HM122 PORTABLE SAWMILL

7 and 9.5 Horsepower Models

OPERATOR'S MANUAL

0006100-M-EN: Rev B
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WOODLAND MILLS

DISCOVER THE WOODLAND™

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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, WARNING & INFORMATION SYMBOLS

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

Symbol	Description
	Refer to instruction/operator's manual
	Wear protective gloves
	Wear safety footwear
	Wear eye protection
	Wear a face shield
	Wear a mask
	Wear ear protection
	Lift point
	Lockout electrical power (electric sawmills only)
	General warning
	Electricity warning
	Instructions are different for electric sawmills. Refer to electric sawmill manual addendum for electric sawmill-specific instructions.
	Instructions do not pertain to electric sawmills. Instructions can be skipped and ignored when working with an electric sawmill.

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

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, hearing protection, 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 no more than a teaspoon of liquid dish soap per full tank. The soap helps keep the blade clean(er) when excess pitch builds up.
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

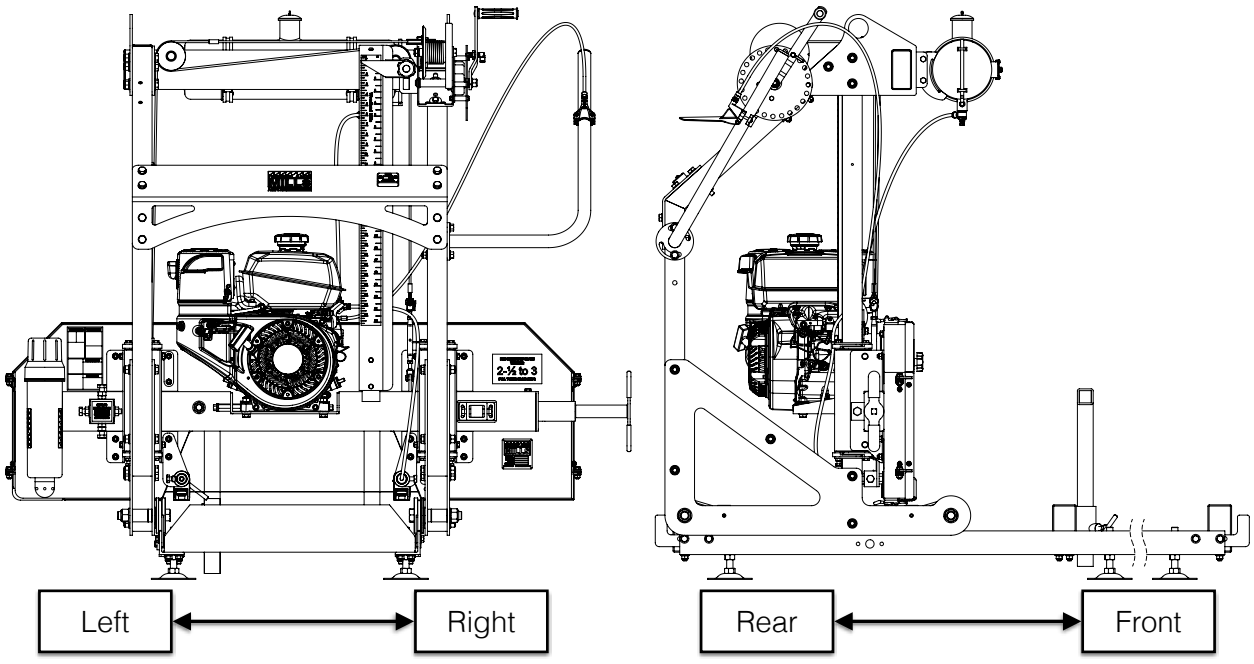
Proper and routine maintenance is critical to operator safety, achieving good milling results, and to prolong the life of your investment.

- **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 "WD-40 Water Resistant Silicone Spray," "3-in-One Silicone Spray Lubricant," or "Jig-A-Loo."
- **Band Wheel Guards** — Routinely remove any build-up of sawdust that may collect inside the band wheel guards.
- **Lubrication Tank** — Fill with clean water. Add a teaspoon of liquid dish soap if pitch builds up on the blade. In winter months windshield washer fluid can be used. Do not leave water in tank if temperature falls below 32°F [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 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.

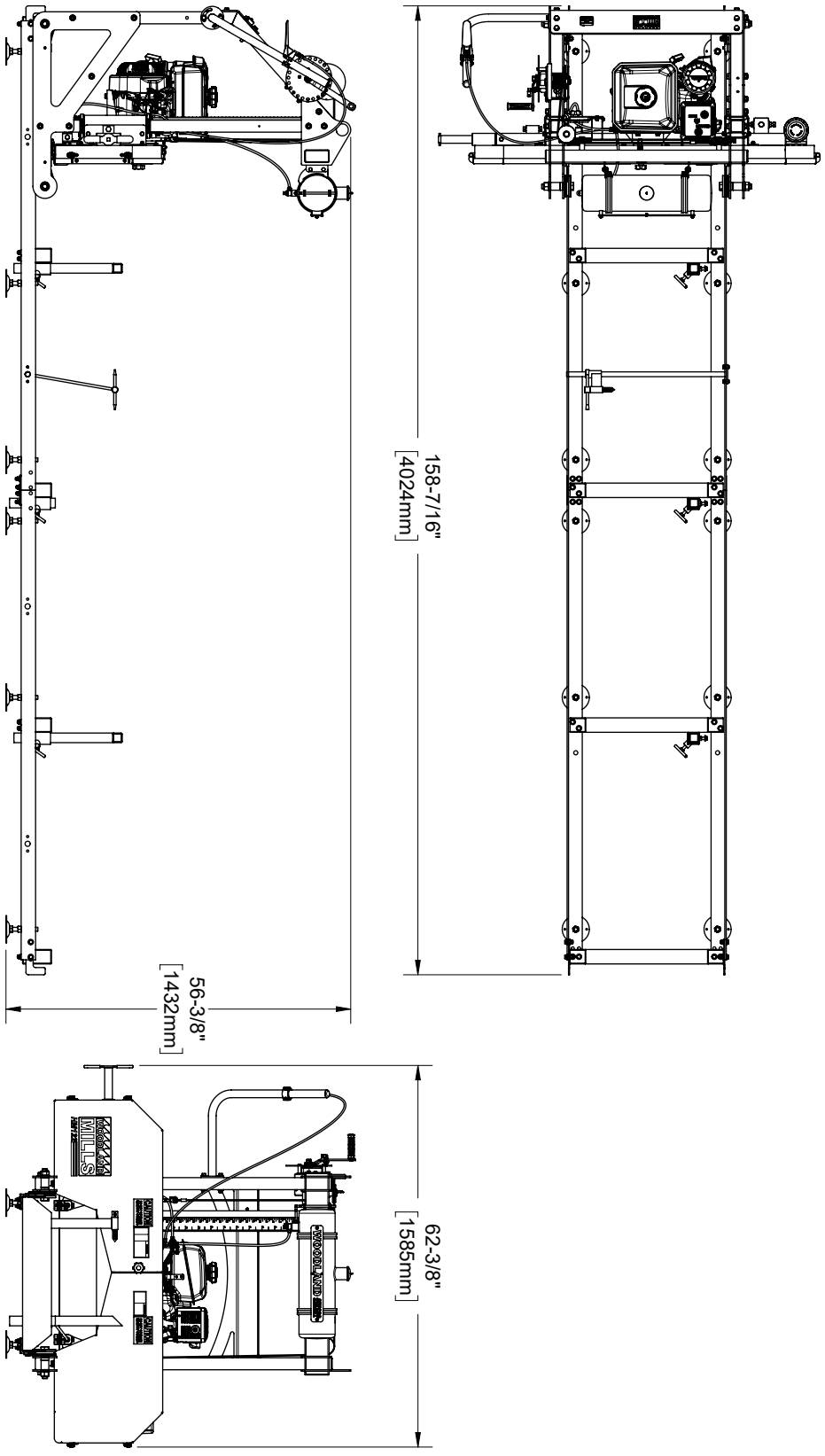
TECHNICAL SPECIFICATIONS

The HM122 sawmill comes in two variants: the ***HM122-7*** that utilizes a 7 horsepower engine and the ***HM122-9.5*** with a 9.5 horsepower engine. Both versions are assembled and operated in the same manner. Pictures and graphics used in this manual display the HM122-9.5 sawmill but the instructions still apply to both.

