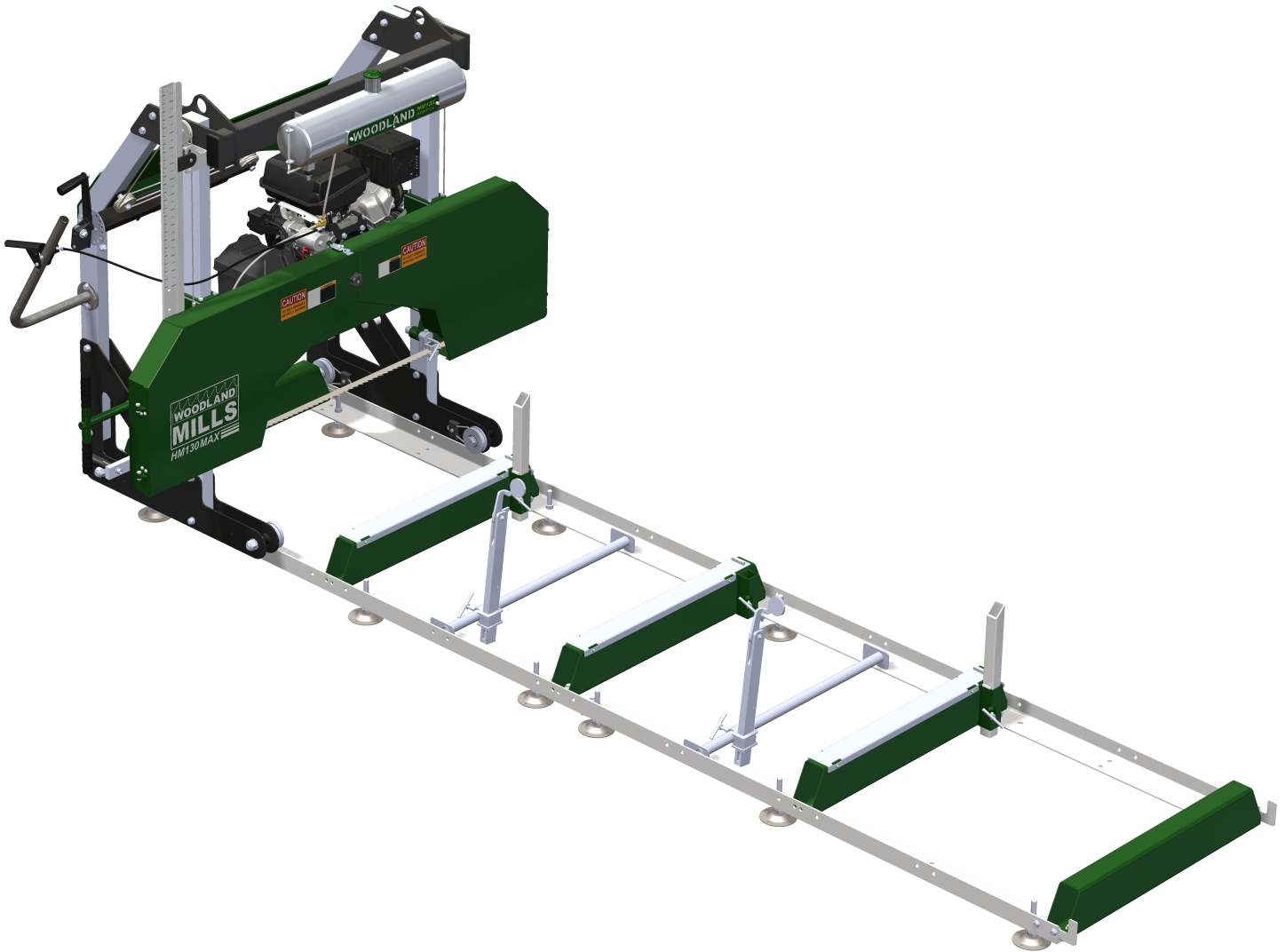
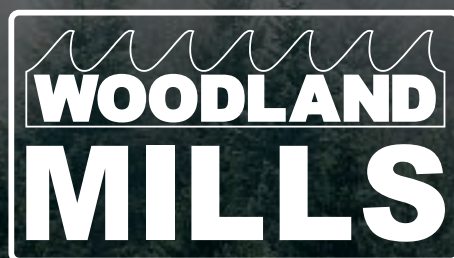


HM130MAX PORTABLE SAWMILL

14 Horsepower Electric Start



OPERATOR'S MANUAL



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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 sawmill. 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 sawmills are designed for acreage owners to aid in the milling of natural, untreated wood with the mill firmly supported on the ground. 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****



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.



WARNING!

Only operate the engine in a well ventilated area. Carbon Monoxide (CO) produced by the engine during use can kill. Do not use indoors, near windows, or in other sheltered areas.

NOTE: 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.



WORK AREA

- **Keep work area clean, free of clutter and well lit.** Cluttered and dark work areas can cause accidents.
- **Do not use your sawmill 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 alert of your surroundings.** Using power tools in confined work areas may put you dangerously close to cutting tools and rotating parts.

INTERNAL COMBUSTION ENGINE SAFETY

WARNING!

Internal combustion engines present special hazards during operation and fuelling. Read and follow the warning instructions in the engine Owner's Manual and the safety guidelines below. Failure to follow the warnings and safety standards could result in severe injury or death.



- **DO NOT** run the machine indoors or in an enclosed area such as a deep trench unless adequate ventilation, through such items as exhaust fans or hoses, is provided. Exhaust gas from the engine contains poisonous carbon monoxide gas (CO); exposure to carbon monoxide can cause loss of consciousness and may lead to death.
- **DO NOT** smoke while operating the machine.
- **DO NOT** smoke when refuelling the engine.
- **DO NOT** refuel a hot or running engine.
- **DO NOT** refuel the engine near an open flame.
- **DO NOT** spill fuel when refuelling the engine.
- **DO NOT** run the engine near an open flame.
- **ALWAYS** refill the fuel tank in a well-ventilated area.
- **ALWAYS** replace the fuel tank cap after refuelling.
- **ALWAYS** check the fuel lines and the fuel tank for leaks and cracks before starting the engine. Do not run the machine if fuel leaks are present or the fuel lines are loose.
- **ALWAYS** avoid contact with hot fuel, oil, and exhaust fumes.



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 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 tool. A wrench or key that is left attached to a rotating part of the tool may result in personal injury.
- **Never make blade guide adjustments, remove or install blades, or conduct any other maintenance or make any other adjustments while the engine is running.** Always shut the engine off, remove the ignition key, and turn the engine off before carrying out any of the aforementioned procedures. Consult your engine manual for safe shutdown procedures to prevent accidental ignition.



TOOL USE AND CARE

- **Always** be sure the operator is familiar with proper safety precautions and operation techniques before using machine.
- **Never touch** the engine or muffler while the engine is on or immediately after it has been turned off. These areas get extremely hot and can cause burns.
- **Always** close the fuel valve on the engine when the machine is not in use.
- **Do not force the tool.** Tools do a better and safer job when used in the manner for which they are designed.
- **Never use the sawmill** with a malfunctioning switch or throttle. Any power tool that cannot be controlled with the switch is dangerous and must be repaired before using.
- Turn off the engine and place the switch in the locked or off position before servicing, adjusting, installing accessories or attachments, or storing. Such preventive safety measures reduce the risk of starting the power tool accidentally.
- Secure logs with the log screw clamping device instead of with your hand or another individual's help. This safety precaution allows for proper tool operation using both hands.
- **Storing sawmill.** When the sawmill is not in use, store it in a dry, secure place or keep well covered and out of the reach of children. Inspect the sawmill for good working condition prior to storage and before re-use.
- **Maintain your sawmill.** It is recommended that the general condition of the sawmill be examined before it is used. Keep your sawmill in good repair 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 sawmill off immediately and have the problem corrected before further use.
- **Keep saw blades sharp and clean.** Properly maintained bandsaw blades are less likely to bind and are easier to control.
- **Cleaning and Lubrication.** Use only soap and a damp cloth to clean your sawmill. Many household cleaners are harmful to plastic and rubber components on the sawmill.
- **Use only accessories that are recommended** by the manufacturer for your model. Accessories that may be suitable for another sawmill may create a risk of injury when used on the sawmill.
- **Always** operate 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 machine if any safety devices or guards are missing or inoperative.
- **Never leave sawmill running unattended.**
- **Coiled blades can spring apart with considerable force and unpredictably in any direction.** Always deal with coiled blades, including those packaged in boxes, with the utmost care.
- **Never use the equipment to cut anything other than lumber** or for any purpose other than cutting lumber as described in this manual.



EQUIPMENT OPERATION

1. Wear heavy-duty work gloves, ANSI-approved goggles behind a full face shield, steel-toed work boots, and a dust mask.
2. Operate only with assistance.
3. Cut-off branches from the lumber to be processed.
4. Place the lumber to be cut on the track supports.
5. Clamp the lumber firmly in place using the included log clamps and supports.
6. Fill the lubrication tank with clean water. Add a ¼ cup of liquid dish soap per full tank; add less if topping up a partially full tank. The soap helps keep the blade clean(er) when excess tree oils and sap are encountered.
7. Start and operate the engine according to the provided engine manual.
8. Depress the throttle to bring the blade up to speed—the throttle should be fully depressed while the saw is under load.
9. Roll the head assembly slowly along the track and against the lumber to make the cut.
10. Trim off the rounded sides of the log.
11. When the log is squared-off, boards or posts can be cut to standard or custom specifications.
12. To prevent accidents, turn off the engine and disconnect its spark plug wire after use. Wait for the engine to cool, clean external parts with a clean cloth, then store the equipment out of children's reach.



WARNING!

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



WARNING!

The operator and any assistants must stay clear of the front and back of the blade whenever the engine is on.



MAINTENANCE

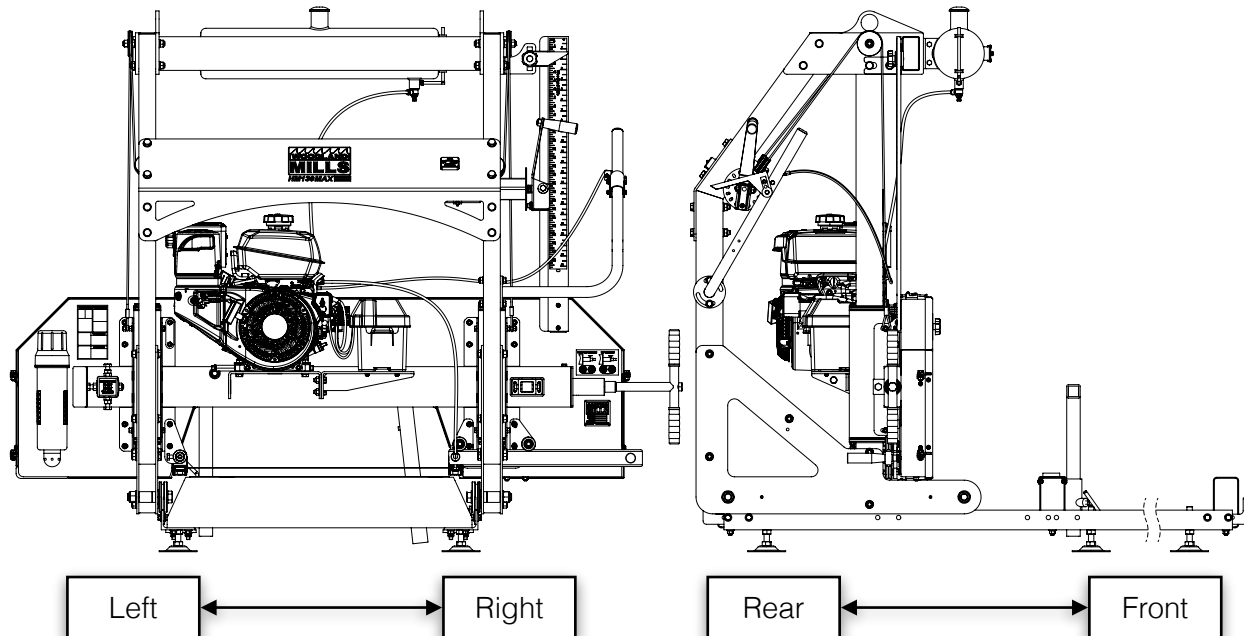
Proper and routine maintenance is critical to operator safety, achieving good milling results, and to prolong the life of your investment.

- **Band Wheel Bearings** — Inspect before use to ensure they are not worn. Bearings are sealed and do not need to be greased.
- **Blade Guide Bearings** — Inspect before use for excessive grooves or scoring in the bearing case. Replace if necessary.
- **Blade Tension** — Grease threads of tensioning T-handle when dry or as required. Use multi-purpose, extreme-pressure grease.
- **Log Clamps** — Spray the cam mechanism with dry silicone spray frequently.
- **Belts** — Periodically check the condition and wear of the drive and idler belt. Ensure that the blade does not ride on the band wheels.
- **Drive Belt** — Periodically check the tension of the drive belt.
- **Carriage Posts (Front)** — Spray posts before use with a silicone spray lubricant such as 3-in-1 or Jig-A-Loo.
- **Band Wheel Guards** — Routinely remove any build-up of sawdust that may collect inside the band wheel guards.
- **Lubrication Tank** — Only fill with a water and dish soap mixture, or in winter months use windshield washer fluid. Do not leave lubricant in tank if temperature falls below 0° C.
- **Blade Lubricant** — Never use diesel fuel or kerosene as blade lubricant. These substances lead to premature wear of your belts and poor sawing performance. For winter operation, replace the water lubricant with windshield washer fluid.
- **Engine** — Check the engine oil level before each use and maintain the engine per the instructions set out by the engine manufacturer in the engine manual. The engine is equipped with an oil alert system and will not start without adding oil before starting.
- **Lifting Cables** — Before, during, and after operation, regularly inspect the cables for any wear or kinks. Ensure that the cables are in perfect condition. Oil the coiled part of the cable often to prevent premature wear. Replace with new cables as necessary.

TECHNICAL SPECIFICATIONS

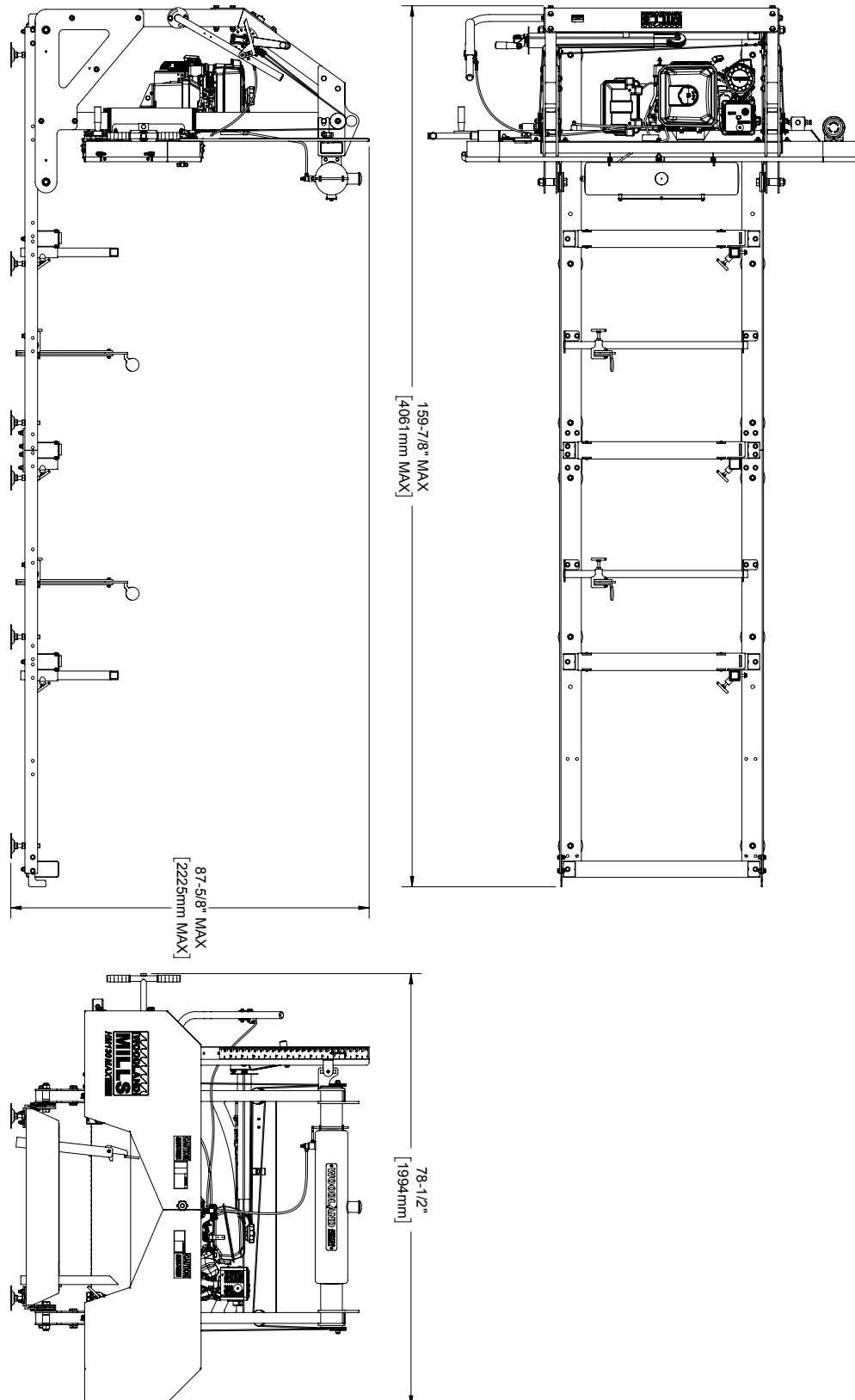
The HM130MAX sawmill comes with a 14 horsepower electric-start engine.

Item	HM130MAX Specification
Gasoline Engine	14 hp Kohler Command Pro
Max Log Diameter	30 in [762 mm]
Max Board Width	30 in [762 mm]
Max Board Thickness	7 in [178 mm]
Blade Size	1-¼ x 158 in [32 mm x 4013 mm]
Track Length	153-½ in [3900 mm]
Track Width	37 in [940 mm]
Track Height Adjustability (top of bunk)	7-⅞ to 10-⅝ in [200 to 270 mm]
Product Weight	921 lb [418 kg]
Shipping Weight	1012 lb [459 kg]





OVERALL DIMENSIONS





ASSEMBLY

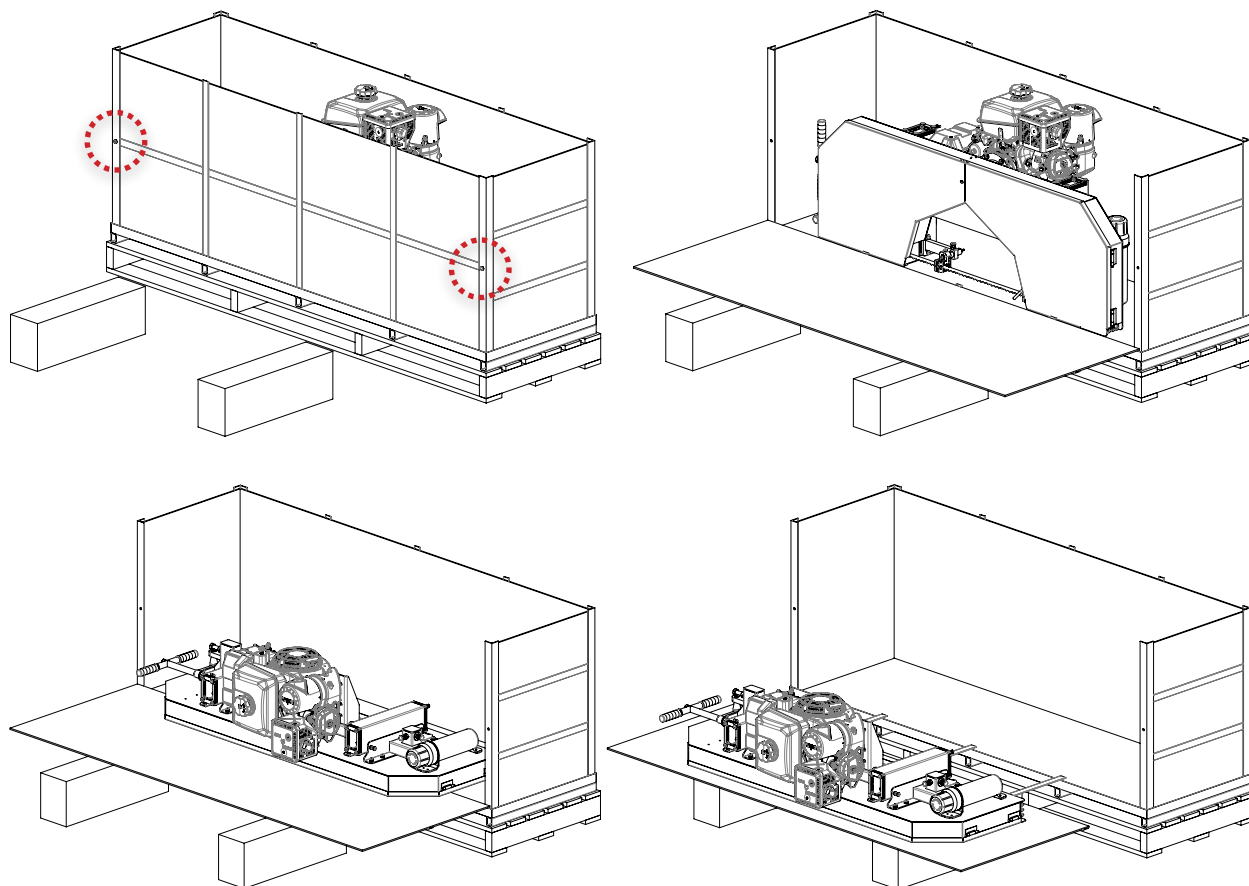
1. TOOLS REQUIRED

Tool	Specification
Wrench/Socket	7 mm (2X)
Wrench/Socket	10 mm (2X)
Wrench/Socket	13 mm (2X)
Wrench/Socket	14 mm (2X)
Wrench/Socket	15 mm (2X)
Wrench/Socket	16 mm (2X)
Wrench/Socket	17 mm (2X)
Wrench/Socket	18 mm (2X)
Wrench/Socket	19 mm (2X)
Wrench	24 mm or Adjustable Wrench (2X)
Wrench	30 mm or Adjustable Wrench (2X)
Hex Key	3 mm
Hex Key	4 mm
Phillips Head Screwdriver	No. 3
Torque Wrench	Capable of at least 25 ft•lb (34 N•m)
Tape Measure	Standard Inch/Metric Tape Measure

During several of the assembly steps, more than one socket or wrench of the same size may be required to assemble the hardware. A socket or box wrench in combination with an adjustable wrench can be utilized if multiple same size tools are in limited supply.

2. UNPACKING

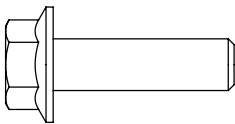
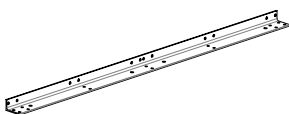
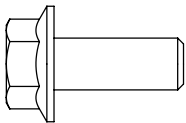
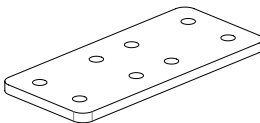
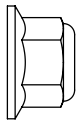
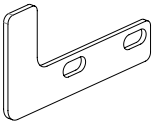
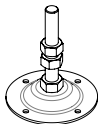
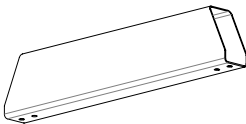
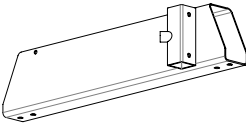
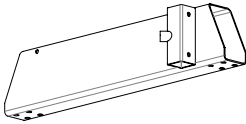
Unpack the contents of the crate except for the sawhead and the two long boxes in the bottom that contain the sections of track. Unfasten the two (2) M8 bolts/nuts on the front of the crate using a socket/wrench. Place two (2) 6-8 in [150-200 mm] tall support blocks in front of the crate, bend the front of the crate down, and then lay the cardboard wall over it. Carefully rotate the sawhead down onto the cardboard and support blocks and slide it out of the crate as shown below.



The two long track boxes can now be removed and the crate discarded.

3. TRACK

Assemble the track system with the provided components and hardware listed in the table below. It is important to assemble and level the track on a firm foundation before tightening all of the hardware and it should ideally be a minimum of 4 in [100 mm] off the ground. This will allow for easy cleanup of sawdust from under the tracks and height adjustment of the log supports.

16x	M10 X 35 mm Flanged Hex Bolt		4x	Track Rail	
28x	M10 X 25 mm Flanged Hex Bolt		2x	Reinforcement Plate	
40x	M10 Flanged Lock Nut		4x	Carriage Stop	
12x	Track Foot		2x	End Bunk	
			2x	Mid Bunk	
			1x	Centre Bunk*	

* Centre bunk incorporates four (4) mounting holes at each end

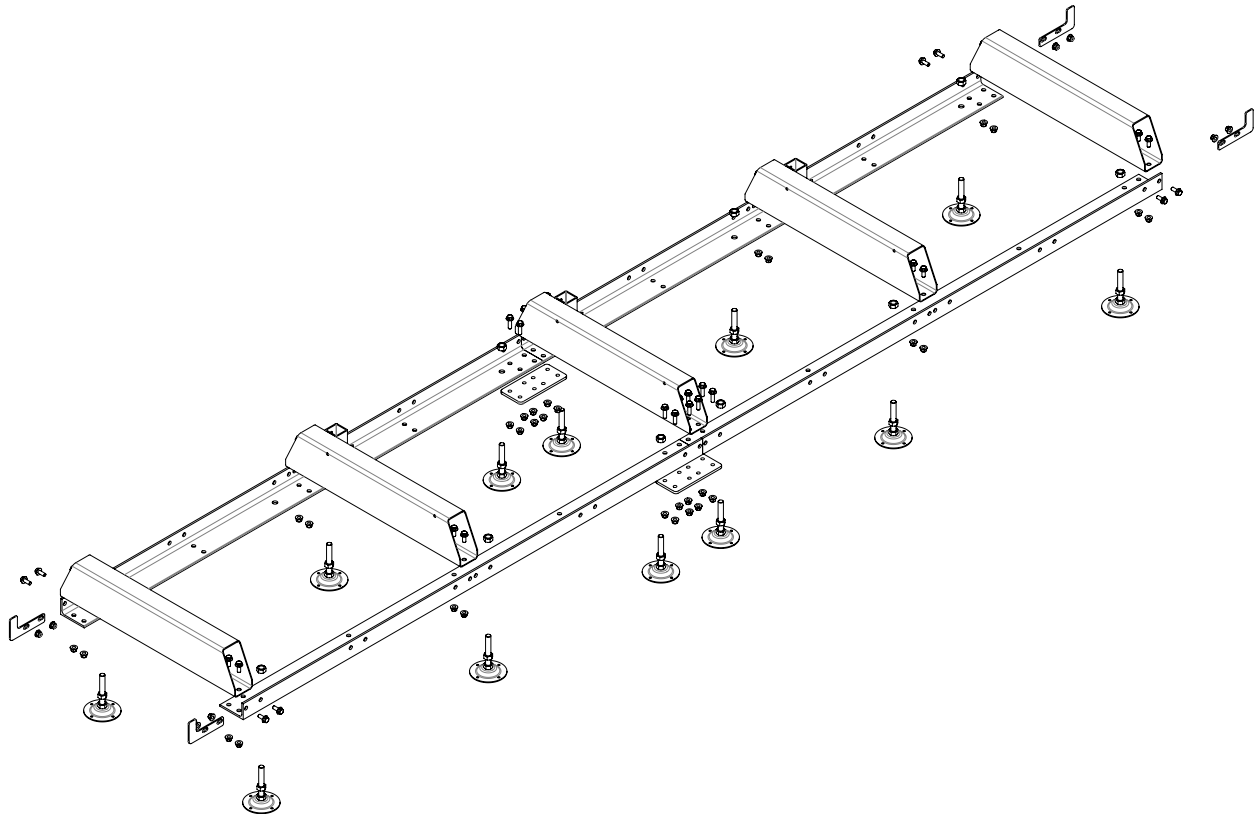


If a Woodland Mills sawmill trailer was purchased with this sawmill, skip this track assembly section and follow the track assembly instructions in those manuals.

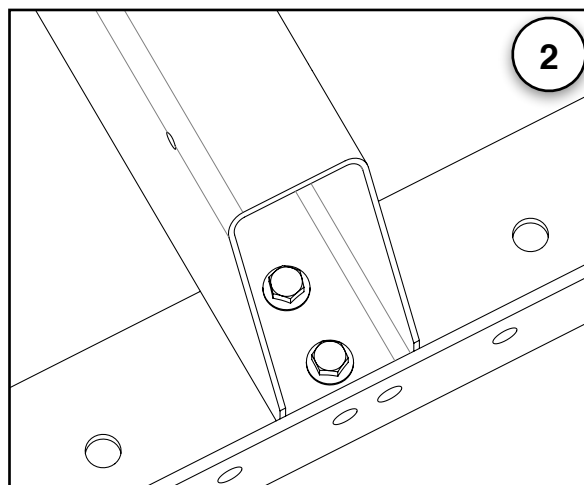
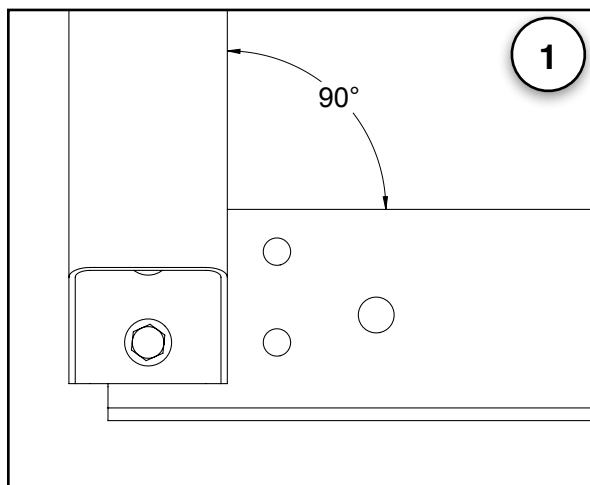




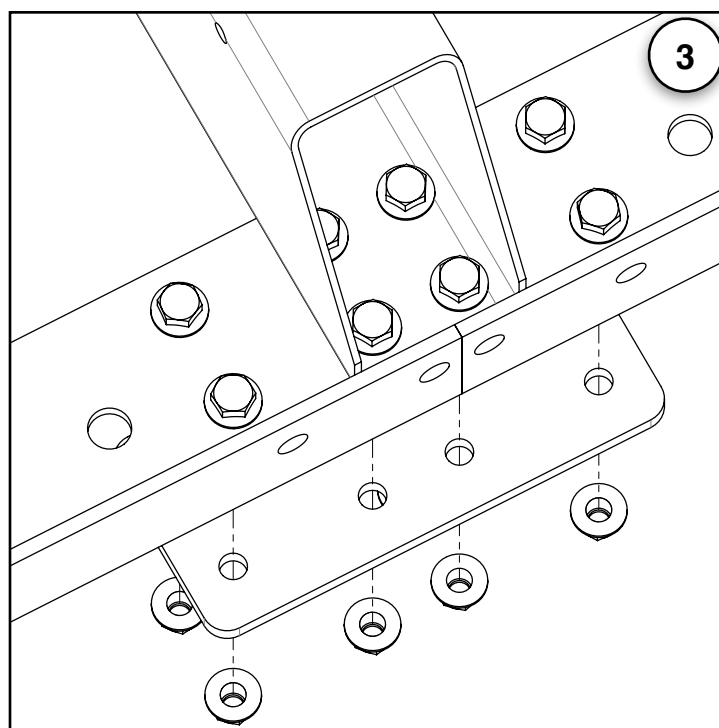
The track comes completely disassembled from the factory. Lay out all the components on a flat piece of level ground prior to assembly. See the **TRACK** exploded view for a more detailed part breakdown.



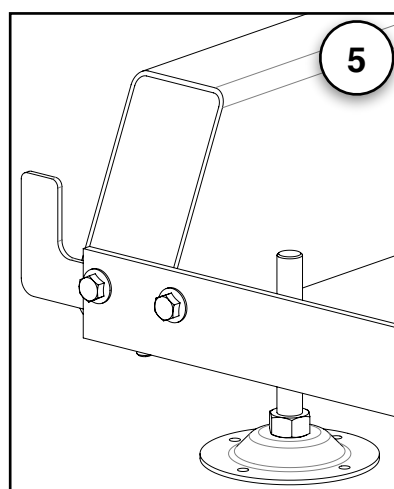
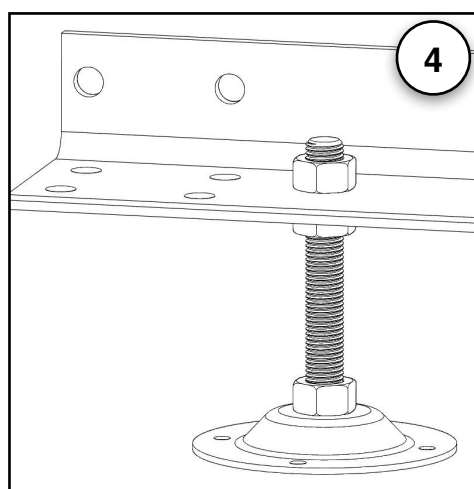
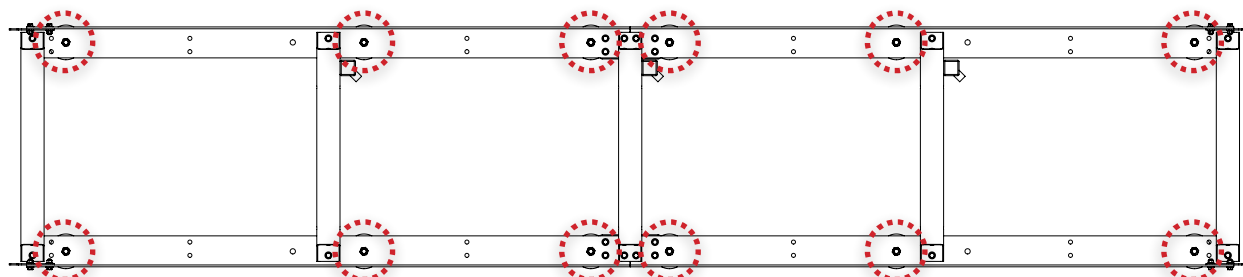
When assembling the log bunks to the rails, ensure that the two end bunks are square (90°) as shown in **Figure 1**. Use sixteen (16) M10 X 25 mm bolts at all end bunk and mid bunk locations (**Figures 1 & 2**).



Use sixteen (16) M10 X 35 mm bolts to join the centre bunk and reinforcement plates to the rails at the rail joints (**Figure 3**).

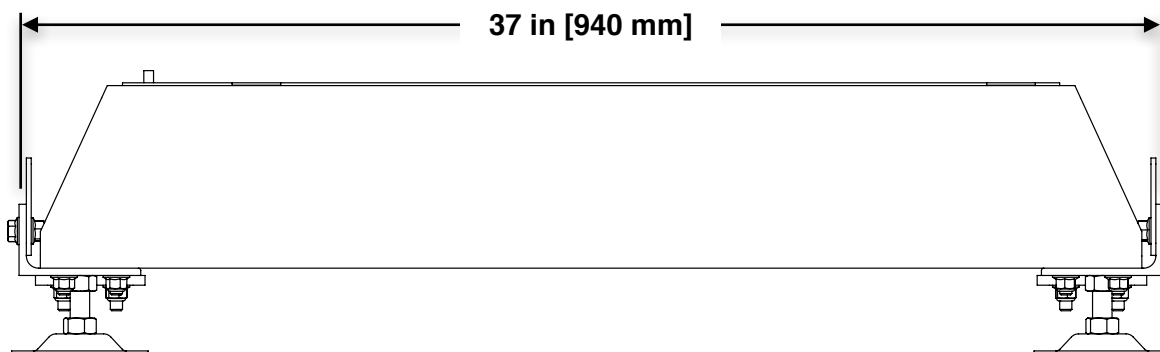


Attach the twelve (12) levelling feet to the track at the locations shown below. The bolt can be turned to either raise or lower the foot to adjust the level of the track (**Figure 4**). If setting the track on wooden blocks, use wood screws in the four holes to secure each foot in place.



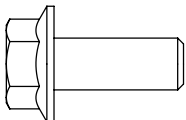
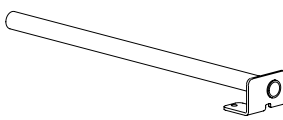
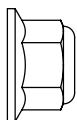
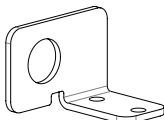
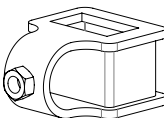
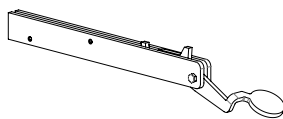
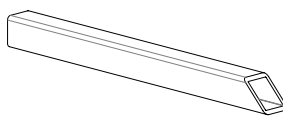
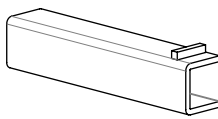
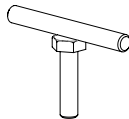
Assemble the four (4) carriage stops to the ends of the rails and tighten the bolts. Ensure carriage stops are assembled to the inside face of the rails, *not* the outside (**Figure 5**).

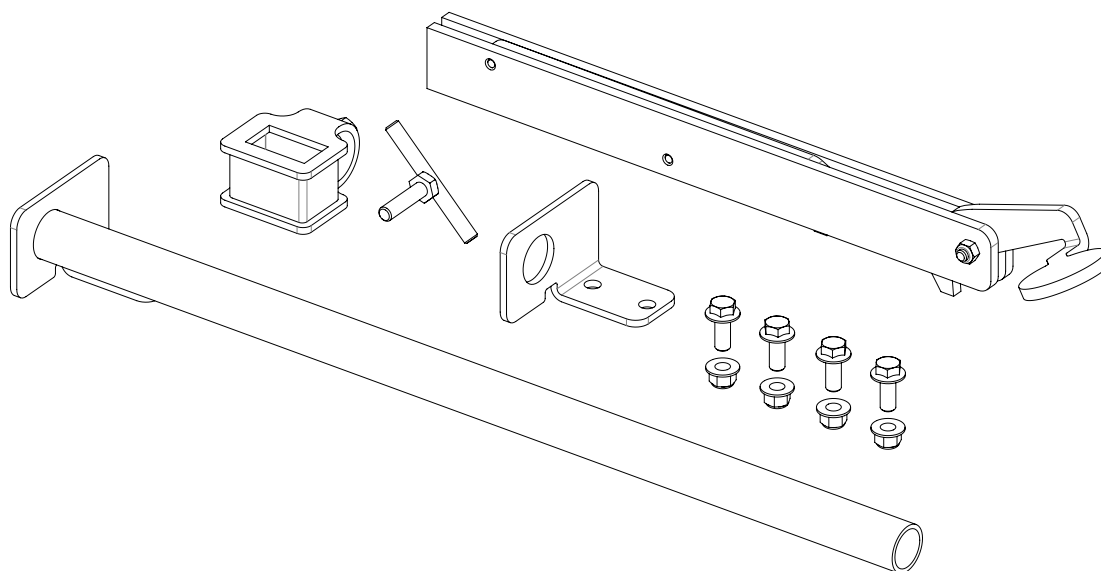
The assembled track should measure 37 in [940 mm] wide when measuring from the outside faces of the rails.



