cause the grinder to sway and bounce. It may also damage the machine and/or break teeth. Follow the directions on the ***previous page*** to ensure efficient and safe grinding.

PULLING THROUGH THE CENTRE

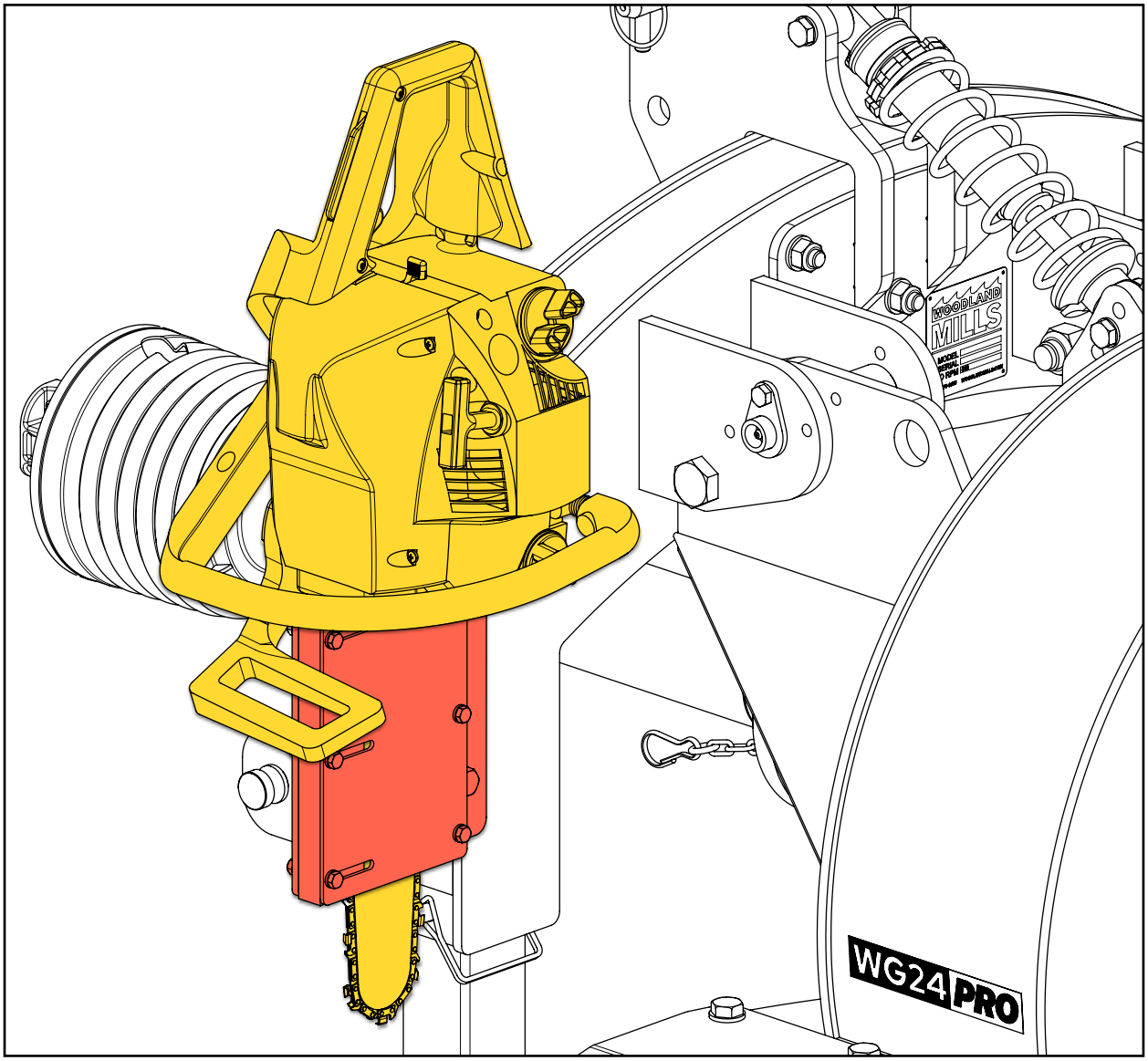


GRINDING LEFT-TO-RIGHT



CHAINSAW HOLDER

Use the chainsaw holder only during transport. Always remove the chainsaw from the holder prior to grinding stumps.



STORAGE

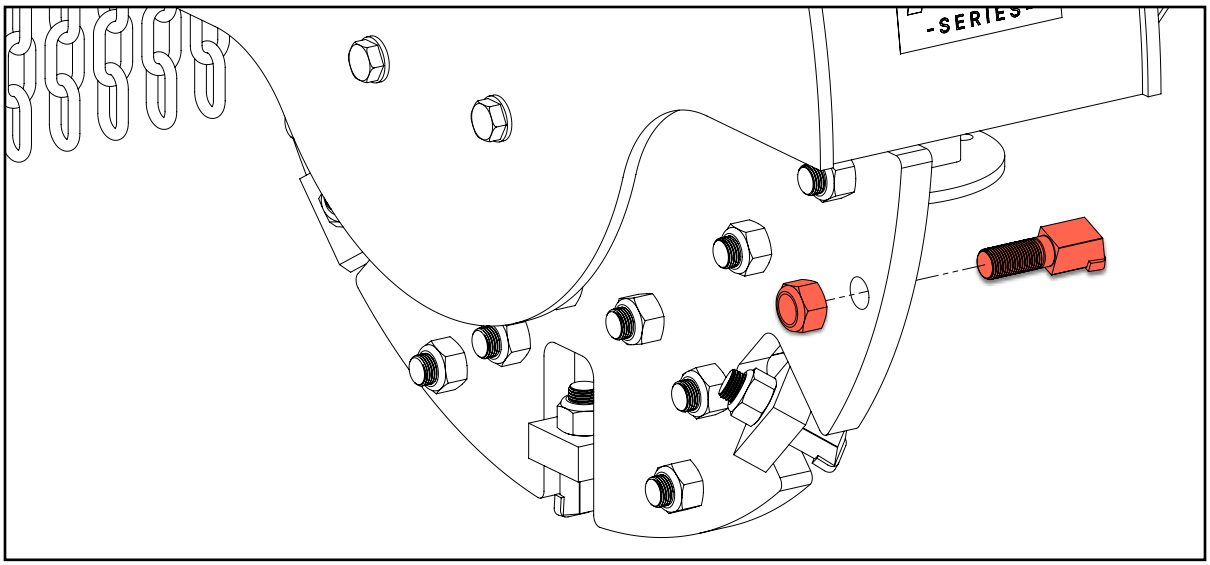
1. Lower both support legs and reinsert the locking pins.
2. Lower the stump grinder onto a flat, level surface.
3. Disconnect the PTO shaft.
4. Remove the stump grinder from the tractor's 3-point hitch system.