Item	HM122-7 Specification	HM122-9.5 Specification
Gasoline Engine	7 hp Kohler Command Pro	9.5 hp Kohler Command Pro
Max Log Diameter	22 in [559 mm]	
Max Board Width	20 in [508 mm]	
Max Board Thickness	6 in [152 mm]	
Blade Size	1-¼ x 125 in [32 mm x 3175 mm]	
Track Length	153-½" [3899 mm]	
Track Width	26 in [660 mm]	
Track Height Adjustability (top of bunk)	7-⅞ to 10-⅝ in [200 to 270 mm]	
Product Weight	568 lb [258 kg]	595 lb [270 kg]
Shipping Weight	735 lb [334 kg]	762 lb [346 kg]



OVERALL DIMENSIONS

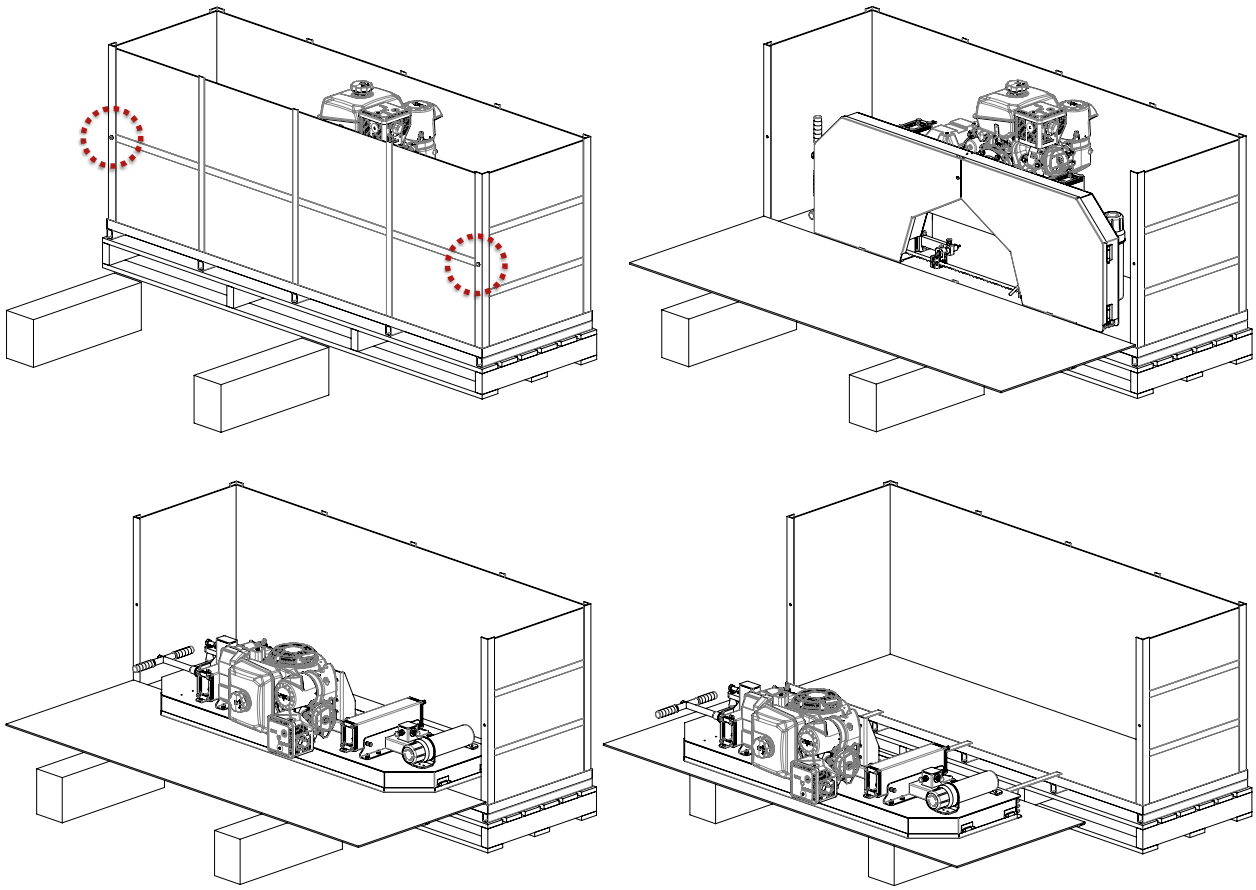


UNPACKING

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.

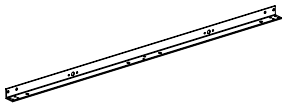
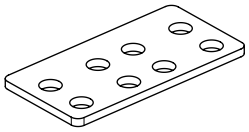
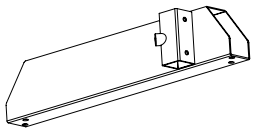
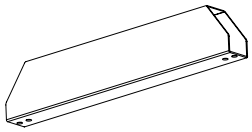
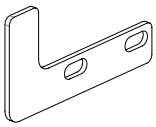
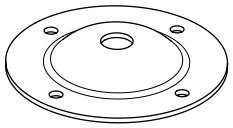
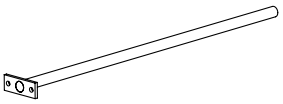
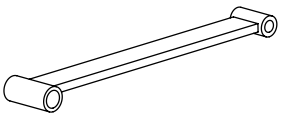
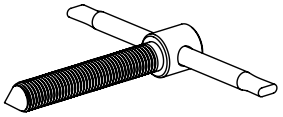
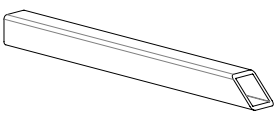
Carefully rotate the sawhead down onto the cardboard and support blocks and slide it out of the crate as shown below.

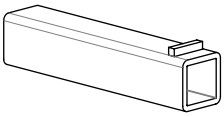
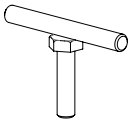
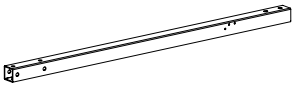
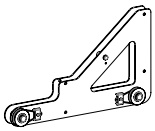
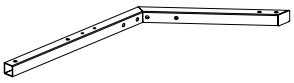
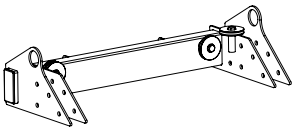
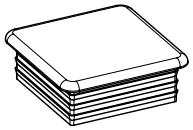
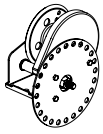
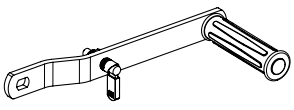


The two long track boxes can now be removed and the crate discarded.

COMPONENT LISTS

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

4x	Track Rail [0001459]	
2x	Reinforcement Plate [0001463]	
3x	Mid Bunk [0001458]	
2x	End Bunk [0001457]	
4x	Carriage Stop [0001055]	
12x	Levelling Foot Base [0001071]	
1x	Log Clamp Shaft [0001460]	
1x	Log Clamp Arm [0001461]	
1x	Log Clamp [0001462]	
2x	Bevelled Log Support [0001056]	

2x	Key Stop Log Support [0001465]	
3x	T-Bolt M10 X 40 mm [0001059]	
2x	Front Post [0002101]	
2x	Carriage Leg Assembly	
2x	Back Post [0002851]	
1x	Cross Beam Assembly	
2x	End Cap [0001660]	
1x	Winch Assembly	
1x	Winch Arm Assembly	
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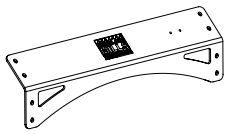
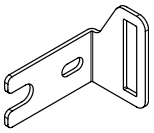
1x	Dashboard [0002105]	
1x	Hour Meter	
1x	Scale Support [0002040]	
1x	Magnetic Scale (White) [0003235]	
1x	Magnetic Scale (Yellow) [0003233]	
1x	Log Scale Mounting Bracket [0002240]	
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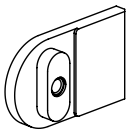
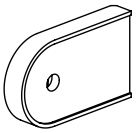
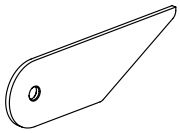
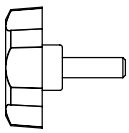
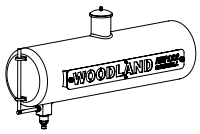
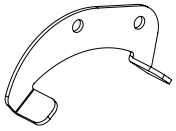
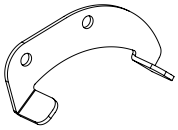
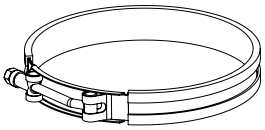
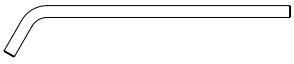
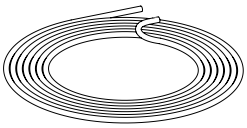
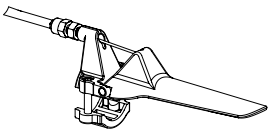
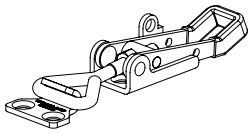
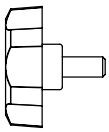
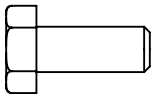
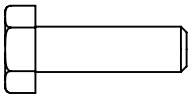
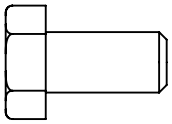
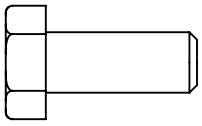
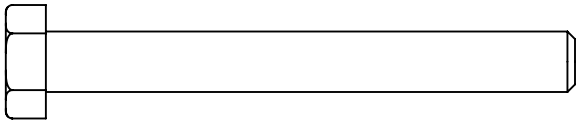
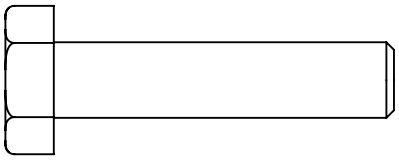
1x	Scale Indicator Bracket [Rear] [0002097]	
1x	Scale Indicator Bracket [Frnt] [0002098]	
1x	Scale Indicator Arrow [0002099]	
1x	Knob M8 X 25 mm [0002764]	