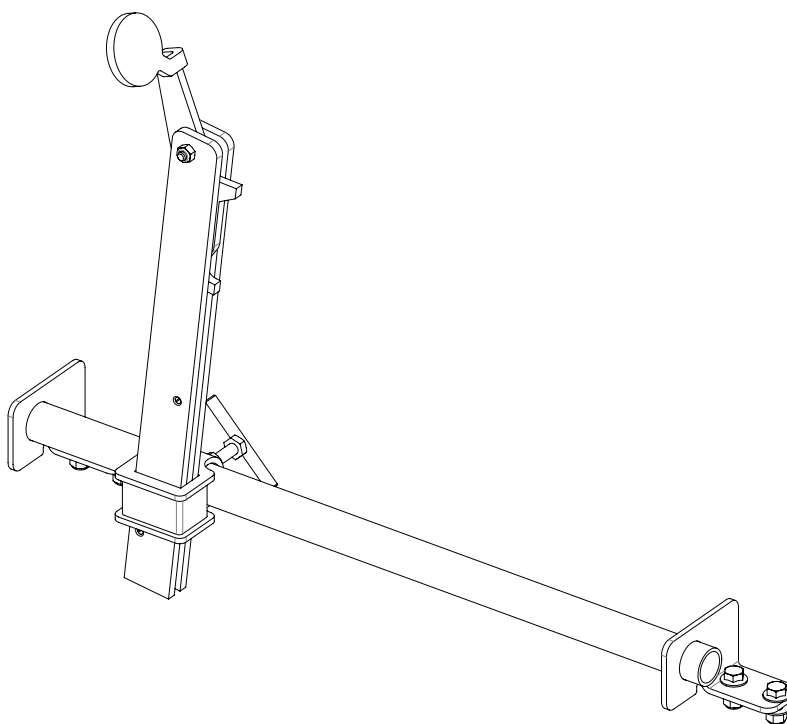
4. LOG CLAMP AND SUPPORTS

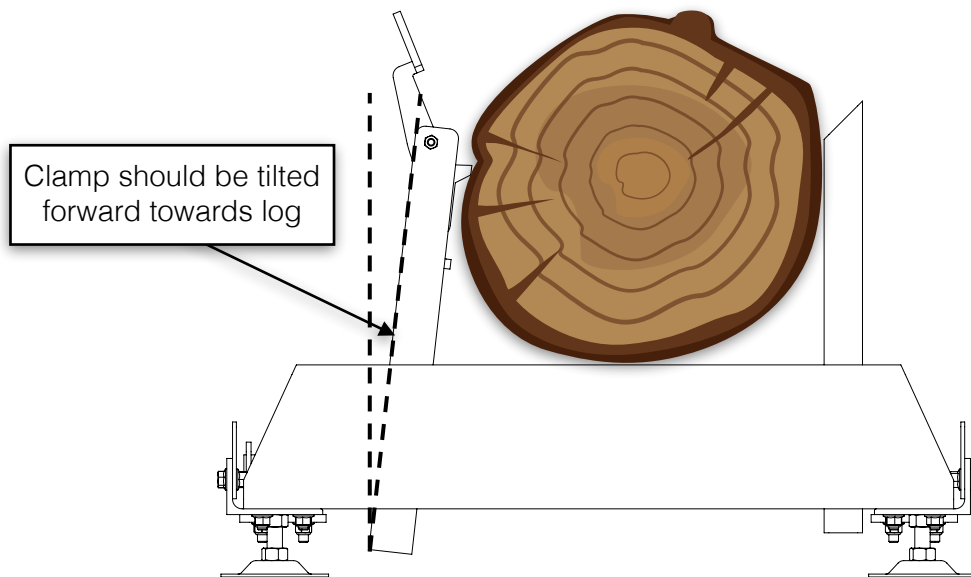
Assemble the log clamp components as shown below. The HM130MAX comes with two (2) log clamp assemblies. Attach the assembled log clamps to the track using four (4) M10 X 25 mm bolts with lock nuts on each clamp assembly and tighten.

8x	M10 X 25 mm Flanged Hex Bolt		2x	Log Clamp Shaft/Bracket Weldment	
8x	M10 Flanged Lock Nut		2x	Log Clamp Bracket	
			2x	Log Dog Receiver	
			2x	Log Dog	
			2x	Long Log Support	
			2x	Short Log Support	
			5x	M10 X 40 mm T-Bolt	

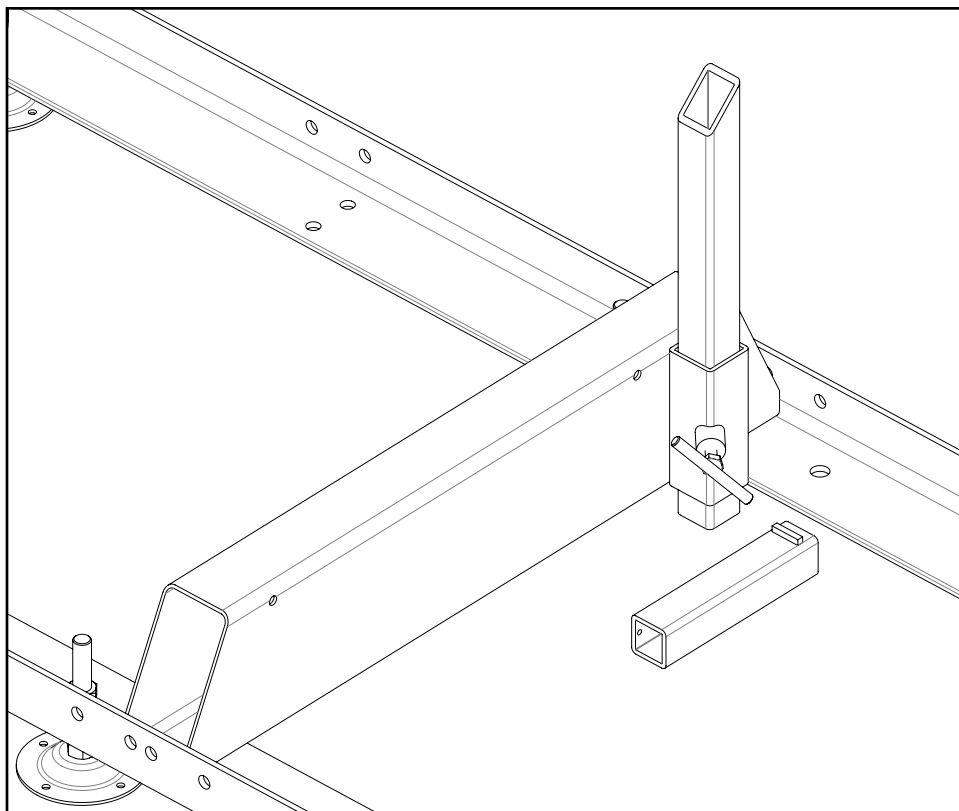


Attach log dog assembly to track as shown below with the four (4) nuts and bolts provided. Note that there are various locations along the track where this assembly can be bolted. Depending on how many track sections are being used, select a log clamp position that will secure the log firmly against the log supports.





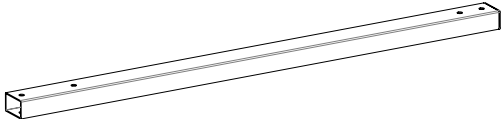
Insert log supports into track cross supports and secure with T-bolts as shown in the picture below. The T-bolt threads should be **coated with grease**. The sawmill includes two sets of log supports—a short set and a long set. The long set is ideal for large diameter logs while the shorter set is better suited for small logs and square cants.



5. SAWMILL HEAD ASSEMBLY

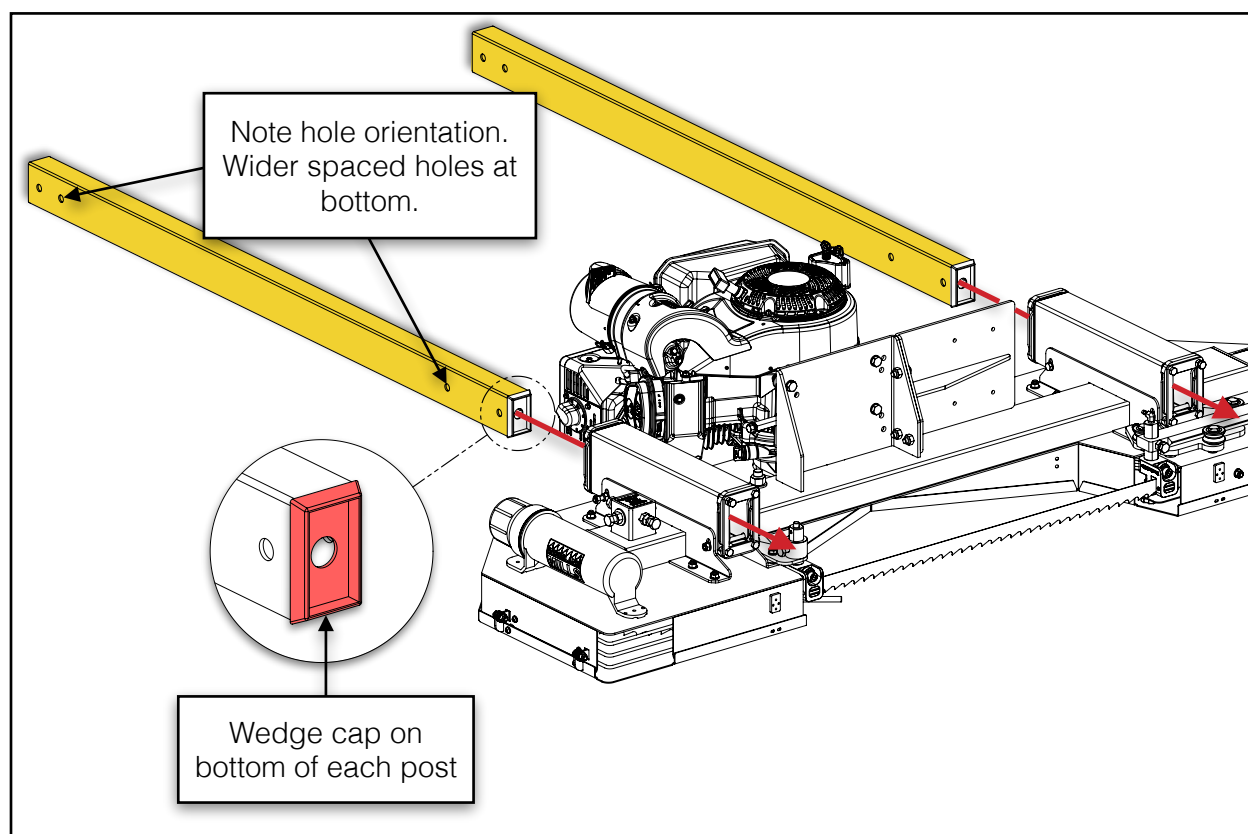
The sawmill head assembly is built in multiple steps. Follow the sub-sections below using the parts table at the top of each sub-section to gather the necessary components for each step.

FRONT POSTS

2x	Front Post	
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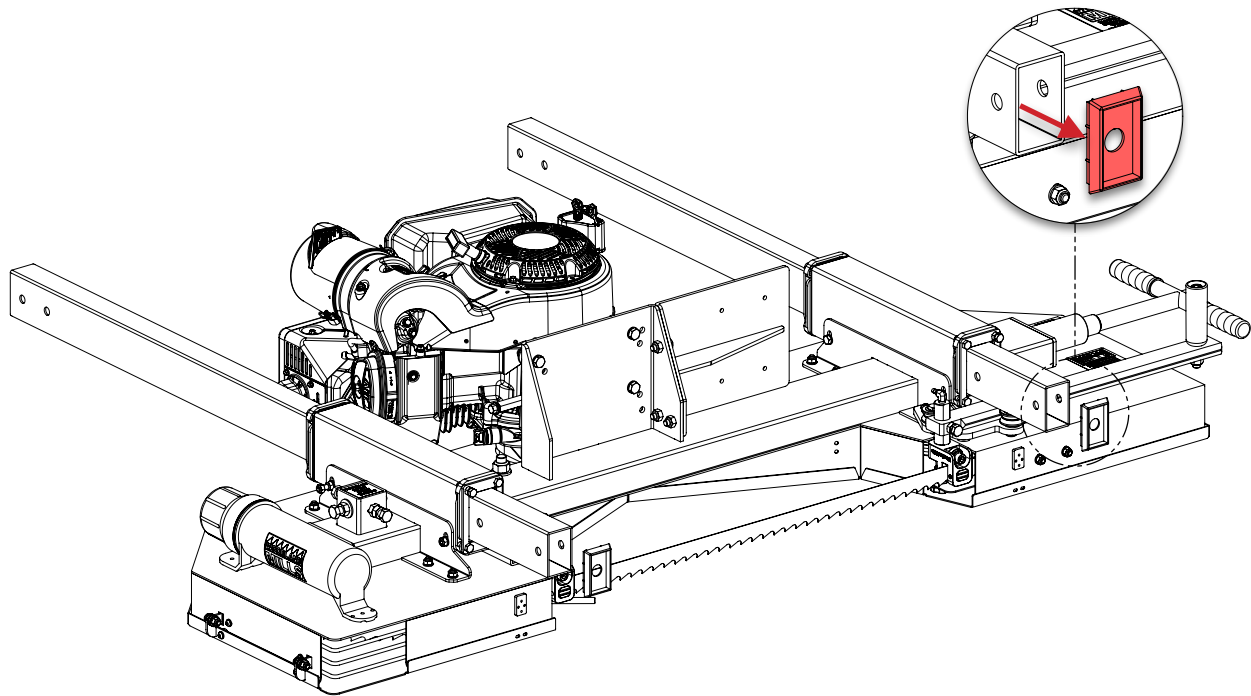
With the sawhead resting approximately 6 in [150 mm] above the ground, slide the two (2) front posts through the top of the post sleeves—do not assemble them from the bottom.

There are wedge-shaped caps on the bottom of each post to help aid the assembly of the posts through the nylon post sleeve bushings.



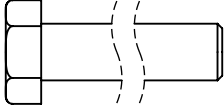
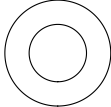
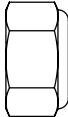
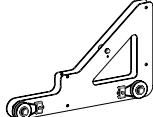


Remove the wedge-shaped caps from the bottom of both posts. They are only required for front post assembly.

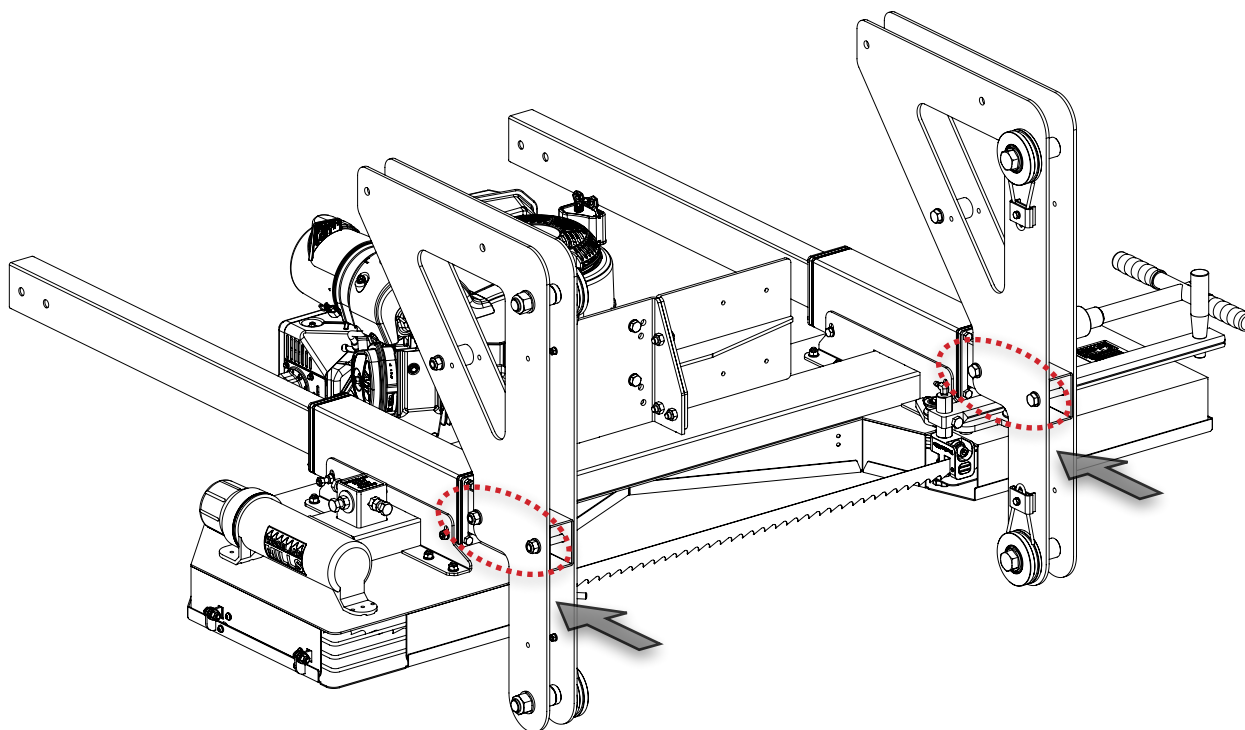


CARRIAGE LEGS

The carriage leg sub-assemblies come loosely assembled from the factory. Final tightening of these bolts will be done in a later step. See the ***CARRIAGE LEG, WHEEL, AND SWEEPER*** exploded view for a more detailed part breakdown.

4x	M12 X 80 mm Hex Bolt		8x	M12 Flat Washer	
4x	M12 Lock Nut		2x	Carriage Leg Sub-Assembly	

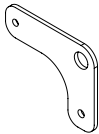
Attach the two (2) carriage leg sub-assemblies to the front posts with four (4) M12 X 80 mm bolts, lock nuts, and eight (8) flat washers. Be sure the bolts point outward and the carriage leg wheels are positioned on the inside of the legs. Fully tighten these four (4) M12 bolts so that the plates are firmly attached to the posts. The posts should be pushed all the way up until the carriage leg plates contact the post sleeves.



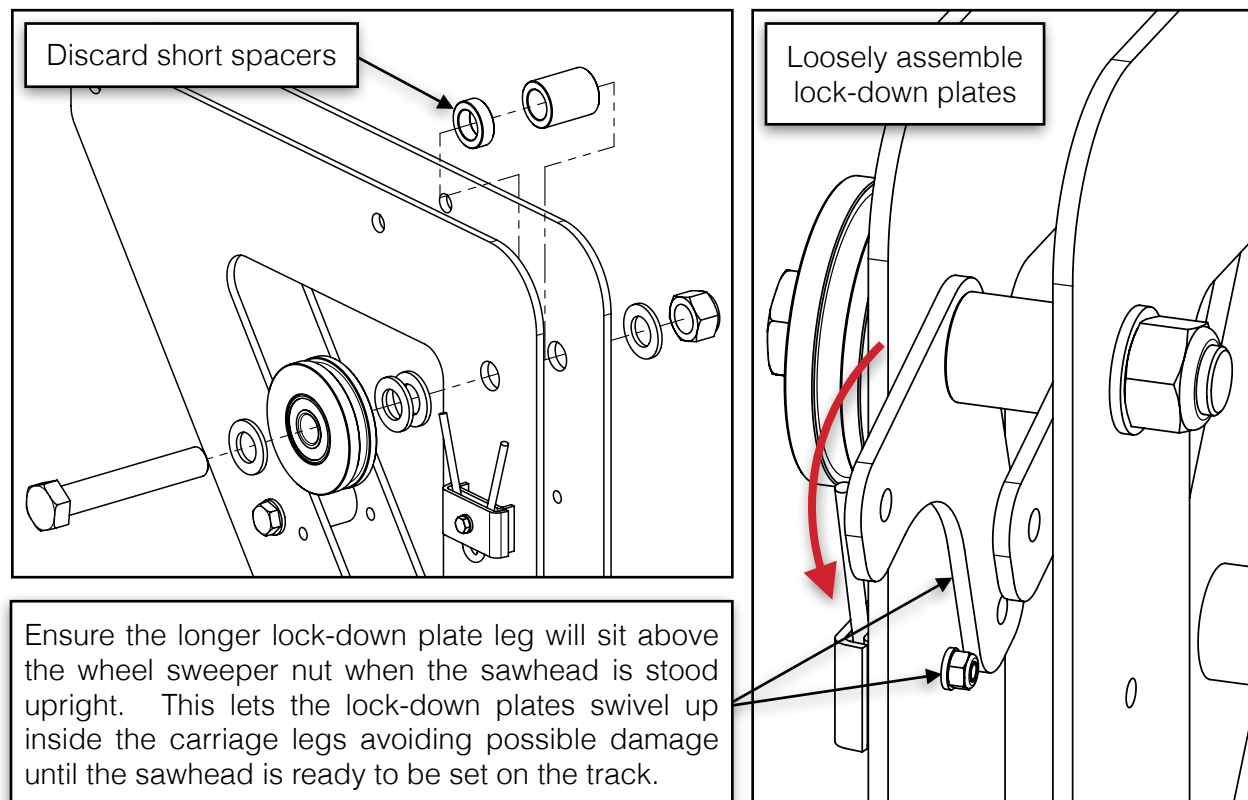
HEAD LOCK-DOWN PLATES

Woodland Mills sawmill trailer owners only

If a Woodland Mills sawmill trailer was purchased with this sawmill, the head lock-down plates can be loosely installed prior to standing the sawhead upright. The lock-down plates come with the sawmill trailers and are not included with the sawmill.

8x	Head Lock-Down Plate	
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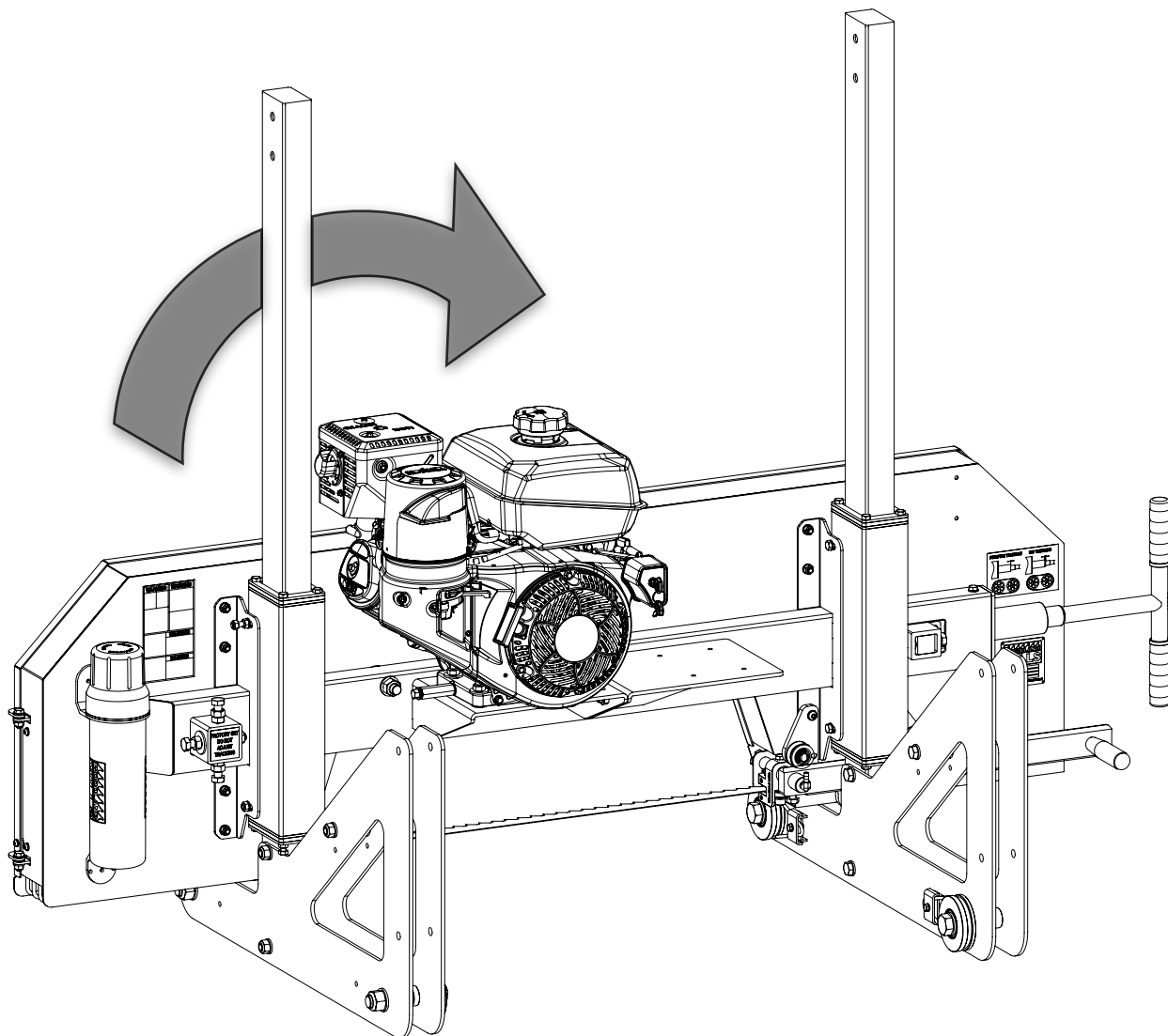
Disassemble each carriage wheel and discard the short spacers as they are no longer necessary. Assemble one (1) lock-down plate on each side of the long spacers—between the carriage legs—and then reassemble the carriage wheels. Do not fully tighten the carriage wheel bolts.



See section, **HEAD LOCK-DOWN PLATES**, in the sawmill trailer Operator Manuals to complete the lock-down plate installation once the sawmill is on the trailer.

STANDING THE SAWHEAD UPRIGHT

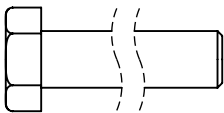
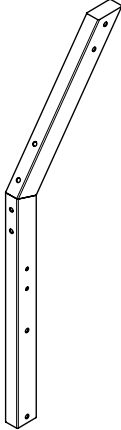
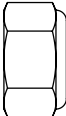
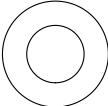
With the help of another person, stand the sawhead upright by rotating it around the rounded profiles at the front of the carriage legs. Do not set the sawhead on the track until instructed to do so later in the assembly process.

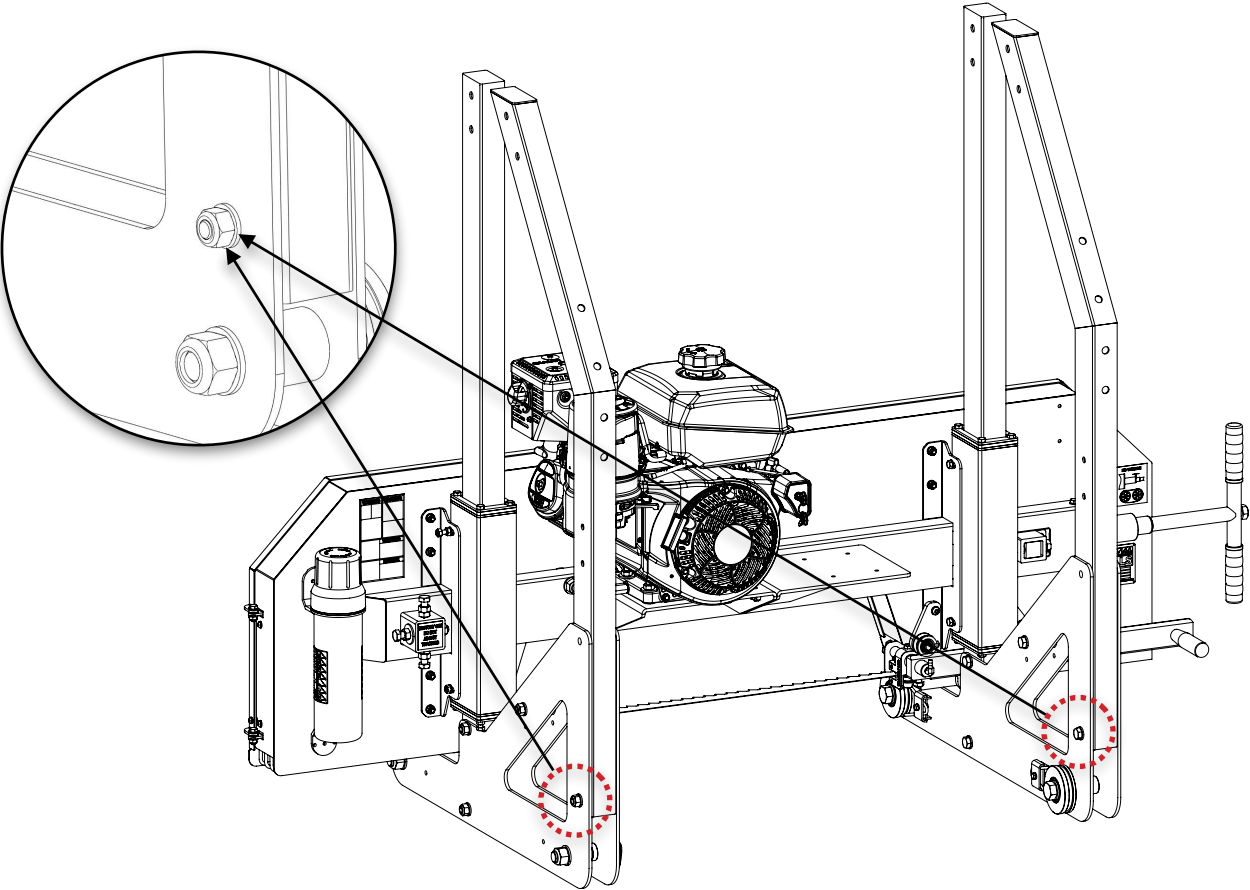




REAR POSTS

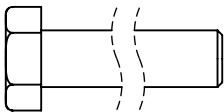
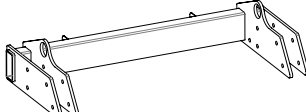
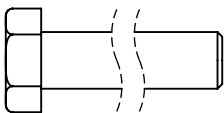
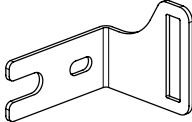
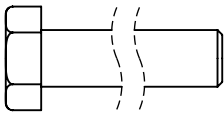
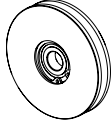
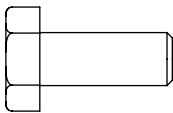
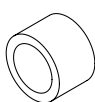
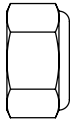

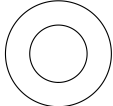
Using the hardware listed below, attach the rear posts between the carriage leg plates using one (1) M12 X 80 mm bolt, lock nut, and two (2) flat washers per post.

2x	M12 X 80 mm Hex Bolt		2x	Rear Post	
2x	M12 Lock Nut				
4x	M12 Flat Washer				



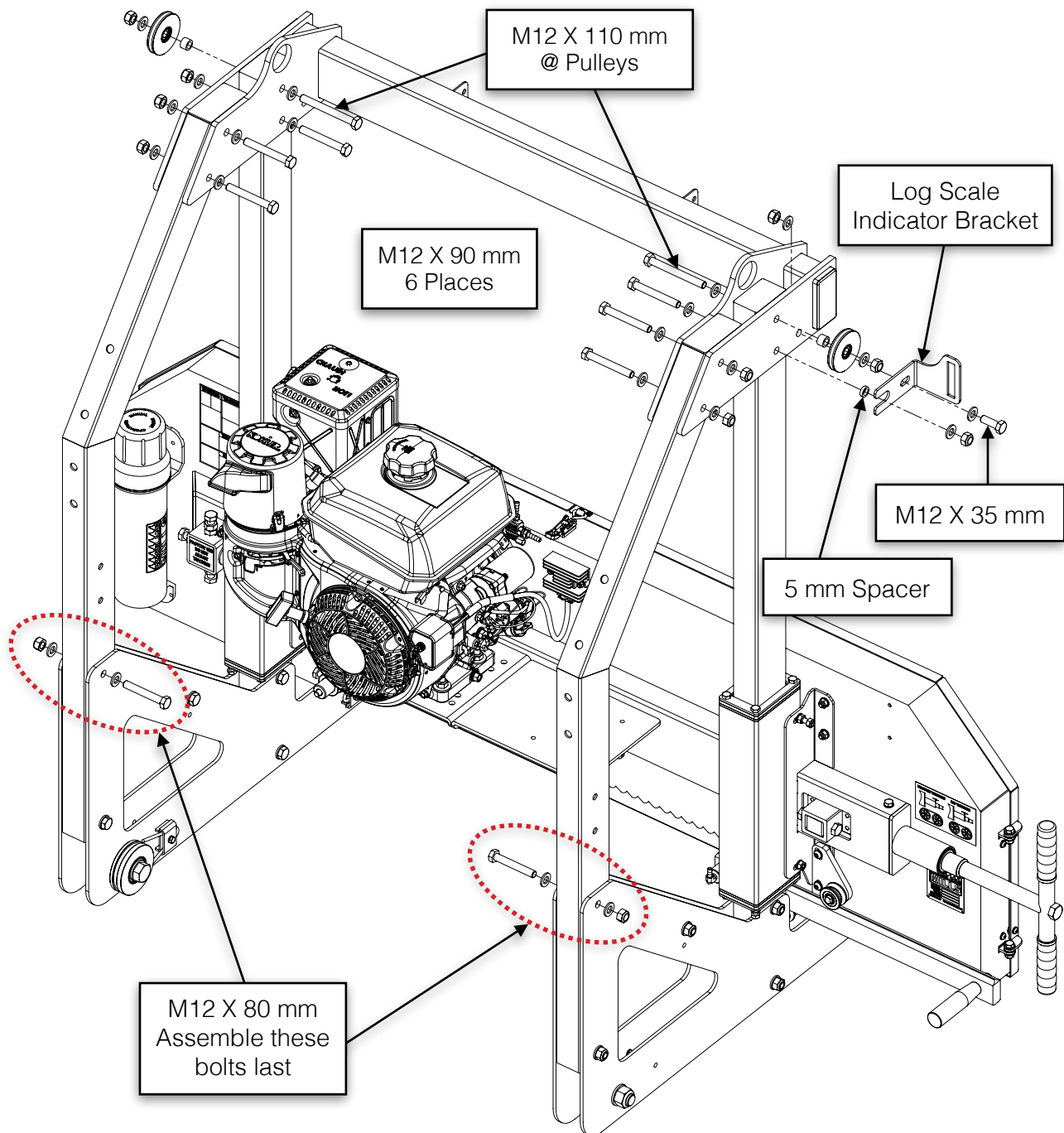
CROSS BEAM

With the hardware listed below, assemble the cross beam to the carriage posts.

2x	M12 X 110 mm Hex Bolt		1x	Cross Beam	
6x	M12 X 90 mm Hex Bolt		1x	Log Scale Indicator Bracket	
2x	M12 X 80 mm Hex Bolt		2x	Pulley	
1x	M12 X 35 mm Hex Bolt		2x	Spacer [12 mm Lg]	
11x	M12 Lock Nut		1x	Spacer [5 mm Lg]	
22x	M12 Flat Washer				

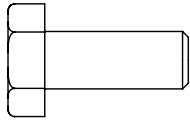
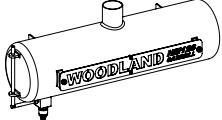
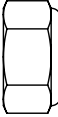
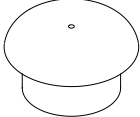
With the help of a second person, slide the cross beam over the carriage posts. Use six (6) M12 X 90 mm bolts and two (2) M12 X 110 mm bolts (with pulleys and 12 mm spacers) to fasten it in place. Be sure to install the log scale indicator bracket on the right-side below the pulley with the 5 mm spacer in the open slot. Use an M12 flat washer under every bolt head and lock nut.

Finally, install two (2) M12 X 80 mm bolts at the top of each carriage leg. Do *not* fully tighten these bolts at this time.

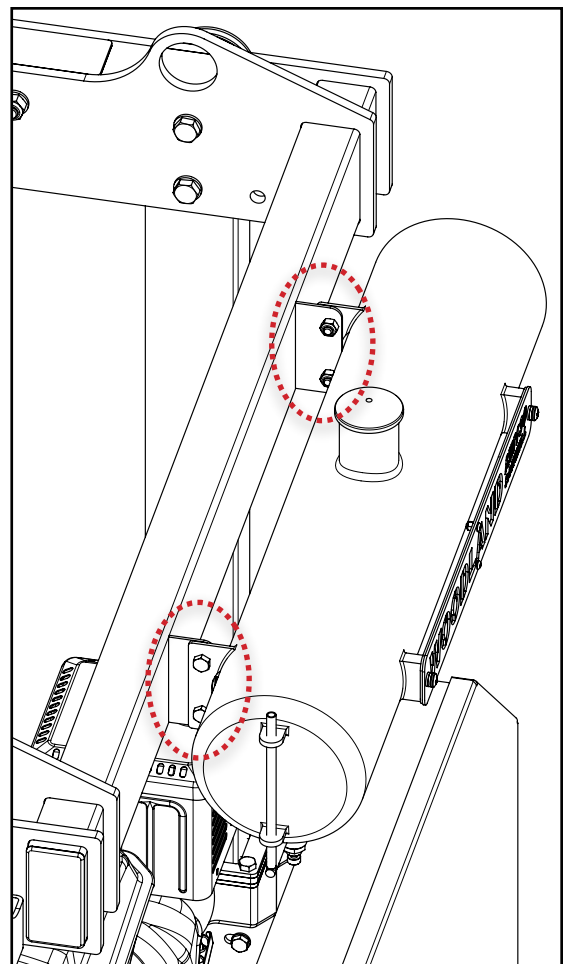
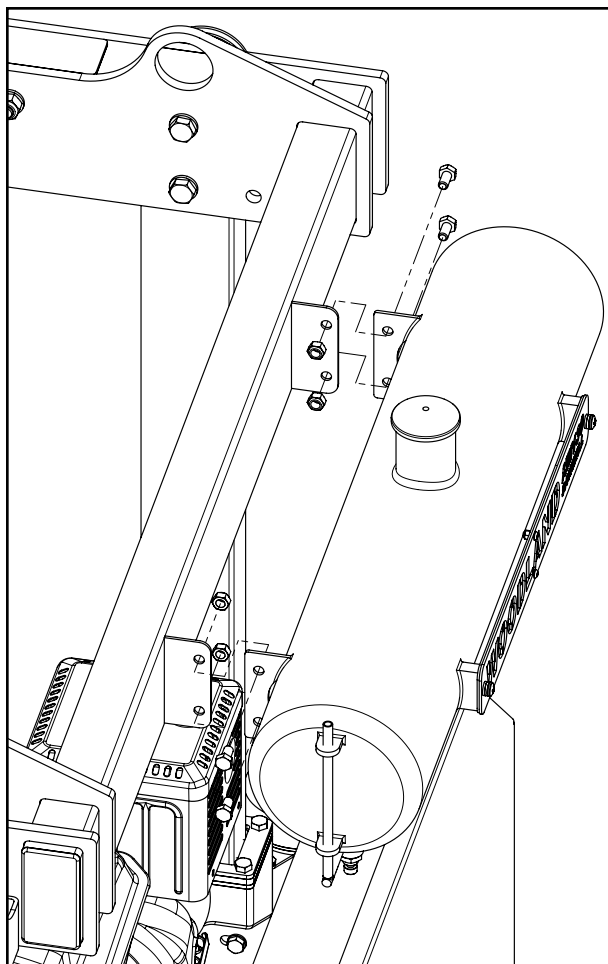


LUBRICATION TANK

With the hardware listed below, assemble the lubrication tank to the front of the cross beam.

4x	M8 X 16 mm Hex Bolt		1x	Lubrication Tank	
4x	M8 Lock Nut		1x	Lubrication Tank Cap	

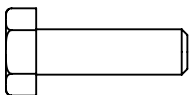
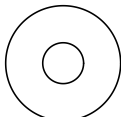

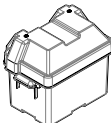
Assemble the lubrication tank to the cross beam with four (4) M8 X 16 mm bolts and lock nuts. Ensure the bolts point inward. Insert the cap chain into the tank opening to prevent the cap from being lost.



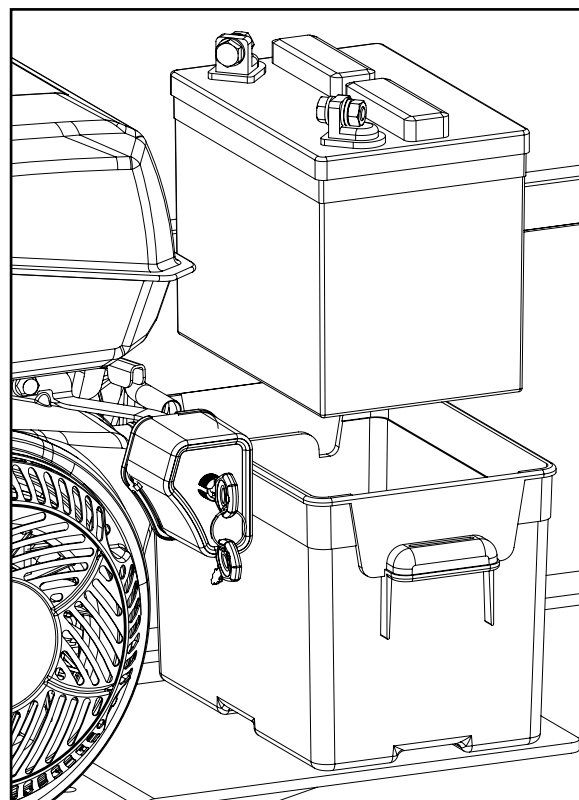
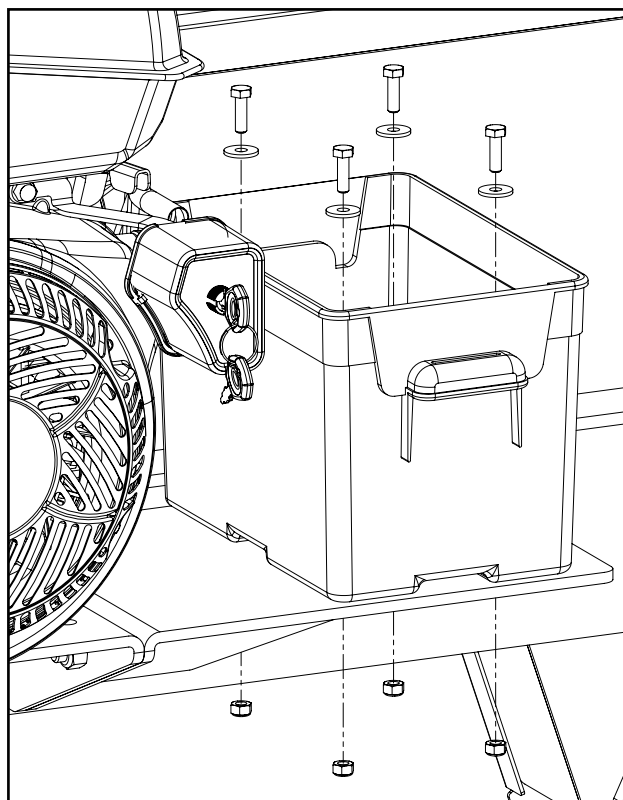
BATTERY BOX & BATTERY

For users who would like to utilize the electric start capability of the engine, follow the instructions below. Otherwise, the engine can be pull-started and this section skipped.