MAINTENANCE

- Proper routine maintenance is critical to operator safety, achieving proper stump grinding results, and prolonging the life of the machine.
- Before cleaning and/or any maintenance is performed on the stump grinder, always turn off the tractor engine and disconnect the PTO shaft.
- Inspect the machine before each use for loose nuts and worn cutting teeth and clean any debris that has built-up.
- After 2 hours of operation, check for loose nuts and worn cutting teeth. Tighten and replace as necessary.
- Grease the bearings and the pivot pins on the main housing as needed before each use. Do not over-grease the bearings as this can blow out the seals and cause premature bearing failure. Refer to section, ***GREASING***, for information.
- Inspect the clutch plates on the PTO shaft periodically to ensure that they are not seized together. Refer to ***PTO SHAFT CLUTCH RUN-IN*** in the ***SET UP PROCEDURES*** section of the manual.

REPLACING TEETH

1. Disconnect the PTO shaft from the tractor and set the stump grinder on a flat, level surface.
2. Remove the M16 X 1.5 mm lock nut (fine thread) from the back of the tooth using a 24 mm wrench or socket.
3. Remove the worn cutting tooth while noting its orientation so that the replacement tooth will be installed in the same manner.



4. Install the replacement tooth and lock nut using a torque wrench set to 160 ft•lb [215 N•m]. Refer to section ***FLYWHEEL TOOTH TORQUING*** for more detail.

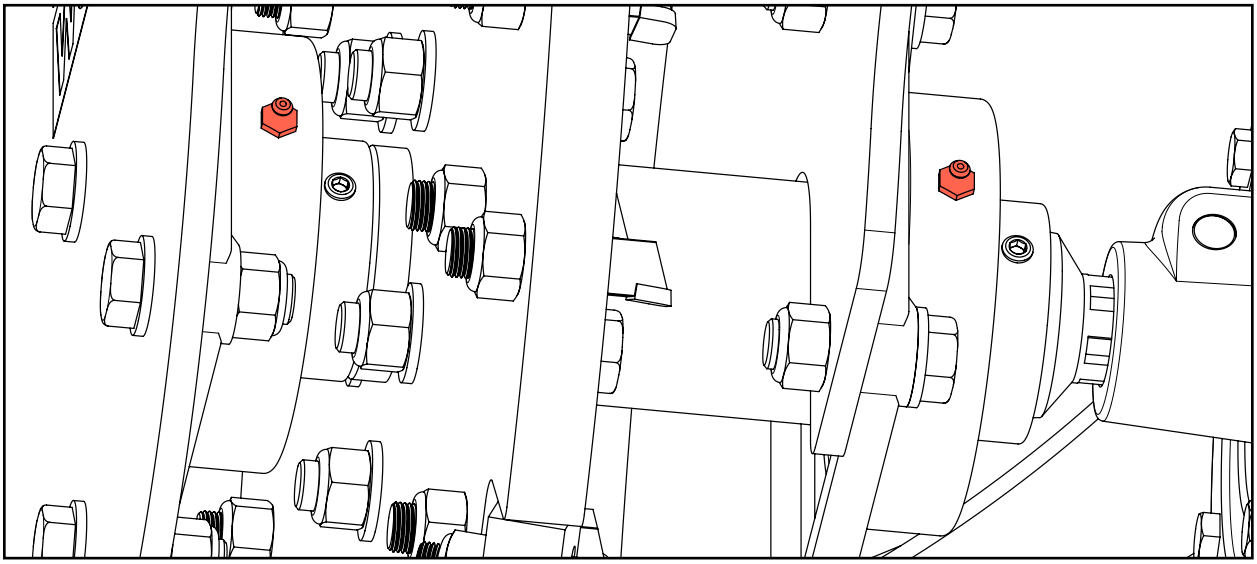
GREASING

BEARINGS & OUTPUT SHAFT

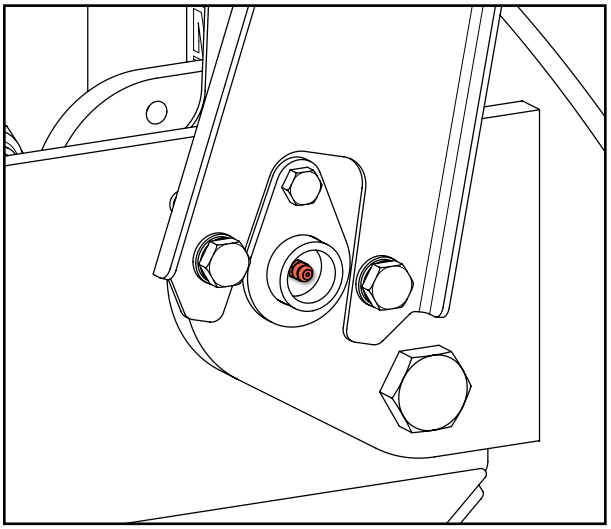
The stump grinder has ten (10) grease points: two (2) flywheel bearings, two (2) hinge pins, and six (6) on the PTO shaft. Check each grease point prior to use and add grease as needed.

Also, periodically brush grease onto the stump grinder's splined output shaft for ease of PTO shaft assembly and removal, to prevent rust buildup, and to prevent the two shafts from seizing together.