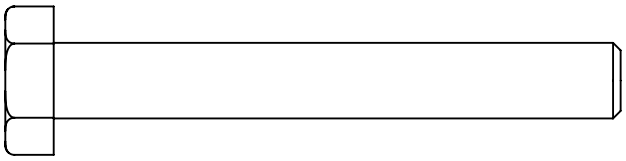
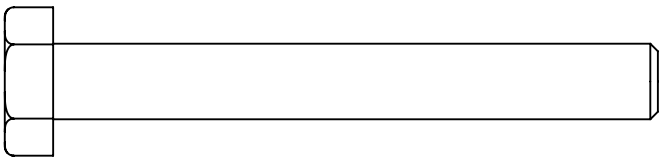
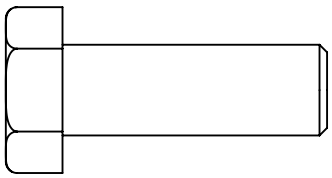
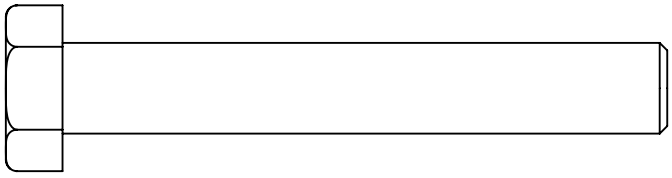
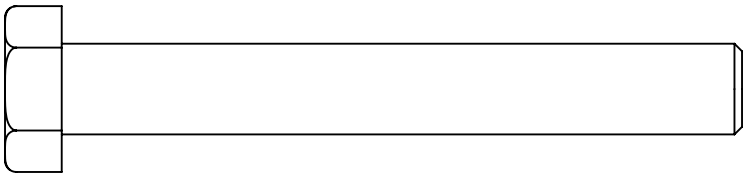
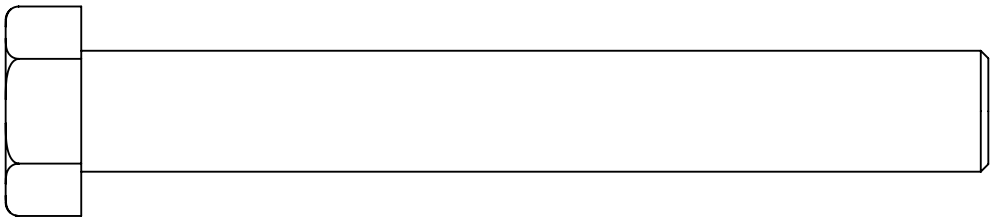
1x	Lubrication Tank Assembly	
1x	Tank Bracket (Left) [0007795]	
1x	Tank Bracket (Right) [0007794]	
2x	Bolt Clamp [0007528]	
1x	Drip Nozzle [0001092]	
2x	Tubing [0002748 & 0002749]	
1x	Push Handle [0004511]	
1x	Throttle Handle Assembly	
2x	Latch [0002248]	
1x	Knob M8 X 17 mm [0001659]	

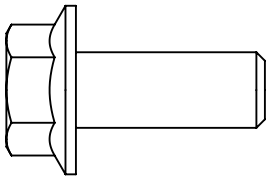
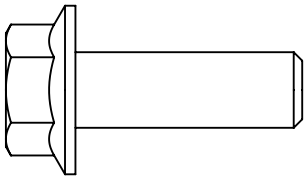
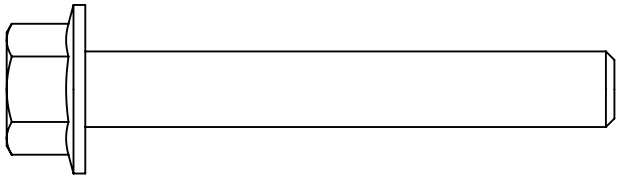
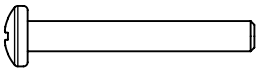
TO-SCALE HARDWARE

BOLTS & SCREWS

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

2x	**HHB-MBE069FCJ**	**M6 X 1 X 15 mm HEX BOLT**
		
1x	**HHB-MBE075FCJ**	**M6 X 1 X 20 mm HEX BOLT**
		
4x	**HHB-MBJ071FCJ**	**M8 X 1.25 X 16 mm HEX BOLT**
		
2x	**HHB-MBJ075FCJ**	**M8 X 1.25 X 20 mm HEX BOLT**
		
2x	**HHB-MBJ125PCJ**	**M8 X 1.25 X 70 mm HEX BOLT**
		
1x	**HHB-MBM100FCJ**	**M10 X 1.5 X 45 mm HEX BOLT**
		

4x	HHB-MBM130PCJ	M10 X 1.5 X 75 mm HEX BOLT
		
4x	HHB-MBM135PCJ	M10 X 1.5 X 80 mm HEX BOLT
		
1x	HHB-MBR085FCJ	M12 X 1.75 X 30 mm HEX BOLT
		
15x	HHB-MBR135PCJ	M12 X 1.75 X 80 mm HEX BOLT
		
1x	HHB-MBR145PCJ	M12 X 1.75 X 90 mm HEX BOLT
		
12x	HHB-MCA175FCJ	M16 X 2 X 120 mm HEX BOLT
		

30x	**FHH-MBM080FCM**	**M10 X 1.5 X 25 mm FLANGED HEX BOLT**
		
12x	**FHH-MBM085PCM**	**M10 X 1.5 X 30 mm FLANGED HEX BOLT**
		
2x	**FHH-MBM125PCJ**	**M10 X 1.5 X 70 mm FLANGED HEX BOLT**
		
2x	**PPH-MAW085FCE**	**M4 X 0.7 X 30 mm PHILLIPS PAN HEAD SCREW**
		
8x	**PFH-MAW059FCM**	**M4 X 0.7 X 10 mm PHILLIPS FLAT HEAD SCREW**
		

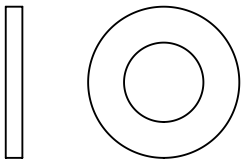
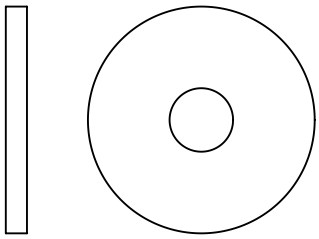
SCALES

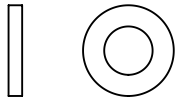
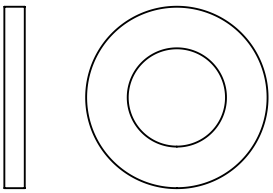
Ruler scales are also provided below to double-check bolt and screw lengths when necessary.

CENTIMETRES / MILLIMETRES

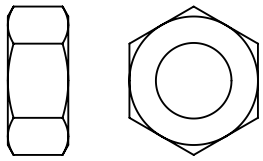
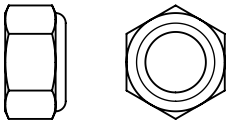
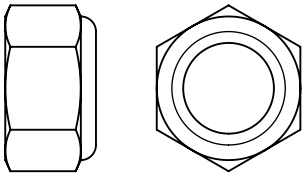
INCHES

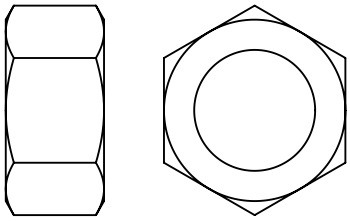
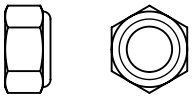
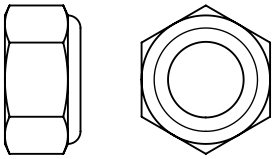
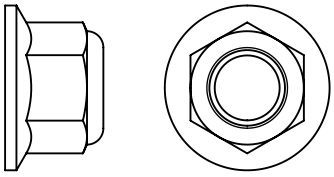
WASHERS

4x	**FTW-MAW000AJ** **M4 FLAT WASHER**
	
16x	**FTW-MBM000AJ** **M10 FLAT WASHER**
	
4x	**FDW-MBJ079000AJ** **M8 FENDER WASHER, 30 mm OD**
	

4x	**FTW-MBE000AJ** **M6 FLAT WASHER**
	
35x	**FTW-MBR000AJ** **M12 FLAT WASHER**
	

NUTS

7x	**HXN-MBMCH M10 X 1.5 HEX NUT**
	
6x	**HLN-MAWCH M4 X 0.7 LOCK NUT**
	
8x	**HLN-MBJCH M8 X 1.25 LOCK NUT**
	
18x	**HLN-MBRCH M12 X 1.75 LOCK NUT**
	

36x	**HXN-MCACH M16 X 2 HEX NUT**
	
2x	**HLN-MBECH M6 X 1 LOCK NUT**
	
9x	**HLN-MBMCH M10 X 1.5 LOCK NUT**
	
38x	**FLN-MBMCL M10 X 1.5 FLANGED LOCK NUT**
	

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. 2
Tape Measure	Standard Inch/Metric Tape Measure

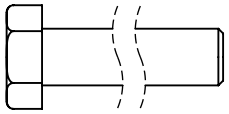
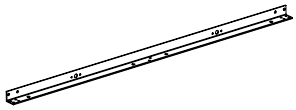
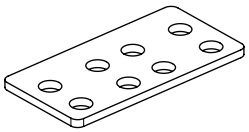
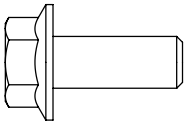
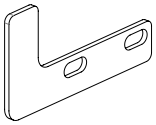
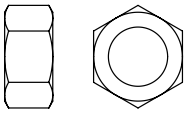
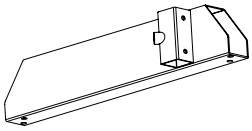
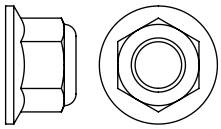
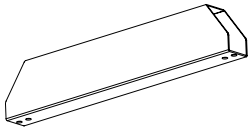
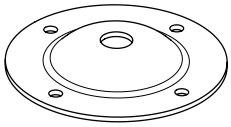
During several of the assembly steps, more than one socket or wrench of the same size may be required to assemble the hardware. A socket or box wrench in combination with an adjustable wrench can be utilized if multiple same size tools are in limited supply.