Assemble the battery box to the mounting plate using the hardware listed in the table below and then place a U1 size battery in the box. The battery is to be supplied by the customer.

4x	M6 X 20 mm Hex Bolt		4x	M6 X 18 mm Fender Washer	
4x	M6 Lock Nut		1x	Battery Box	

Fasten the bottom half of the battery box to the mounting plate next to the engine with four (4) M6 X 20 mm bolts, fender washers, and lock nuts as shown below. Then set the battery inside the box with the terminal side closest to the engine.



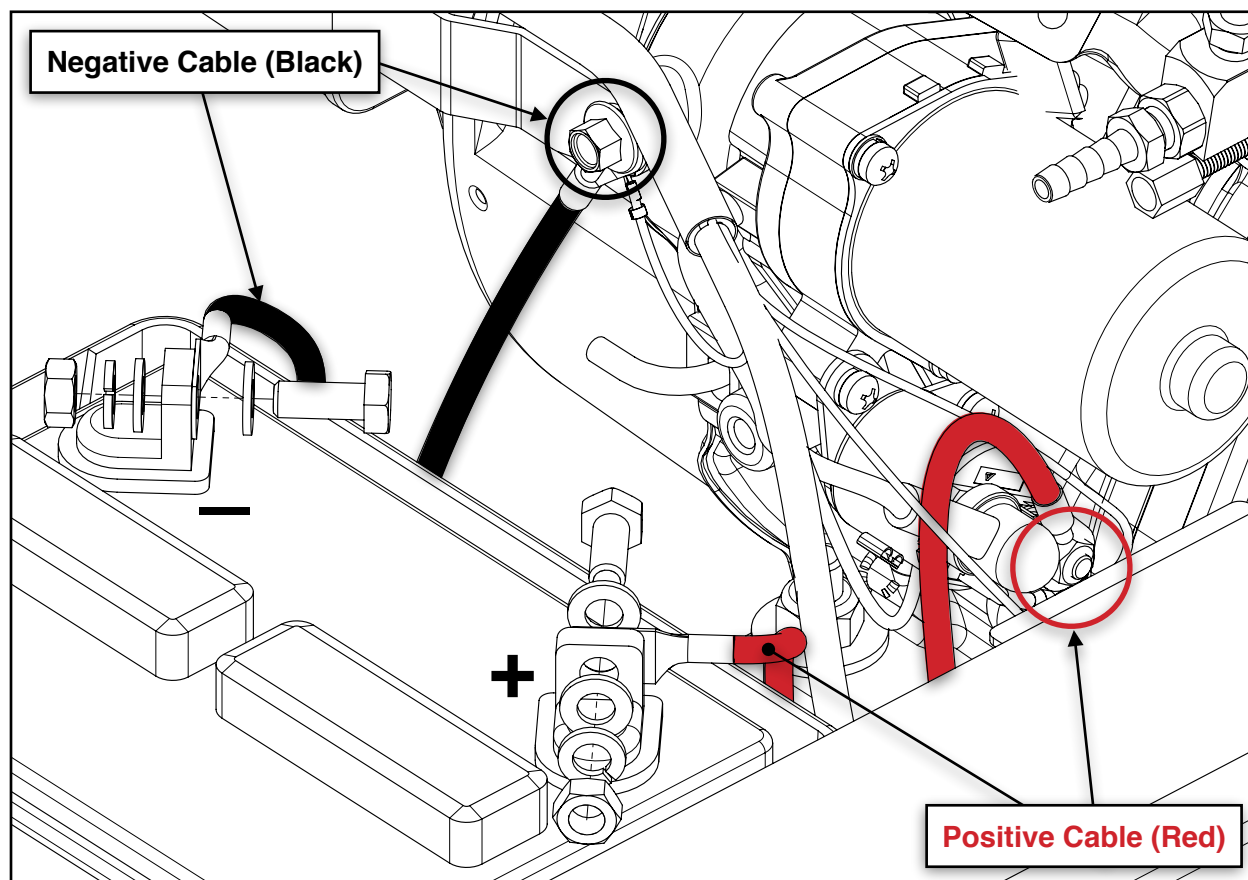
BATTERY CONNECTIONS

The customer is required to purchase their own battery that meets the following specifications:

Size	Voltage	Cold Cranking Amps
U1 (20 L x 13 W x 18 H cm) (7-7/8 L x 5-1/8 W x 7-1/8 H in)	12 V	250 Min (300+ Recommended)

Connect the black battery cable to the negative battery terminal and the red battery cable to the positive battery terminal using M8 X 20 bolts, flat washers, split-lock washers, and nuts.

****Double-check the battery terminal positions as the negative and positive terminals may be the reverse of what is shown in the example below. The connection points on the engine are the same regardless of the battery's orientation.****

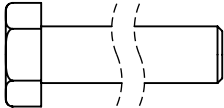
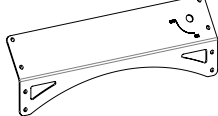
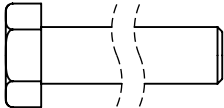
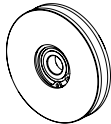
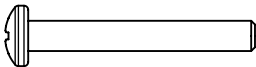
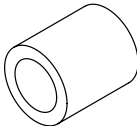
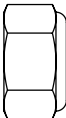
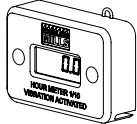

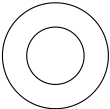



Once the connections are made, set the battery box lid on top ensuring the battery cables route down and out the openings in the side. Use the included strap to secure the top and bottom halves of the battery box.

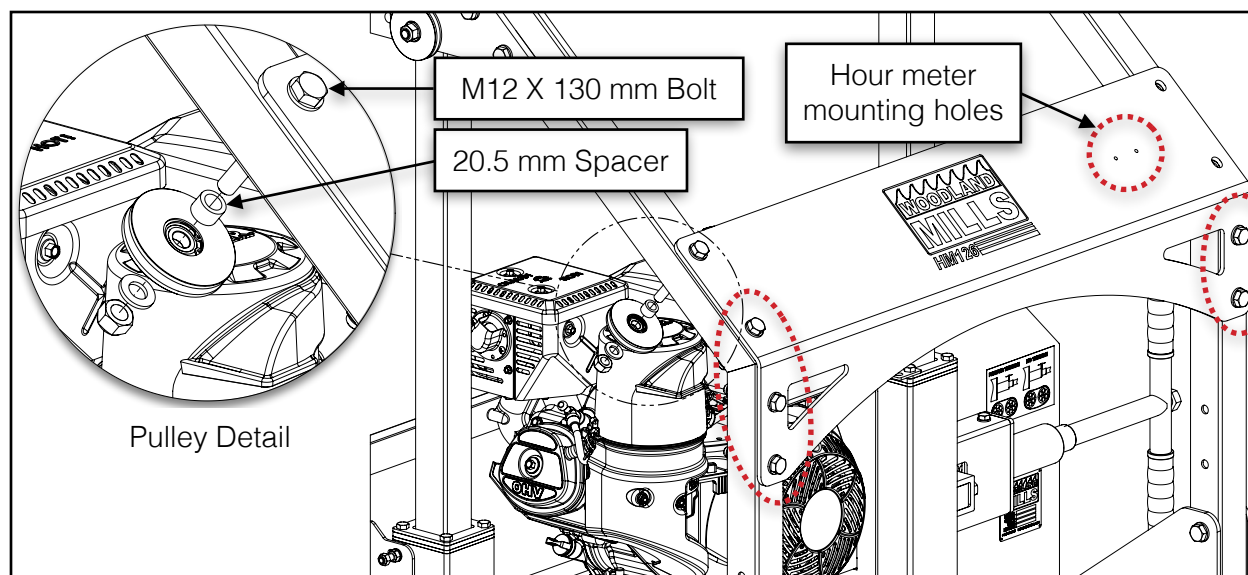


DASHBOARD & HOUR METER

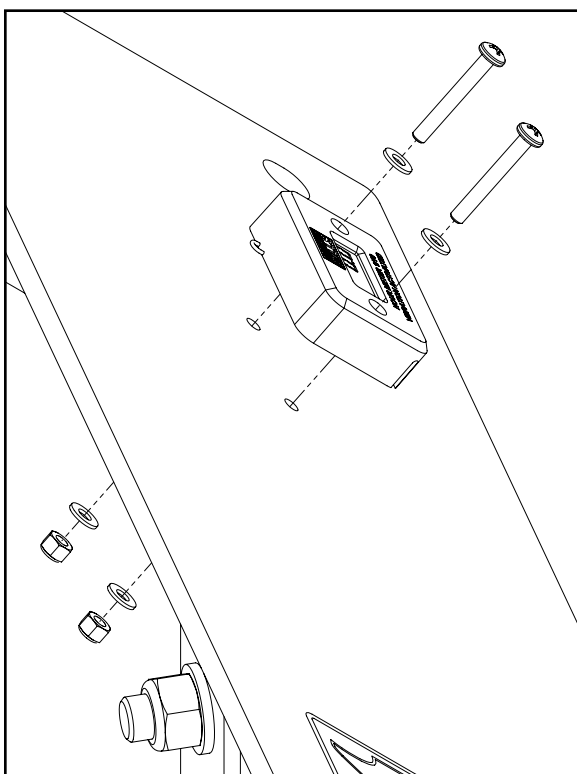
With the hardware listed below, assemble the dashboard to the rear carriage posts.

1x	M12 X 130 mm Hex Bolt		1x	Dashboard	
5x	M12 X 110 mm Hex Bolt		1x	Pulley	
2x	M4 X 30 mm Pan Head Screw		1x	Spacer [20.5 mm Lg]	
6x	M12 Lock Nut		1x	Hour Meter	
2x	M4 Lock Nut				
12x	M12 Flat Washer				
4x	M4 Flat Washer				

Assemble the dashboard to the rear carriage posts with five (5) M12 X 110 mm bolts and one (1) M12 X 130 mm bolt (with pulley and spacer) as illustrated on the next page. Use an M12 flat washer under every bolt head and lock nut. Do *not* fully tighten these bolts at this time.



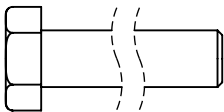
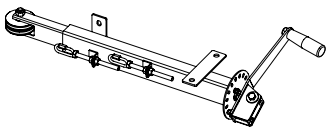
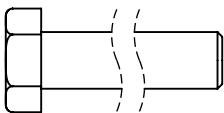
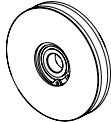
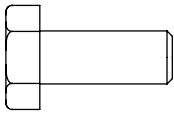
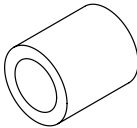
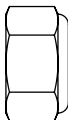

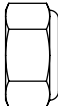
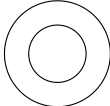
Assemble the hour meter to the right-side of the dashboard through the two (2) small holes. Use two (2) M4 X 30 mm pan head screws, four (4) flat washers (2 per screw), and two (2) lock nuts. Once the entire sawmill has been assembled, snip the wire loop at the top of the meter with either a razor or sharp knife. This will activate the meter to start measuring the vibration of the machine, recording the hours of use on the engine.



Cut wire loop on hour meter after sawmill is assembled

LIFT MECHANISM

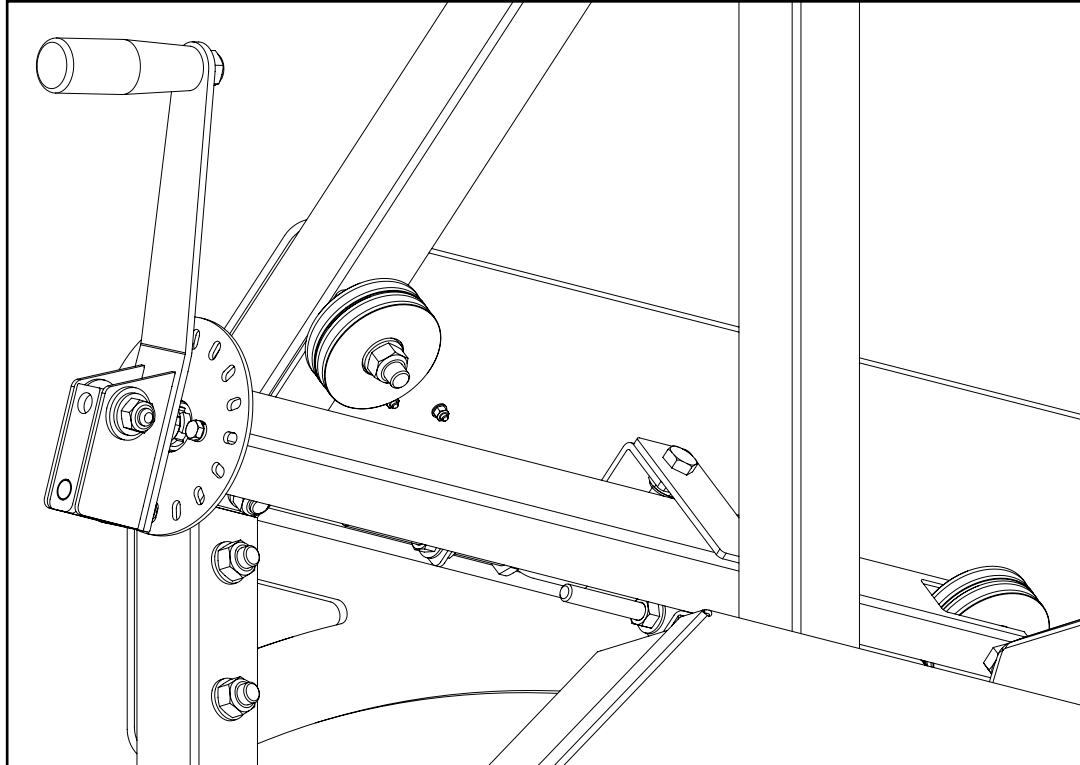
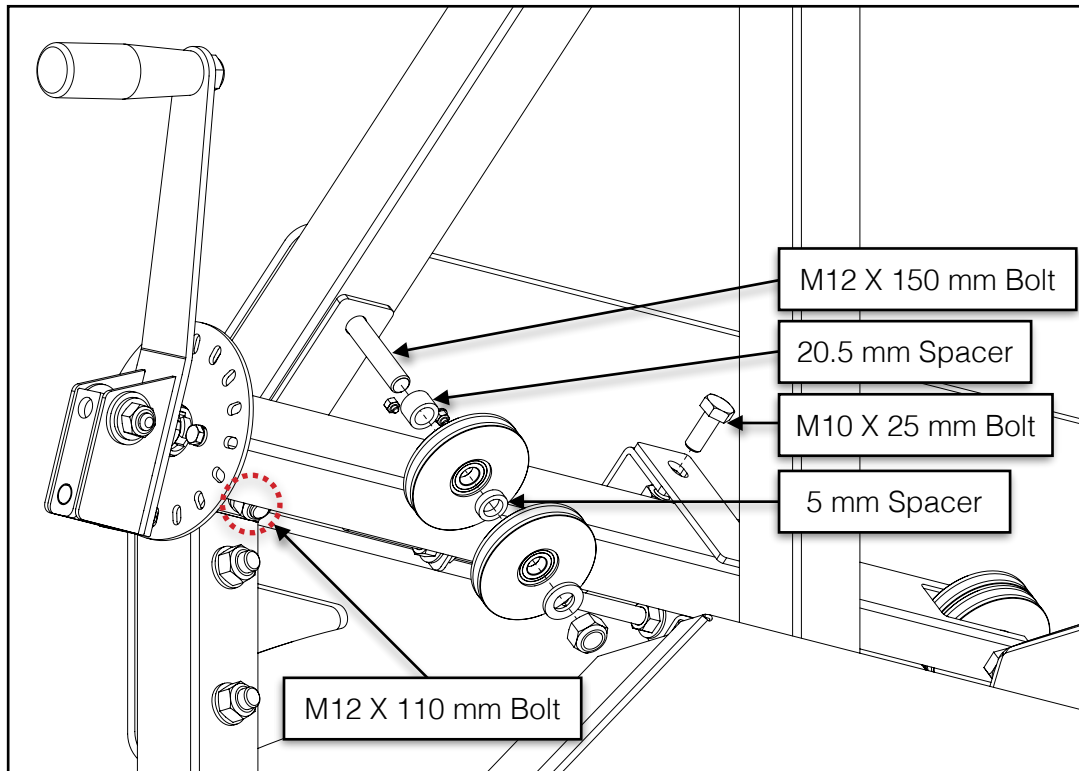
With the hardware listed below, assemble the lift mechanism to the carriage.

1x	M12 X 150 mm Hex Bolt		1x	Lift Mechanism Sub-Assembly	
1x	M12 X 110 mm Hex Bolt		2x	Pulley	
1x	M10 X 25 mm Hex Bolt		1x	Spacer [20.5 mm Lg]	
2x	M12 Lock Nut		1x	Spacer [5 mm Lg]	
1x	M10 Lock Nut				
4x	M12 Flat Washer				

Attach the lift mechanism assembly to the underside of the right-rear carriage post as shown on the next page.

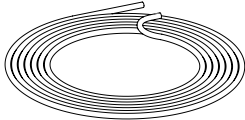
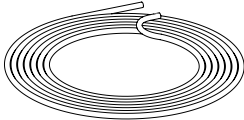
Use one (1) M12 X 150 mm bolt (including the pulleys and 2 spacers—5 mm spacer *between* pulleys) and one (1) M12 X 110 mm bolt. Use an M12 flat washer under each bolt head and lock nut. Fasten the centre tab to the inside of the dashboard using an M10 X 25 mm bolt and nut.

Do *not* fully tighten these bolts at this time.



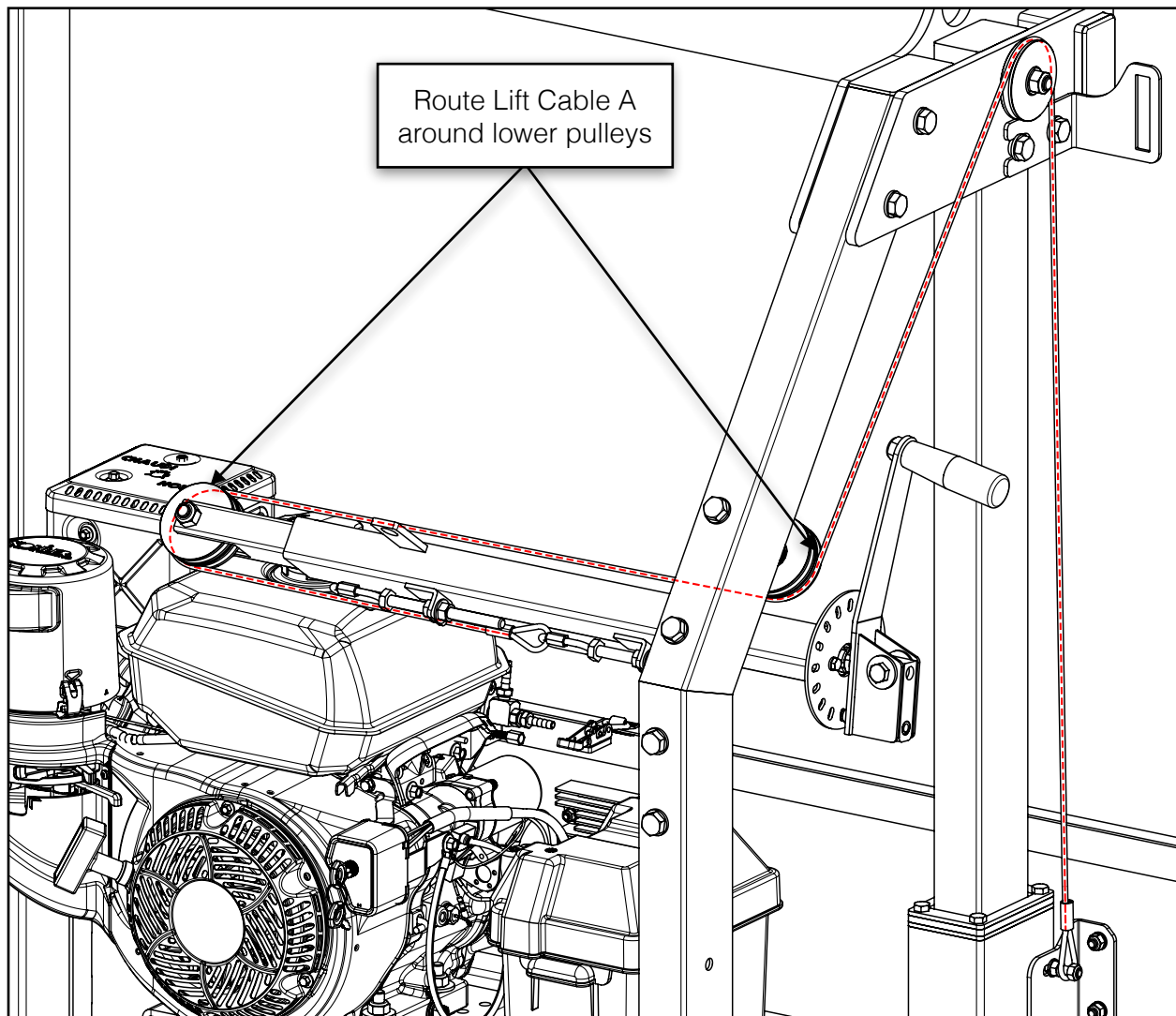
LIFT CABLE ROUTING

Route the lift cables listed below.

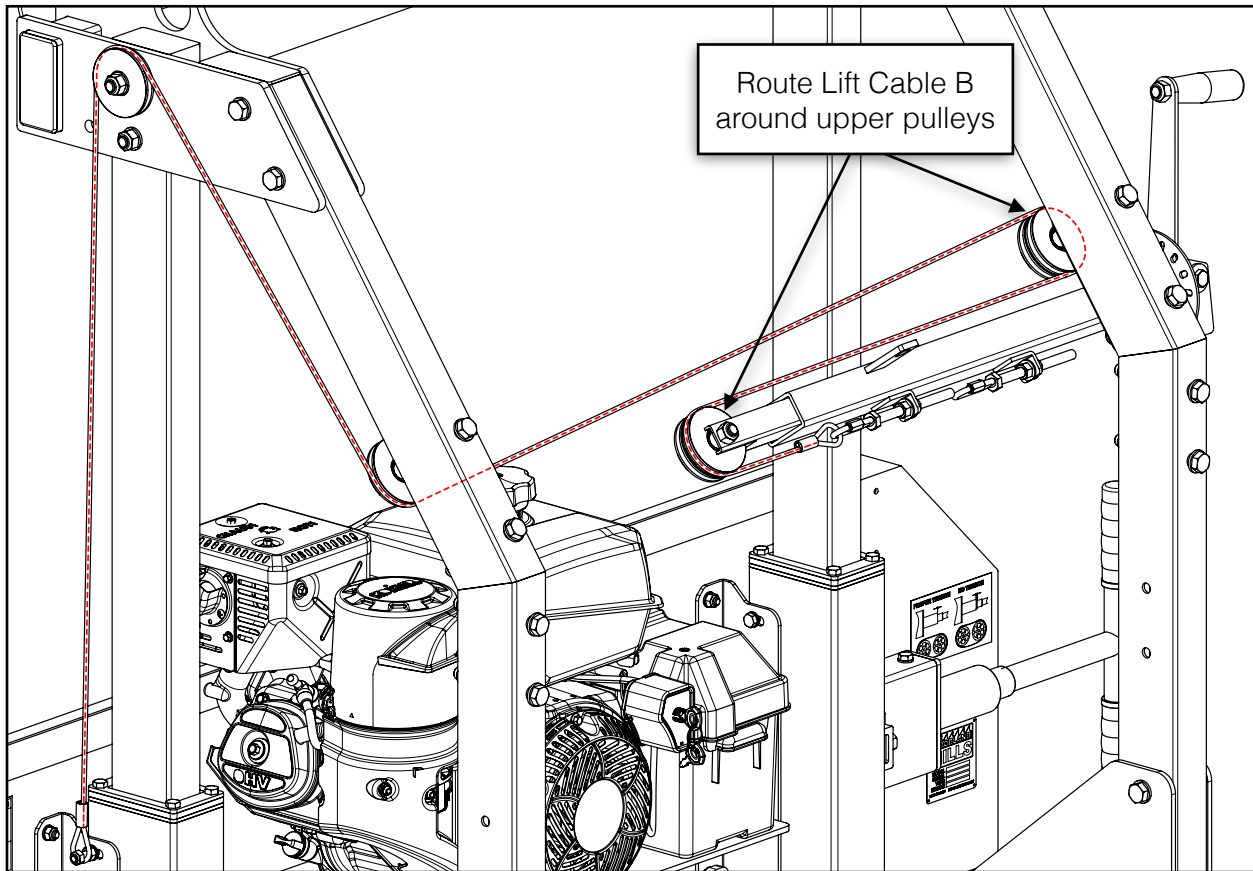
1x	Lift Cable A [Right Side]		1x	Lift Cable B [Left Side]	
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The wire rope lift cables come coiled and both are assembled at one end to the back beam post sleeves. The lengths are specific to each side so do not swap them.

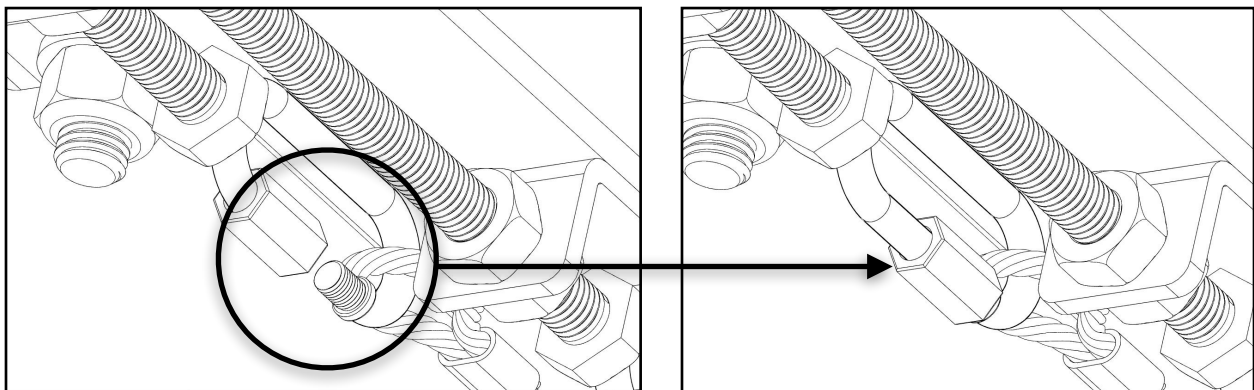
Route lift cable A (right side) as shown below. [Dashboard removed from views for clarity.]



Route lift cable B (left side) as shown below. [Dashboard and lift cable A removed from view for clarity.]

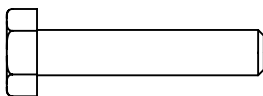
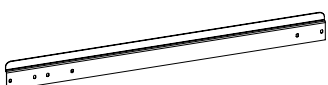

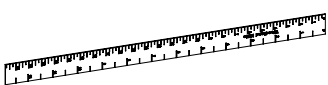
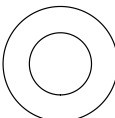
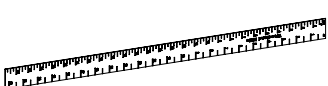
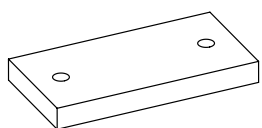
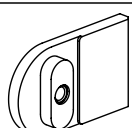
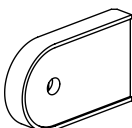
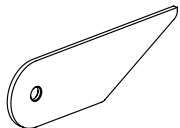
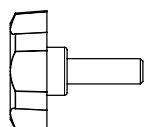


Be sure to securely tighten the oval chain link with a wrench after the cable loop ends have been attached.

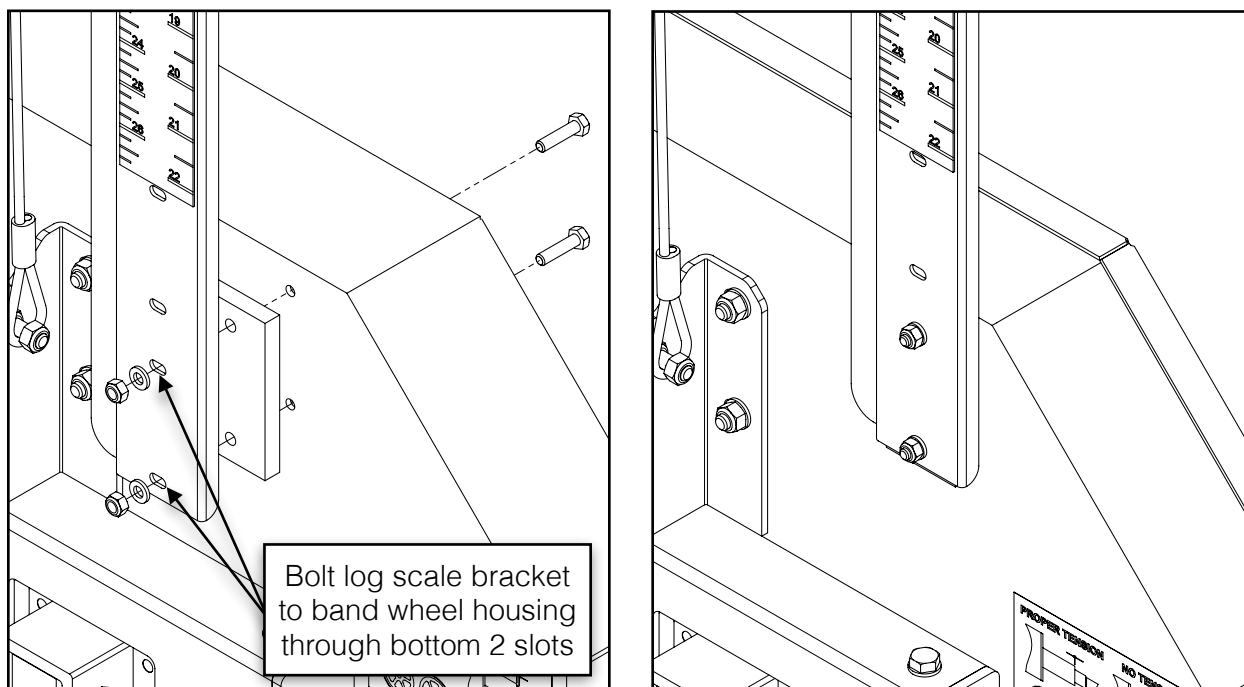


LOG SCALE

With the hardware listed below, assemble the log scale components.

2x	M6 X 22 mm Hex Bolt		1x	Log Scale Bracket	
2x	M6 Lock Nut		1x	Magnetic Scale [White]	
2x	M6 Flat Washer		1x	Magnetic Scale [Yellow]	
			1x	Log Scale Bracket Spacer Plate	
			1x	Log Scale Guide	
			1x	Lock Scale Locking Plate	
			1x	Log Scale Indicator Arrow	
			1x	M8 X 25 mm Knob	

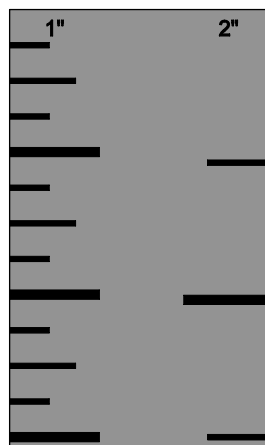
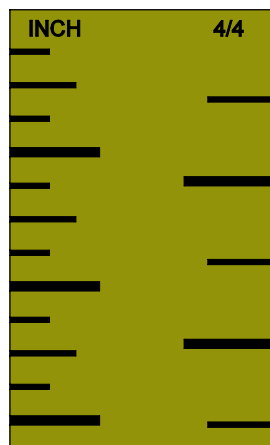
Bolt the log scale bracket and spacer plate to the band wheel housing through the bottom two slots using two (2) M6 X 22 mm bolts, flat washers, and lock nuts as shown below.



Note: the sawmill comes with two (2) different magnetic scales: one yellow, one white. Each with two different graduations down the left and right sides.

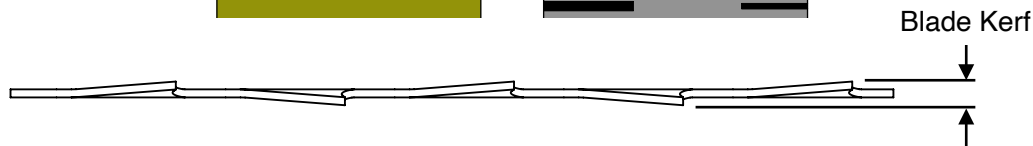
Yellow Scale

The left side is an inch scale, with the large graduations spaced at 1 in. The right side is “four quarter” (4/4) which mills the lumber $\frac{1}{8}$ in oversize to allow for finish planing on each side after drying.



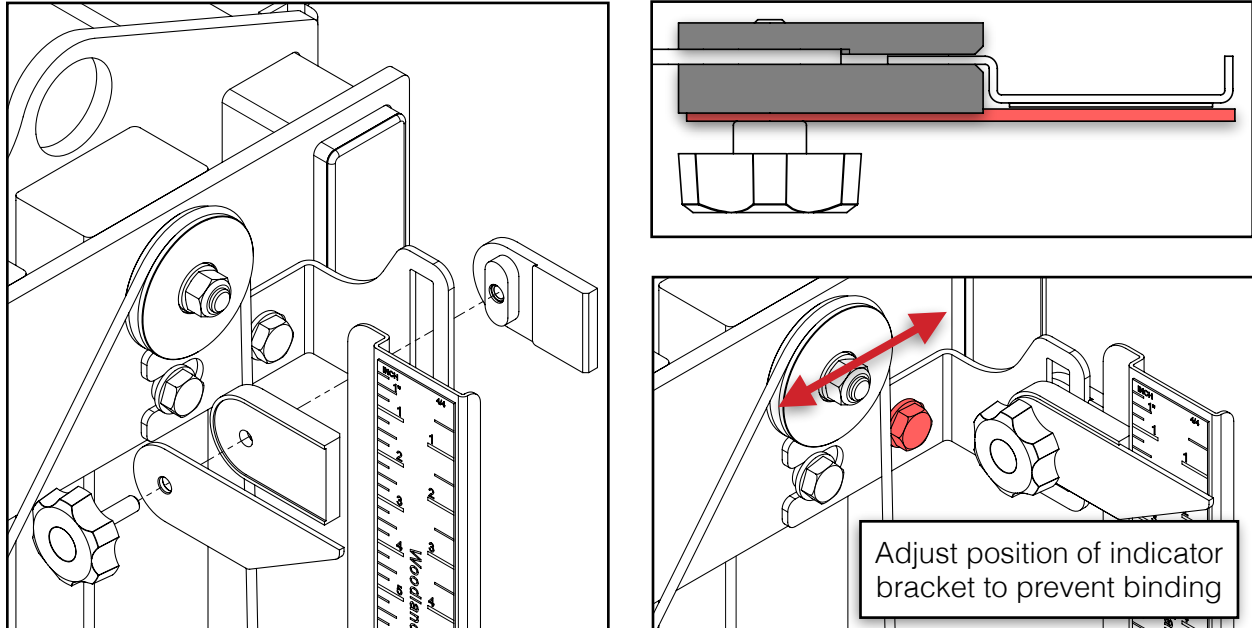
White Scale

The left side is an inch scale, with the large graduations spaced at 1 in + blade kerf. The right side is also an inch scale, except the large graduations are spaced at 2 in + blade kerf.

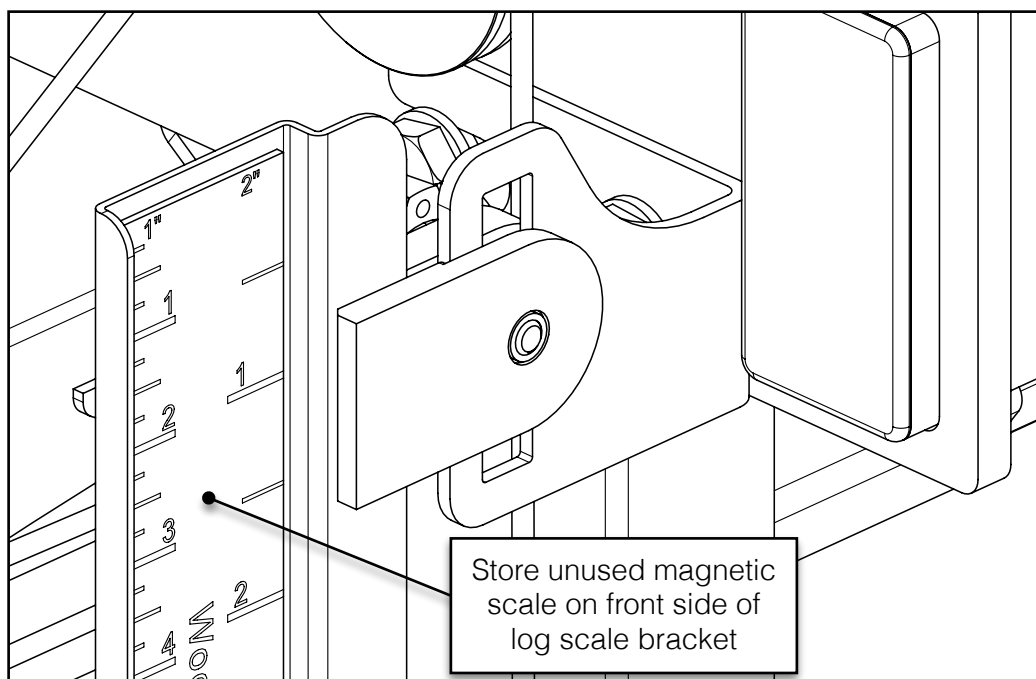


The graduations on the white magnetic scale make allowances for the blade kerf. On the yellow magnetic scale the kerf is not accounted for in the measurements.

Assemble the guide, locking plate, and indicator arrow to the log scale indicator bracket using the M8 threaded knob. Adjust the position of the indicator bracket forwards or backwards if the guide and locking plate bind on the log scale bracket as the sawhead is raised and lowered.

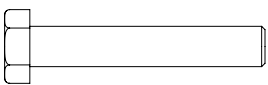
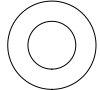




Store the other magnetic scale on the front side of the log scale bracket when not in use.