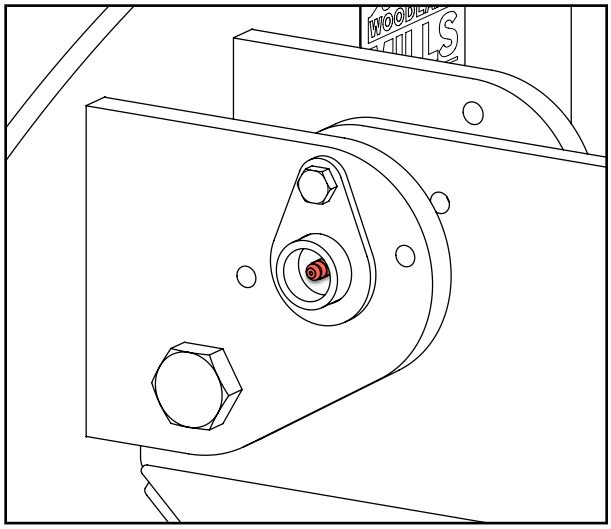
****Warning: These grease points come pre-greased from the factory. *Do not add grease to these points on a new stump grinder*. Over-greasing can damage the bearing seals.****



Flywheel Shaft Bearings (Underside of Flywheel Housing)



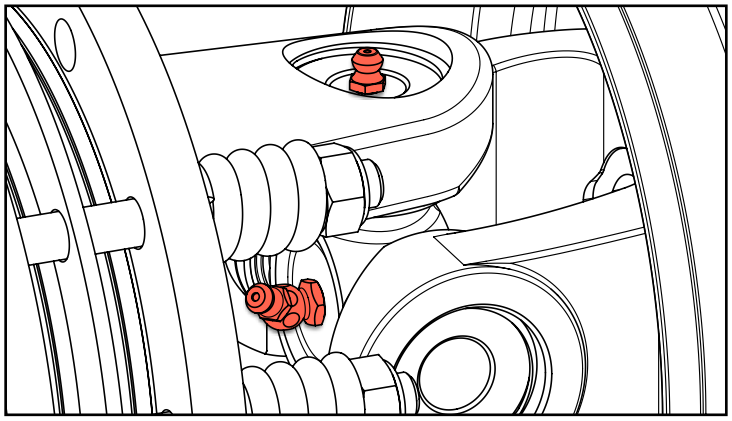
Right Pivot Hinge



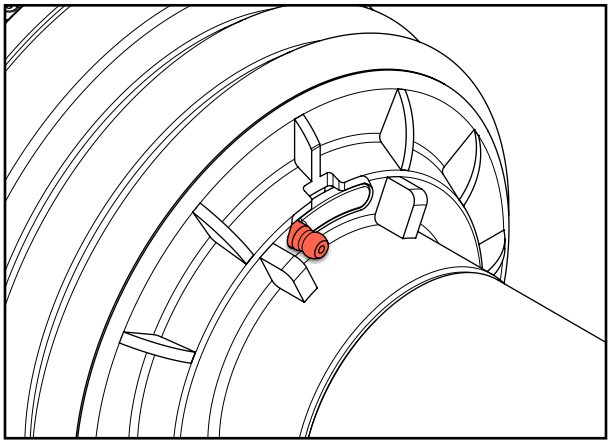
Left Pivot Hinge

PTO SHAFT

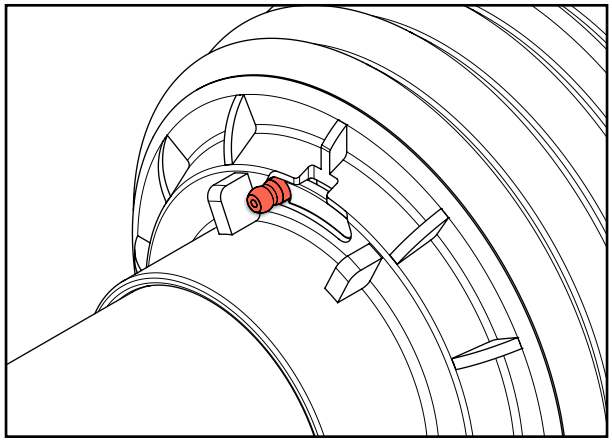
The PTO shaft has six (6) grease points that accessible from the outside: two (2) on the clutch yoke journal, one (1) on each of the inner and outer guards, and two (2) on the tractor yoke journal. Check each grease point prior to use and add grease as needed.



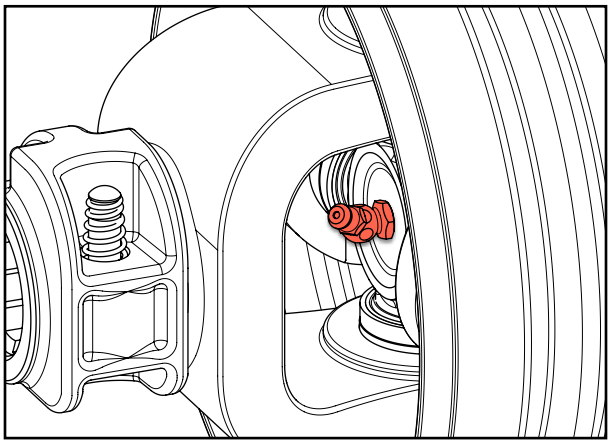
PTO Shaft: Clutch Yoke Journal (2x)