BOLT TORQUE WARNING!

When assembling the sawmill, do not torque the bolts to hardware Class/Grade specifications. Snug the hardware, then tighten a further ¼—½ turn. Tightening bolts to torque spec can crush metal tubing, ruining the components.

2. TRACK

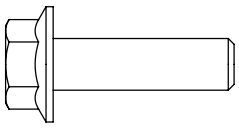
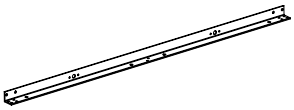
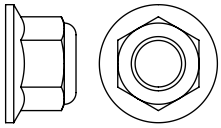
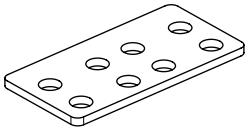
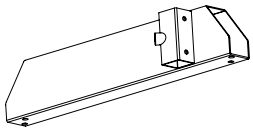
Assemble the track with the provided components and hardware listed in the table below. It is important to assemble and level the track on a firm foundation before tightening all of the hardware and should ideally be 3-½—4 in [90—100 mm] off the ground. This will allow for easy cleanup of sawdust and log support height adjustments.

12x	M16 X 120 mm Hex Bolt		4x	Track Rail	
12x	M10 X 30 mm Flanged Hex Bolt		2x	Reinforcement Plate	
24x	M10 X 25 mm Flanged Hex Bolt		4x	Carriage Stop	
36x	M16 Hex Nut		3x	Mid Bunk	
36x	M10 Flanged Lock Nut		2x	End Bunk	
			12x	Levelling Foot Base	

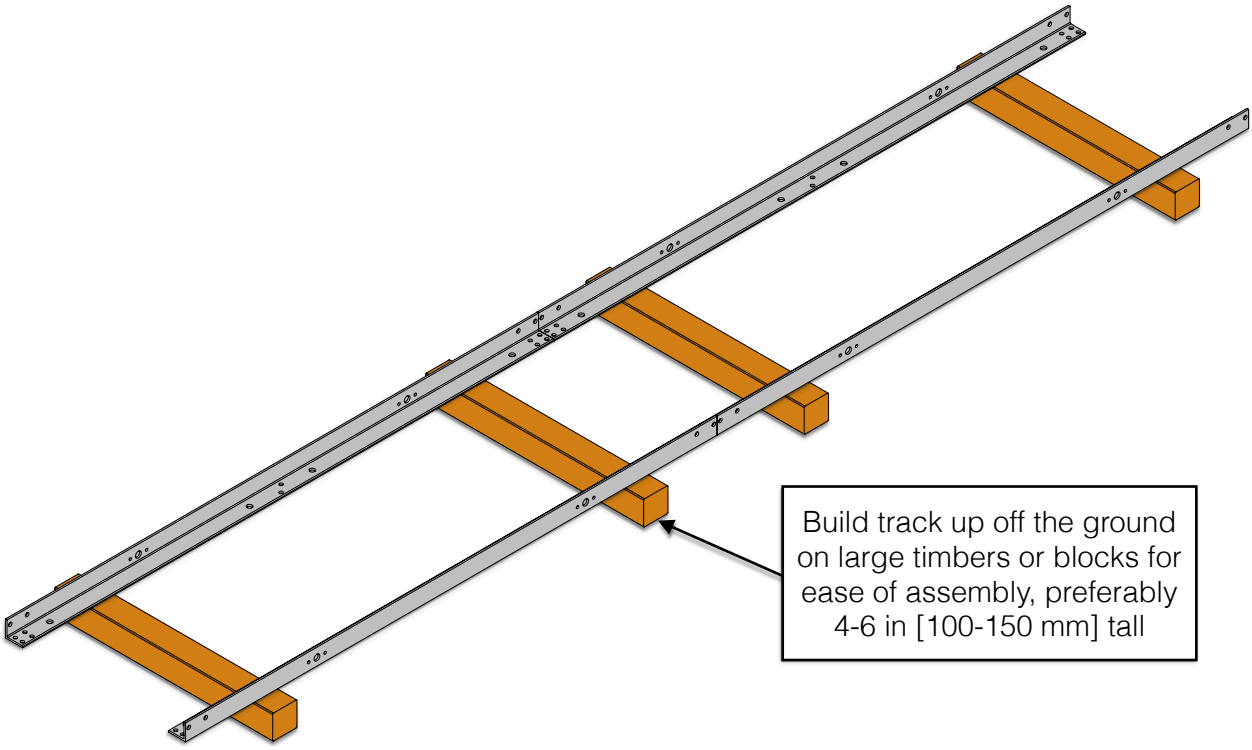
If a Woodland Mills sawmill trailer was purchased with this sawmill, skip this track assembly section and follow the track assembly instructions in those manuals.

RAILS & MID (CENTRE) BUNK

Assemble one of the mid bunks over the joint between both pairs of track rails using the components and hardware listed in the table below.

12x	M10 X 30 mm Flanged Hex Bolt		4x	Track Rail	
12x	M10 Flanged Lock Nut		2x	Reinforcement Plate	
			1x	Mid Bunk	

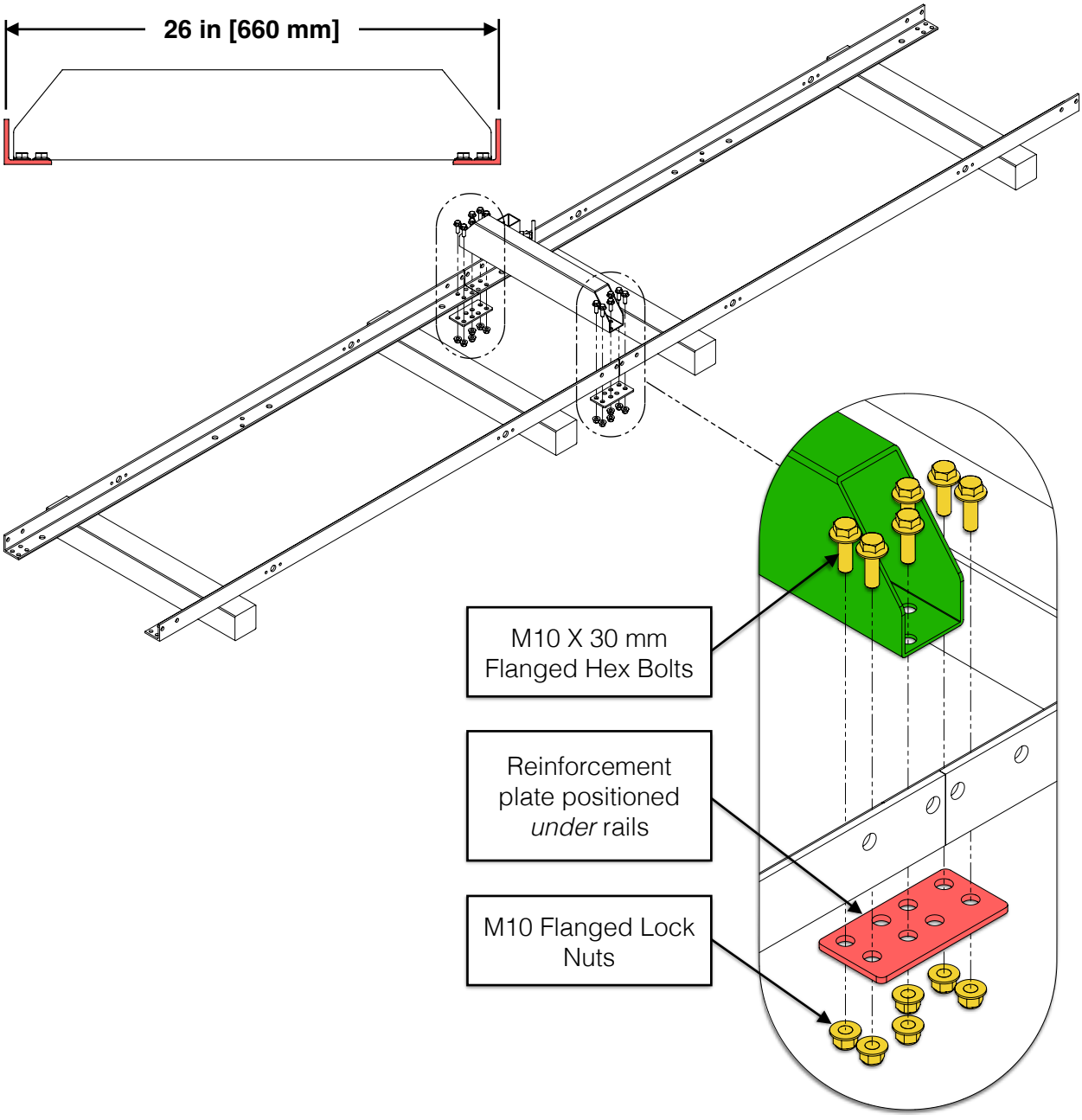
First, set the four (4) track rails on top of four pieces of lumber of equal height. It is ideal to keep the rails at least 4-6 in [100-150 mm] off the ground for ease of assembly..