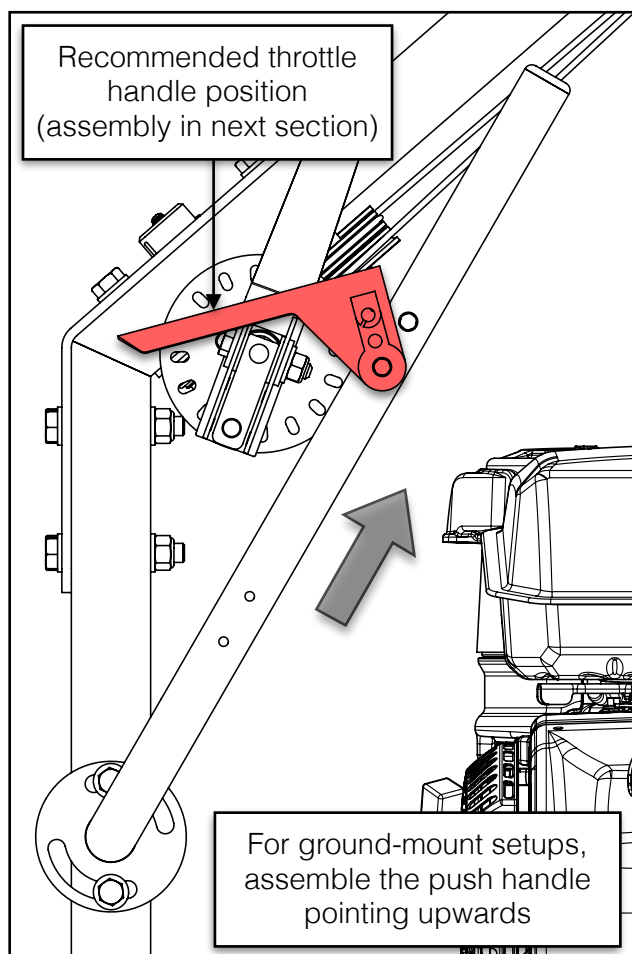


PUSH HANDLE

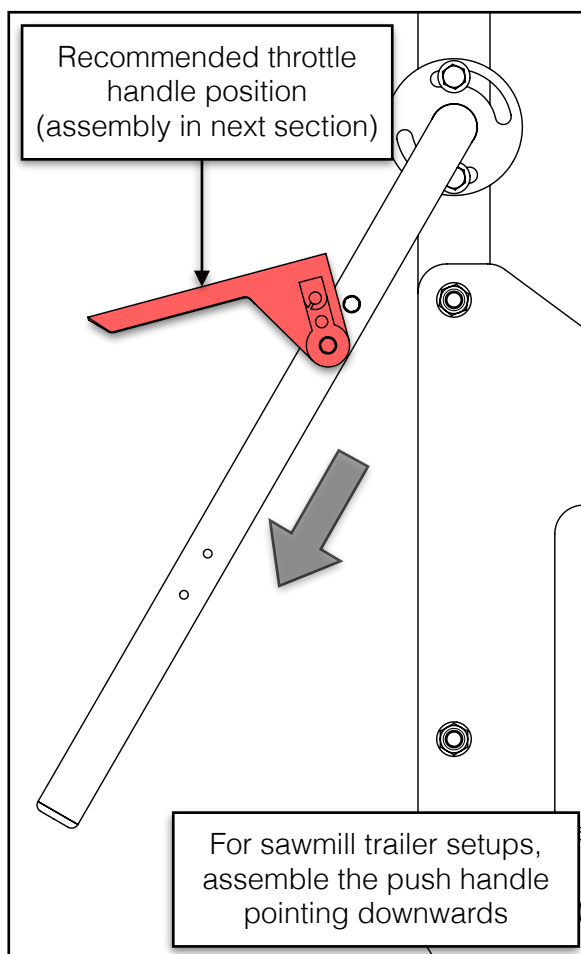
With the hardware listed below, assemble the push handle to the right rear carriage leg.

2x	M10 X 70 mm Flanged Hex Bolt		2x	M10 Flat Washer	
2x	M10 Lock Nut		1x	Push Handle	

The push handle is installed in an upward position when the sawmill is ground-mounted (**below-left**). Or it can be rotated 180° if the sawmill is high above the ground on a sawmill trailer or on a purpose-built stand (**below-right**).

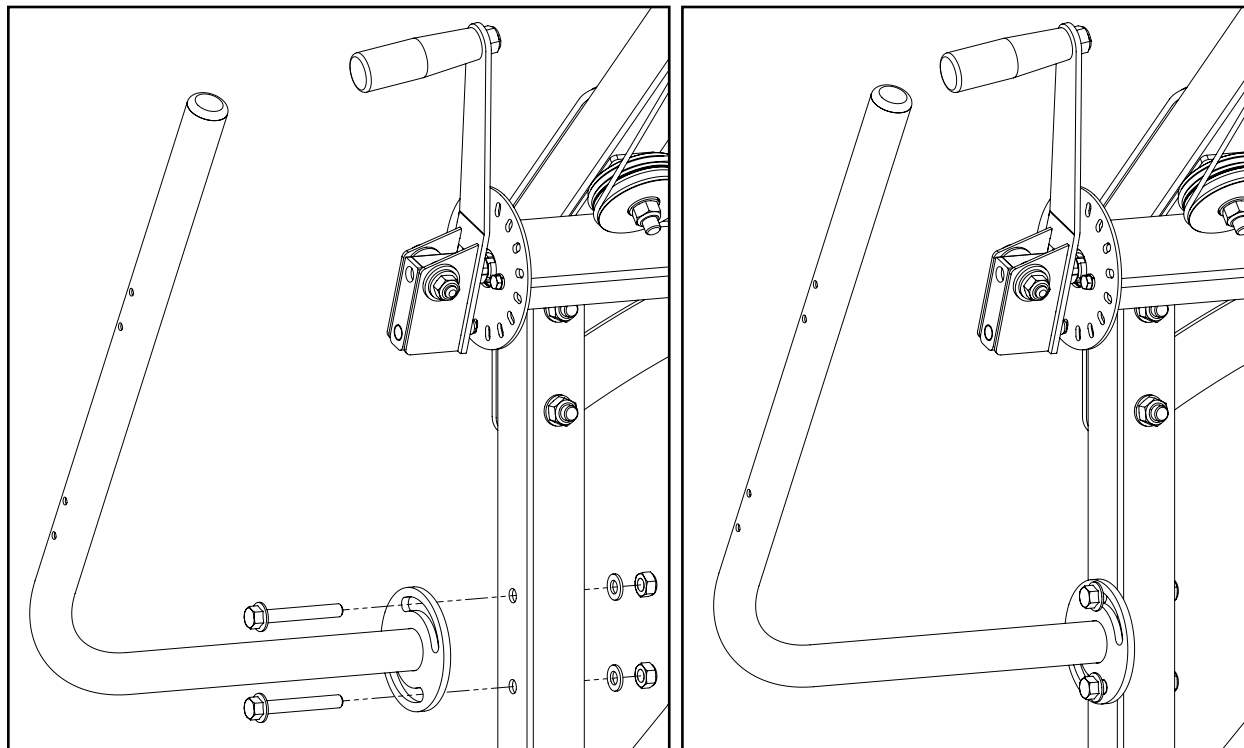


Ground-Mount Push Handle and Throttle Handle Recommended Position



Sawmill Trailer Push Handle and Throttle Handle Recommended Position

When a desired push handle orientation has been decided upon, attach the push handle to the side of the post using two (2) M12 X 70 mm bolts, flat washers, and lock nuts as shown below. Fully tighten these bolts.

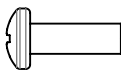
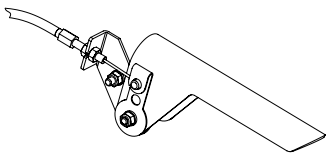



The push handle can be adjusted/rotated forwards or backwards to suit the ergonomics of the operator in either ground-mount or sawmill trailer configurations.



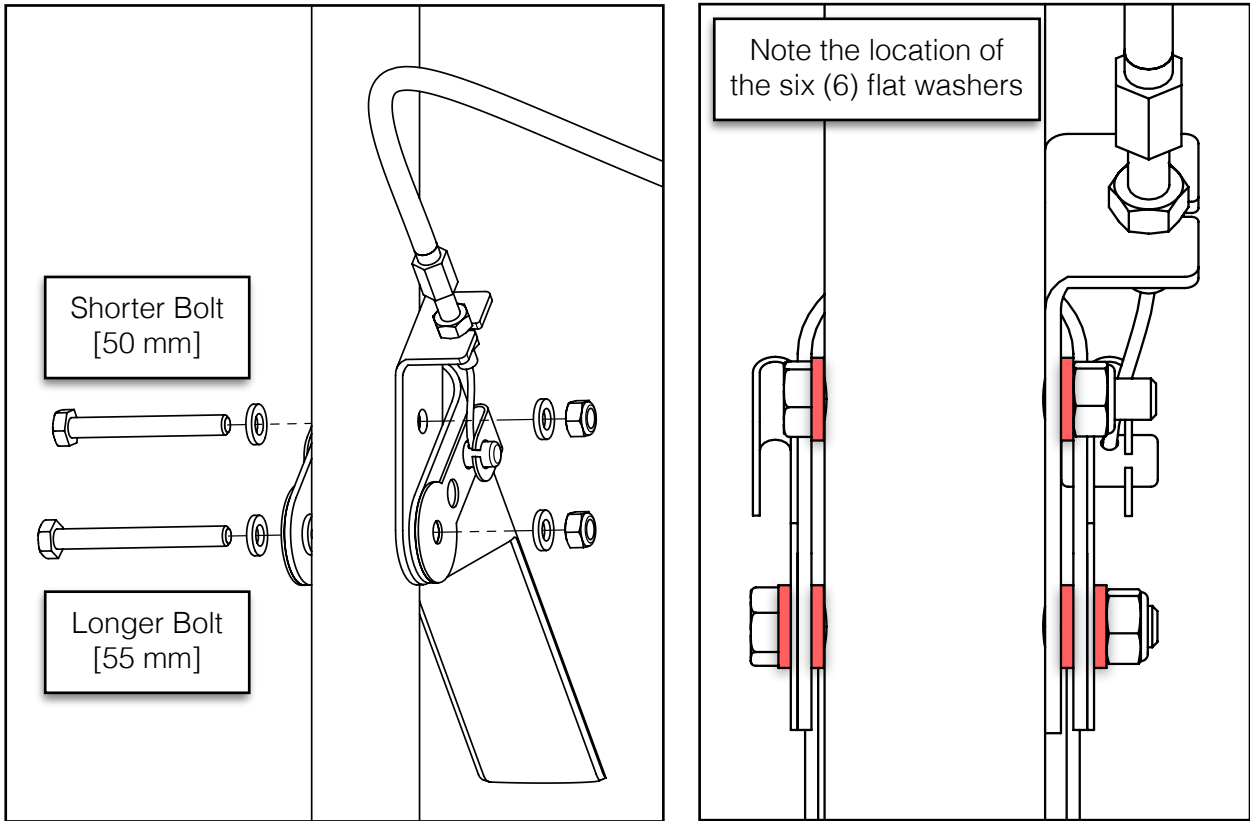
THROTTLE HANDLE AND CABLE

Use the hardware listed below to assemble the throttle handle to the push handle and route the throttle cable to the engine.

1x	M4 X 12 mm Phillips Pan Head Screw		1x	Throttle Handle Assembly	
1x	Throttle Cable Barrel Clamp				

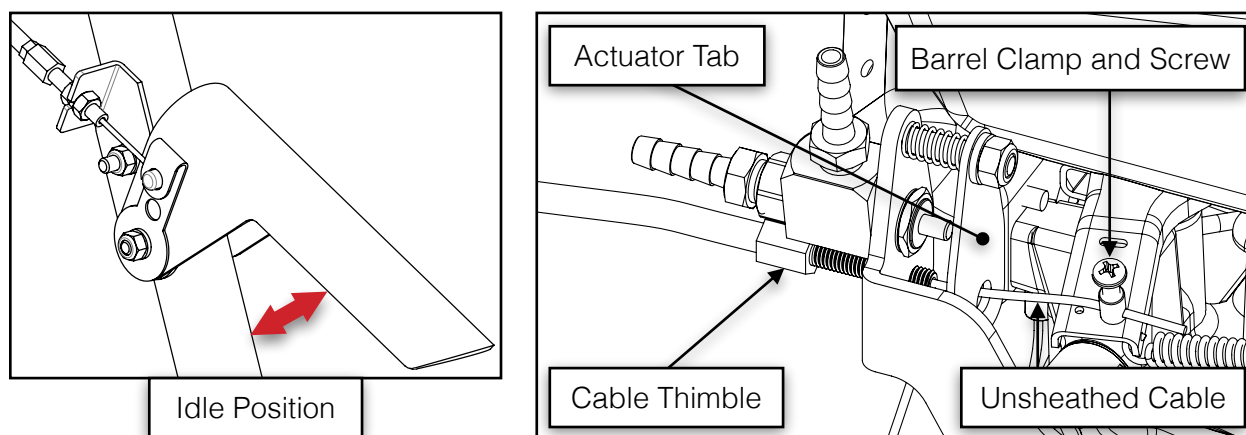
The throttle handle comes loosely pre-assembled. The hardware needs to be unthreaded from the throttle handle prior to assembly. There are two (2) M6 hex bolts, two (2) lock nuts, and six (6) flat washers.

Assemble the throttle handle to the uppermost pair of holes in the push handle.

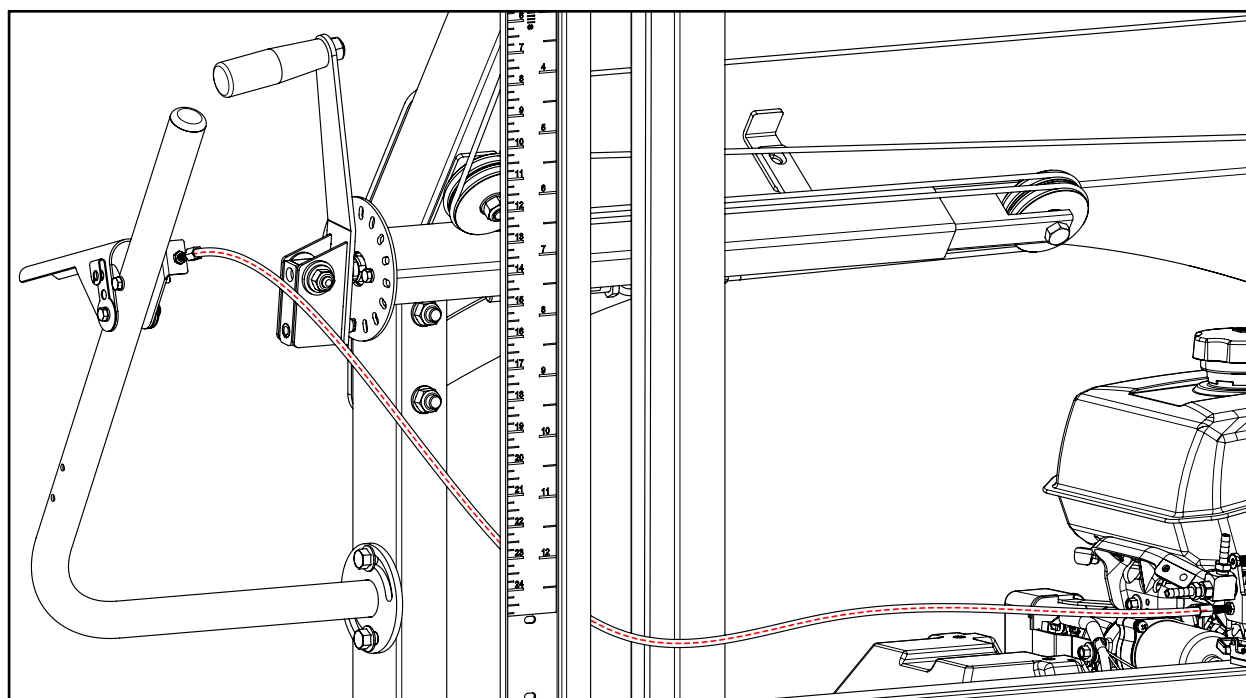


With the throttle lever in the idle position (fully open), route the cable between the log scale bracket and the front-right carriage post. Pass the cable through the thimble in the auto-lube bracket and pull the unsheathed portion of the cable through the hole in the actuator tab, then to the engine.

Next, route the unsheathed end of the cable through the hole in the barrel clamp, pull it tight while ensuring the throttle handle is still fully open, and then tighten the M4 Phillips pan head screw to secure it in place. This will take the slack out of the cable.


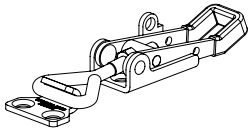



The assembled throttle handle and routed cable should now match the image below.

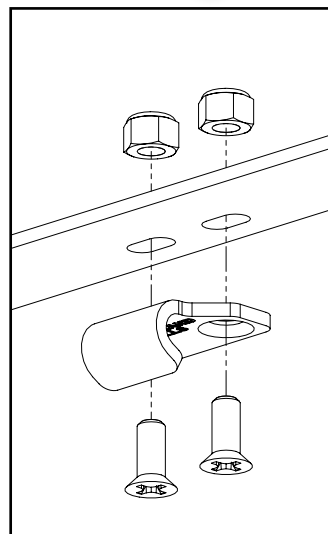
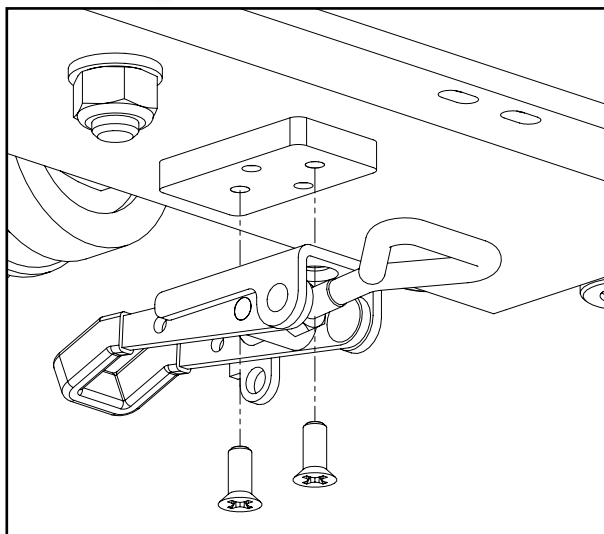
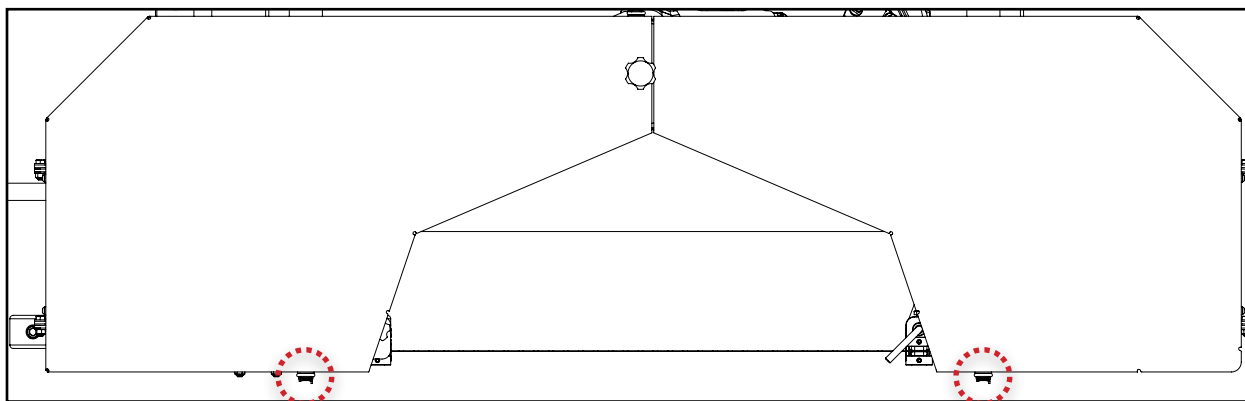


BAND WHEEL DOOR LATCHES

Using the hardware listed below, assemble the two (2) bottom band wheel door latches.

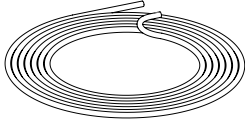
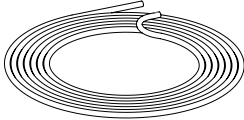
8x	M4 X 10 mm Phillips Flat Head Screw		2x	Latch	
4x	M4 Lock Nut				

Use two (2) M4 X 10 mm flat head screws per latch. Assemble the latches to the pre-installed spacers on the bottom of the band wheel housing. On each band wheel door, install the hook-shaped catch using two (2) M4 X 10 mm flat head screws with lock nuts.



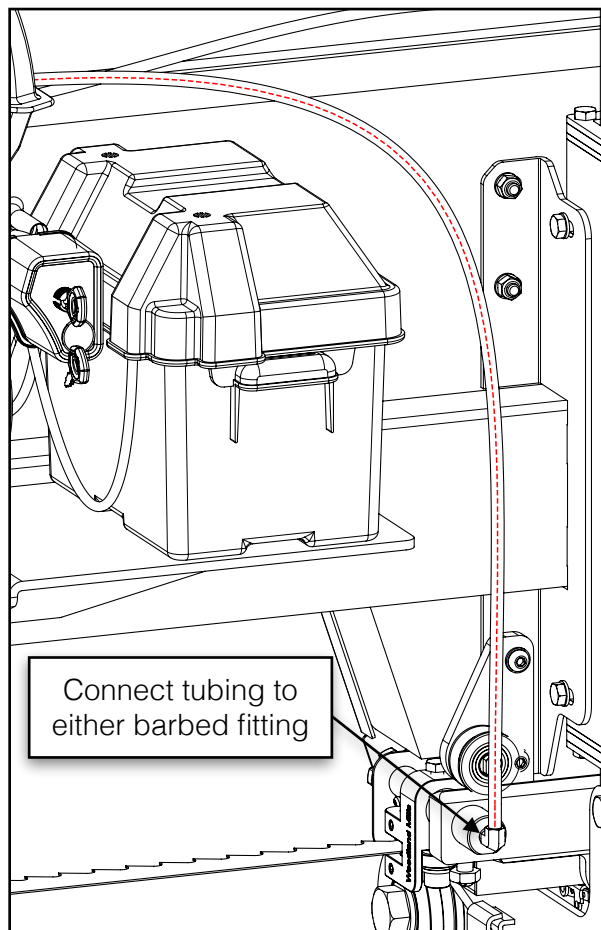
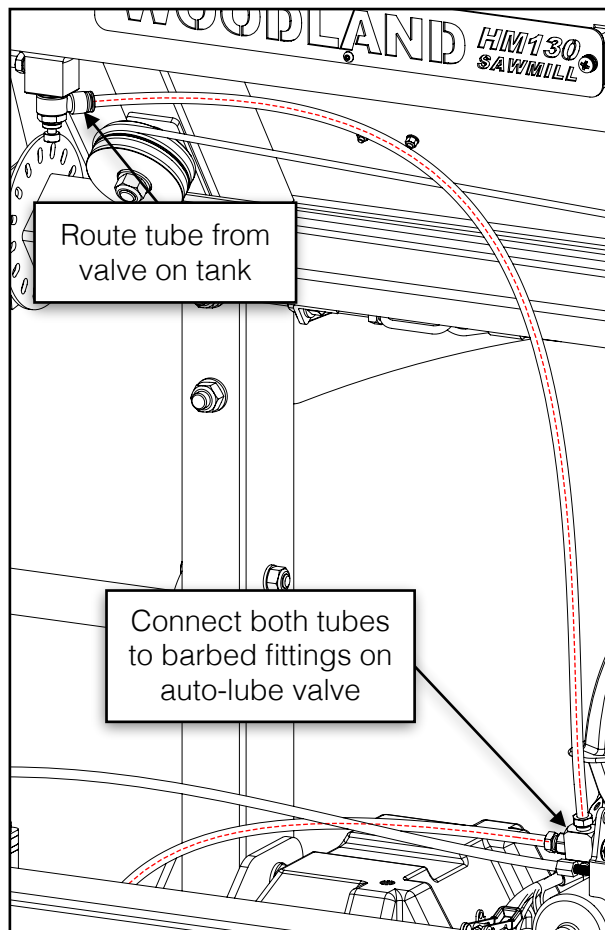
LUBRICATION TUBING

Use the tubing listed in the table below to complete the routing for the lubrication system.

1x	Tubing: Tank-to-Valve		1x	Tubing: Valve-to-Guide Block	
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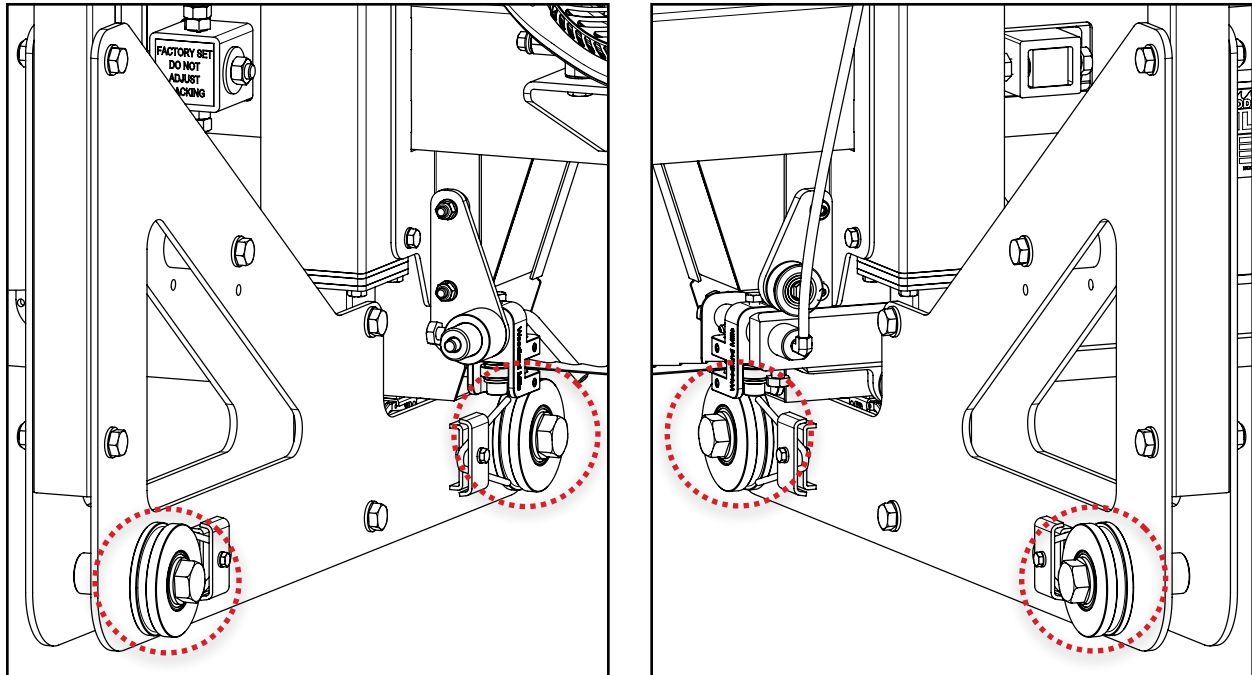
Route the *tank-to-valve* tubing from the blue ring fitting on the tank to the vertical barbed fitting on the auto-lube valve.

Route the *valve-to-guide block* tubing from the horizontal barbed fitting on the auto-lube valve, down to the barbed fitting on the guide block holder shaft.



TIGHTEN CARRIAGE WHEEL BOLTS

Tighten the four (4) M20 X 120 mm bolts that fasten the carriage wheels to the carriage side plates.

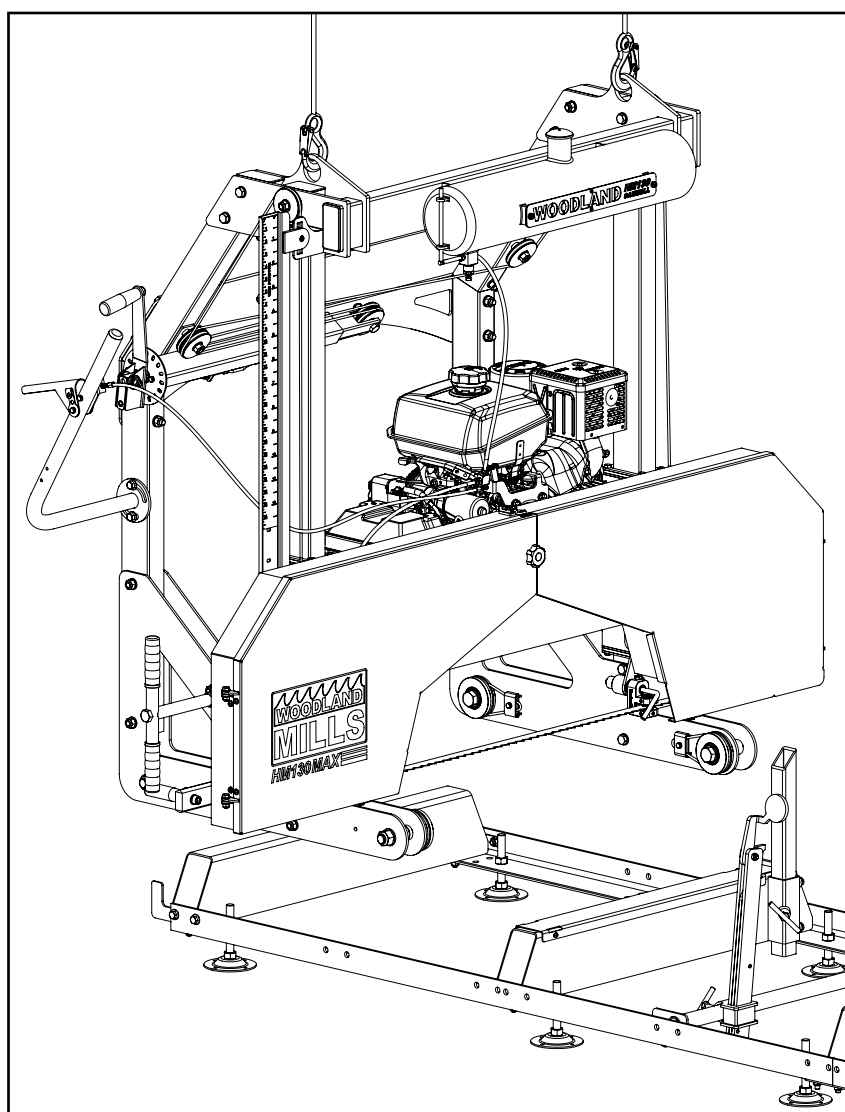


6. PLACING THE HEAD ON THE TRACK

At this point, most of the sawmill head bolts should only be hand tight. They will be fully tightened when the head is on the track and has settled in to a true and square state. There are two methods in which the sawmill head can be lifted onto the track assembly:

METHOD 1

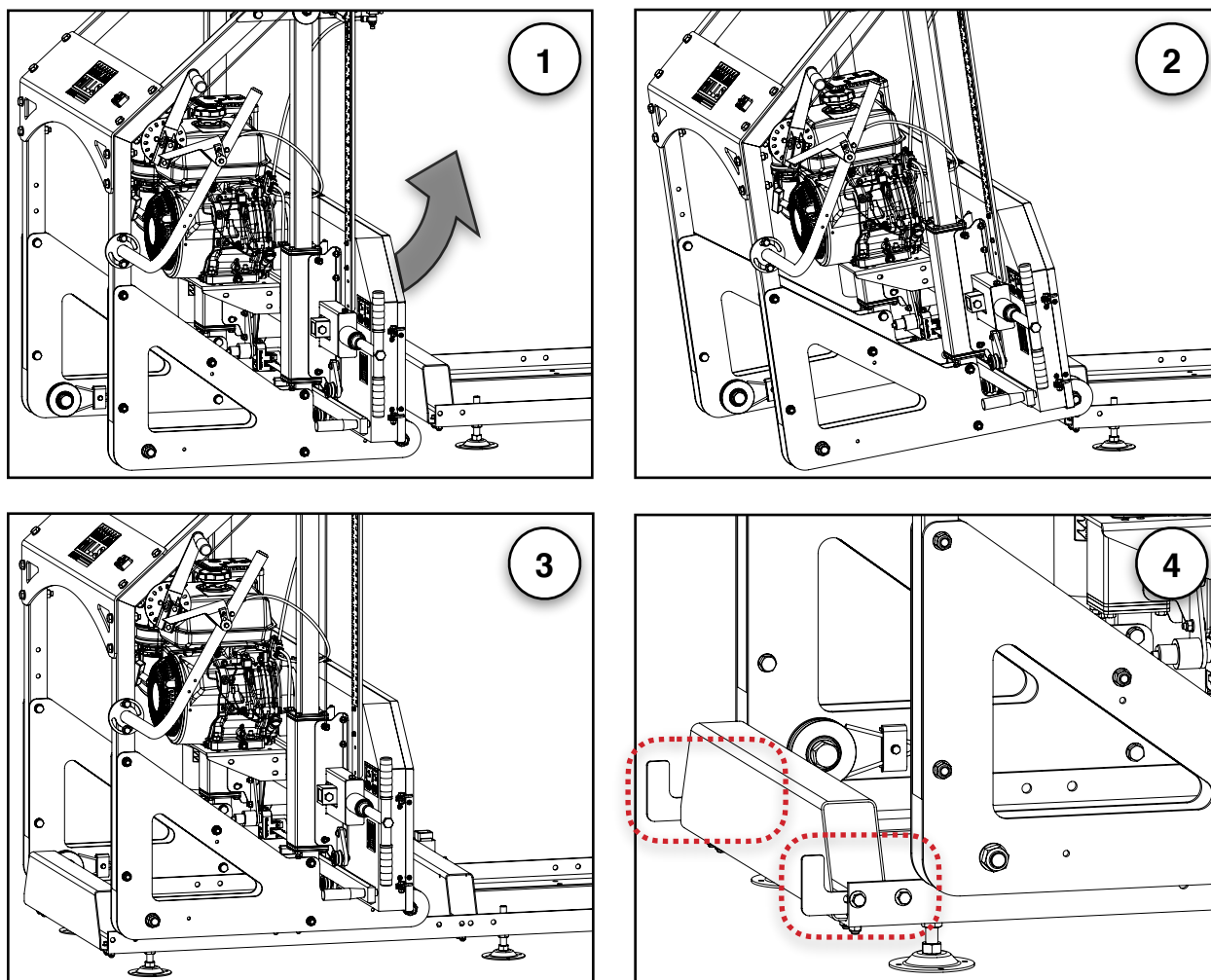
If a tractor or forklift is available, the head can be lifted onto the track with a lifting strap or chain with a minimum rating of 1000 lb. [450 kg]. Attach the lifting strap/chain to the lifting hooks, raise the head up, and rest it on the track so that the grooves in the carriage wheels fit around the track rails. Two people are recommended for this procedure.



METHOD 2

At least two people are required for this step. Start by removing the two (2) carriage stops from one end of the track. The head can be walked over to the track until positioned behind it (**Figure 1**). Once in this position, tilt the head backwards so that the front two wheels are off the ground. Walk the head forward while the grooves in the two front carriage wheels ride along the track rails (**Figure 2**). Next, using at least two people, lift up the back end of the sawmill head and walk it forward until both rear carriage wheels are seated on the track (**Figure 3**).

Finally, reattach the two (2) carriage stops to the inner faces of the track rails (**Figure 4**).

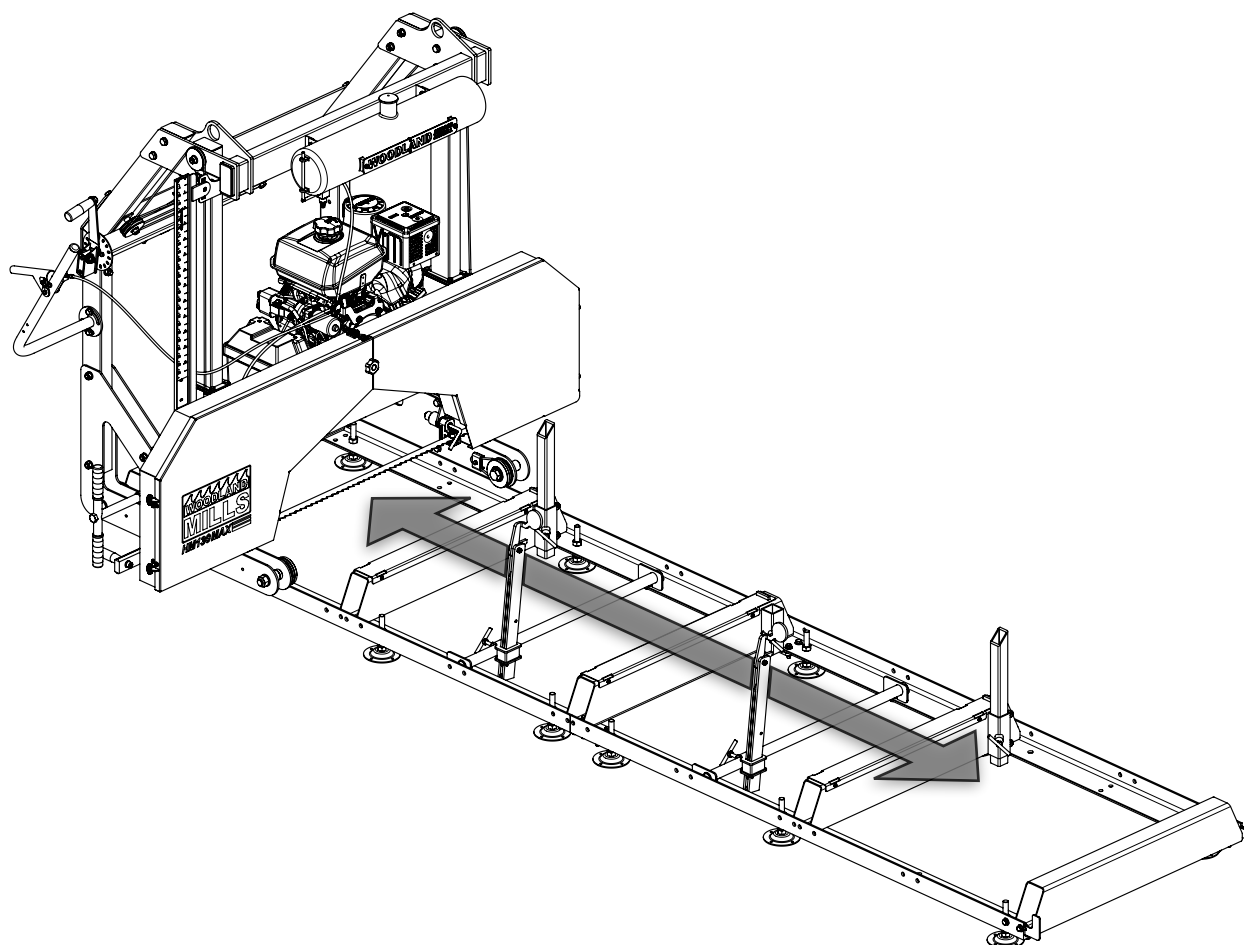


With the sawmill head assembly now resting on the track, grab hold of the one side of the cross beam and perform a shake-down of the head. Shaking the head will help settle the components into their proper position that may have become misaligned either due to tolerances during the assembly process or when the saw head was set on the track.

Afterwards, tighten all of the saw head bolts, post and cross beam hardware.