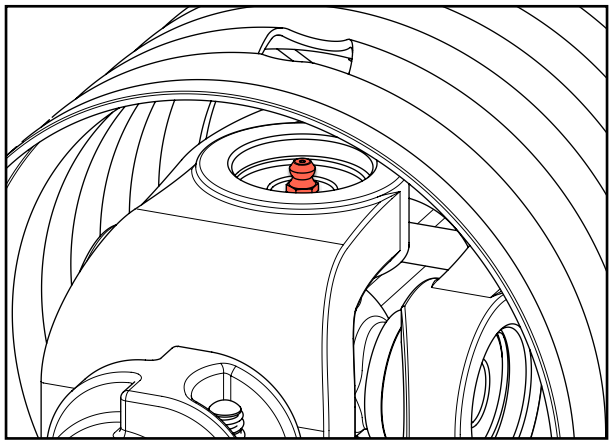
Inner Guard Bearing



Outer Guard Bearing



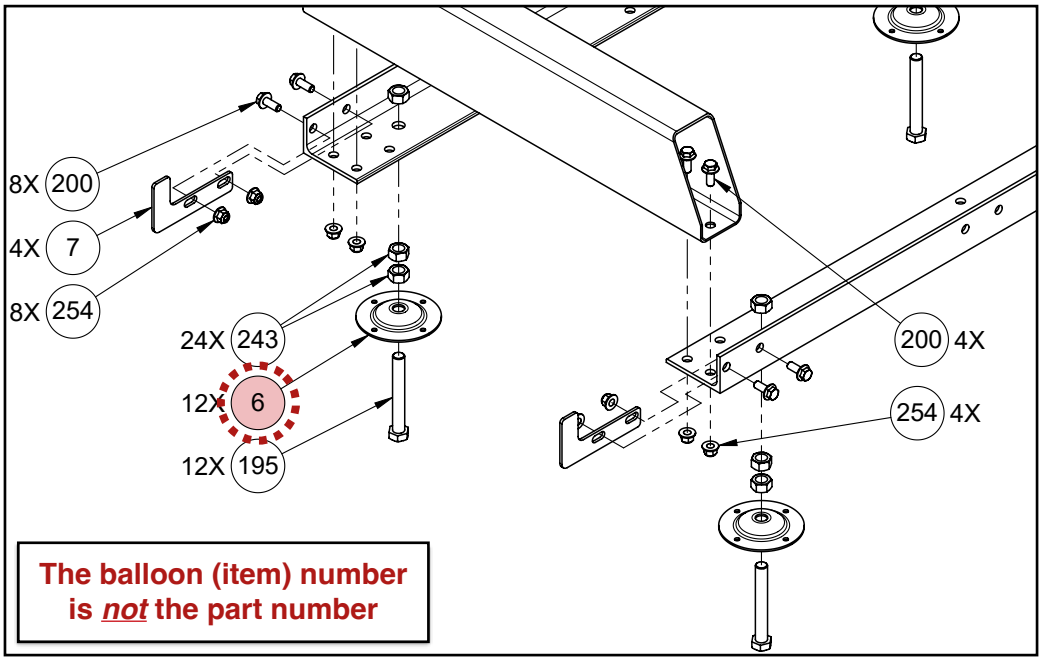
Tractor Yoke Journal



Tractor Yoke Journal Bearing Cup

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:

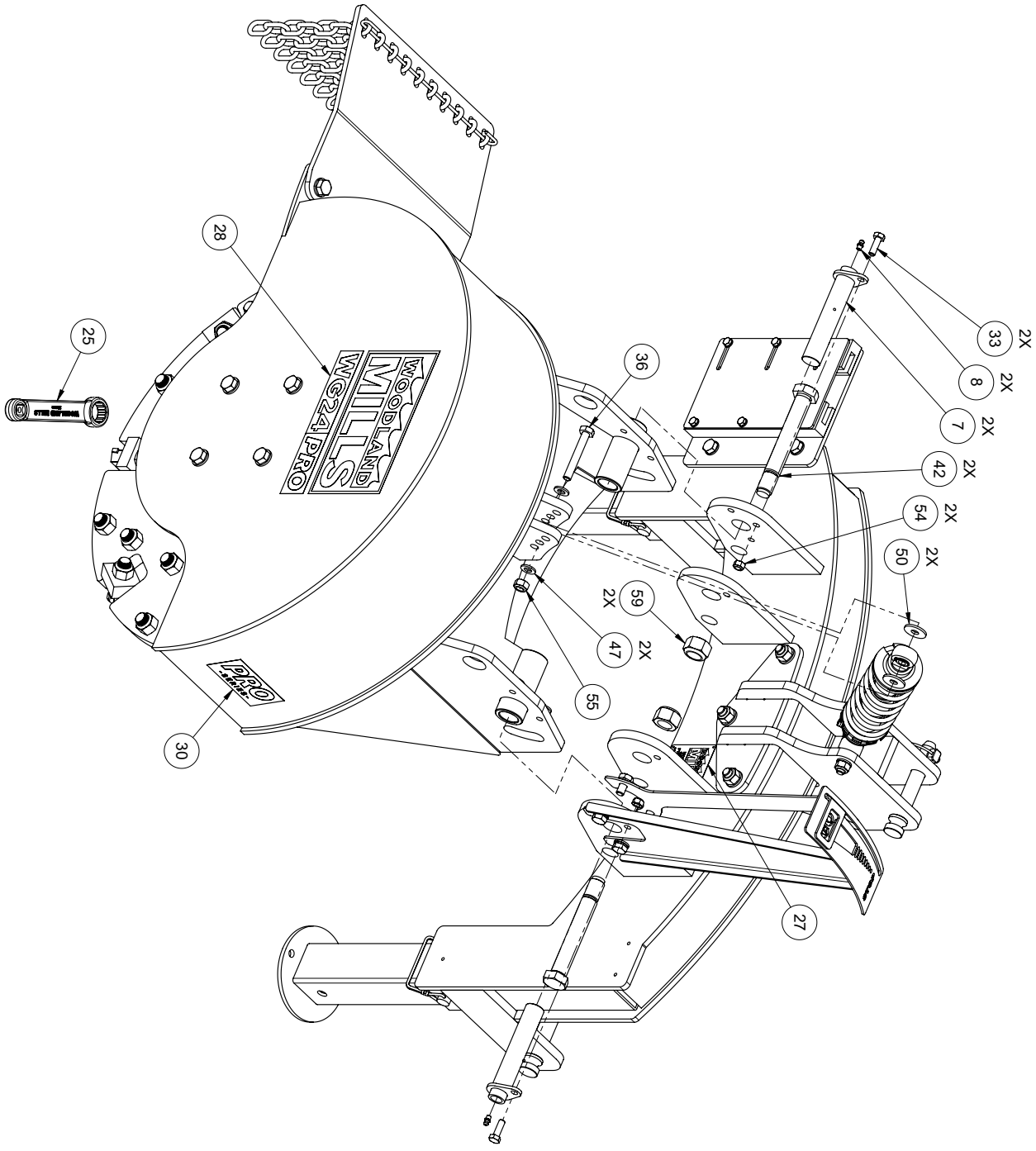
PARTS LIST

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

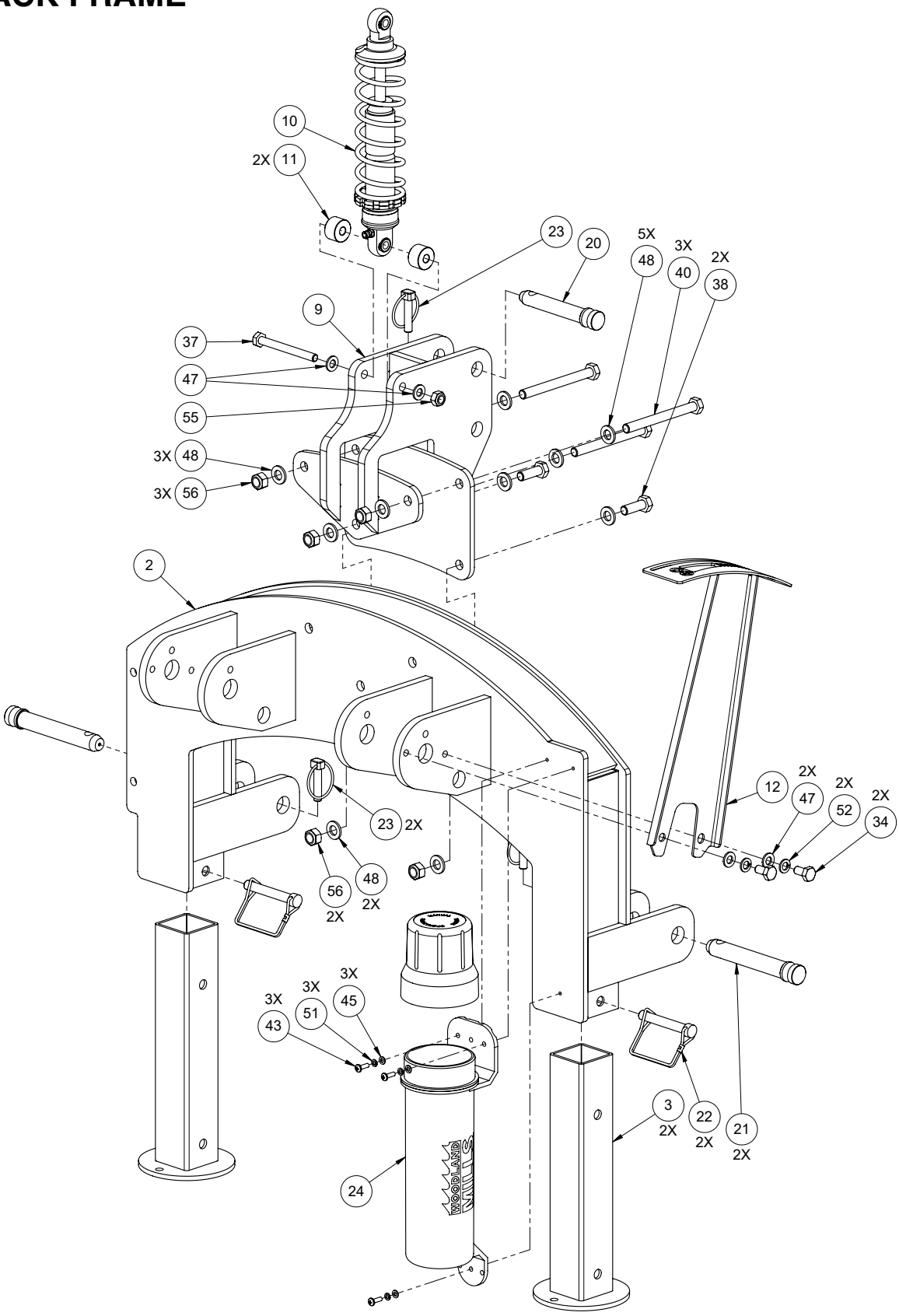
Record the part number (e.g. *0001071, HHB-MBM080FCJ, etc.*) in the "**Part No.**" column.

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.

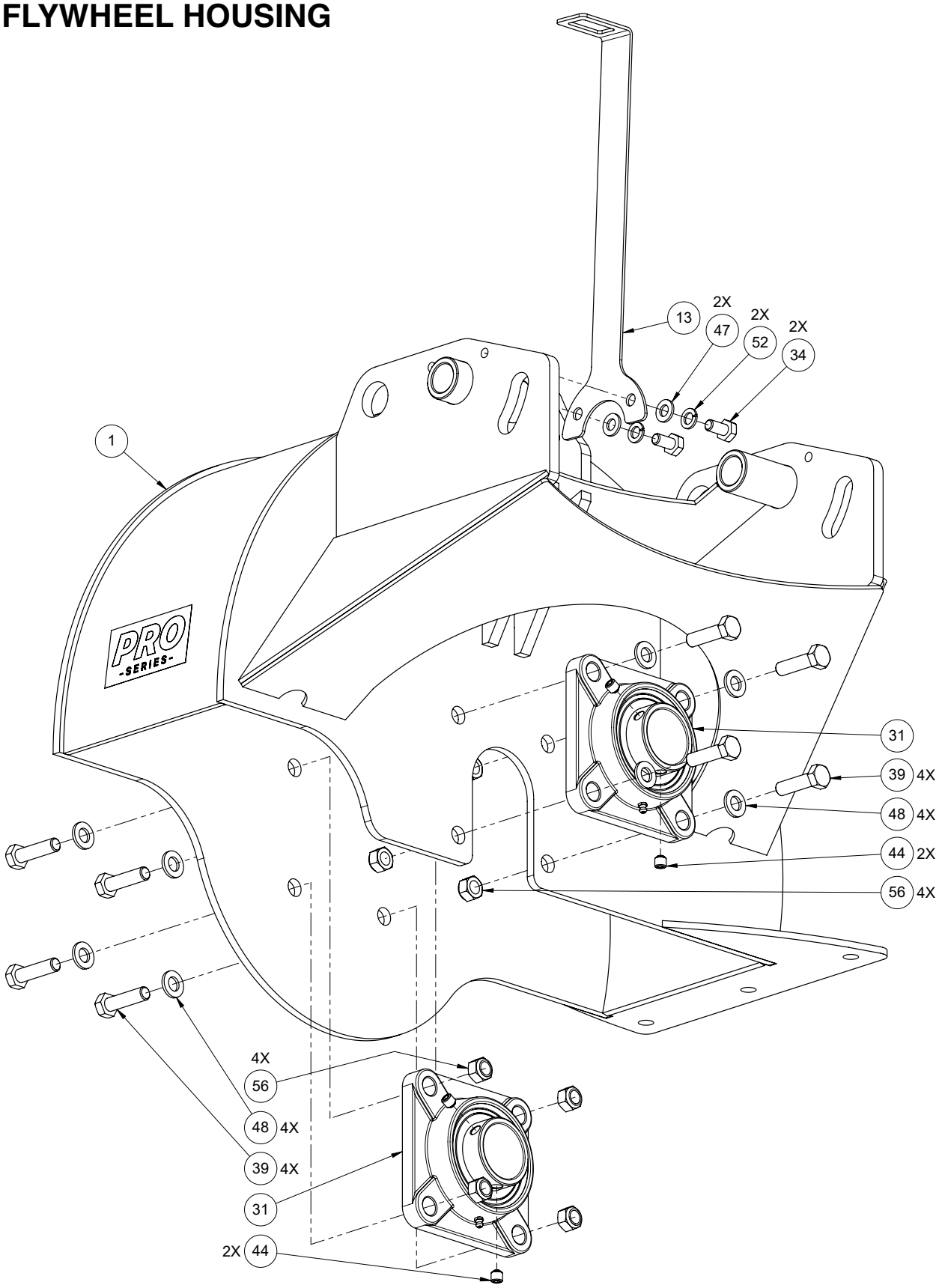
EXPLODED ASSEMBLY VIEWS
COMPLETE ASSEMBLY