CAPTION

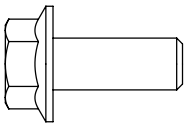
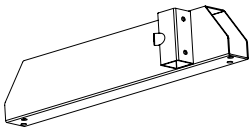
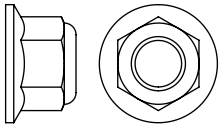
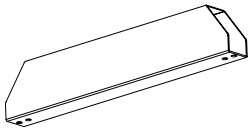
Next, assemble one of the mid bunks over the rail joints with a reinforcement plate *under* the rails on both the left and right sides. Use six (6) M10 X 30 mm flanged hex bolts and M10 flanged lock nuts per side.

Keep the outer faces of the rails 26 in [660 mm] apart but do not fully tighten the hardware. Snug the bolts enough so that minor adjustments to the track width can be made once the track is fully assembled.

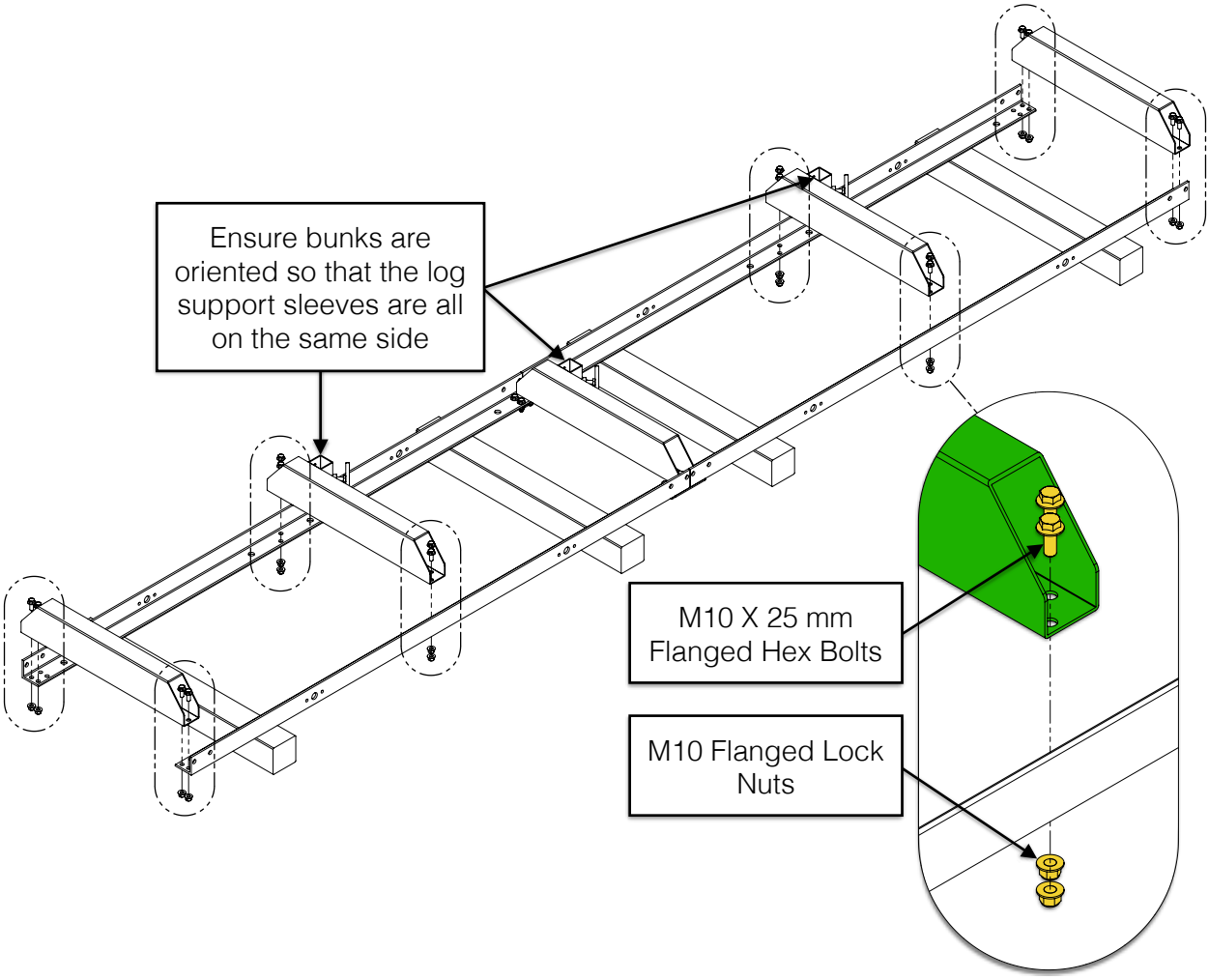


MID & END BUNKS

Assemble the mid and end bunks in the locations shown using the components and hardware listed in the table below.

16x	M10 X 25 mm Flanged Hex Bolt		2x	Mid Bunk	
16x	M10 Flanged Lock Nut		2x	End Bunk	

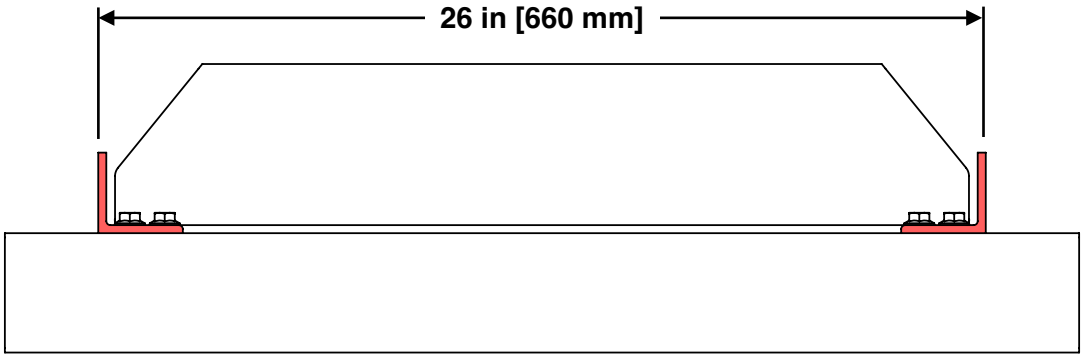
Use sixteen (16) M10 X 25 mm flanged hex bolts and M10 flanged lock nuts (4 per bunk) at all end & mid bunk locations. Snug the hardware in the same manner as the centre bunk.



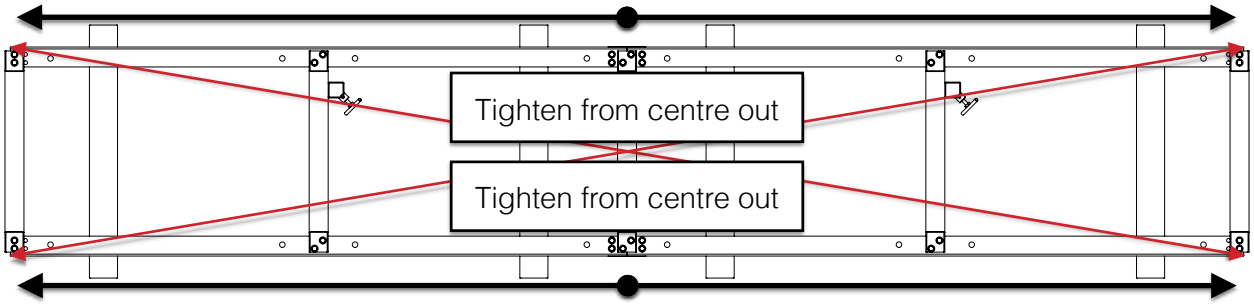
SQUARING THE TRACK AND SETTING THE WIDTH

The assembled track measures 26 in [660 mm] wide when measuring from the outside faces of the rails.

With the bunk hardware connections only snug-tight, the rails can be moved in or out as needed until the proper width is achieved along the entire length of the track.