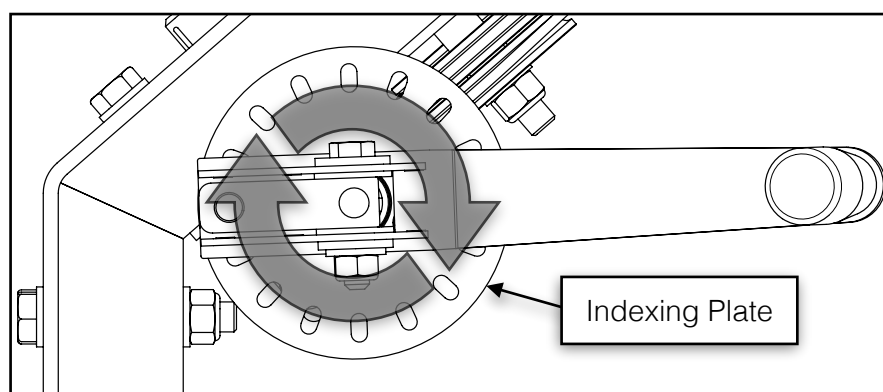
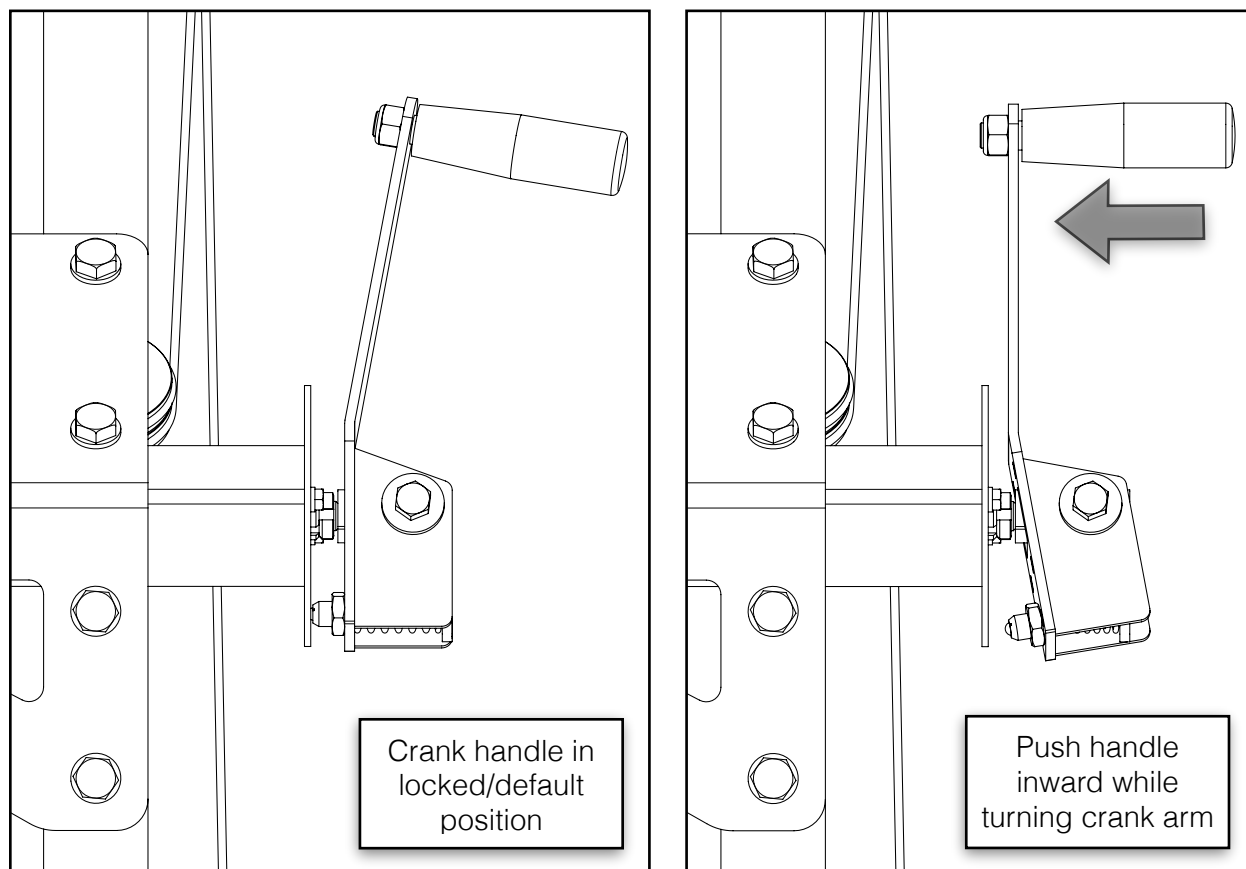
ROLLING THE SAWMILL HEAD ASSEMBLY

Roll the sawmill head assembly along the full length of the track to ensure it moves freely. If it binds or is difficult to push it is likely the track is not square, straight, and/or level. Make the necessary adjustments to the track and roll the head assembly again. Repeat the track adjustments until the head rolls freely.



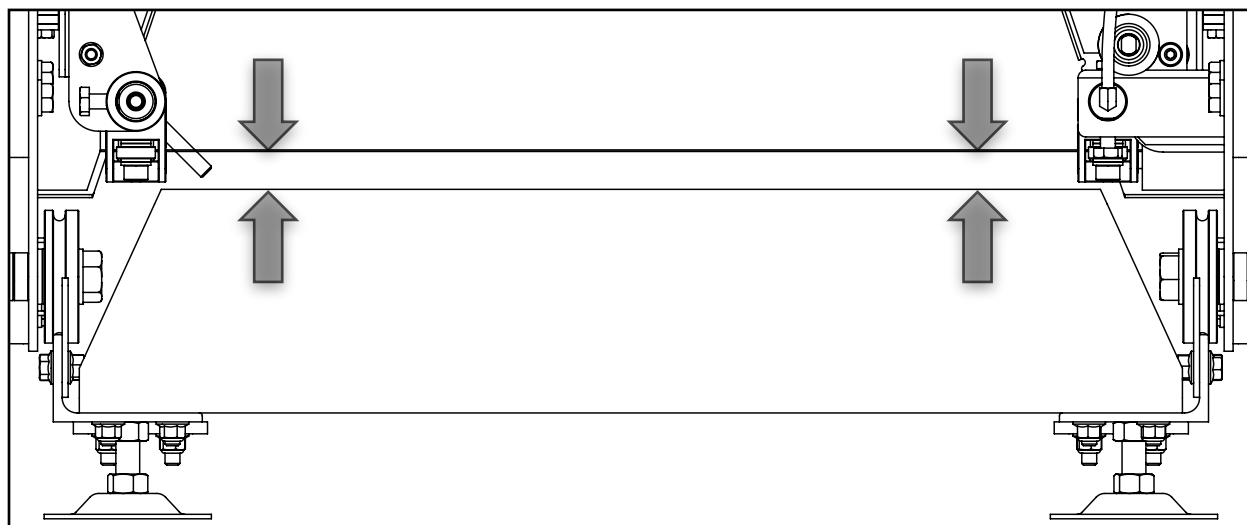
RAISING & LOWERING THE SAWHEAD

The lift mechanism is equipped with a self-locking, spring-loaded crank arm that prevents the head from lowering during cuts. When winding the head up or down, the operator pushes the handle towards the mill as the crank arm is turned. When the desired cut depth is reached, releasing the handle will lock the arm into one of the slots in the indexing plate.

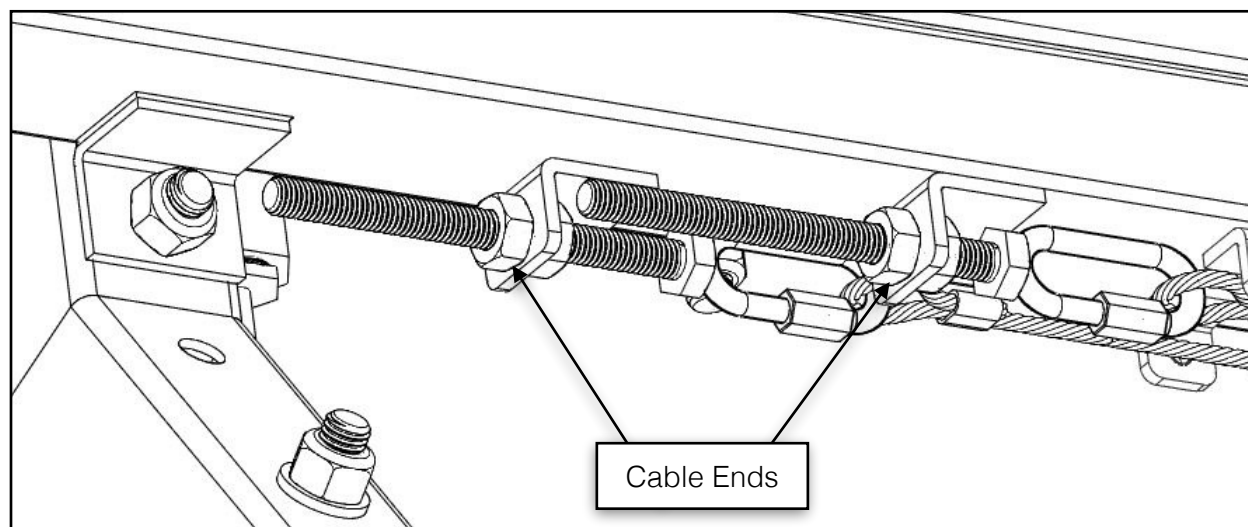


LEVELLING THE SAWMILL HEAD ASSEMBLY

Using a tape measure, measure the distance from the blade to the top of the log bunk on both the left and right side. The distance should be equal. If the measurements are not equal, adjust the lift cable ends under the lift mechanism sub-assembly to either raise or lower one side.

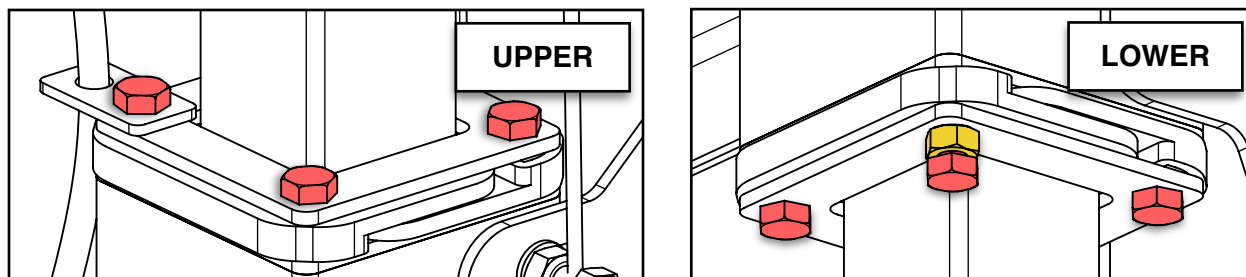


Using a wrench, turn the nut clockwise to raise one side of the sawmill head assembly, or counter-clockwise to lower it. Double-check the blade height as discussed in the previous step. Once the measurements are equal on both sides, tighten the corresponding jam nut to clamp it securely against tab.



ADJUST THE POST SLEEVE BUSHINGS

Once the sawmill head assembly is level, loosen the eight (8) hex bolts (4 top, 4 bottom) just enough so the bushings can be pushed forwards and backwards. Do this for both sides of the sawhead.

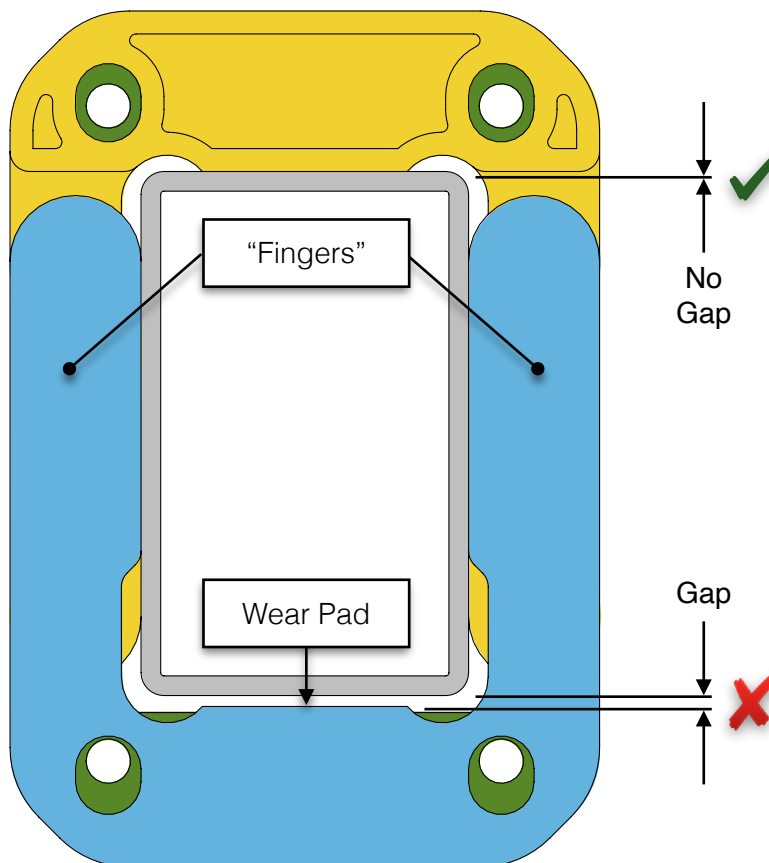


Push the bushings together (front-to-rear) so that there is no gap between the bushing wear pads and the front/rear faces of the post as shown below.

The bushing side “fingers” naturally push inwards so as they wear, continuous pressure is applied to each side of the carriage post.

However, the front & rear wear pads on the bushings do not self-adjust. As a gap appears over time due to wear, simply loosen two (2) bolts on one side and push the bushing towards the post until they are flush again.

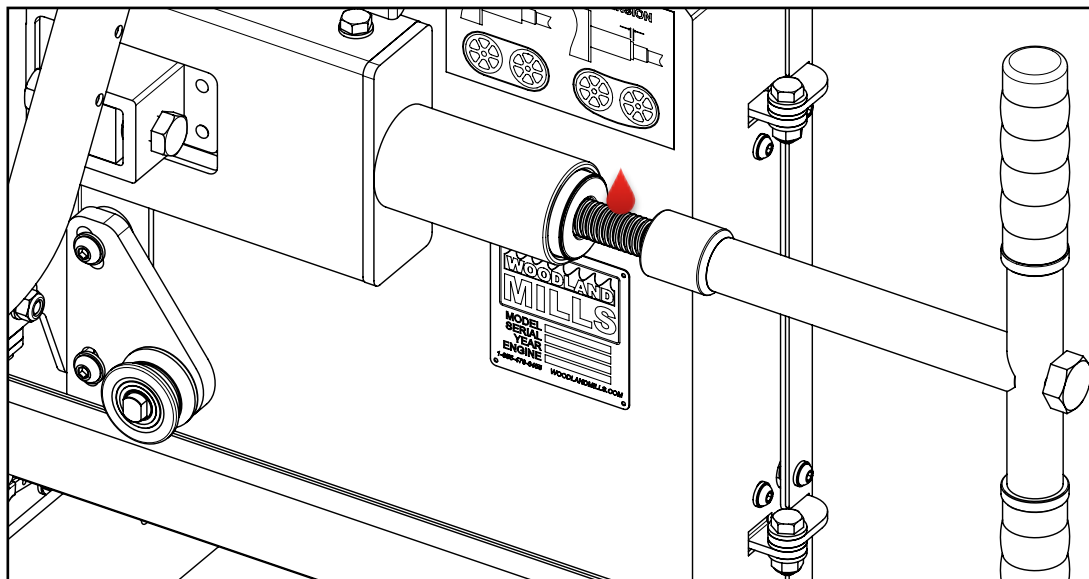
The bushing holes are slotted to allow for this future adjustment.



With the wear pads flush with the posts, tighten all the hex bolts and spray the posts with a water resistant silicone lubricant such as **“WD-40 Water Resistant Silicone Spray”** or **“3-in-One Silicone Spray Lubricant.”**

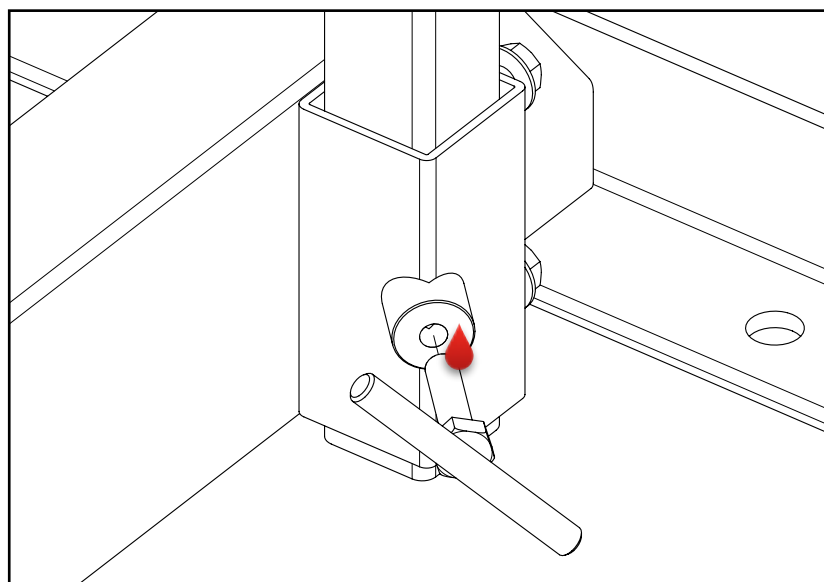
GREASING THREADS

Add waterproof grease to the threads of the blade tension T-handle and to the mating bearing face prior to use.



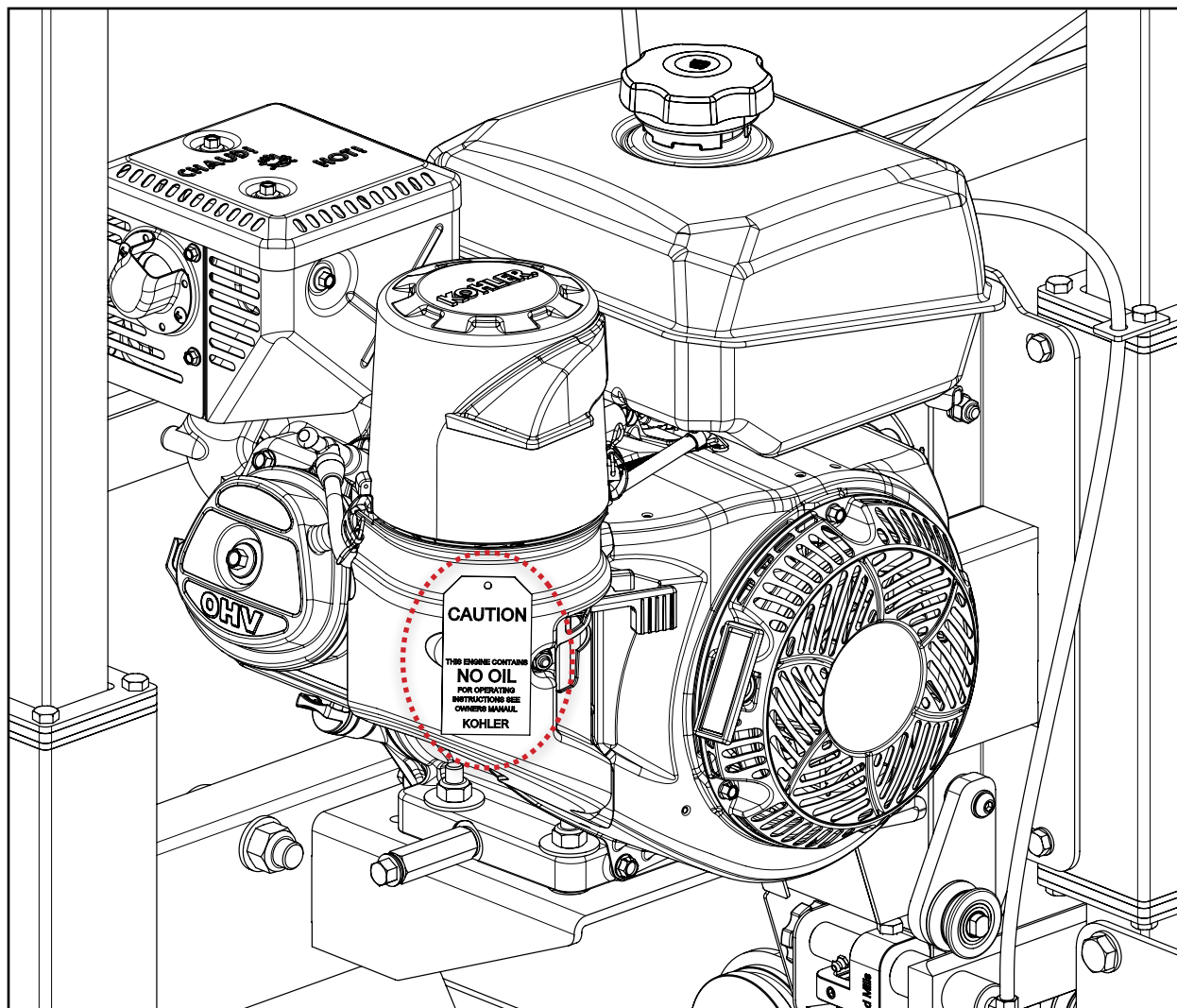
****Note: It is very important to take the tension off the blade by turning the T-handle in the counter-clockwise direction when the sawmill is not in use. Failure to do so will result in flat spots on the rubber belts. These flat spots will cause the mill to vibrate excessively during subsequent uses.****

Add grease to all T-bolt threads on the sawmill track: three (3) on the bunks and one (1) on the log clamp assembly.



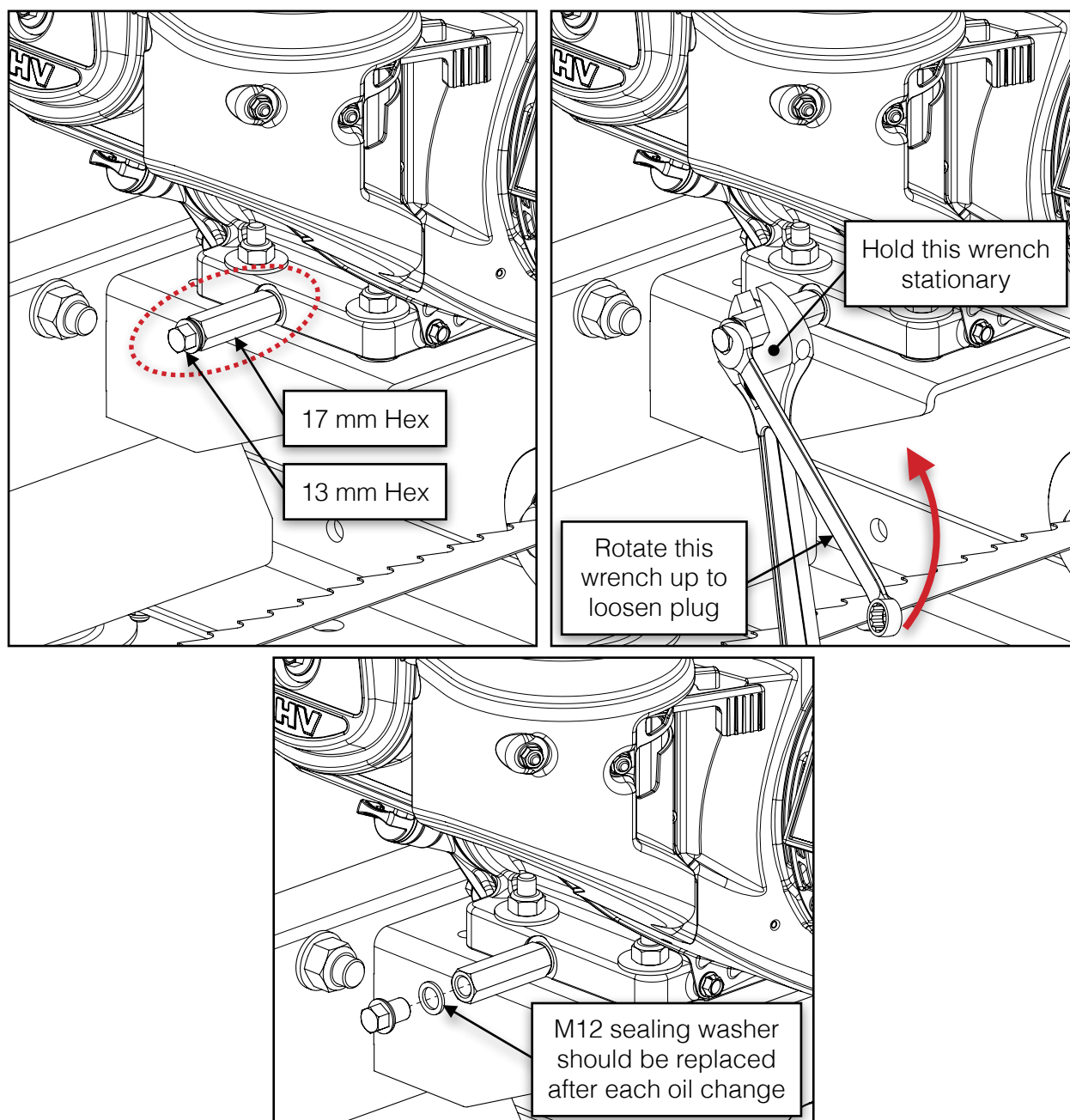
ENGINE OIL

Refer to the engine manual before using your sawmill. Please note that the engine does not contain any gasoline or engine oil when it is shipped. Furthermore, the engine is equipped with an oil alert system, meaning that if the crankcase oil level is low or empty, the power is cut to the spark plug and it will not start.



When changing the engine oil, follow the instructions on the next page.

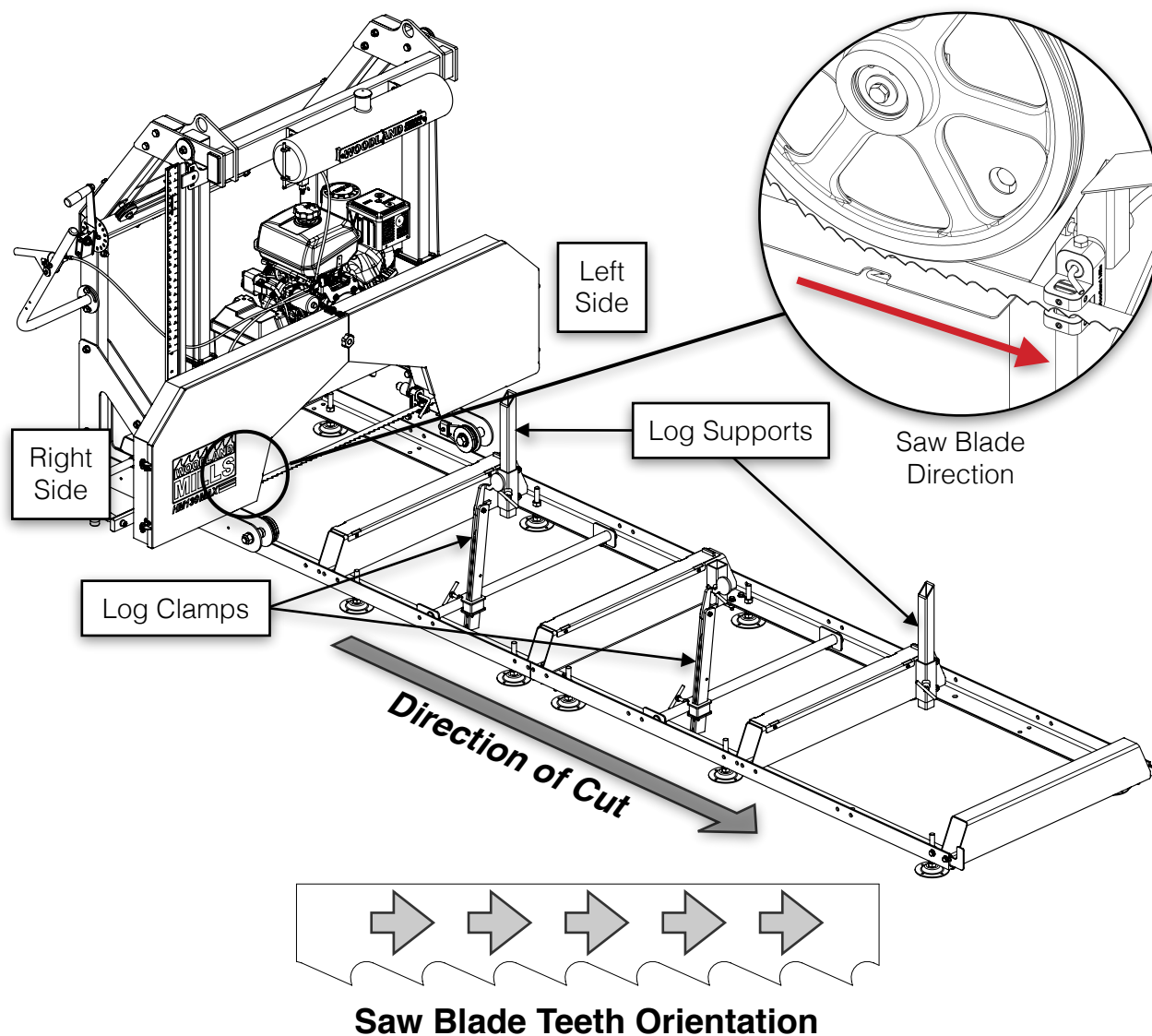
The engine comes with a brass oil drain extension to make oil changes easier. When removing the drain plug, use a wrench to hold the brass extension stationary while a second wrench loosens the plug. Failure to follow this procedure could damage the threads in the aluminum engine block and void the warranty.



Repeat the process in reverse to re-install the drain plug. Remember to hold the brass extension stationary with a second wrench when tightening the plug.

DIRECTION OF CUT

Always cut in the direction shown below. The log clamps are located to the right side of the log with the log supports on the left. Failure to cut in this direction can cause the log to come loose and possibly cause damage or injury.



Always ensure the saw blade teeth are orientated such that they are cutting *into* the wood and not being dragged backwards across it. Some blade manufacturers ship their saw blades inside out (backwards) due to manufacturing processes and they must be flipped prior to installation.

****Please follow the instructions in the SAWMILL SET-UP PROCEDURES section. Failure to do so may result in poor sawing performance, damage or injury.****

SAWMILL SET-UP PROCEDURES

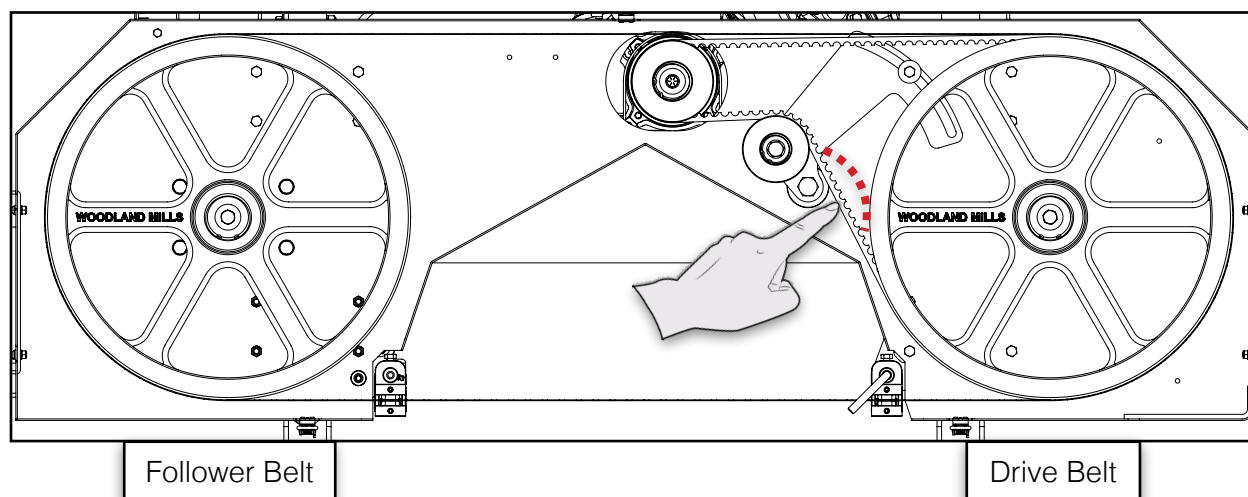
DRIVE BELT TENSION



Make sure the blade is under proper tension when setting the drive belt tension. This ensures the belt is fully seated into the pulley grooves when the deflection is checked. See section, BLADE TENSION, for more information.



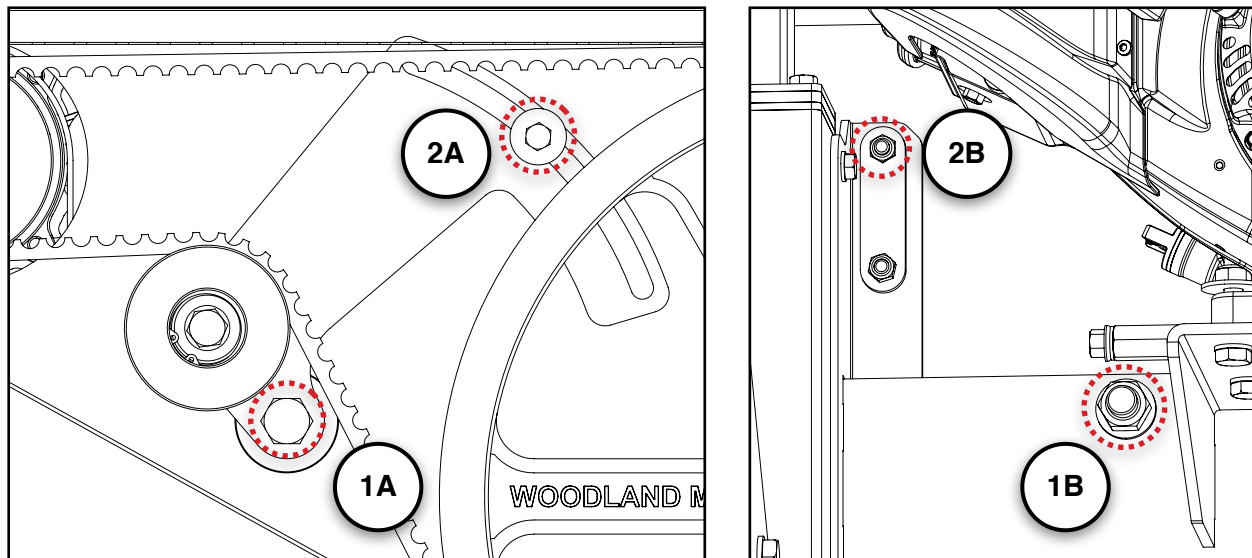
To check the drive belt tension, push against it firmly and measure the deflection. There should be no more than $\frac{1}{4}$ in [6 mm] of movement. If the belt deflection exceeds this amount it will need to be tightened as described below.



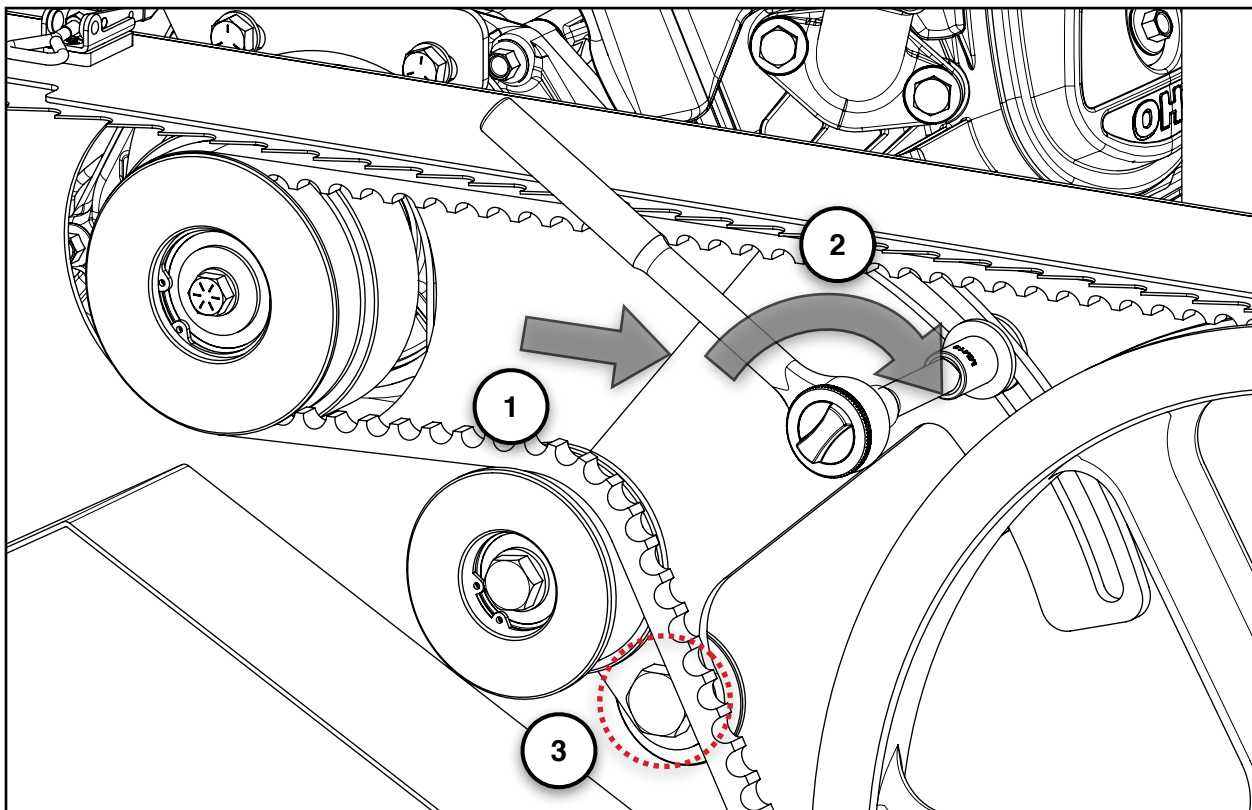
****Never attempt to adjust the belt tension with the engine running. As a safety precaution, remove the spark plug cap.****

Start by loosening the M16 hex bolt (1A) and lock nut (1B) that secure the belt tensioner mechanism to the sawhead. Then loosen the M8 bolt (2A) in the curved slot—its nut (2B) is secured in place by an anti-rotation device and does not require a second wrench or socket.

****Only loosen the bolts approx. one turn—do not remove them.****

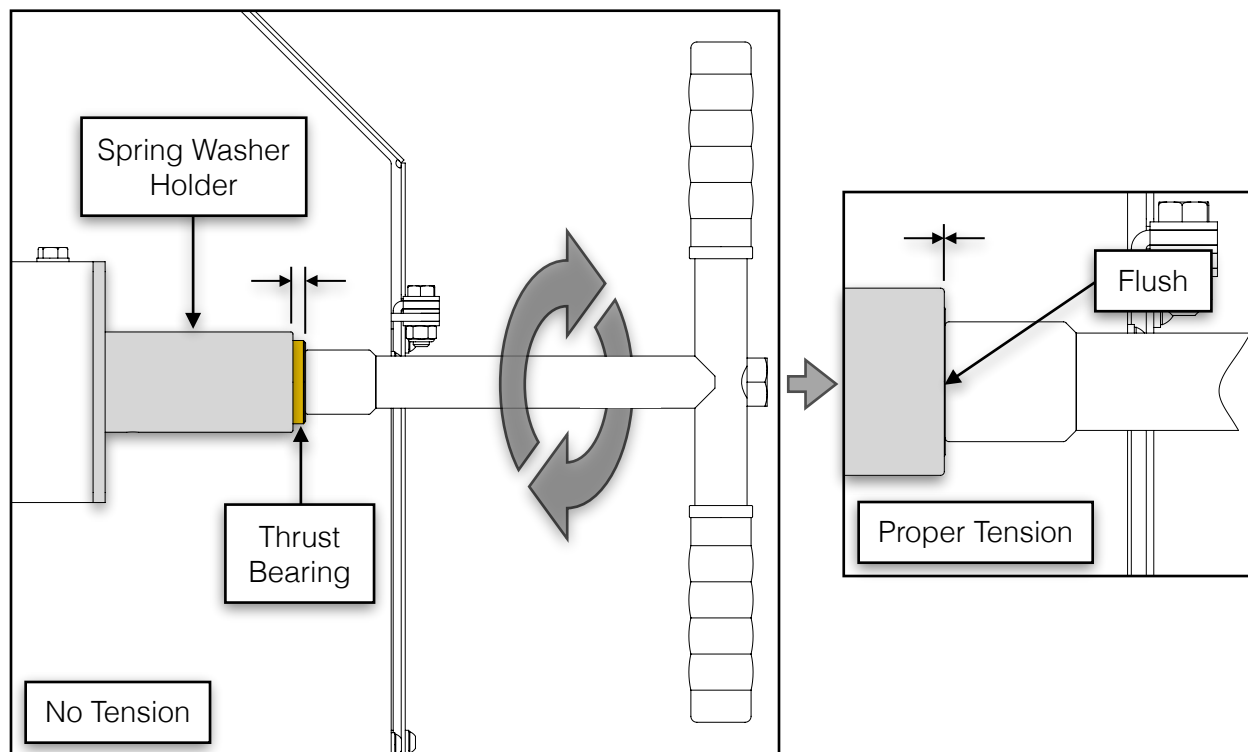


Once both bolts are loose, firmly push the belt tensioner towards the band wheel until the belt is tight (#1), then tighten the upper bolt in the curved slot in a clockwise direction using a 13 mm socket (#2). Re-check the belt tension to ensure a maximum of $\frac{1}{4}$ in [6 mm] deflection and then tighten the M16 bolt and lock nut when the deflection is correct (#3).

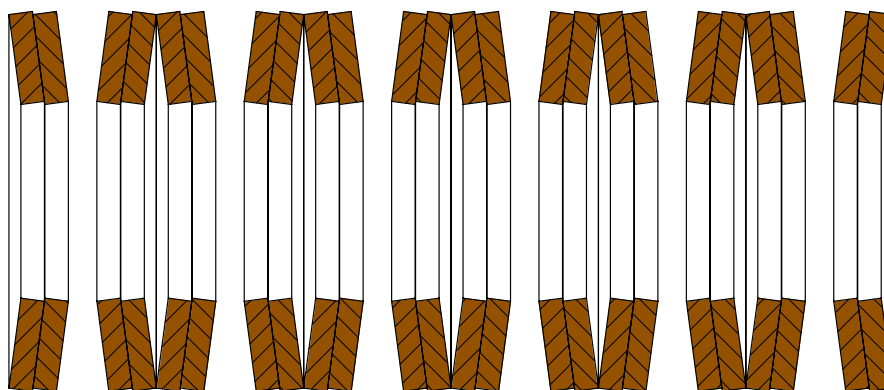


BLADE TENSION

Proper blade tension is achieved when the thrust bearing is flush with the outer face of the spring washer holder after turning the T-handle clockwise.