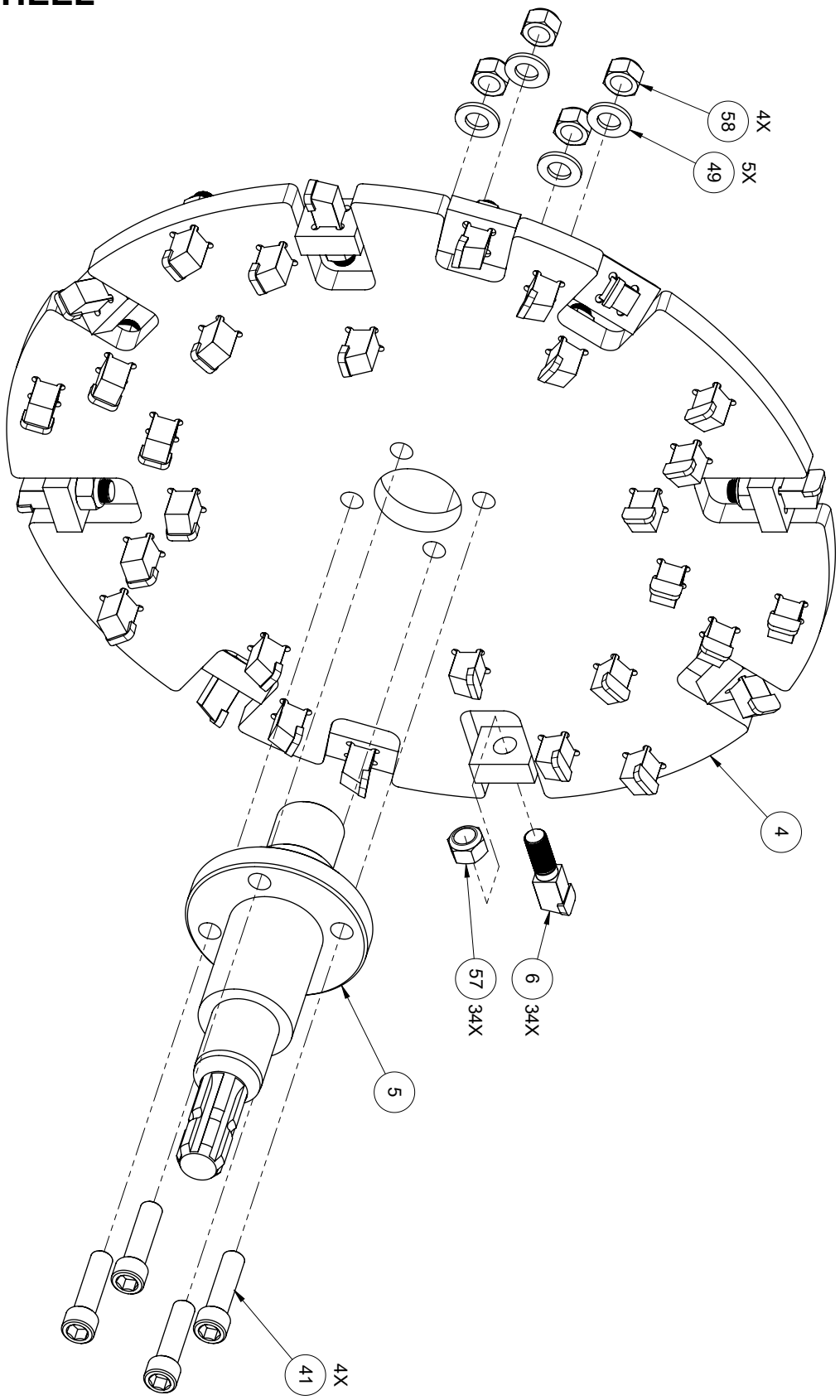
BACK FRAME


10
2X 11
23
20
5X 48
3X 40
2X 38
9
37
47
55
3X 48
3X 56
2
12
2X 47
2X 52
2X 34
23 2X
56 2X
48 2X
3X 45
3X 51
3X 43
3 2X
22 2X
21 2X
24