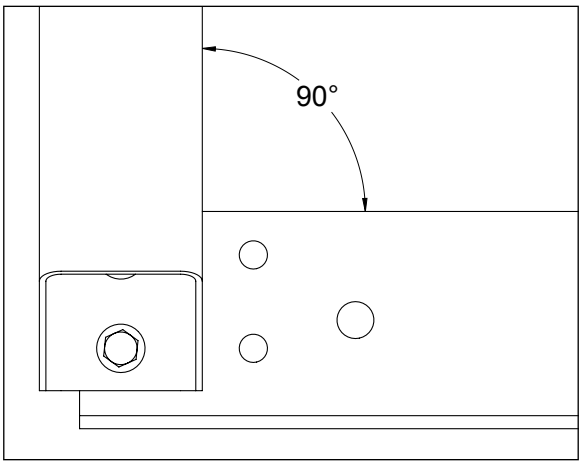
When the width is uniform along the full track length, check it for square by measuring diagonally from rail tip-to-rail tip as shown with the **red arrows** below.



Ensure the end bunks are square to the rails.

Once the width is correct and the track square, tighten all sixteen (16) M10 X 25 mm and twelve (12) M10 X 30 mm flanged hex bolts and their nuts ***working from the centre out towards the ends*** as shown with the **black arrows** above.

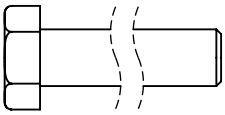
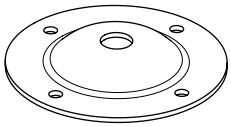
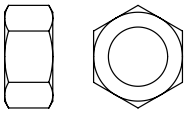
Double-check the track width and squareness after tightening. Readjust if necessary.



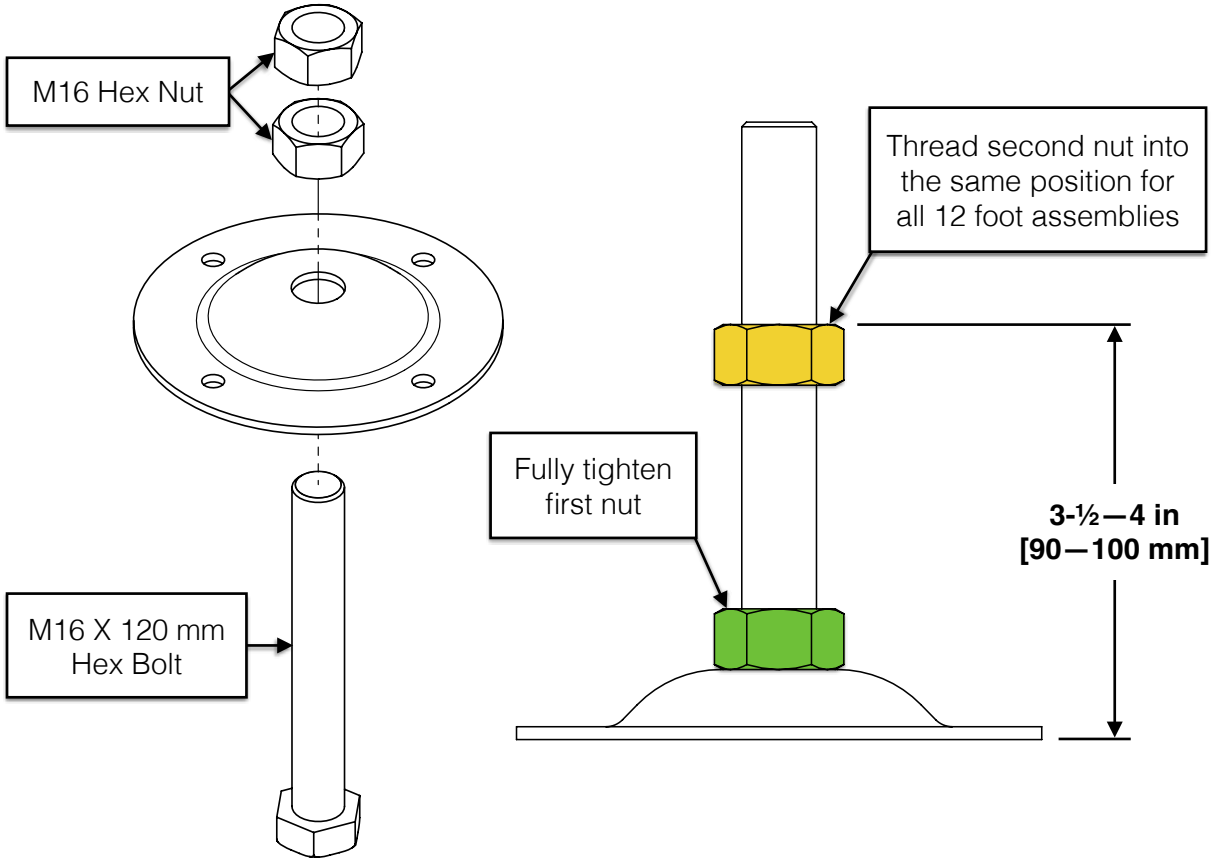
END BUNKS SQUARE TO RAILS

LEVELLING FEET

Assemble the levelling feet using the components and hardware listed in the table below.

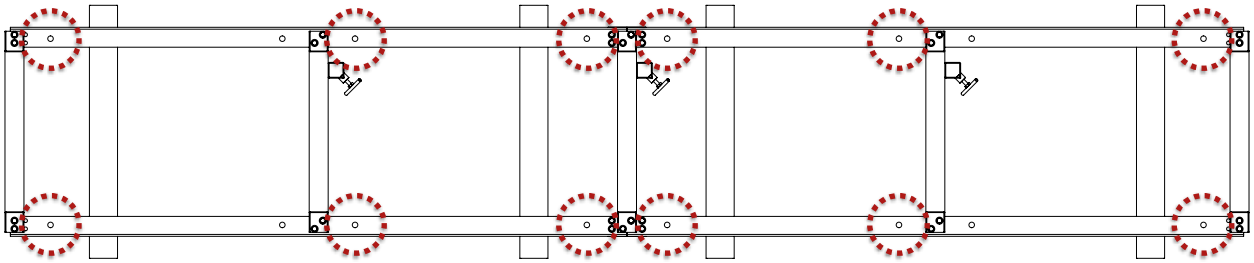
12x	M16 X 120 mm Hex Bolt		12x	Levelling Foot Base	
36x	M16 Hex Nut				

Assemble twelve (12) sets of levelling feet, each one with a levelling foot base, an M16 X 120 mm hex bolt, and two (2) M16 hex nuts. A third hex nut will secure the foot assembly to the rail on the next page.

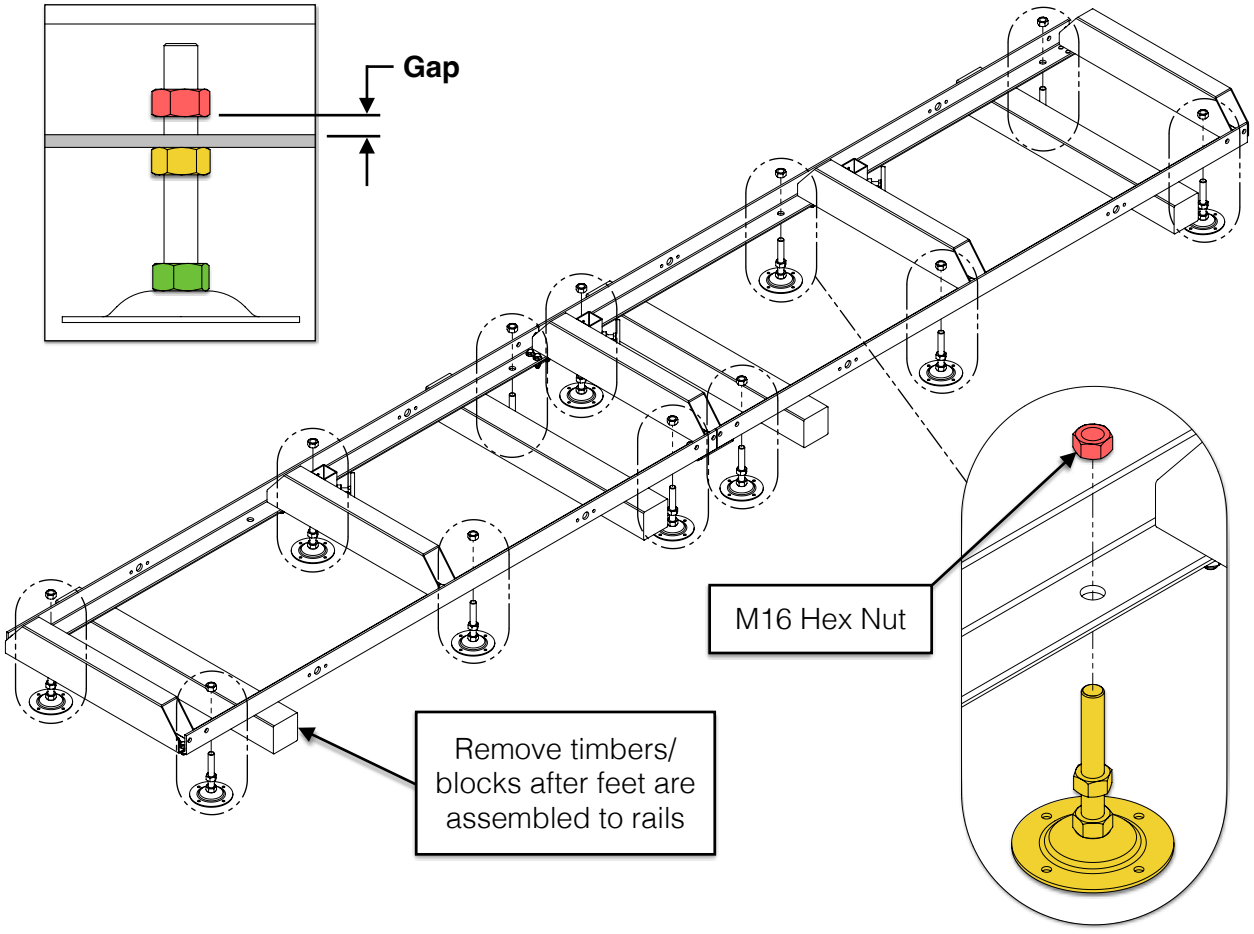


Fully tighten the bottom nut and position the second nut roughly 3-½—4 in [90—100 mm] from the bottom of the foot base. Ensure the position of the second nut is the same for all twelve (12) levelling foot assemblies.