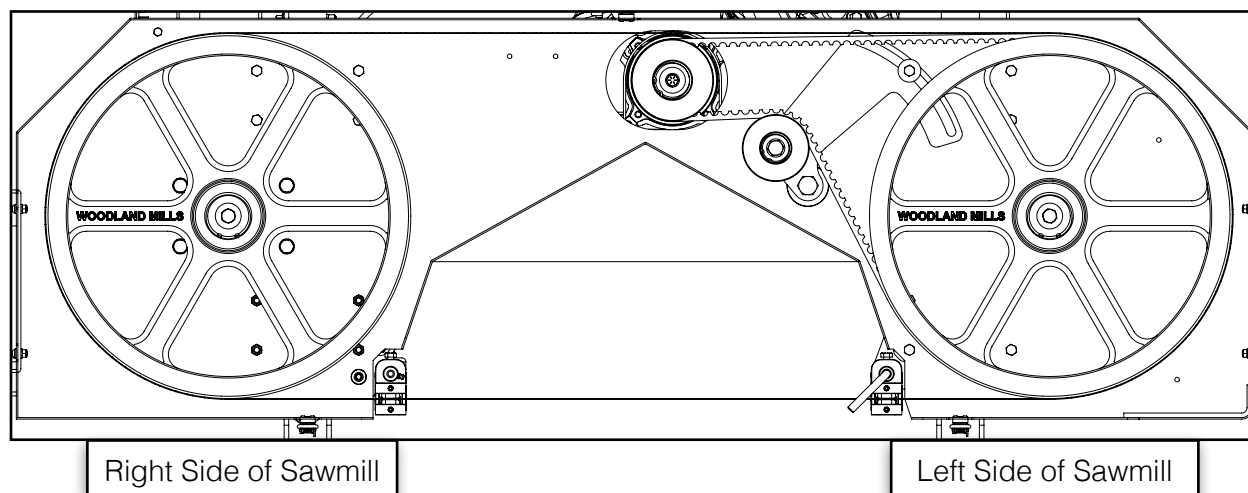


If the spring washer holder is removed for maintenance (e.g. greasing or replacement), ensure the twenty-four (24) Belleville washers inside are oriented and re-installed as shown in the graphic below. There are five (5) groups of four (4)—each made up of two (2) opposing nested pairs—with a separate nested pair at each end.

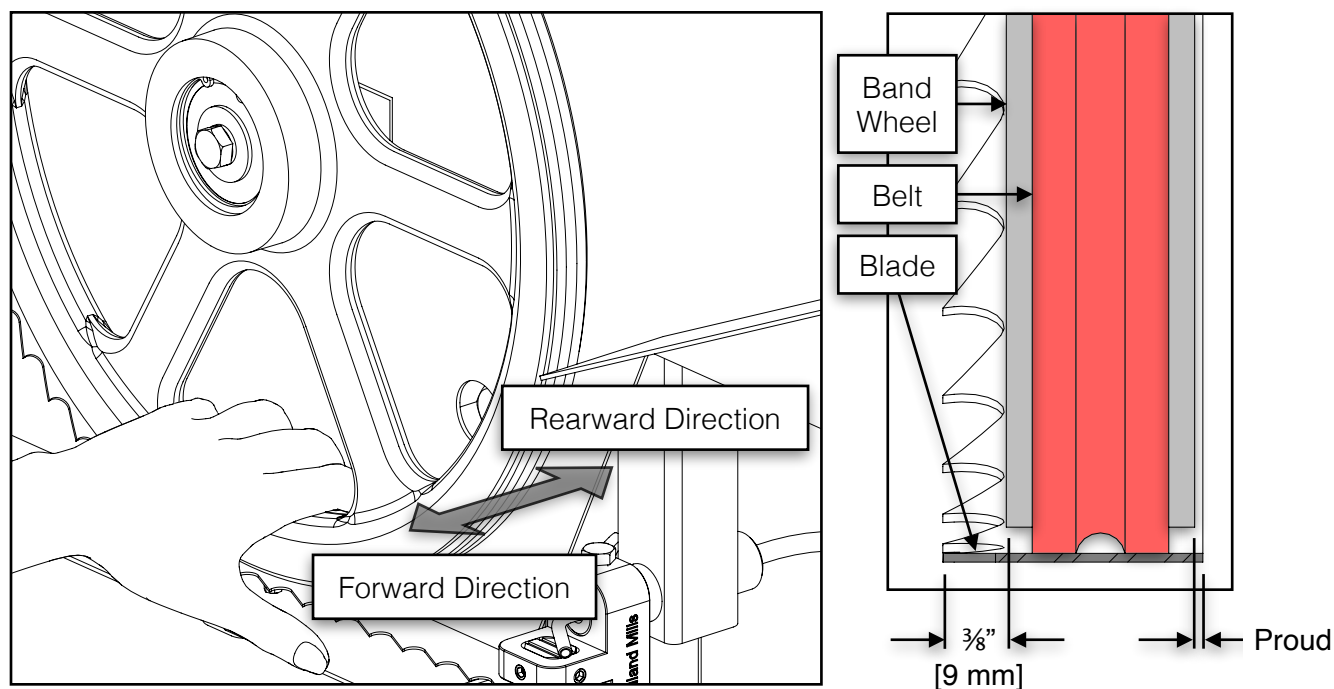


BLADE TRACKING

Never attempt to adjust the blade tracking with the engine running. As a safety precaution, remove the spark plug cap. Gloves and safety glasses should be worn when working with the blade as it is extremely sharp.

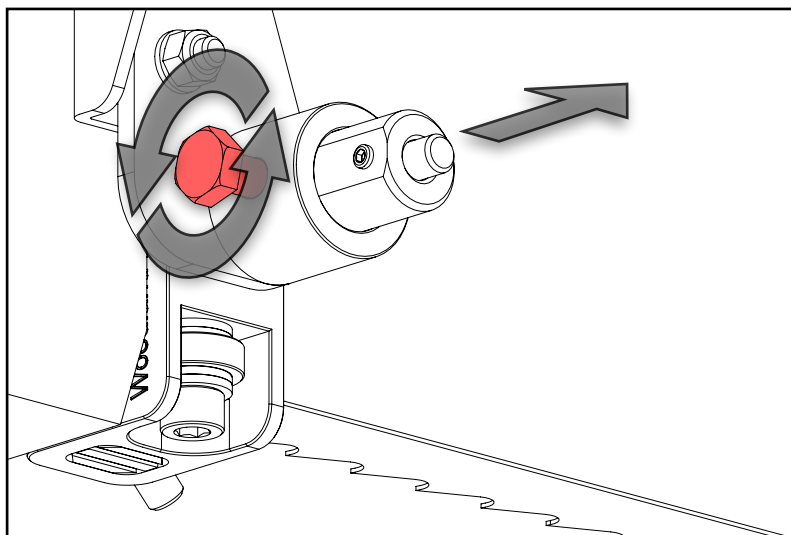


The blade should run with the same tooth-to-front band wheel face distance on both the drive and follower sides: $\sim\frac{3}{8}$ in [9 mm] ideally. The back of the blade will be just proud [$\sim.04$ in / 1 mm] of the rear face of the band wheel at this distance and can be a quicker check than using a tape measure or scale. If an adjustment on either side is required, the steps on the following pages detail the procedure.

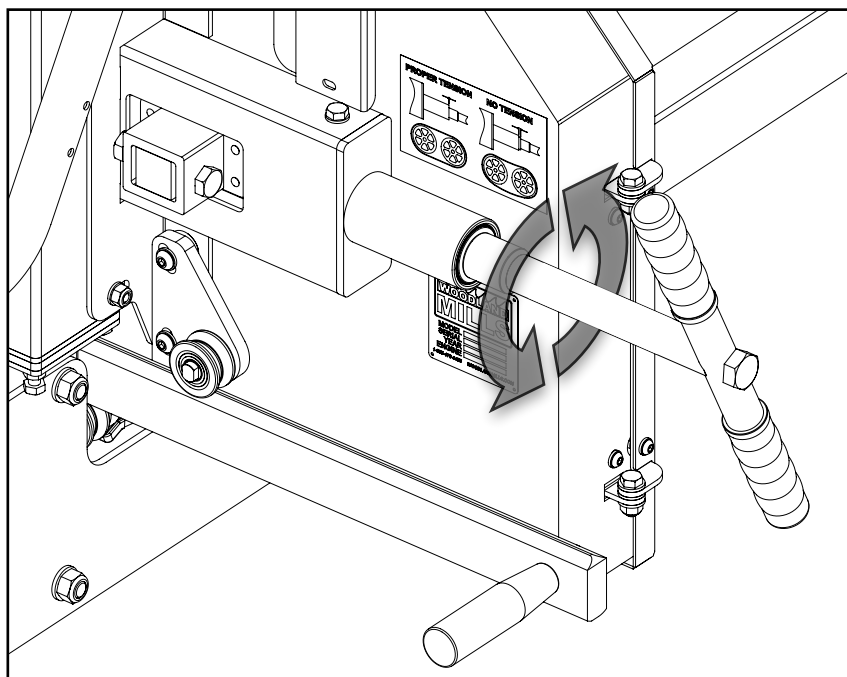


REDUCING THE BLADE TENSION

Loosen the blade guide holder assembly bolt using a socket/wrench. The shaft should now be free to slide rearward and out of the way. Perform this step on both blade guide assemblies. This ensures the guide bearings will not influence the tracking of the blade whilst being adjusted.



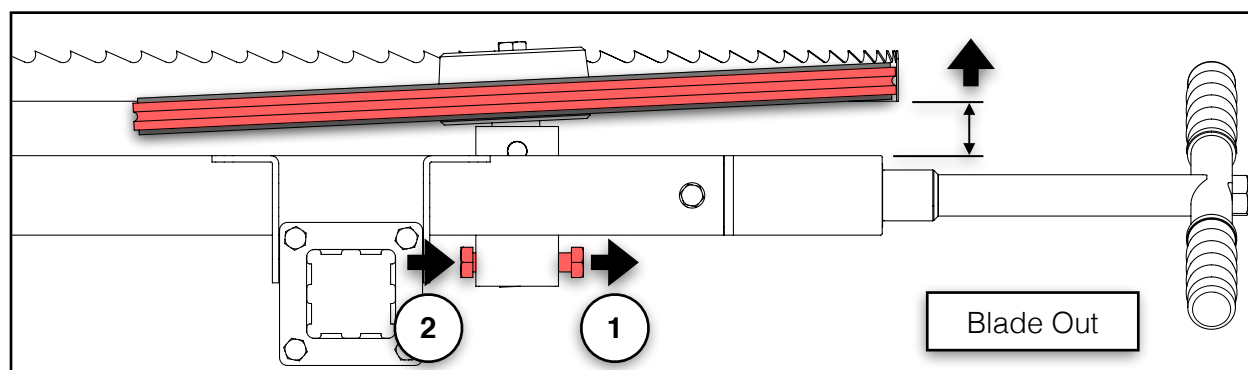
Take some tension off the blade by turning the tension handle in the counter-clockwise direction one full turn from its fully-tensioned position.



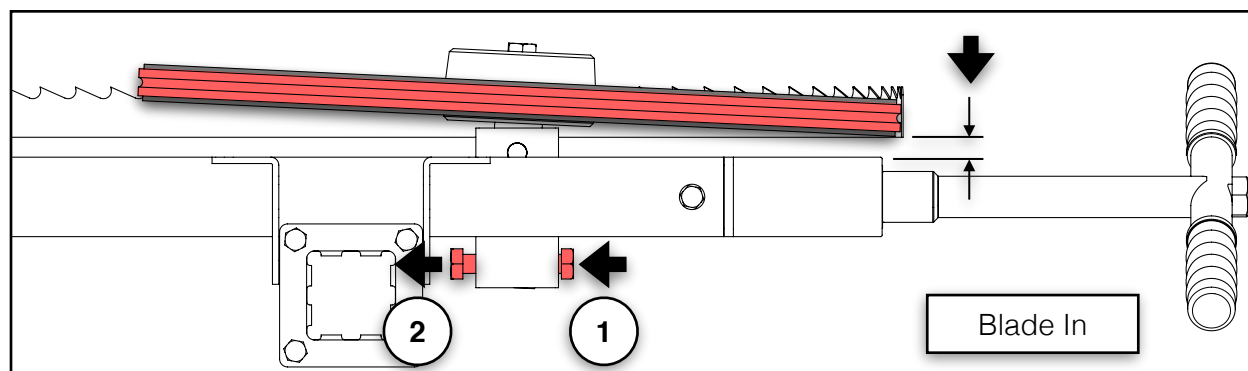
ADJUSTING THE FOLLOWER SIDE TRACKING

The follower side band wheel shaft is connected to the RapidChange™ blade system. Once the tracking is set, it maintains these settings even without a blade on the sawmill, allowing for quick and simple blade/belt changes. The two (2) bolts at the rear of the follower shaft are used to adjust the pitch angle of the band wheel to track the blade.

To move the blade **forward**—or **out**—on the band wheel, start with the right-hand bolt by turning it *counter-clockwise* (#1) so that it moves **out** from the sawmill. Turn it ½ turn then snug the left-hand bolt by turning it *clockwise* (#2) to fix the follower band wheel shaft in plate.



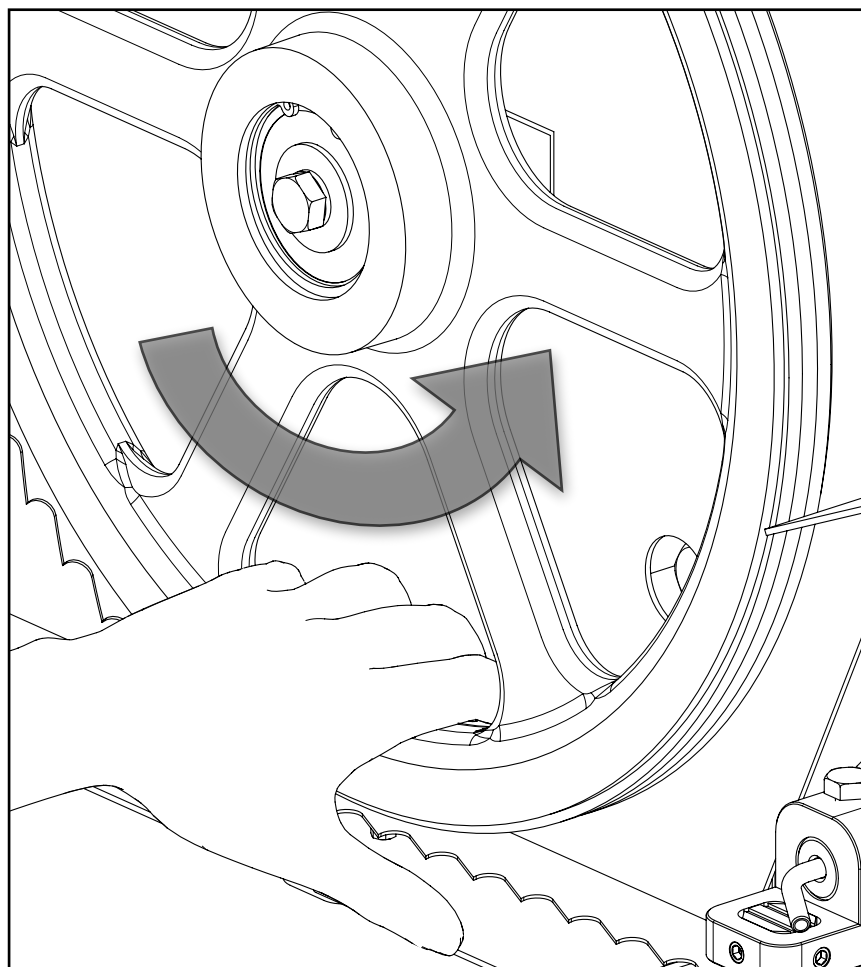
Alternatively, to move the blade **rearward**—or **in**—on the band wheel, start with the left-hand bolt by turning it *counter-clockwise* (#2) so that it moves **in** towards the sawmill. Turn it ½ turn then snug the right-hand bolt by turning it *clockwise* (#1) to fix the follower band wheel shaft in plate.



A simple phrase to help remember which way to adjust the tracking bolts is: **IN is IN, and OUT is OUT**. When the bolts move in towards the sawmill, the blade moves *in*. When the bolts move out away from the sawmill, the blade moves *out*.

****Note that the band wheel angle shown in these graphics has been exaggerated and some components have been removed for clarity.****

Turn the T-handle *clockwise* until proper blade tension is achieved. While wearing gloves, spin the band wheel by hand and observe how the blade tracking has changed. Measure the distance again and repeat the above step to further compensate if required. The ideal measurement is $\frac{3}{8}$ in [9 mm] or check that the back of the blade is just proud of the back of the band wheel.

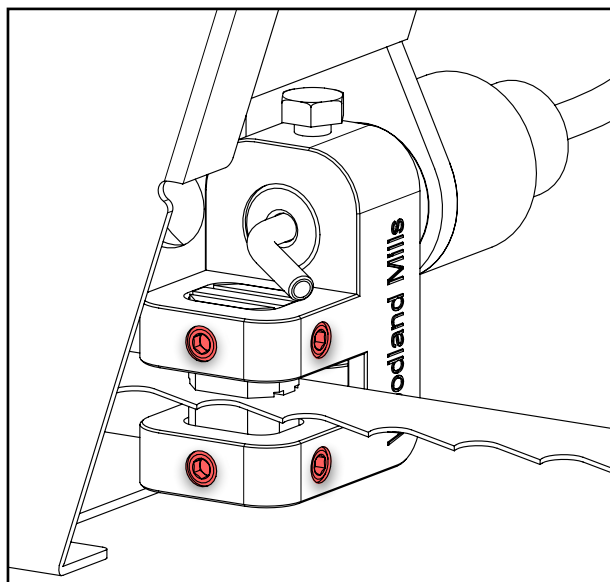


Finally, move the guide block holders forward to the blade. See section, **BLADE GUIDE ADJUSTMENT** on the next page for more information.

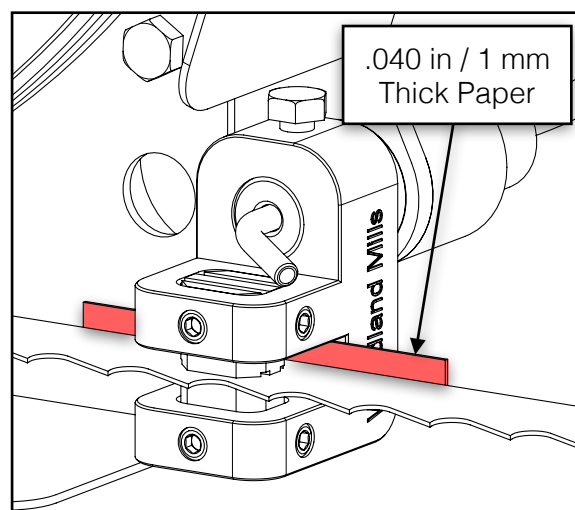
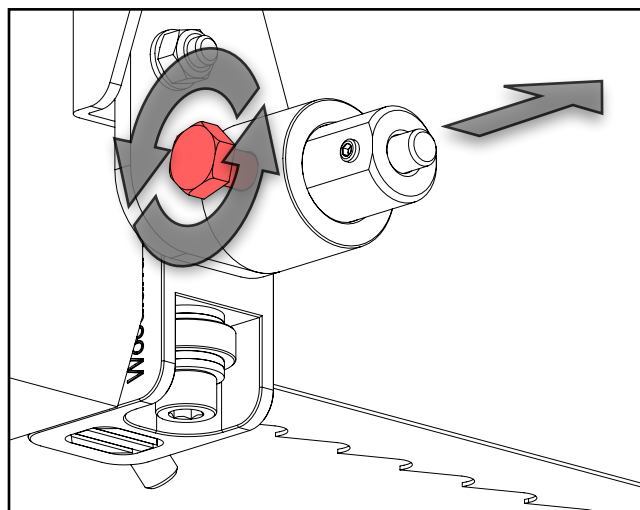
After the blade tracking is set properly, it should require no further adjusting, even after blade changes. The RapidChange™ blade system maintains the band wheel pitch angle whether or not a blade is on the sawmill.

BLADE GUIDE ADJUSTMENT

Never attempt to adjust the guide blocks or the guide bearing with the engine running. As a safety precaution, remove the spark plug cap. It is also advised to confirm that the blade is tracking properly before performing the steps below. Blade tracking is covered in the **BLADE TRACKING** section. Using a 4 mm hex key, loosen the blade guide blocks on both the left and right sides. They should be free to slide up and down.

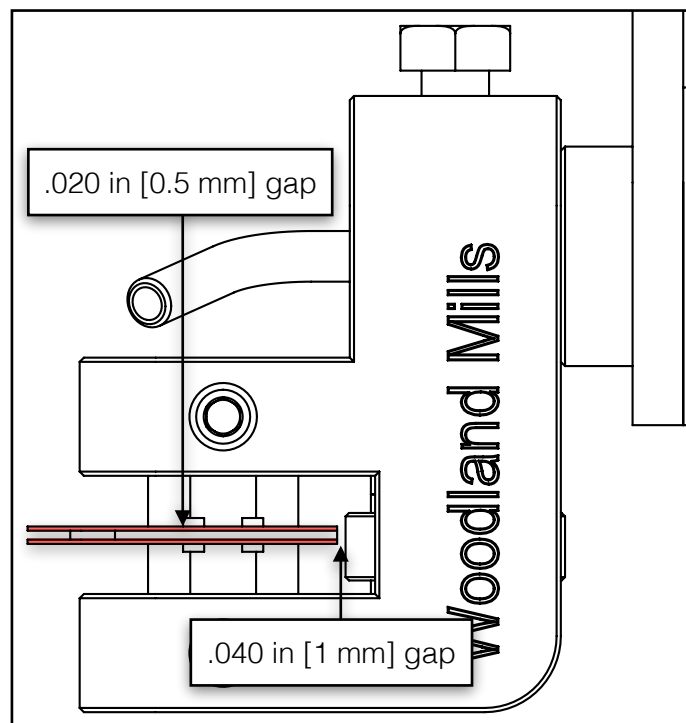
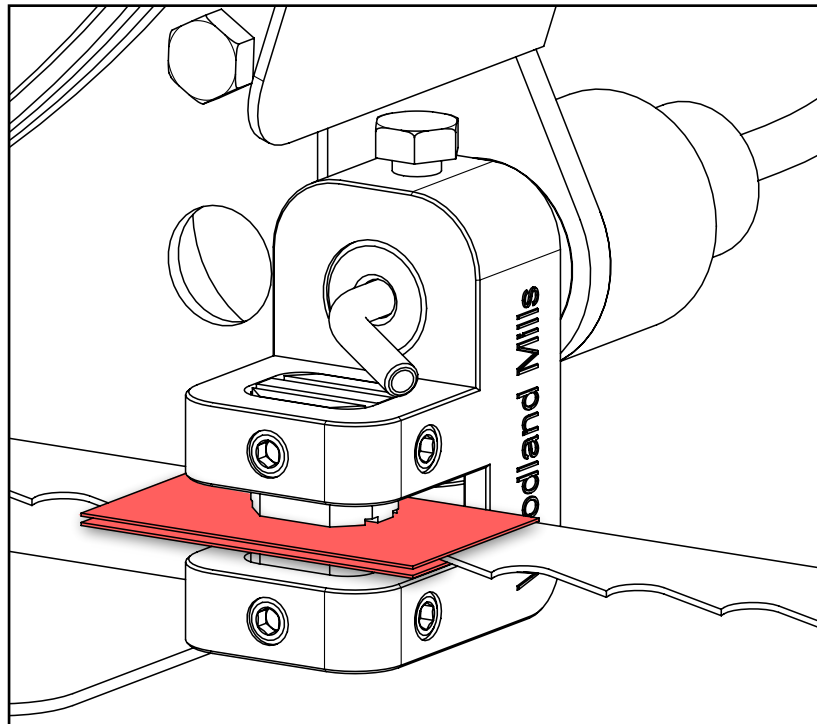


Loosen the blade guide assembly bolts on both guide block holders so that the round shaft is free to slide back and forth. Position it so that there is a thick paper-sized gap (.040 in or 1 mm) between the bearing and the back of blade. Re-tighten the bolt against the flat on the shaft to secure the assembly into position.





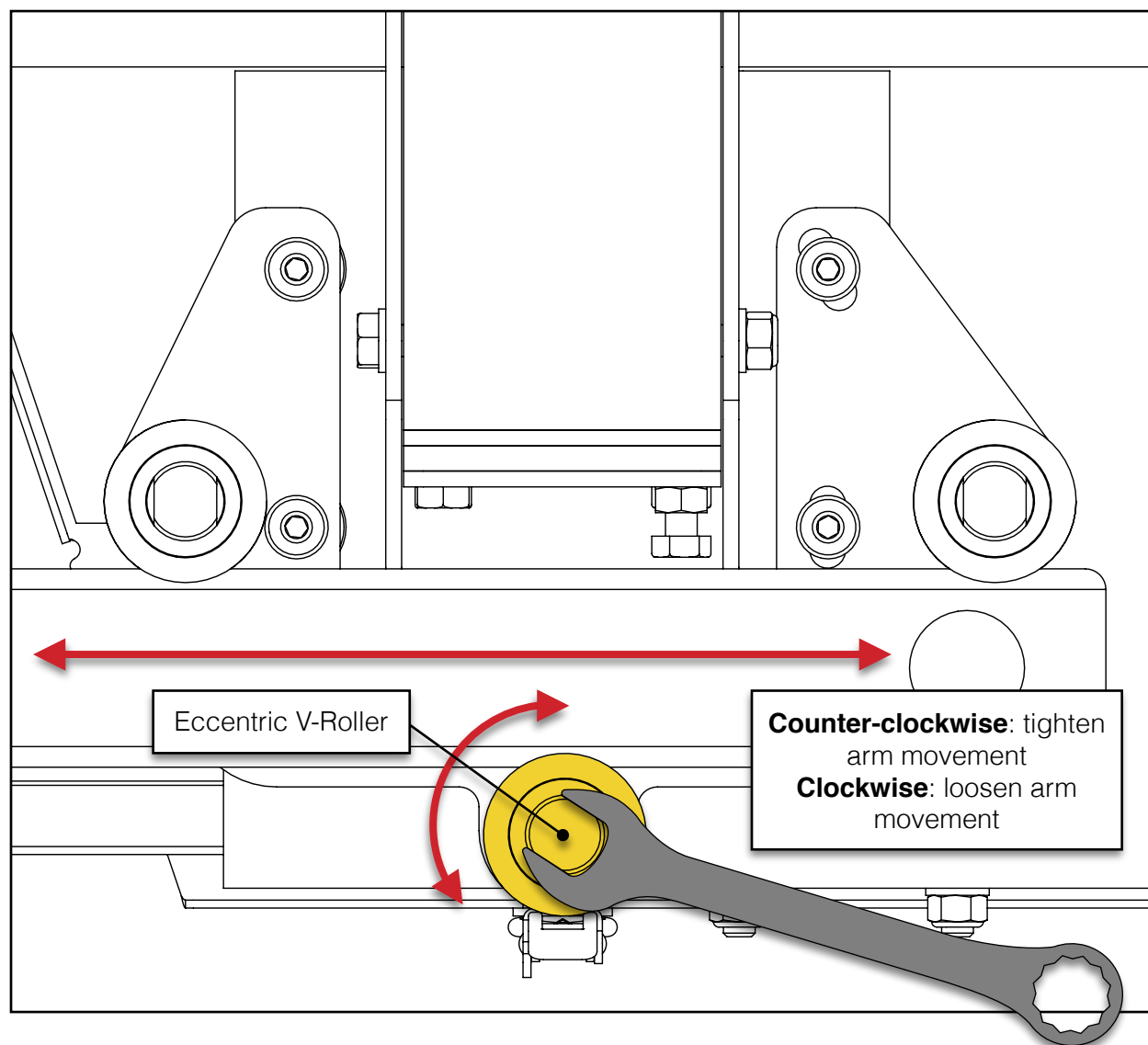
Using a feeler gauge or thick piece of paper (.020 in / 0.5 mm), place it between the blade and both guide blocks and then tighten the set screws.



ADJUSTABLE BLADE GUIDE CALIBRATION

ECCENTRIC V-ROLLER ADJUSTMENT

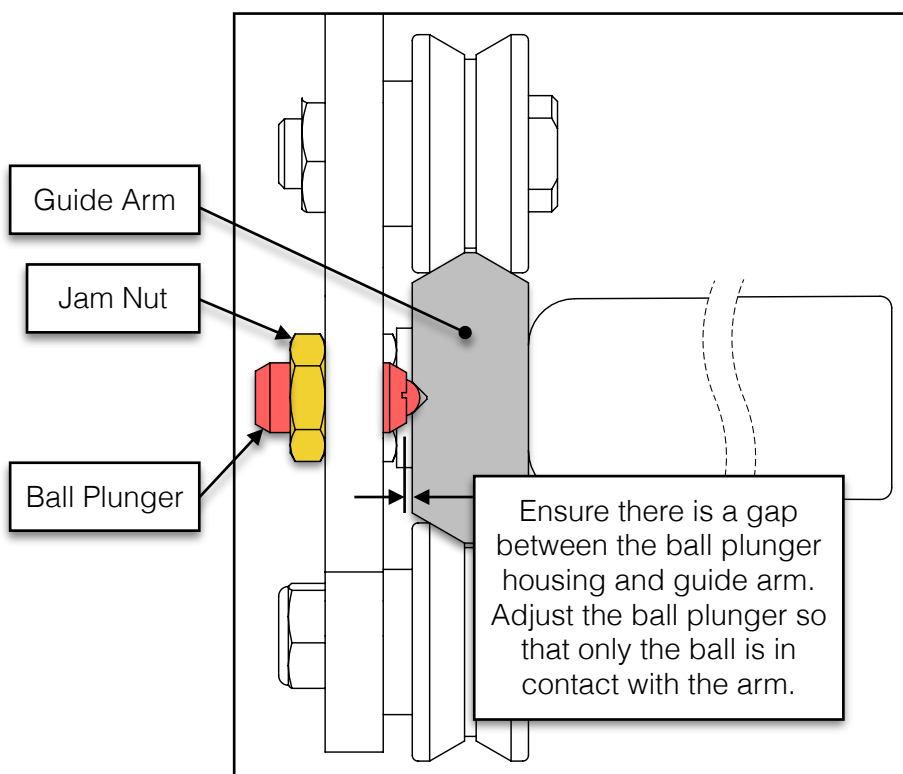
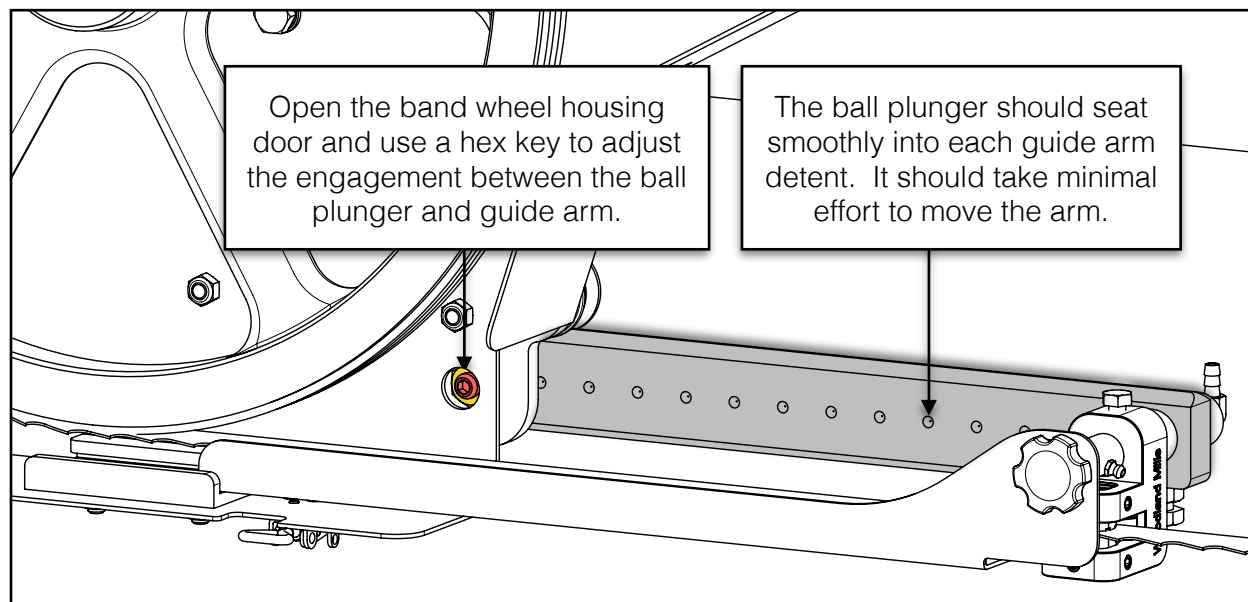
Slide the adjustable blade guide (ABG) arm in and out to check that it moves smoothly between the V-rollers. If it feels too loose or too tight, adjust the bottom eccentric roller using a wrench. Turning it counter-clockwise will tighten the arm movement; turning it clockwise will loosen the movement.



****Some components removed for clarity.****

BALL PLUNGER ADJUSTMENT

If extending and retracting the guide arm is still difficult after adjusting the eccentric V-roller, the ball plunger may require adjustment. Slide a wrench between the band wheel housing and ABG carriage and loosen the ball plunger jam nut.

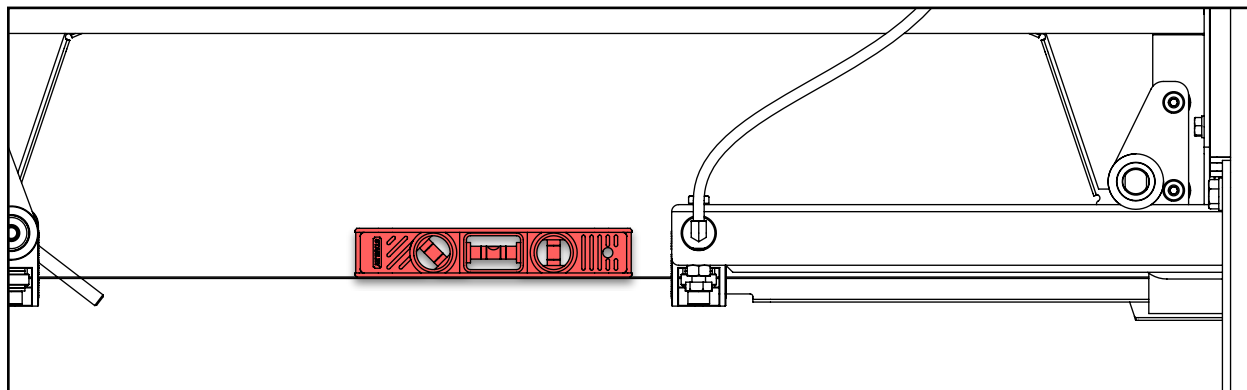


After adjusting the ball plunger, slide the guide arm in and out a few times to verify the movement feels smooth and that there is positive engagement between the ball plunger and guide arm detents. If not, adjust the ball plunger with the hex key again and repeat the process until satisfied.

Once the guide arm is moving well, tighten the ball plunger jam nut.

CARRIAGE & GUIDE ARM ADJUSTMENT

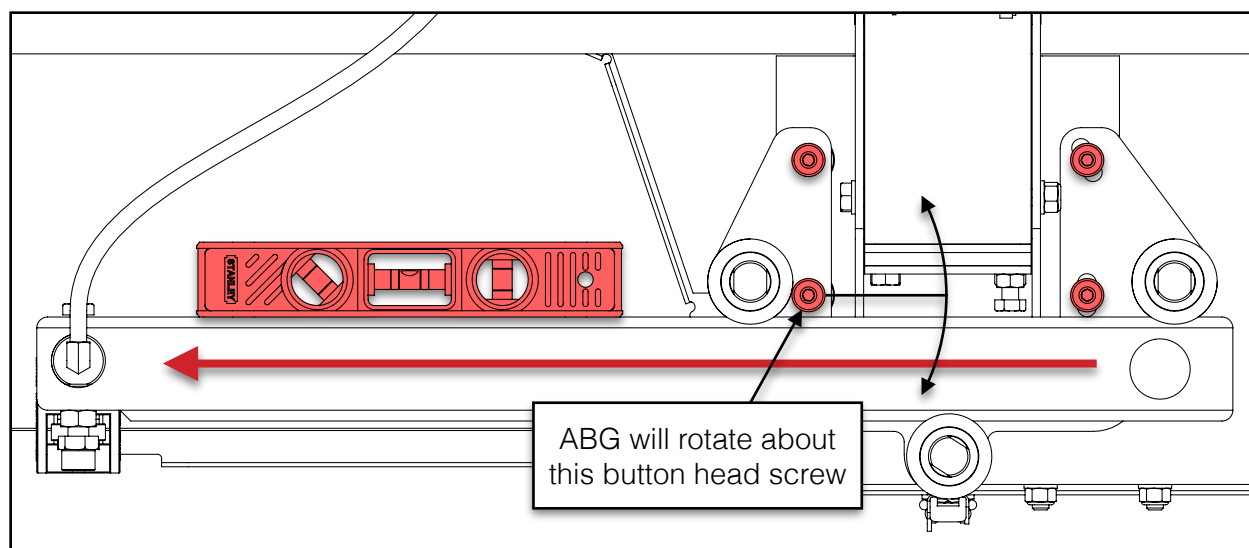
If the guide arm does not extend parallel with the blade, apply full tension to the blade and place a spirit level on the blade to check its level.



Loosen the four (4) button head screws just enough to the carriage can rotate. The carriage will rotate about the lower-left screw as shown below.

Fully extend the guide arm and set the level on top of the arm.

Rotate the ABG carriage and guide arm until it matches the blade level so both are parallel. Slide the guide arm in-and-out to verify that the gaps between the guide blocks and the blade are uniform. See previous section, **BLADE GUIDE ADJUSTMENT**, for more information.



Once the ABG is properly adjusted, fully tighten the four (4) button head screws on the carriage.

SAWMILL MAINTENANCE

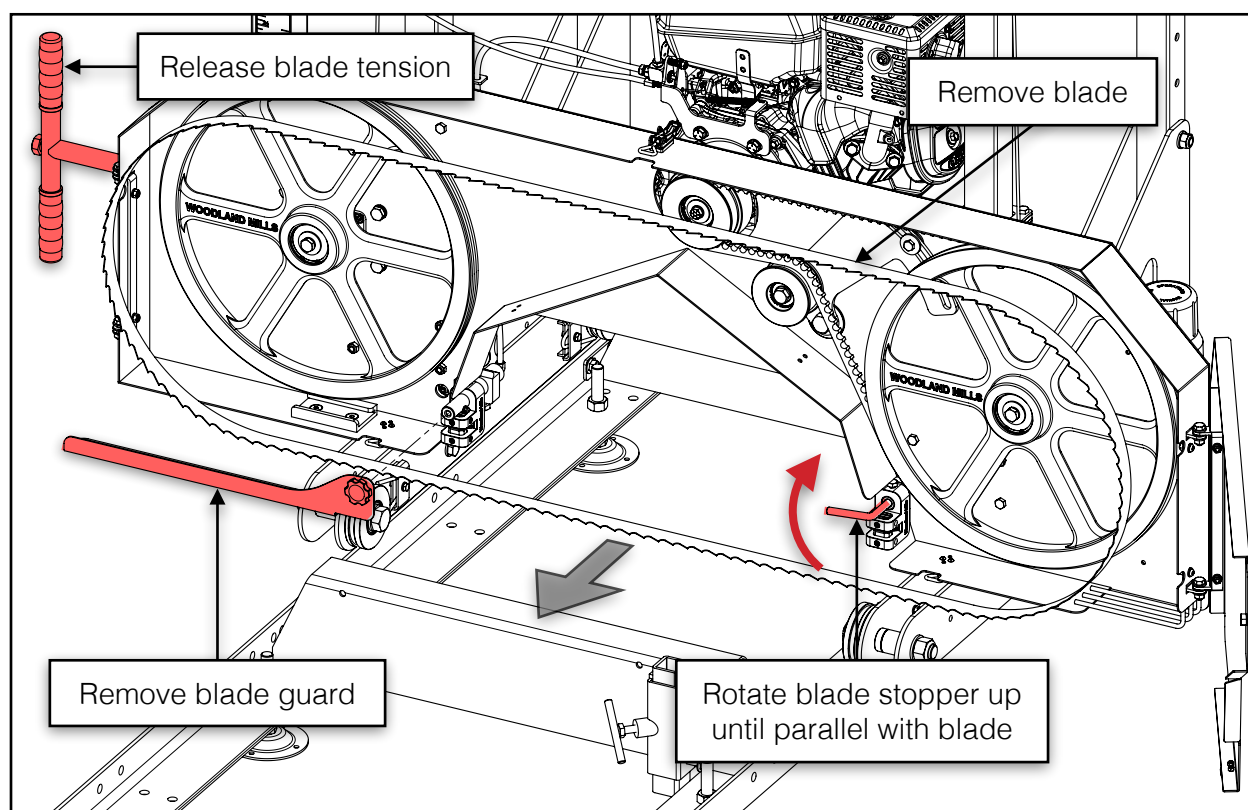
CHANGING THE BLADE

Never attempt to change the blade with the engine running. As a safety precaution, remove the spark plug cap. Gloves and safety glasses must be worn when changing the blade.