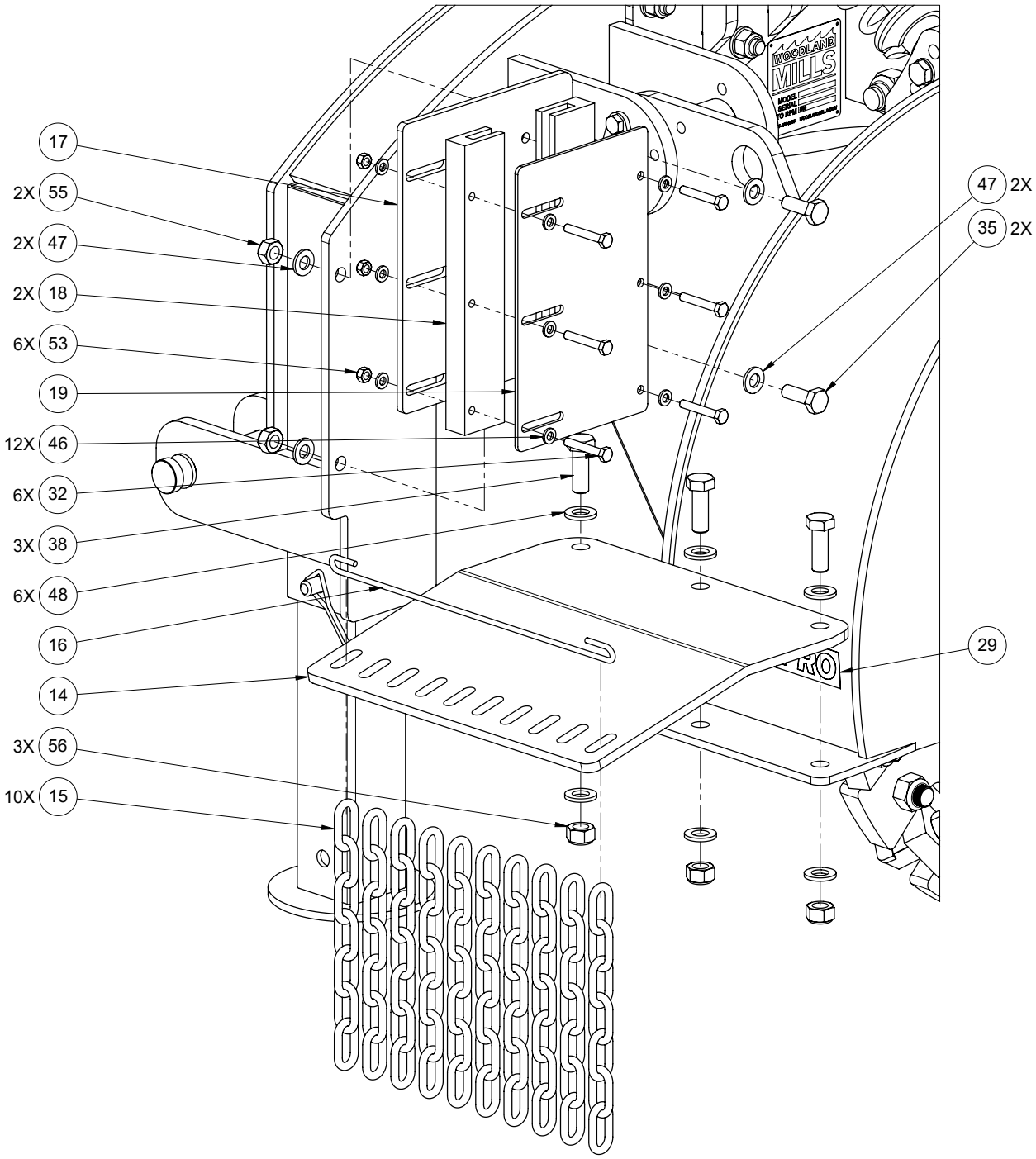
FLYWHEEL HOUSING



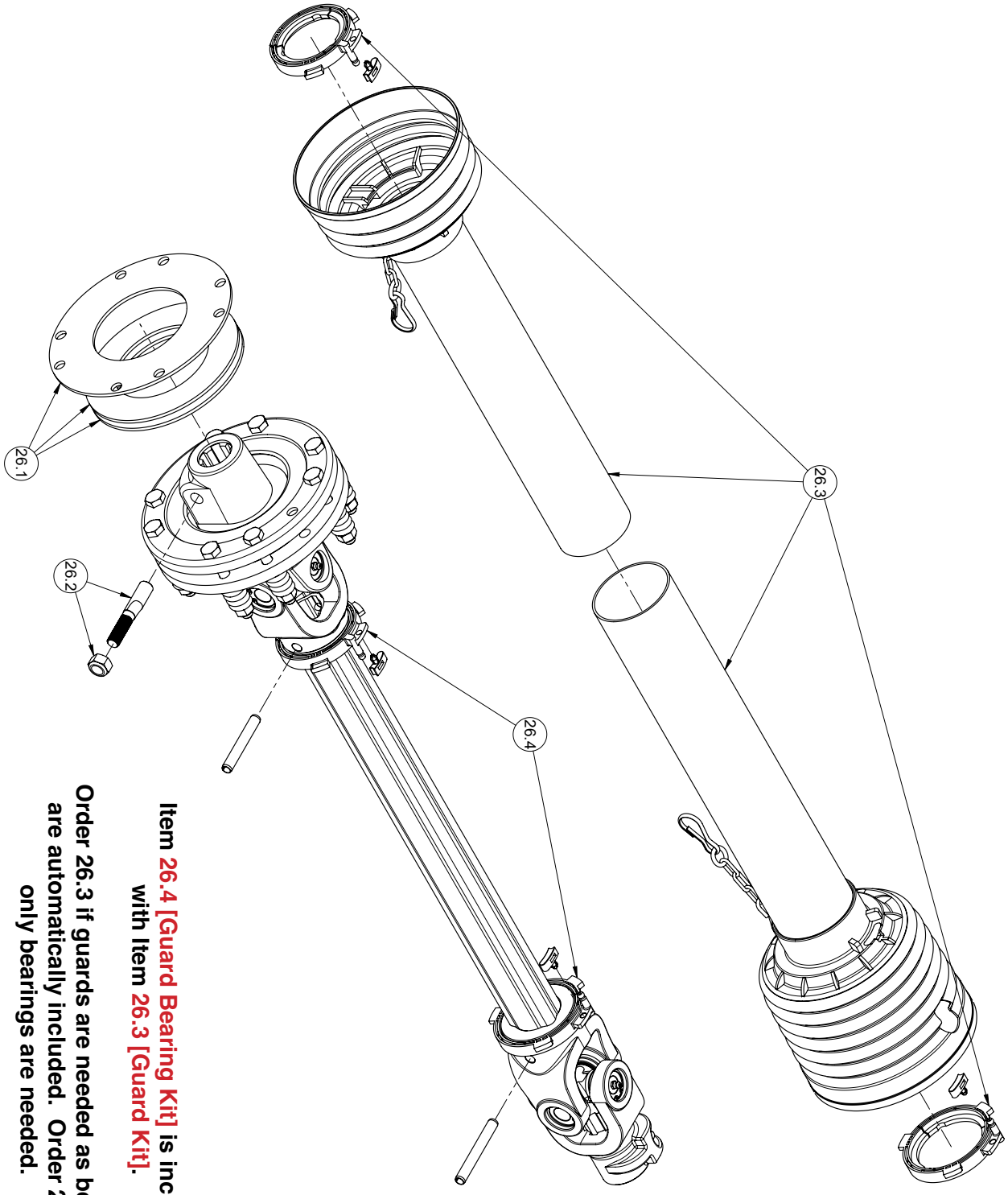
FLYWHEEL



DEFLECTOR & CHAINSAW HOLDER



PTO SHAFT



Item 26.4 [Guard Bearing Kit] is included with Item 26.3 [Guard Kit].