Attach the twelve (12) levelling feet assemblies to the rails at the locations shown below.



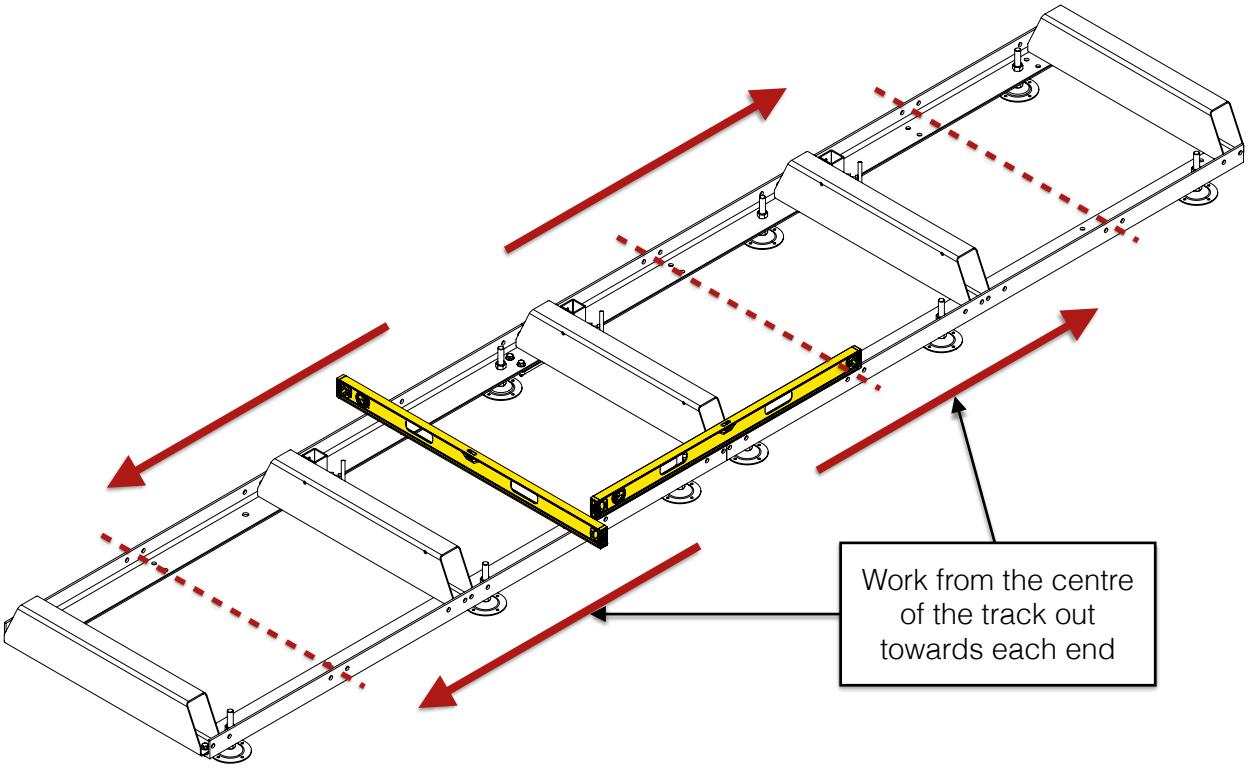
Assemble the levelling feet up through the bottom of the rails and thread an M16 hex nut onto each of the M16 X 120 mm hex bolts. Do not tighten the nut. Leave it loose enough so a noticeable gap exists between the nut and the rail to allow for track levelling in a later step.



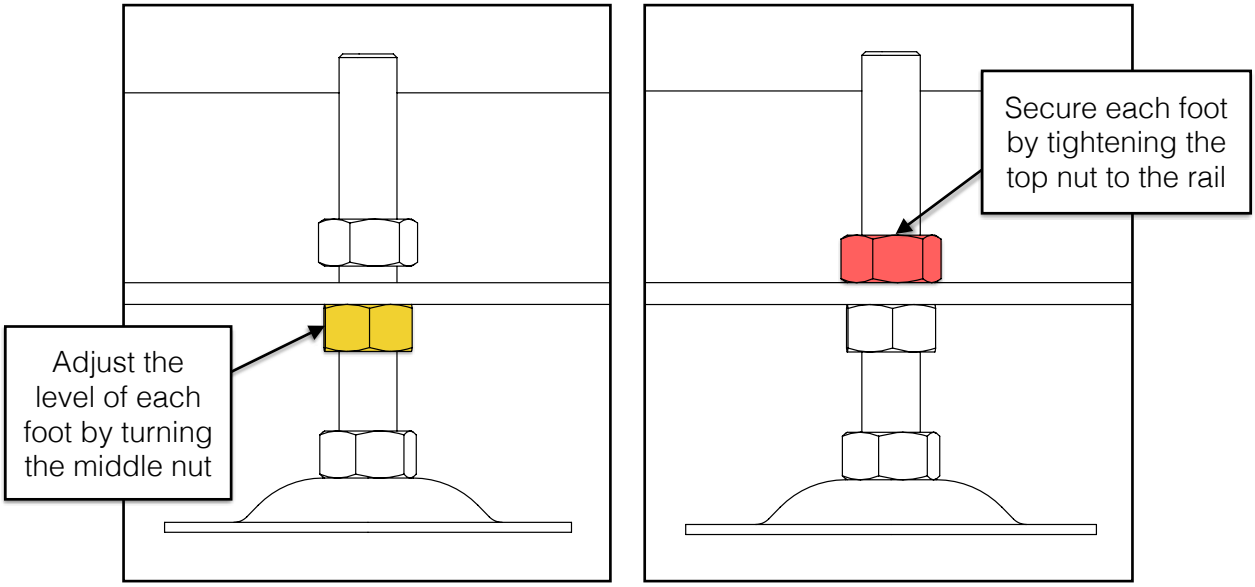
With the feet loosely assembled to the rails, remove the timber/block supports so the full weight of the track is resting on middle nuts of the levelling feet.

LEVELLING THE TRACK

Working from the middle of the track out towards each end, check the rails for level lengthwise *along* the rails and widthwise *across* the rails.

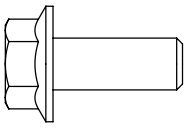
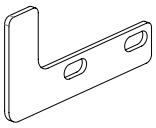
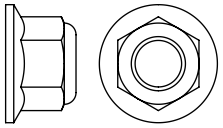


Turn the middle nut on each foot to fine-tune the level. Once level, secure each foot to the rail by tightening the M16 top nut.