Follow these steps to remove an old/worn blade from the sawmill:

1. Turn the belt tension handle counter-clockwise to release the tension from the blade until it is loose.
2. Open the band wheel housing doors.
3. Remove the yellow blade guard.
4. Rotate the blade stopper up on the drive-side guide block holder.

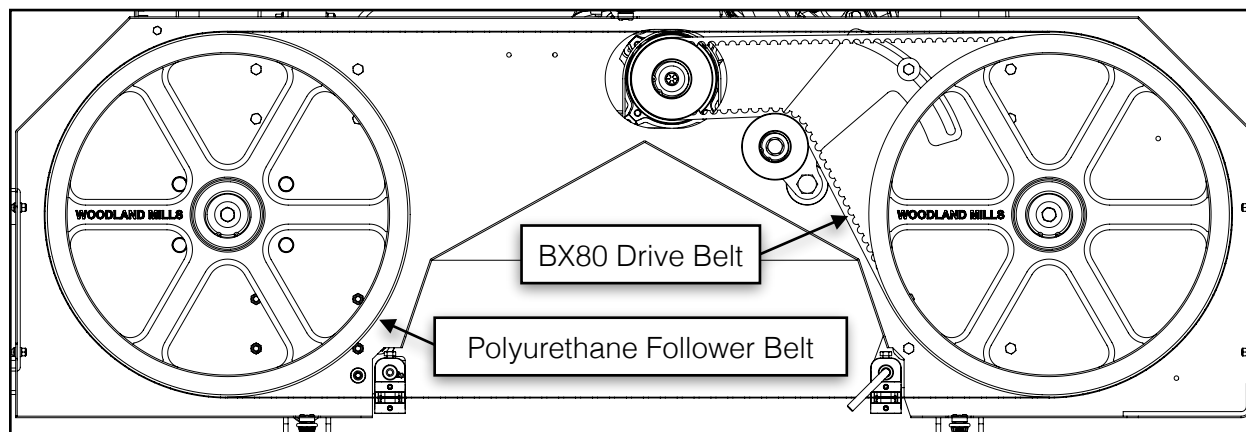
The blade is now sufficiently loose and can be easily pulled straight out the front.



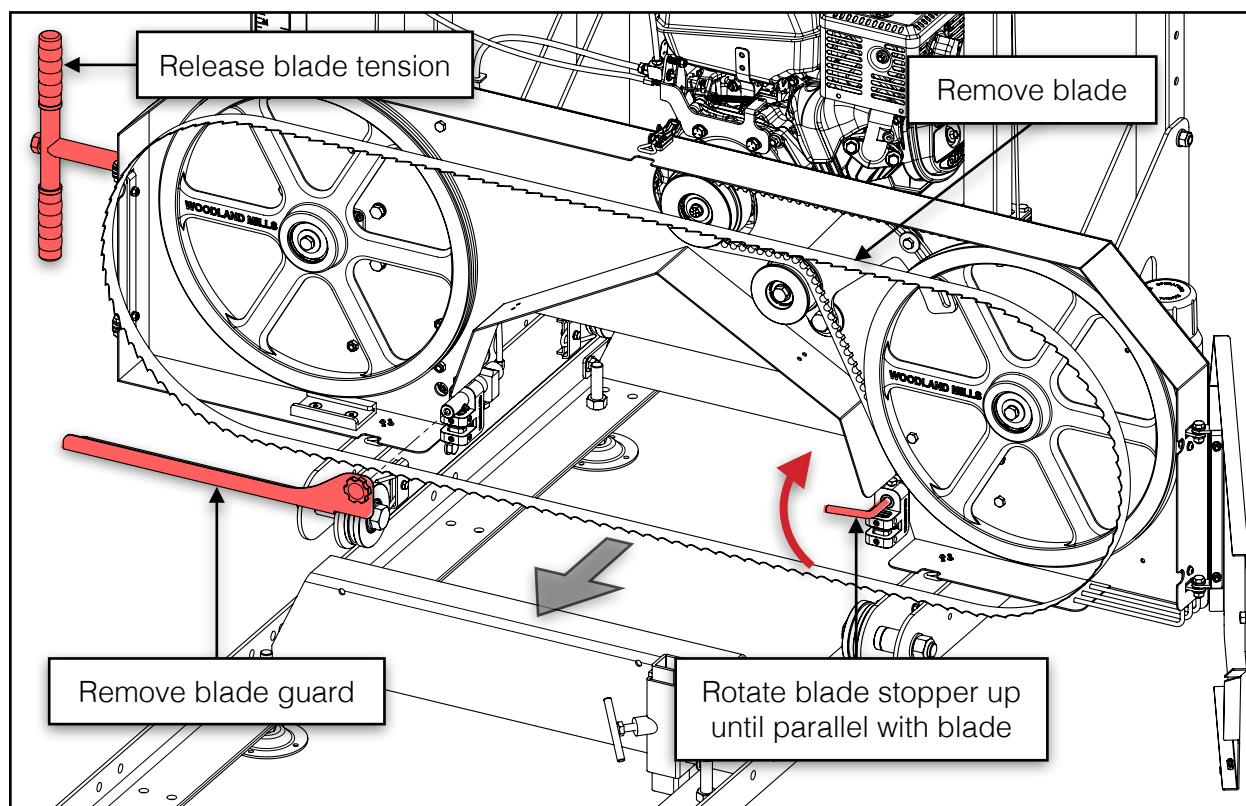
Install a new blade following the reverse order of steps and then set the proper blade tension. The tracking should not have to be adjusted after changing blades. See section, **ADJUSTING THE FOLLOWER SIDE TRACKING**, for more information.

REPLACING BELTS

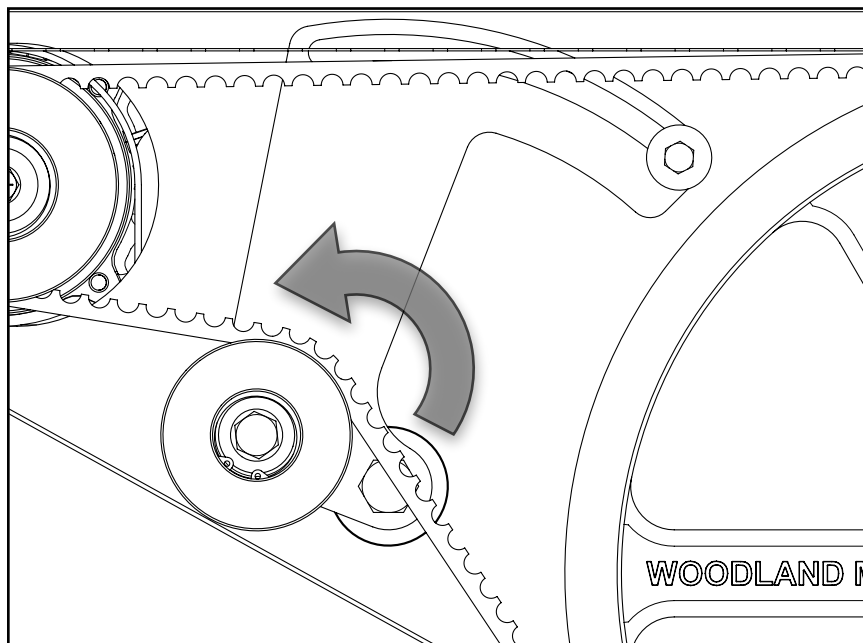
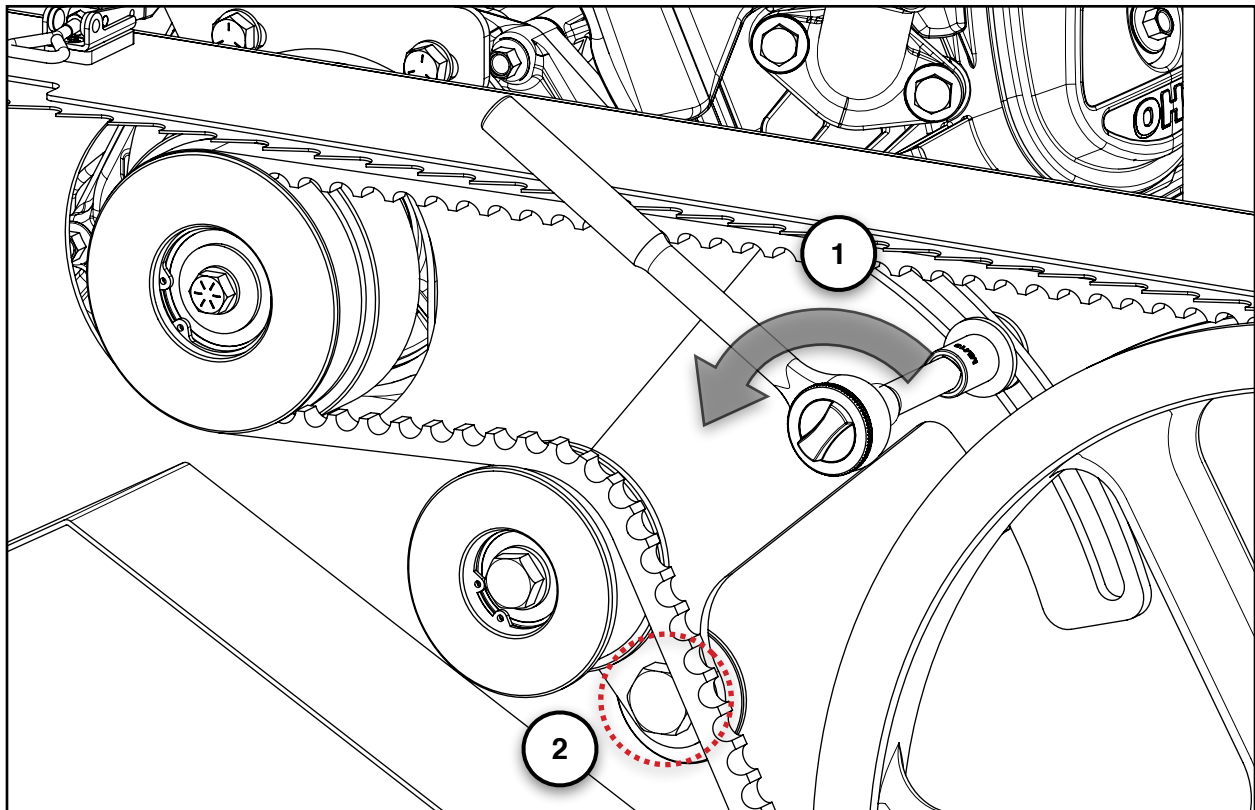
Never attempt to replace the belts with the engine running. As a safety precaution, remove the spark plug cap. Gloves and safety glasses must be worn when replacing the belts. There are two V-belts on the sawmill: a BX80 cogged belt on the drive side and a Woodland Mills polyurethane belt on the follower side.



First, remove the blade following the procedure outlined in section, **CHANGING THE BLADE**.



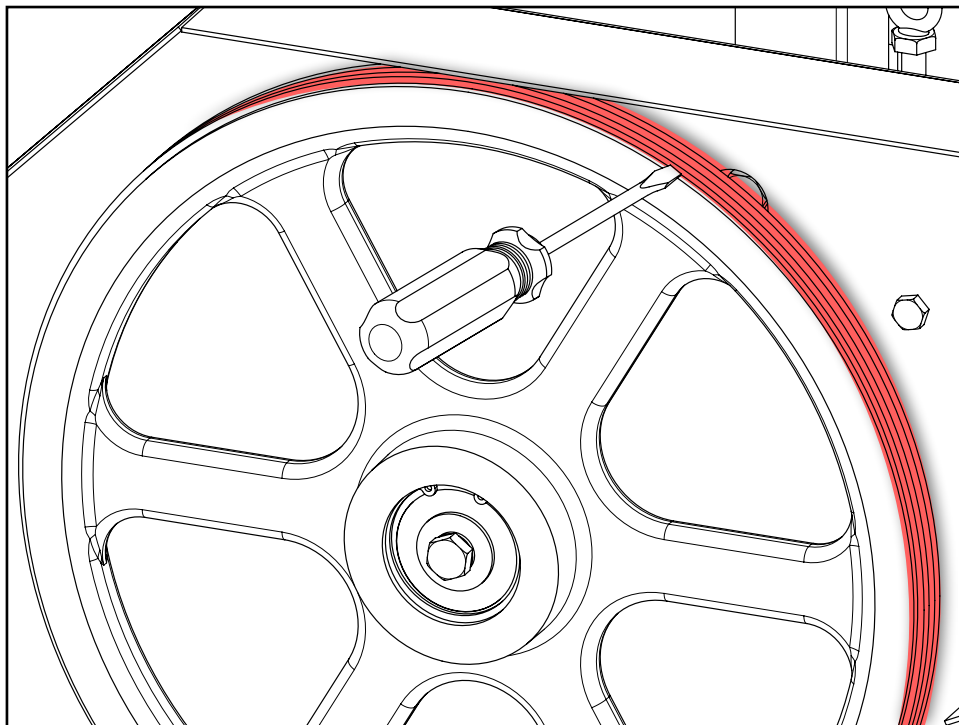
Next, remove the tension from the drive belt by loosening the M8 hex bolt (#1) and the M16 hex bolt (#2) by approximately one (1) turn—do not remove the bolts.



Once both bolts are loose, the belt tensioner will rotate counter-clockwise until the idler pulley comes to rest on the band wheel housing. The belt can now easily be removed by hand and a new belt installed.

Tension the belt following the same procedure as outlined in section, **DRIVE BELT TENSION**.

The follower belt is changed by prying it off and installing a new one with the aid of slotted screw drivers.



The blade can now be re-installed, band wheel housing doors closed, and proper blade tension set.

****Note that blade tracking should not have changed after replacing the belts. The RapidChange™ blade system maintains the band wheel pitch angle while the blade is removed. Refer to section, BLADE TRACKING, for more information.****



TROUBLESHOOTING

Problem/Issue	Possible Causes	Resolution Options
Producing wavy cuts	<ol style="list-style-type: none"> 1. Inadequate blade tension. 2. Improper blade guide set up. 3. Improper blade tracking. 4. Sap build up on blade. 5. Dull blade. 6. Pushing mill too quickly. 	<ol style="list-style-type: none"> 1. Tighten blade. Refer to page 61. 2. Gap between guide blocks and blade are incorrect. Refer to page 66. 3. Adjust blade tracking. Refer to page 62. 4. Install new blade. Refer to page 71. Always use blade lubricant. 5. Install new blade. Refer to page 71. 6. Slow feed rate down and push head slower through log.
Last board is tapered or narrow in middle	<ol style="list-style-type: none"> 1. Tracks are not level. 	<ol style="list-style-type: none"> 1. Tracks need to be checked with level and adjusted to be square. They also need to be set up on firm, sturdy base so deflection does not occur from logs or sawmill head.
Blade dulls quickly	<ol style="list-style-type: none"> 1. Logs are not clean. 2. Foreign objects in log. 	<ol style="list-style-type: none"> 1. Logs may contain dirt/sand causing blades to wear prematurely. 2. Tree may contain nails, staples, old fencing etc.
Blade comes off band wheels	<ol style="list-style-type: none"> 1. Inadequate blade tension. 2. Improper blade guide set up. 3. Improper blade tracking. 4. Belts are worn. 5. Dull blade. 6. Pushing mill too quickly. 	<ol style="list-style-type: none"> 1. Tighten blade. Refer to page 61. 2. Gap between guide blocks and blade are incorrect. Refer to page 66. 3. Adjust blade tracking. Refer to page 62. 4. Install new belts. Refer to page 72. 5. Install new blade. Refer to page 71. 6. Slow feed rate down and push head slower through log.
Blades are breaking	<ol style="list-style-type: none"> 1. Too many blade sharpenings. 2. Inadequate blade tension. 3. Improper blade guide set up. 4. Improper blade tracking. 5. Pushing mill too quickly. 	<ol style="list-style-type: none"> 1. Replace blade. Refer to page 71. 2. Binding between guide blocks when blade is too loose. Tighten blade. Refer to page 61. 3. Gap between guide blocks and blade are incorrect. Refer to page 66. 4. Adjust blade tracking. Refer to page 62. 5. Slow feed rate down and push head slower through log.
Blade is slowing down or stopping when milling	<ol style="list-style-type: none"> 1. Inadequate blade tension. 2. Improper drive belt tension. 3. Pushing mill too quickly. 	<ol style="list-style-type: none"> 1. Tighten blade. Refer to page 61. 2. Belts are worn or too loose. Replace. Refer to page 72. 3. Slow feed rate down and push head slower through log.
Mill is not cutting or cutting very slowly	<ol style="list-style-type: none"> 1. Dull blade. 2. Blade is on backwards. 	<ol style="list-style-type: none"> 1. Install new blade. Refer to page 71. 2. Remove blade and flip it inside out. The teeth should be facing in the direction of the log supports.
Mill is vibrating excessively	<ol style="list-style-type: none"> 1. Log is not clamped securely. 2. Belts are deformed. 3. Band wheel bearing issue. 4. Pushing mill too quickly. 5. Loose bolts. 6. Post sleeve bushings worn. 	<ol style="list-style-type: none"> 1. Ensure log is clamped firmly resting on log bunks and against log supports. 2. Belts may have flats in them from leaving blade tension tight when not in use. Replace them. Refer to page 72. 3. Inspect and replace the band wheel bearings if worn. 4. Slow feed rate down when milling. 5. Check all bolts to ensure they are tight. 6. Adjust the post sleeve bushings or replace them. Refer to page 54.



Problem/Issue	Possible Causes	Resolution Options
Adjustable blade guide arm is difficult to move or too loose	<ol style="list-style-type: none"> 1. Eccentric V-roller not adjusted properly. 2. Ball plunger over-engaged or not enough engagement. 3. Guide arm is not parallel with blade. 	<ol style="list-style-type: none"> 1. Adjust the bottom eccentric V-roller clockwise to loosen the guide arm or counter-clockwise to tighten the guide arm movement. Refer to page 68. 2. Adjust the ball plunger. Refer to page 69. 3. Rotate the adjustable blade guide carriage until parallel with the blade. Refer to page 70.
Sawhead difficult to raise or lower	<ol style="list-style-type: none"> 1. Sawhead not level. 2. Front posts not lubricated. 	<ol style="list-style-type: none"> 1. Level the sawhead by adjusting the lift cable ends under the lift mechanism. Refer to page 53. 2. Spray front posts with water resistant silicone lubricant.



PARTS LIST

Item	Qty	Part No.	Description
1	4	0001073	TRACK RAIL
2	2	0002885	LOG BUNK, END
3	2	0002887	LOG BUNK, MID
4	1	0002886	LOG BUNK, CENTER
5	3	0002888	LOG BUNK CAP
6	2	0001072	REINFORCEMENT PLATE
7	4	0001055	CARRIAGE STOP
8	12	0001070	LEVELLING FOOT
9	2	0002904	LOG CLAMP SHAFT AND BRACKET WELDMENT
10	2	0001069	LOG CLAMP SHAFT BRACKET
11	2	0001061	LOG CLAMP RECEIVER
12	2	0001211	LOG CLAMP
13	2	0001056	LOG SUPPORT, LONG
14	2	0001465	LOG SUPPORT, SHORT
15	5	0001059	T-BOLT, M10 X 1.5, 40 mm LG
16	1	0002908	BACK BEAM
17	2	0002672	POST SLEEVE
18	8	0004234	U-SHAPED POST SLEEVE BUSHING
19	4	0001410	POST SLEEVE LOCKING PLATE
20	1	0002052	RAPIDCHANGE MOUNTING PLATE
21	1	0002053	RAPIDCHANGE TENSION BLOCK
22	1	0002054	RAPIDCHANGE SHAFT SLEEVE
23	1	0002241	RAPIDCHANGE TENSION BAR, TORQUE GAUGE, TR18X3 THD
24	1	0002056	RAPIDCHANGE BACK PLATE
25	2	0002350	HEX BOLT, M12 X 1.25, 20 mm LG, 2.5 mm CHAMFER
26	1	0003116	SPRING WASHER HOLDER, RAPIDCHANGE
27	6	0002637	SPRING WASHER HOLDER SPACER, RAPIDCHANGE
28	1	0001029	TENSION HANDLE
29	2	0001030	HANDLE GRIP, GROOVED, 26 mm ID, 108 mm LG
30	6	0002023	SPACER, ADJUSTABLE BLADE GUIDE
31	1	0003529	ADJUSTABLE BLADE GUIDE ROLLER CARRIAGE, 41 mm X 120° ROLLERS
32	2	0003525	TRACK ROLLER SHAFT W/ HEAD, CONCENTRIC, M12 X 1.75 THD
33	1	0003527	TRACK ROLLER SHAFT W/ HEAD, ECCENTRIC, M10 X 1.5 THD
34	3	0003528	TRACK ROLLER SHAFT SPACER, 15 ID X 23 OD X 5 mm THK
35	3	0002657	TRACK ROLLER, V-GROOVE, 120°, 41 mm DIA X 20 mm WD
36	2	0002661	BALL-NOSE SPRING PLUNGER, HEX DRIVE, NON-LOCKING, M12 X 1.75, 26 mm LG
37	1	0002660	BLADE GUIDE ADJUSTMENT ARM, 120° TRACK ROLLERS
38	2	0004199	PLASTIC HANDLE, 35 mm DIA, M16 THRU
39	1	0002666	BLADE GUARD GUIDE
40	1	0002665	BLADE GUARD, ADJUSTABLE BLADE GUIDE
41	1	0002667	KNOB, MULTI-LOBE, 38 mm OD, M8 X 1.25, 12 mm LG
42	1	0002022	BLADE GUIDE HOLDER BRACKET, LEFT
43	2	0001093	GUIDE BLOCK HOLDER
44	1	0001096	GUIDE BLOCK HOLDER SHAFT A
45	1	0002663	GUIDE BLOCK HOLDER SHAFT B, GUARD MOUNT



Item	Qty	Part No.	Description
46	4	0001090	GUIDE BLOCK
47	1	0002664	GREASE FITTING, STRAIGHT, 14 mm LG, M6 TPR THD, MODIFIED
48	1	0002759	SAW BLADE STOPPER
49	1	0002892	BAND WHEEL HOUSING
50	1	0002893	BAND WHEEL DOOR, LEFT
51	1	0002895	BAND WHEEL DOOR, RIGHT
52	2	0001954	BAND WHEEL HOUSING INNER HINGE BRACKET
53	2	0001955	BAND WHEEL HOUSING OUTER HINGE BRACKET
54	3	0003161	LATCH SPACER
55	3	0002248	ADJUSTABLE DRAW LATCH
56	1	0001659	KNOB, MULTI-LOBE, 48 mm OD, M8 X 1.25, 17 mm LG
57	1	0001104	DRIVE SHAFT
58	1	0001993	FOLLOWER SHAFT, RAPIDCHANGE
59	2	0001105	BAND WHEEL, 19 in
60	1	0001107	V-BELT, FOLLOWER, B1448Li, 19 in DIA
61	1	0002017	BELT TENSIONER SHAFT SPACER
62	1	0002643	BELT TENSIONER ADAPTER PLATE W/ LEVELLING WASHER HOUSING
63	1	0002644	BELT TENSIONER IDLER SHAFT, LEVELLING WASHERS
64	1	0002645	BELT TENSIONER PULLEY, SINGLE BEARING, SPHERICAL ALIGNMENT
65	1	0002646	PARALLEL KEY, 8 X 8 mm, 37 mm LG
66	1	0002019	NUT LOCKING PLATE
67	1	0001655	MANUAL TUBE
68	1	0001217	CLUTCH SPACER
69	1	0001137	PARALLEL KEY, 1/4 X 1/4 X 1 in LG
70	1	0003930	CLUTCH ASSEMBLY, HEAVY-DUTY, 1 in [25.4 mm] BORE, 108 mm DIA PULLEY
71	1	0001814	CLUTCH HOUSING GUARD W/ SIDE FLANGES
72	1	0002079	OIL DRAIN EXTENSION, 56 mm LG, M12 X 1.5 THD
73	1	0001136	EXHAUST REDIRECT
74	1	0001986	VALVE MOUNT BRACKET, 14 hp
75	1	0001987	VALVE ACTUATION TAB, 14 hp
76	1	0001985	CABLE THIMBLE, 10 mm HEX, M6 X 1 THD
77	1	0001957	REMOVABLE BATTERY SUPPORT
78	1	0001650	BATTERY CABLE, NEGATIVE (BLACK), 6 AWG, 12 in LG
79	1	0001651	BATTERY CABLE, POSITIVE (RED), 6 AWG, 12 in LG
80	1	0002929	SAW BLADE, 7/8 in PITCH, 181 TEETH, 1-1/4 WD X 161 LG X .042 in THK
81	2	0001416	FRONT POST
82	2	0002668	BACK POST, ADJUSTABLE PUSH HANDLE
83	4	0001417	CARRIAGE SIDE PLATE
84	4	0001966	SPACER, 32 mm OD, 20.5 mm ID, 40 mm LG
85	4	0001967	SPACER, 32 mm OD, 20.5 mm ID, 10 mm LG
86	2	0001102	SPACER, 33.5 OD X 13 ID X 50 mm LG
87	4	0001037	CARRIAGE WHEEL
88	4	0001019	WHEEL SWEEP BRACKET
89	4	0001017	WHEEL SWEEP HOLDER
90	4	0001018	WHEEL SWEEPER
91	1	0002889	CROSS BEAM
92	2	0001661	PLASTIC END CAP, RECT, 100 X 50 mm
93	1	0002096	LOG SCALE MOUNTING BRACKET



Item	Qty	Part No.	Description
94	1	0002097	LOG SCALE GUIDE
95	1	0002098	LOG SCALE GUIDE LOCKING PLATE
96	1	0002099	LOG SCALE INDICATOR ARROW
97	1	0002764	KNOB, MULTI-LOBE, 48 mm OD, M8 X 1.25, 25 mm LG
98	1	0002040	LOG SCALE BRACKET
99	1	0001038	LOG SCALE BRACKET SPACER PLATE
100	1	0003233	MAGNETIC SCALE, 27 in, YELLOW
101	1	0003235	MAGNETIC SCALE, 27 in, WHITE
102	1	0002035	LUBRICANT TANK, 13 L [3.4 gal], MANOMETER/BADGE MOUNT
103	1	0001132	TANK CAP
104	1	0002107	HM130 NAMEPLATE
105	1	0002038	NAMEPLATE BACKING
106	1	0002809	MANOMETER PIPE, LUBRICATION TANK
107	1	0002691	LUBRICATION TUBING, TANK-TO-ELBOW, 2-3/16 in [55 mm] LG
108	1	0002744	LUBRICANT TUBING, TANK-TO-VALVE, 8 mm OD, 33 in [838 mm] LG
109	1	0002745	LUBRICANT TUBING, VALVE-TO-BLADE, 8 mm OD, 41 in [1042 mm] LG
110	1	0002890	DASHBOARD
111	1	0002671	HOURLY METER
112	1	0002919	LIFT MECHANISM HOUSING
113	1	0001048	BRONZE NUT, LH TR20X4 THD
114	1	0001424	LEAD SCREW, LH TR20X4 X 430 mm LG THD
115	1	0001422	LIFT MECHANISM EXTENSION ARM
116	3	0002813	SPACER, 12 ID X 18 OD X 5 mm LG
117	4	0002812	SPACER, 12 ID X 18 OD X 12 mm LG
118	7	0001099	CABLE PULLEY
119	2	0001100	CABLE HOOK
120	1	0002520	CRANK HANDLE INDEXING PLATE
121	1	0002632	CRANK HANDLE ARM LUG
122	2	0002675	SPACER, 12.5 ID X 30 OD X 3.3 mm LG
123	1	0002633	CRANK ARM
124	1	0004214	SPACER, 16.5 ID X 25 OD X 2 mm LG, NYLON
125	2	0003251	SPACER, 12 ID X 18 OD X 20.5 mm LG
126	1	0002741	WIRE ROPE LIFT CABLE, RIGHT, 4 mm DIA, 101.2 in [2570 mm] LG
127	1	0002742	WIRE ROPE LIFT CABLE, LEFT, 4 mm DIA, 137.2 in [3485 mm] LG
128	1	0002068	PUSH HANDLE, ADJUSTABLE
129	1	0001662	PLASTIC END CAP, CIRCULAR, 32 mm OD
130	1	0001021	THROTTLE HANDLE
131	1	0001024	THROTTLE CABLE BRACKET
132	1	0001112	THROTTLE CABLE BARREL END CLAMP
133	1	0002743	THROTTLE CABLE, 74 in [1880 mm] LG CABLE, 65 in [1650 mm] LG SHEATH
134	1	0001829	BLADE TRACKING WARNING LABEL
135	1	0001839	SERIAL NUMBER LABEL
136	2	0002766	CAUTION LABEL, DO NOT OPERATE WITHOUT GUARDS
137	1	0002769	DANGER/WARNING COLLAGE LABEL
138	1	0002770	DANGER LABEL, MOVING PARTS CUT/CRUSH
139	1	0002771	DANGER LABEL, BANDSAW BLADE WILL CUT
140	1	0003245	BLADE TENSION LABEL
141	1	730-34	BATTERY BOX, U1 BATTERY SIZE



Item	Qty	Part No.	Description
142	1	BX80	V-BELT, COGGED, BX80
143	1	CH440-3275	ENGINE, KOHLER COMMAND PRO HORIZONTAL, 14 hp, ELECTRIC START
144	4	5204-2RS	BALL BEARING, ANG-CONT, SEALED, 5204-2RS, 20 mm BORE, 47 mm OD, 20.6 mm WIDE
145	2	6000-2RS	BALL BEARING, SEALED, 6000-2RS, 10 mm BORE, 26 mm OD, 8 mm WIDE
146	7	6001-2RS	BALL BEARING, SEALED, 6001-2RS, 12 mm BORE, 28 mm OD, 8 mm WIDE
147	1	6203-2RS	BALL BEARING, SEALED, 6203-2RS, 17 mm BORE, 40 mm OD, 12 mm WIDE
148	4	6305-2RS	BALL BEARING, SEALED, 6305-2RS, 25 mm BORE, 62 mm OD, 17 mm WIDE
149	2	51102	THRUST BEARING, SINGLE DIR, 51102, 15-16 mm BORE, 28 mm OD, 9 mm WIDE
150	1	51204	THRUST BEARING, SINGLE DIR, 51204, 20 mm BORE, 41.5 mm OD, 15 mm WIDE W/ HSG
151	1	0003452	STEM VALVE, 1/8 in NPT FEMALE, 1/8 in STEM TRAVEL
152	1	SLS-03-08	FLOW CONTROL VALVE, RA, 3/8 NPT, 8 mm QUICK-CONNECT TUBE
153	3	HDW	FITTING, STRAIGHT, BARBED, 1/8 in NPT, 1/4 in HOSE
154	1	HDW	FITTING, ELBOW, 90°, BARBED, 1/8 in NPT, 1/4 in HOSE
155	1	HDW	FITTING, ELBOW, 90°, BARBED, 6 mm ID TUBE, WHITE
156	1	HDW	COMPRESSION SPRING, GROUND ENDS, 0.72 OD, 0.096 in DIA WIRE, 1.75 in LG
157	1	HDW	COMPRESSION SPRING, GROUND ENDS, 8.5 OD, 0.9 DIA WIRE, 27 mm LG
158	1	HDW	EXTENSION SPRING, 8.5 mm OD, 1.5 mm WIRE, 60 mm LG
159	1	HDW	SPRING PIN, SLOTTED, 5 mm DIA, 20 mm LG
160	2	HDW	HEX BOLT, M6 X 1, 12 mm LG
161	4	HDW	HEX BOLT, M6 X 1, 20 mm LG
162	4	HDW	HEX BOLT, M6 X 1, 25 mm LG
163	4	HDW	HEX BOLT, M6 X 1, 35 mm LG
164	1	HDW	HEX BOLT, M6 X 1, 50 mm LG
165	1	HDW	HEX BOLT, M6 X 1, 55 mm LG, 18 mm LG THD
166	2	HDW	HEX BOLT, M8 X 1.25, 12 mm LG
167	4	HDW	HEX BOLT, M8 X 1.25, 16 mm LG
168	26	HDW	HEX BOLT, M8 X 1.25, 20 mm LG
169	4	HDW	HEX BOLT, M8 X 1.25, 25 mm LG
170	1	HDW	HEX BOLT, M8 X 1.25, 30 mm LG
171	4	HDW	HEX BOLT, M8 X 1.25, 35 mm LG
172	2	HDW	HEX BOLT, M8 X 1.25, 100 mm LG, 22 mm LG THD
173	2	HDW	HEX BOLT, M8 X 1.25, 120 mm LG
174	1	HDW	HEX BOLT, M10 X 1.5, 20 mm LG
175	4	HDW	HEX BOLT, M10 X 1.5, 25 mm LG
176	3	HDW	HEX BOLT, M10 X 1.5, 30 mm LG
177	8	HDW	HEX BOLT, M10 X 1.5, 50 mm LG
178	1	HDW	HEX BOLT, M12 X 1.75, 20 mm LG
179	1	HDW	HEX BOLT, M12 X 1.75, 35 mm LG
180	2	HDW	HEX BOLT, M12 X 1.75, 45 mm LG
181	1	HDW	HEX BOLT, M12 X 1.75, 65 mm LG, 30 mm LG THD
182	10	HDW	HEX BOLT, M12 X 1.75, 80 mm LG, 30 mm LG THD
183	6	HDW	HEX BOLT, M12 X 1.75, 90 mm LG, 30 mm LG THD
184	1	HDW	HEX BOLT, M12 X 1.75, 100 mm LG, 30 mm LG THD
185	8	HDW	HEX BOLT, M12 X 1.75, 110 mm LG
186	1	HDW	HEX BOLT, M12 X 1.75, 130 mm LG, 30 mm LG THD
187	1	HDW	HEX BOLT, M12 X 1.75, 150 mm LG, 36 mm LG THD
188	1	HDW	HEX BOLT, M16 X 2, 90 mm LG, 38 mm LG THD
189	4	HDW	HEX BOLT, M20 X 2.5, 120 mm LG, 46 mm LG THD



Item	Qty	Part No.	Description
190	2	HDW	HEX BOLT, 3/8-16, 3/4 in LG
191	1	HDW	HEX BOLT, 3/8-24, 1-1/4 in LG
192	36	HDW	HEX BOLT, FLANGED, M10 X 1.5, 25 mm LG
193	16	HDW	HEX BOLT, FLANGED, M10 X 1.5, 35 mm LG
194	2	HDW	HEX BOLT, FLANGED, M10 X 1.5, 70 mm LG, 26 mm LG THD
195	6	HDW	BUTTON HEAD SCREW, M4 X 0.7, 6 mm LG
196	2	HDW	BUTTON HEAD SCREW, M4 X 0.7, 10 mm LG
197	12	HDW	BUTTON HEAD SCREW, M6 X 1, 12 mm LG
198	8	HDW	BUTTON HEAD SCREW, M6 X 1, 16 mm LG
199	4	HDW	BUTTON HEAD SCREW, M8 X 1.25, 35 mm LG
200	4	HDW	SHCS, M8 X 1.25, 20 mm LG
201	2	HDW	SHCS, M10 X 1.5, 25 mm LG
202	1	HDW	SHCS, M12 X 1.75, 130 mm LG, 36 mm LG THD
203	1	HDW	SHLDR SCREW, HEX HEAD, 11 X 35 mm LG SHLDR, M10 X 1.5 X 18 mm LG THD
204	1	HDW	SHLDR SCREW, 16 X 90 mm SHLDR, M12 X 1.75 X 18 mm LG THD
205	1	HDW	SCREW, PPH, M4 X 0.7, 12 mm LG
206	2	HDW	SCREW, PPH, M4 X 0.7, 30 mm LG
207	2	HDW	SCREW, PPH, M6 X 1, 14 mm LG
208	12	HDW	SCREW, PFH, M4 X 0.7, 10 mm LG
209	1	HDW	SCREW, HFH, M6 X 1, 30 mm LG, 18 mm THD
210	2	HDW	SCREW, HFH, M8 X 1.25, 20 mm LG
211	1	HDW	SCREW, HFH, M10 X 1.5, 20 mm LG
212	2	HDW	SELF-TAPPING SCREW, PPH, #10, 5/8 in LG
213	1	HDW	SET SCREW, FLAT TIP, M6 X 1, 8 mm LG
214	8	HDW	SET SCREW, FLAT TIP, M8 X 1.25, 8 mm LG, SST
215	4	HDW	FLAT WASHER, M4
216	37	HDW	FLAT WASHER, M6
217	30	HDW	FLAT WASHER, M8
218	12	HDW	FLAT WASHER, M8, NYLON
219	19	HDW	FLAT WASHER, M10
220	58	HDW	FLAT WASHER, M12
221	1	HDW	FLAT WASHER, M16
222	16	HDW	FLAT WASHER, M20
223	4	HDW	FENDER WASHER, M6, 18 mm OD
224	2	HDW	FENDER WASHER, M8, 30 mm OD
225	4	HDW	FENDER WASHER, M10, 30 mm OD
226	2	HDW	FENDER WASHER, M10, 34 mm OD
227	1	HDW	FENDER WASHER, M10, 35 mm OD
228	4	HDW	FENDER WASHER, M12, 31 mm OD
229	4	HDW	SPLIT LOCK WASHER, M6
230	2	HDW	SPLIT LOCK WASHER, M8
231	9	HDW	SPLIT LOCK WASHER, M10
232	24	HDW	BELLEVILLE WASHER, 20.4 ID, 40 OD, 2.5 THK, 3.45 mm HGT
233	2	HDW	LEVELLING WASHER, FEMALE, M16
234	2	HDW	LEVELLING WASHER, MALE, M16
235	2	HDW	SEALING WASHER, M12
236	4	HDW	HEX NUT, M8 X 1.25
237	1	HDW	HEX NUT, M10 X 1.5



Item	Qty	Part No.	Description
238	4	HDW	HEX NUT, M12 X 1.75
239	1	HDW	HEX NUT, THIN, M6 X 1, 3.2 mm THK
240	4	HDW	HEX NUT, THIN, M12 X 1.75, 6 mm THK
241	4	HDW	HEX NUT, FLANGED, M10 X 1.5
242	10	HDW	LOCK NUT, M4 X 0.7
243	35	HDW	LOCK NUT, M6 X 1
244	32	HDW	LOCK NUT, M8 X 1.25
245	10	HDW	LOCK NUT, M10 X 1.5
246	30	HDW	LOCK NUT, M12 X 1.75
247	1	HDW	LOCK NUT, M16 X 2
248	4	HDW	LOCK NUT, M20 X 2.5
249	50	HDW	LOCK NUT, FLANGED, M10 X 1.5
250	2	HDW	SLOTTED NUT, ROUND, M14 X 1.5
251	7	HDW	RETAINING RING, INTERNAL, 28 mm BORE (29.4 mm GROOVE)
252	1	HDW	RETAINING RING, INTERNAL, 40 mm BORE (42.5 mm GROOVE)
253	2	HDW	RETAINING RING, INTERNAL, 62 mm BORE (65 mm GROOVE)

This diagram illustrates the exploded view of a window frame assembly. The main components are labeled with numbers and quantities:

- 1**: 4X (Main frame rail)
- 2**: 2X (Side rail)
- 3**: 2X (Top rail)
- 4**: 2X (Bottom rail)
- 5**: 12X (Glass pane)
- 6**: 2X (Gasket)
- 7**: 8X (Gasket)
- 8**: 16X (Gasket)
- 9**: 2X (Gasket)
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This exploded view diagram illustrates the assembly of a chainsaw. The main components shown include the engine, guide bar, chain, and various housing and adjustment parts. Numerous callouts with numbers and quantities are provided for identification:

- Engine and Drive Components:**
 - 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.</