Order 26.3 if guards are needed as bearings are automatically included. Order 26.4 if only bearings are needed.

PARTS LIST

Item	Qty	Part No.	Description
1	1	0010927	FLYWHEEL HOUSING
2	1	0010929	BACK FRAME
3	2	0001228	BACK SUPPORT LEG, 60 X 60 mm
4	1	0001231	FLYWHEEL
5	1	0001233	FLYWHEEL SHAFT
6	34	0001232	FLYWHEEL TOOTH, 18 mm SQ, M16 X 1.5, 72 mm LG, 30 mm LG THD
7	2	0001238	GREASE PIN, 25 mm DIA
8	2	0004707	GREASE FITTING, STRAIGHT, M6 X 1 TAPERED THD
9	1	0010930	TOP LINK BRACKET
10	1	0011619	PNEUMATIC SHOCK ABSORBER, 6 mm WIRE, 88 lb, 305 mm CTC, 10 mm PIN
11	2	0009995	SPACER, 10 ID X 30 OD X 18.5 mm LG
12	1	0010933	DRAW SPEED INDICATOR GAUGE
13	1	0010934	DRAW SPEED INDICATOR
14	1	0009980	DEFLECTOR PLATE, DEBRIS CHAIN
15	10	0010928	DEBRIS CHAIN
16	1	0009992	CHAIN SKEWER
17	1	0010416	CHAINSAW HOLDER MOUNTING PLATE
18	2	0002361	CHAINSAW HOLDER NYLON GUIDE
19	1	0002363	CHAINSAW HOLDER CLAMPING PLATE
20	1	0001156	HITCH PIN, UPPER, CAT 1, 3/4 in [19 mm] DIA, 3-1/2 in [90 mm] USEABLE LG
21	2	0001240	HITCH PIN, LOWER, CAT 1, 7/8 in [22 mm] DIA, 4-1/2 in [115 mm] USEABLE LG
22	2	0004704	LOCKING PIN, SQUARE, 12 mm DIA, 70 mm USABLE LG, 85 mm LG
23	3	0004705	LINCH PIN, 10 mm DIA, 38 mm USABLE LG, 45 mm LG
24	1	0001655	MANUAL TUBE
25	1	0004194	TORQUE ADAPTER, 1/2 in DRIVE, 12-POINT 24 mm
26	1	0011800	PTO SHAFT, SLIP CLUTCH, 5S-SERIES
26.1	1	0002572	PTO SLIP CLUTCH DISC KIT
26.2	1	0003056	LOCKING PIN KIT, PTO SLIP CLUTCH
26.3	1	0011840	GUARD KIT, PTO SLIP CLUTCH, 5S-SERIES
26.4	1	0010591	GUARD BEARING KIT, 5S/7S-SERIES
26.5	1	0011592	TRIANGULAR YOKE PIN KIT, 5S-SERIES PTO SHAFT
27	1	0006495	LABEL, SERIAL NUMBER, PTO
28	1	0010932	LABEL, WG24 PRO W/ WOODLAND MILLS LOGO
29	1	0010931	LABEL, WG24 PRO
30	1	0008937	LABEL, PRO SERIES, 100 X 56 mm
31	2	UCF210	FLANGE BEARING, SQ, 4-BOLT, 50 mm SFT, 111 mm C-C
32	6	HHB-MBE095FCJ	HEX HEAD BOLT, CLS 8.8, M6 X 1, 40 mm LG, FULL
33	2	HHB-MBJ080FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 25 mm LG, FULL
34	4	HHB-MBM075FCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 20 mm LG, FULL
35	2	HHB-MBM085FCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 30 mm LG, FULL
36	1	HHB-MBM125PCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 70 mm LG, 26 mm LG THD
37	1	HHB-MBM155PCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 100 mm LG, 26 mm LG THD
38	5	HHB-MBR090FCJ	HEX HEAD BOLT, CLS 8.8, M12 X 1.75, 35 mm LG, FULL
39	8	HHB-MBR100FCJ	HEX HEAD BOLT, CLS 8.8, M12 X 1.75, 45 mm LG, FULL
40	3	HHB-MBR180PCJ	HEX HEAD BOLT, CLS 8.8, M12 X 1.75, 125 mm LG, 30 mm LG THD
41	4	SHC-MCA115FCP	SHCS, CLS 12.9, M16 X 2, 60 mm LG, FULL

Item	Qty	Part No.	Description
42	2	HHS-MCF068173AJ	SHLDR SCREW, HEX HEAD, ALLOY, 21 X 118 mm LG SHLDR, M20 X 2.5 X 32 mm LG THD
43	3	PPH-MBA071FCE	SCREW, PPH, CLS 4.8, M5 X 0.8, 16 mm LG, FULL
44	4	KCS-MBN059GR	SET SCREW, KNURLED CUP POINT, GR 45H, M10 X 1.25, 10 mm LG
45	3	FTW-MBA000AJ	FLAT WASHER, M5
46	12	FTW-MBE000AJ	FLAT WASHER, M6
47	12	FTW-MBM000AJ	FLAT WASHER, M10
48	24	FTW-MBR000AJ	FLAT WASHER, M12
49	4	FTW-MCA000AJ	FLAT WASHER, M16
50	2	FDW-MBM079000AJ	FENDER WASHER, M10, 30 mm OD
51	3	SLW-MBAAJ	SPLIT LOCK WASHER, M5
52	4	SLW-MBMAJ	SPLIT LOCK WASHER, M10
53	6	HLN-MBECH	LOCK NUT, CLS 8, M6 X 1
54	2	HLN-MBJCH	LOCK NUT, CLS 8, M8 X 1.25
55	4	HLN-MBMCH	LOCK NUT, CLS 8, M10 X 1.5
56	16	HLN-MBRCH	LOCK NUT, CLS 8, M12 X 1.75
57	34	HLN-MCBCH	LOCK NUT, CLS 8, M16 X 1.5
58	4	HLN-MCACH	LOCK NUT, CLS 8, M16 X 2
59	2	HLN-MCFCH	LOCK NUT, CLS 8, M20 X 2.5

NOTES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