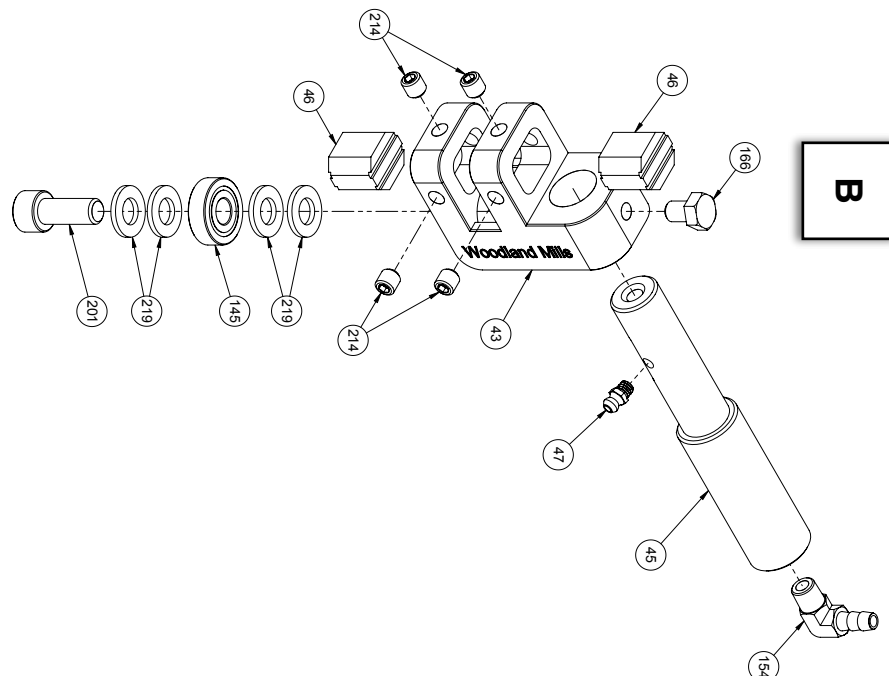
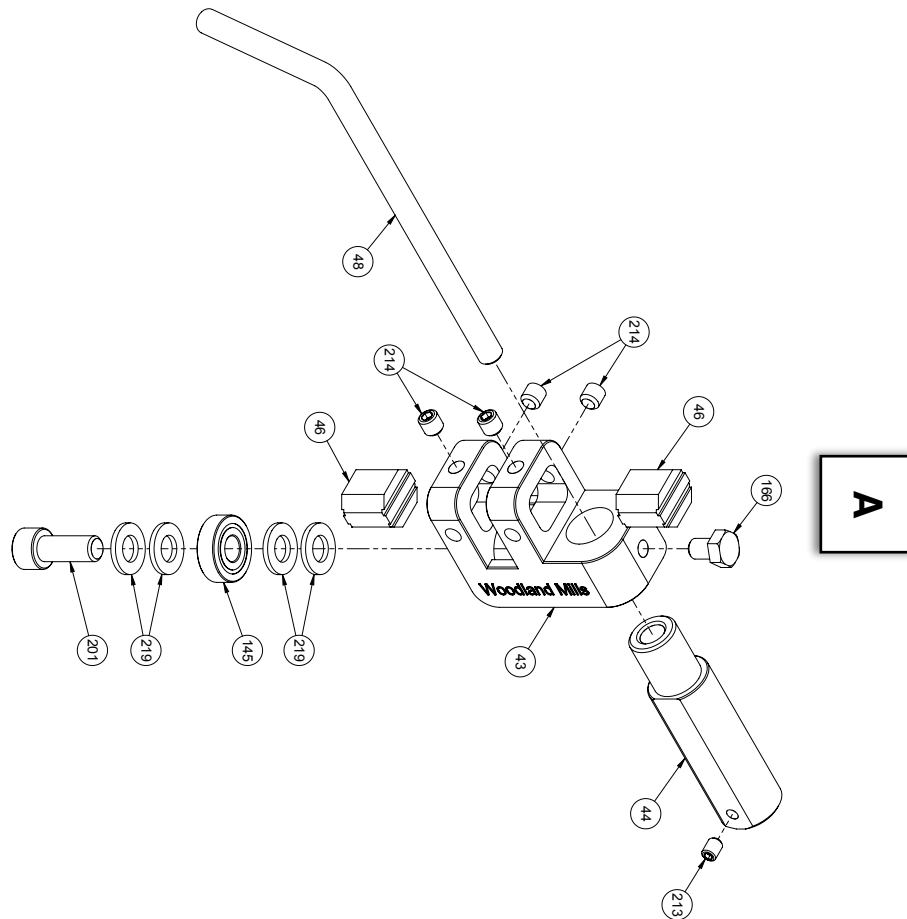
BACK BEAM

This technical diagram illustrates the exploded view of a mechanical assembly, likely a camera or projector mount. The central component is a long, rectangular beam (17) with a 2X multiplier. Various mounting brackets, plates, and hardware are shown in their relative positions. Key components include:

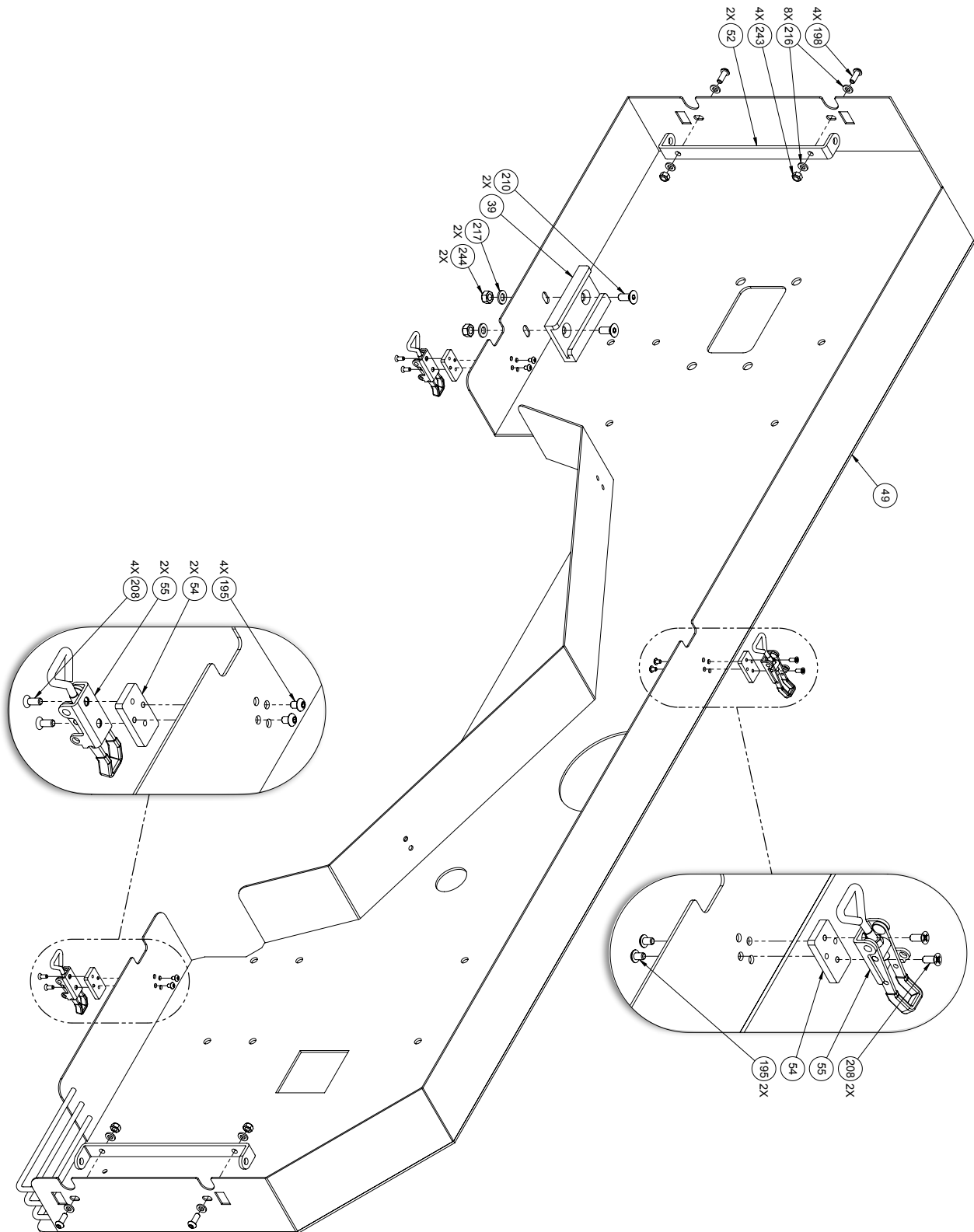
- Beam (17):** The main horizontal structural member.
- Mounting Brackets (18, 19):** L-shaped brackets used for mounting the beam.
- Plates (20, 21):** Rectangular plates used for mounting and alignment.
- Hardware:** Numerous screws, bolts, and washers are specified with callouts such as 168 (4X), 171 (2X), 172 (2X), 173 (2X), 174 (2X), 175 (2X), 176 (3X), 177 (3X), 178 (2X), 179 (2X), 180 (2X), 181 (2X), 182 (2X), 183 (2X), 184 (2X), 185 (2X), 186 (2X), 187 (2X), 188 (2X), 189 (4X), 190 (4X), 191 (4X), 192 (4X), 193 (4X), 194 (4X), 195 (4X), 196 (4X), 197 (4X), 198 (4X), 199 (4X), 200 (4X), 201 (4X), 202 (4X), 203 (4X), 204 (4X), 205 (4X), 206 (4X), 207 (4X), 208 (4X), 209 (4X), 210 (4X), 211 (4X), 212 (4X), 213 (4X), 214 (4X), 215 (4X), 216 (4X), 217 (2X), 218 (2X), 219 (3X), 220 (3X), 221 (3X), 222 (3X), 223 (3X), 224 (3X), 225 (3X), 226 (3X), 227 (3X), 228 (3X), 229 (3X), 230 (3X), 231 (3X), 232 (3X), 233 (3X), 234 (3X), 235 (3X), 236 (3X), 237 (3X), 238 (3X), 239 (3X), 240 (3X), 241 (3X), 242 (3X), 243 (3X), 244 (2X), 245 (3X), 246 (3X), 247 (3X), 248 (3X), 249 (3X), 250 (3X), 251 (3X), 252 (3X), 253 (3X), 254 (3X), 255 (3X), 256 (3X), 257 (3X), 258 (3X), 259 (3X), 260 (3X), 261 (3X), 262 (3X), 263 (3X), 264 (3X), 265 (3X), 266 (3X), 267 (3X), 268 (3X), 269 (3X), 270 (3X), 271 (3X), 272 (3X), 273 (3X), 274 (3X), 275 (3X), 276 (3X), 277 (3X), 278 (3X), 279 (3X), 280 (3X), 281 (3X), 282 (3X), 283 (3X), 284 (3X), 285 (3X), 286 (3X), 287 (3X), 288 (3X), 289 (3X), 290 (3X), 291 (3X), 292 (3X), 293 (3X), 294 (3X), 295 (3X), 296 (3X), 297 (3X), 298 (3X), 299 (3X), 300 (3X).

The diagram uses dashed lines to indicate the assembly path and alignment of the components. The parts are numbered for identification, and the multipliers (2X, 3X, 4X) indicate the quantity of each part required.

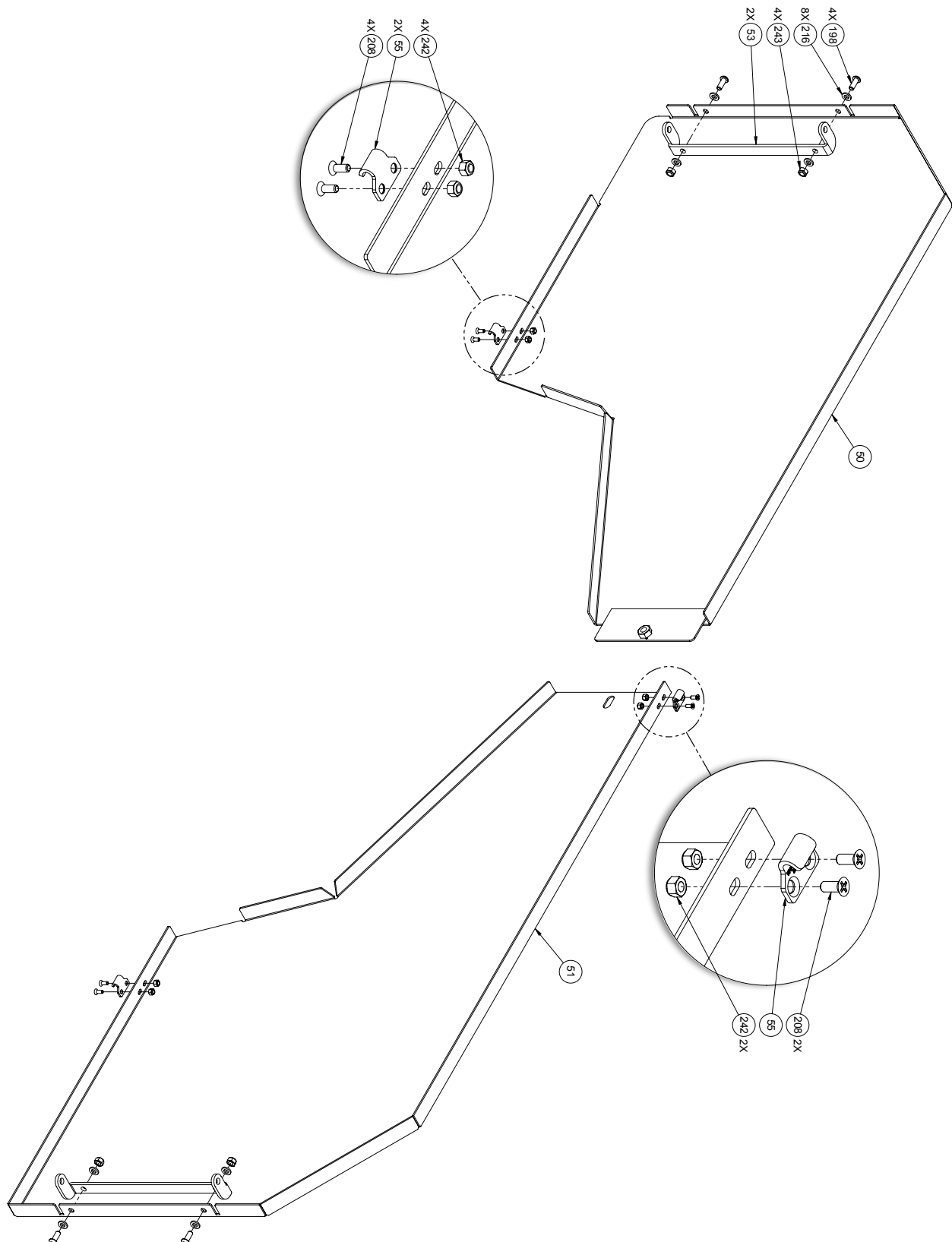
GUIDE BLOCKS



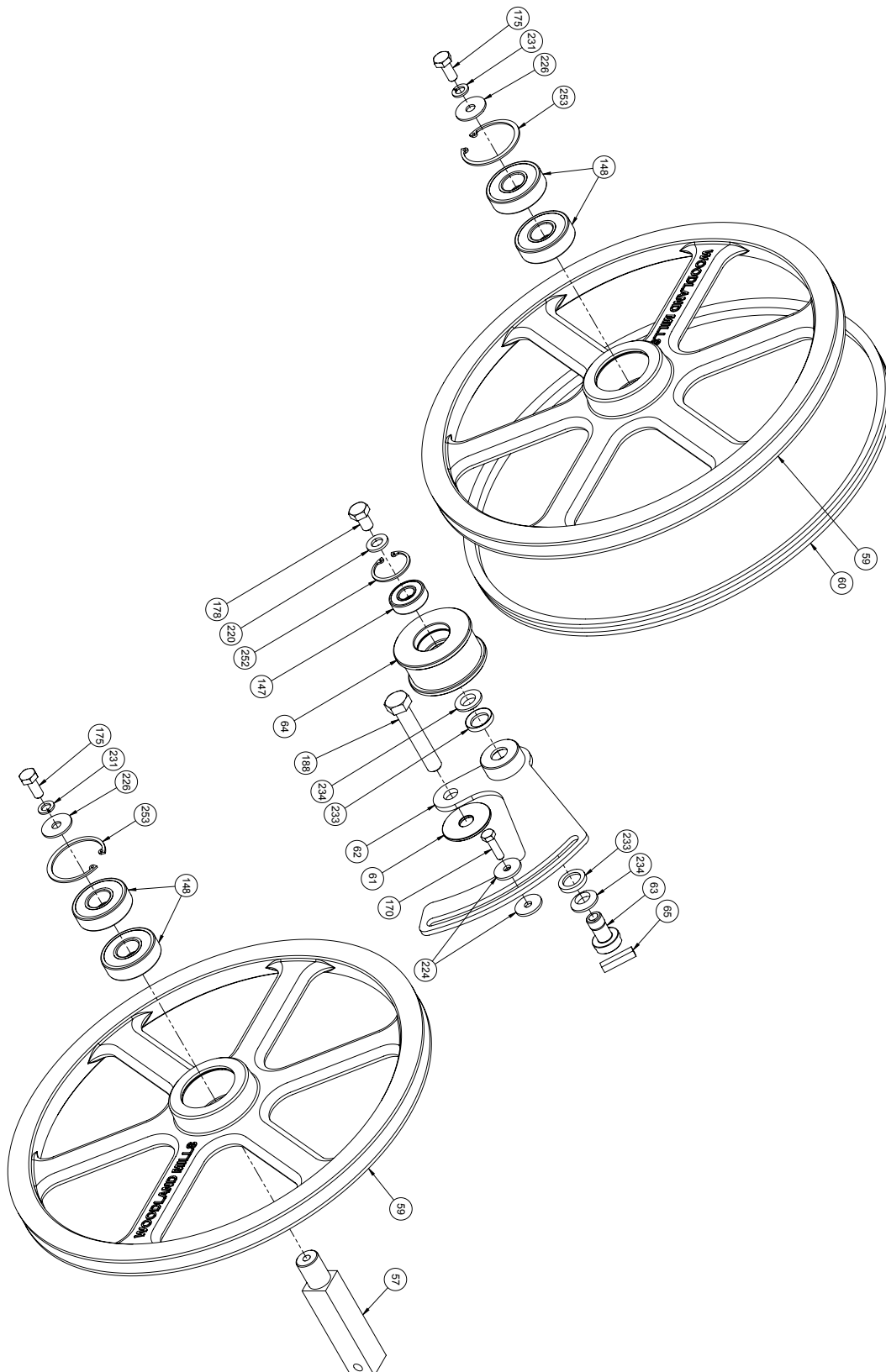
BAND WHEEL HOUSING



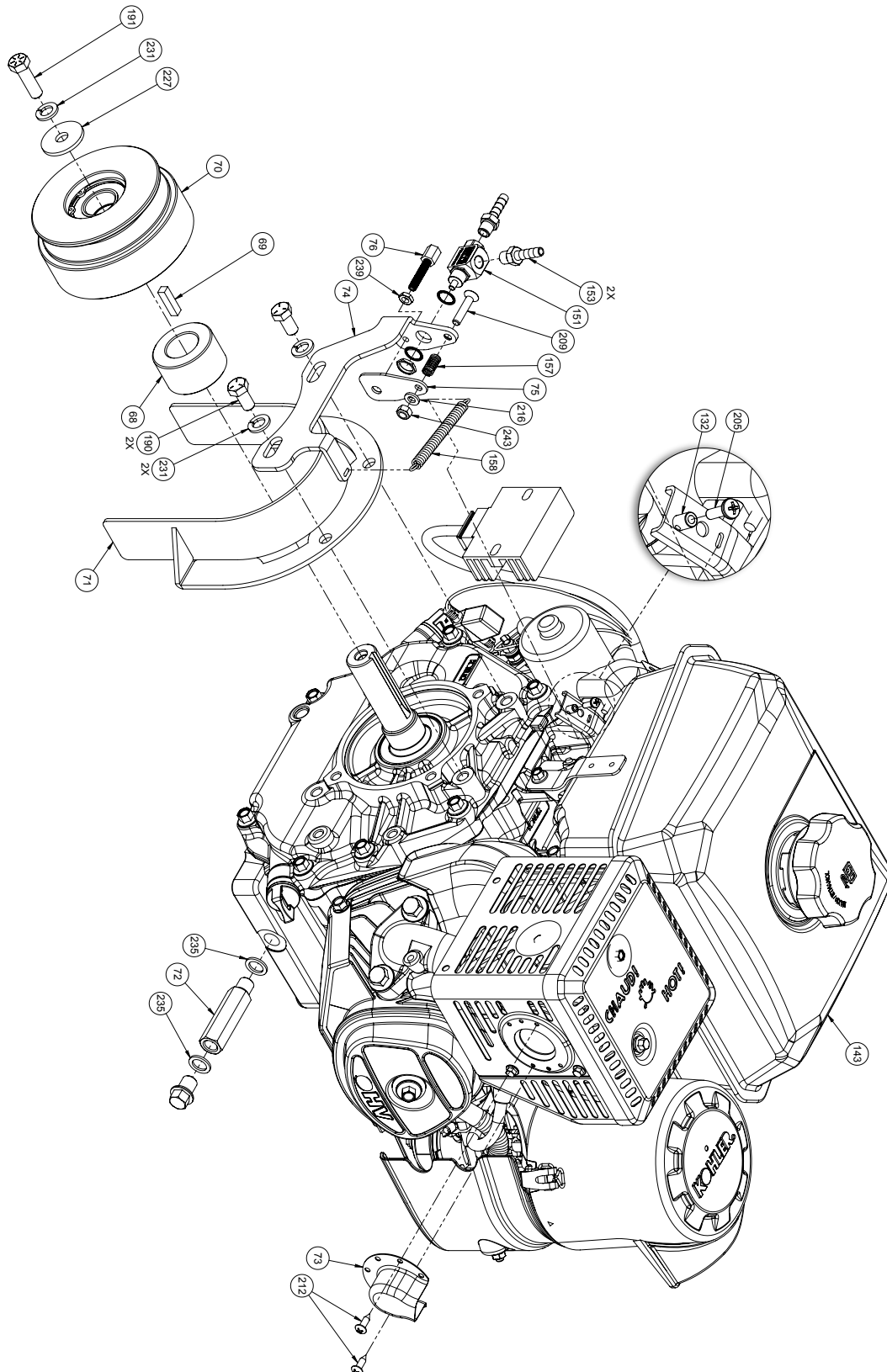
BAND WHEEL HOUSING DOORS



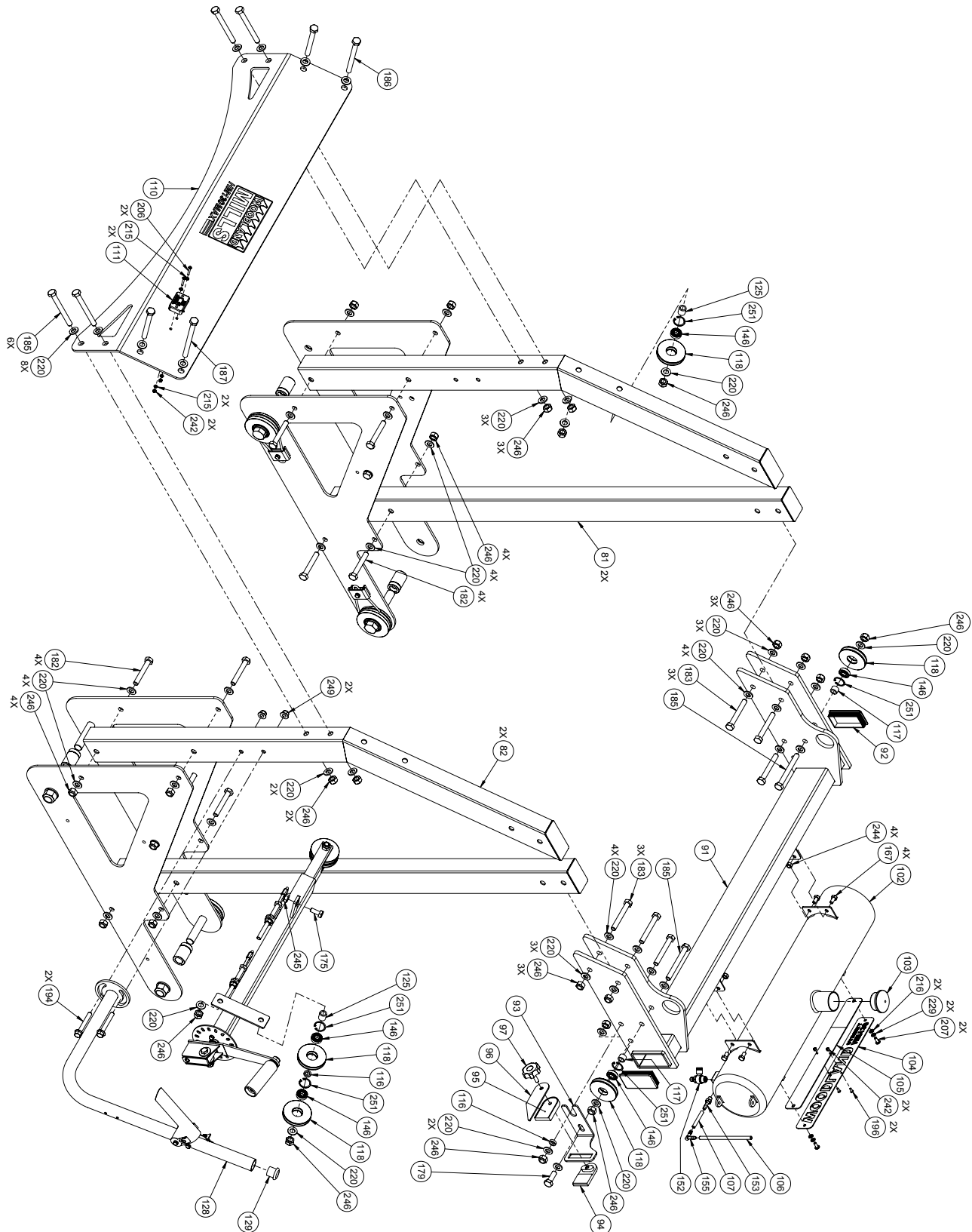
BAND WHEELS AND BELT TENSIONER



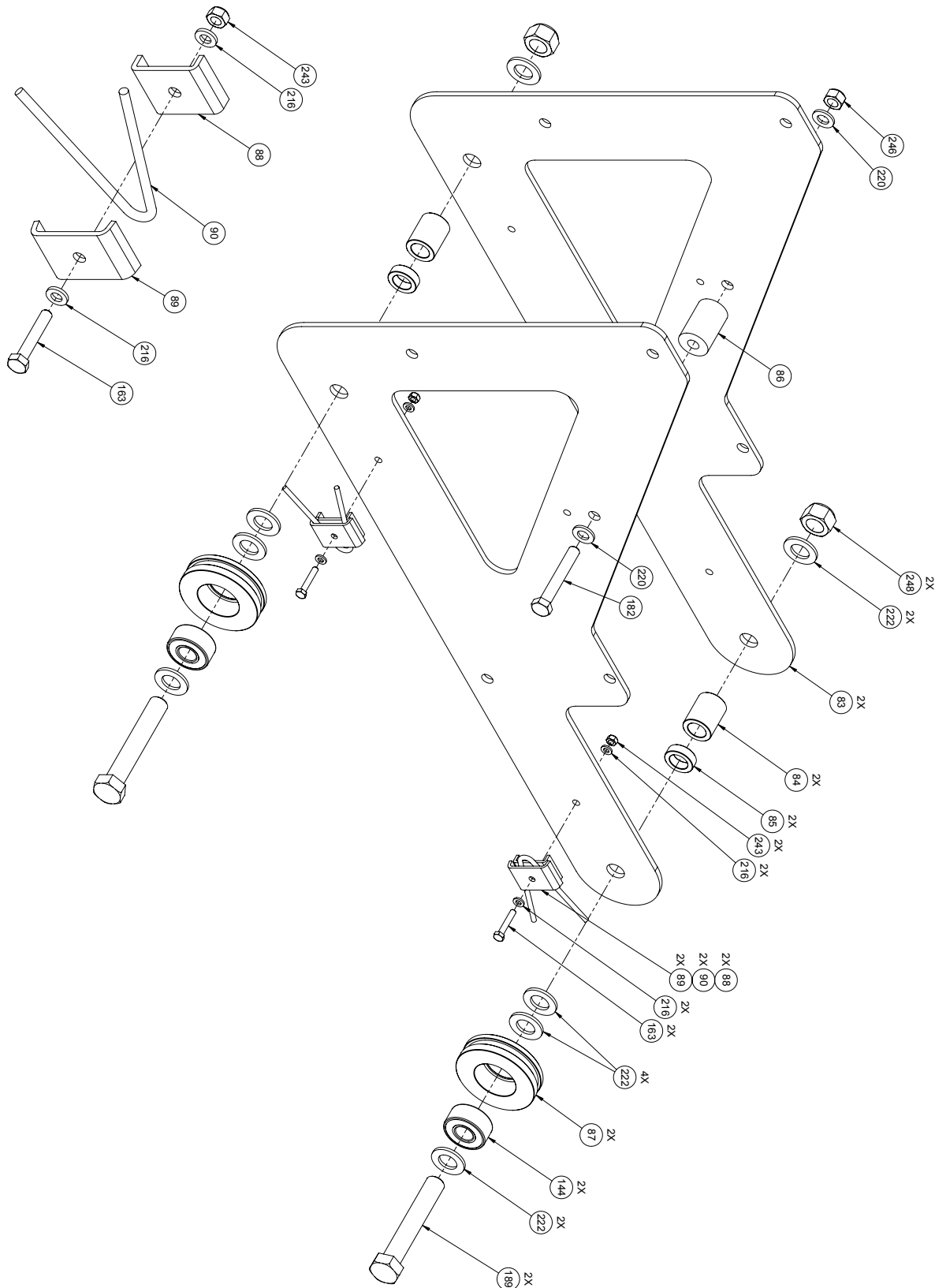
ENGINE COMPONENTS



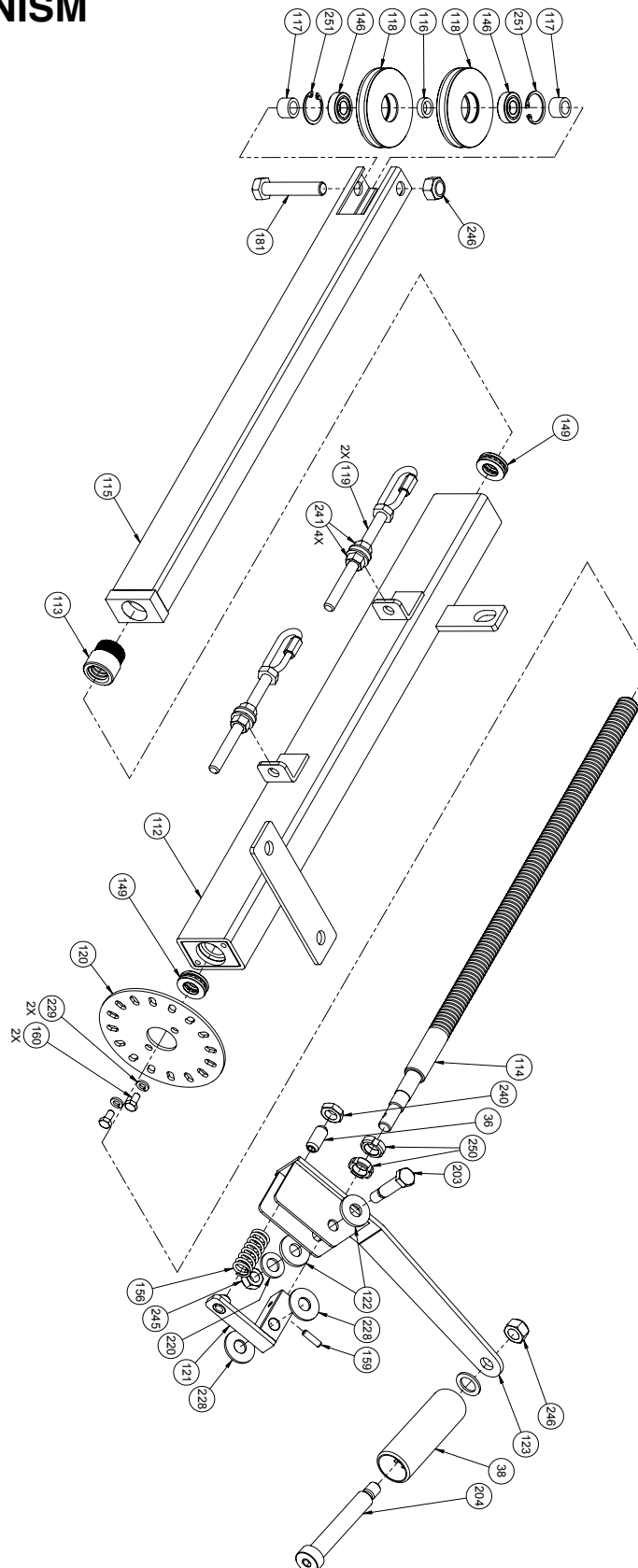
CARRIAGE



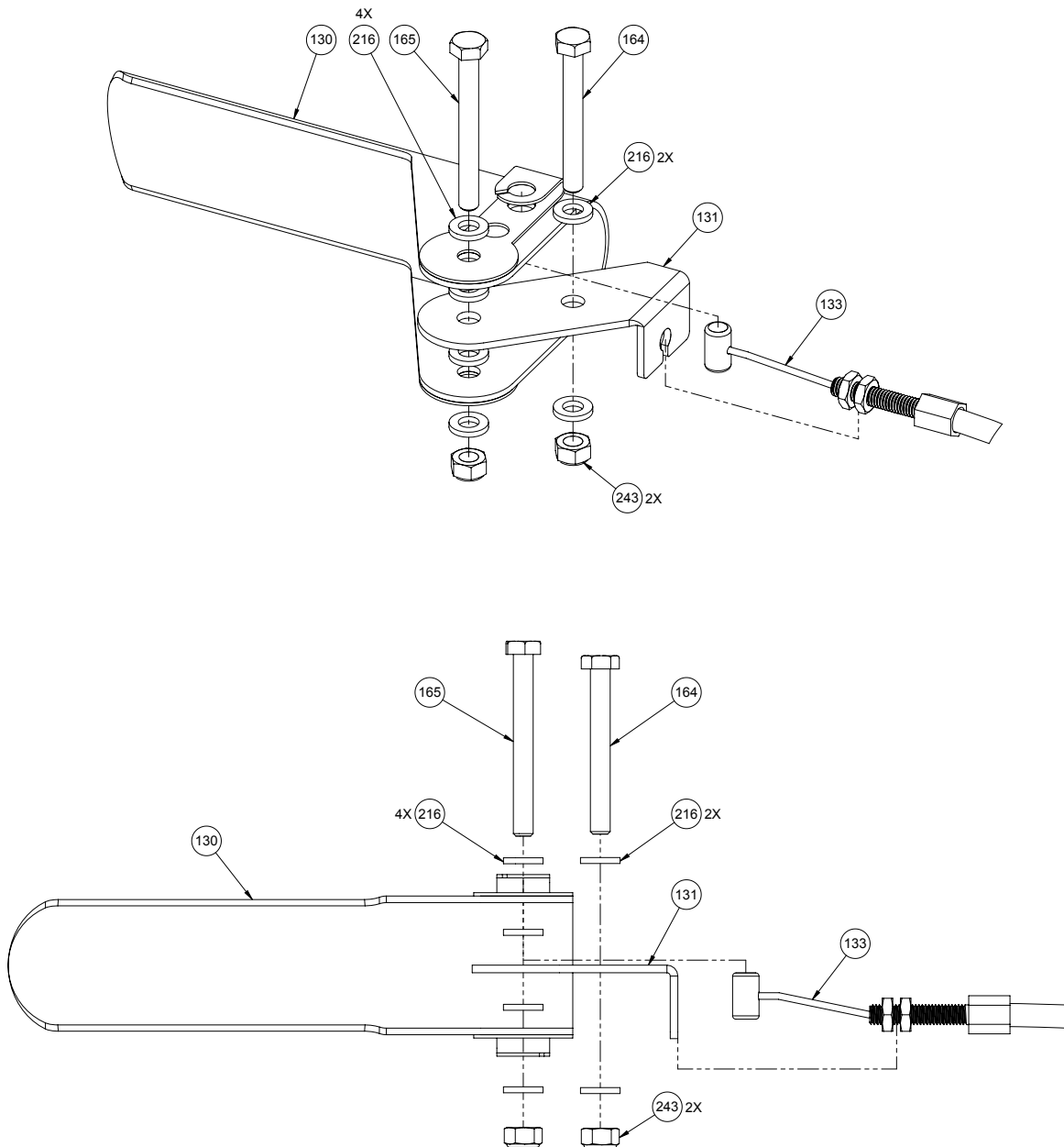
CARRIAGE LEG, WHEEL, AND SWEEPER



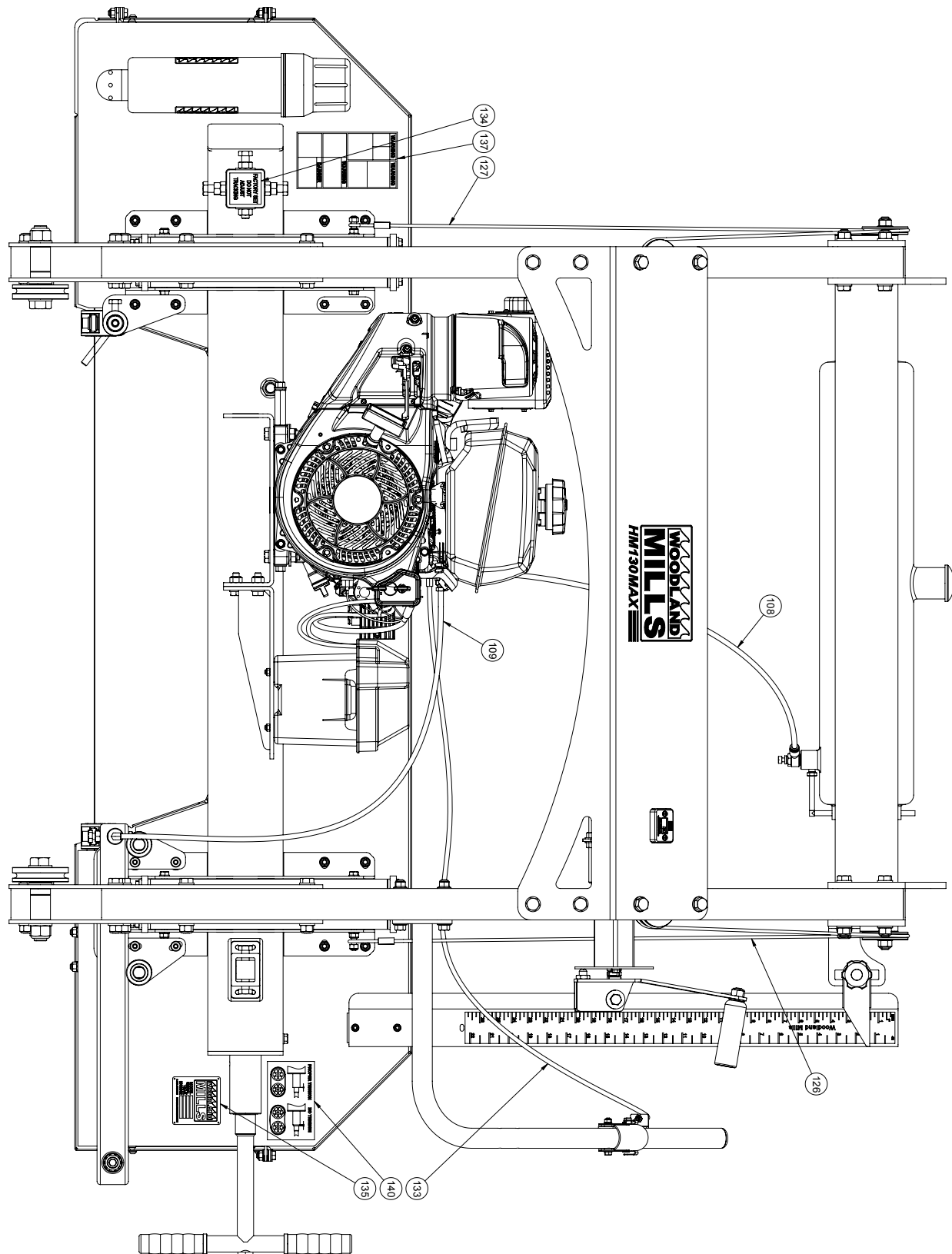
LIFT MECHANISM



THROTTLE HANDLE



CABLES, TUBING & LABELS





NOTES

Lined area for notes, consisting of multiple horizontal lines.

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