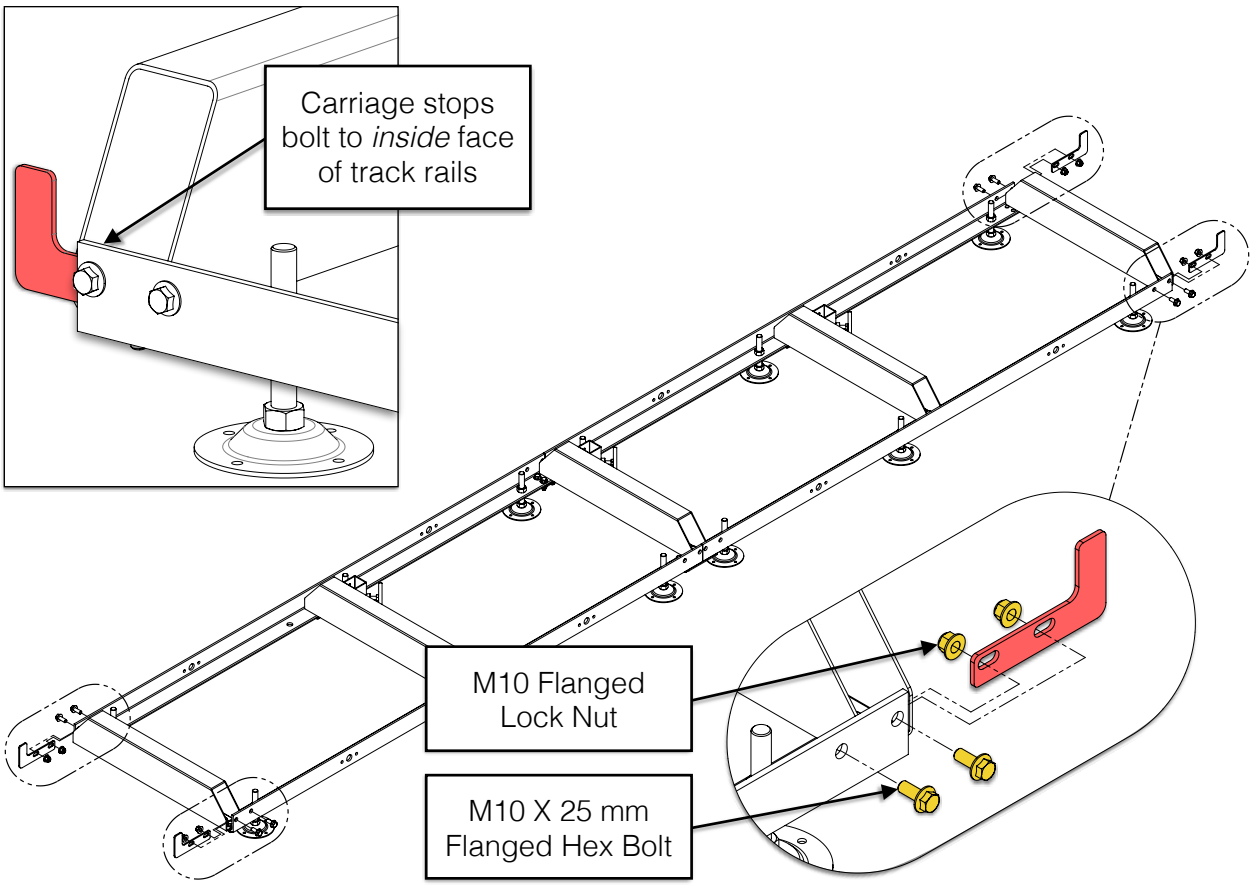


CARRIAGE STOPS

Assemble the carriage stops to the *inside* face of the rails using the components and hardware listed in the table below.

8x	M10 X 25 mm Flanged Hex Bolt		4x	Carriage Stop	
8x	M10 Flanged Lock Nut				

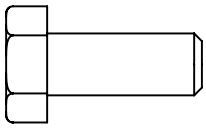
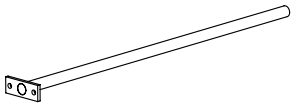
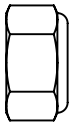
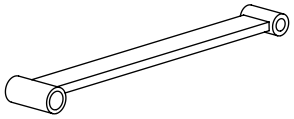
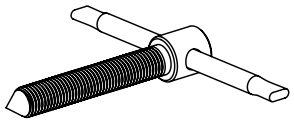
Use two (2) M10 X 25 mm flanged hex bolts and M10 flanged lock nuts to assemble each carriage stop to the *insides* of the track rails.



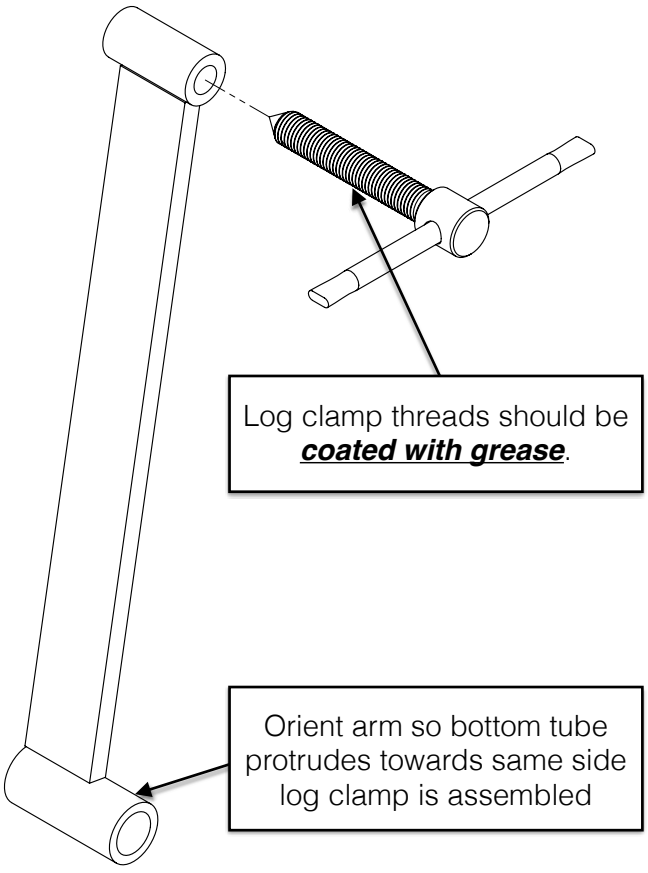
Leave the carriage stops off one end if the sawmill head will be manually lifted onto the track. See section *PLACING THE HEAD ON THE TRACK (METHOD 2)*.

LOG CLAMP

Assemble the log clamps using the components and hardware listed in the table below.

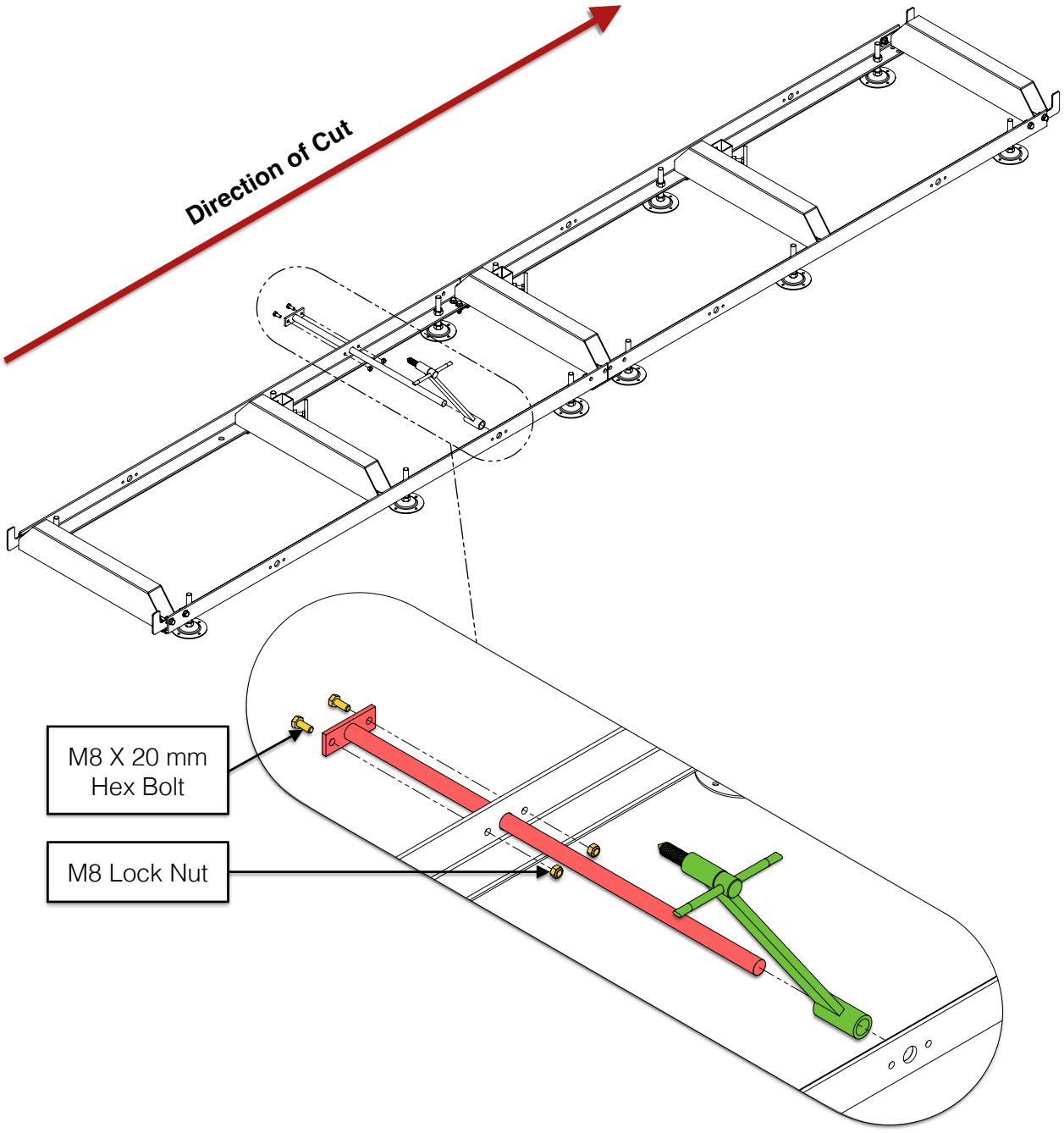
2x	M8 X 20 mm Hex Bolt		1x	Log Clamp Connecting Rod	
2x	M8 Lock Nut		1x	Log Clamp Arm	
			1x	Log Clamp	

Grease the threads of the log clamp prior to threading it into the log clamp arm.. Orient the arm so that the bottom tube protrudes towards the side that the log clamp is being assembled.



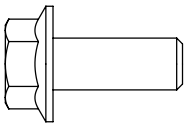
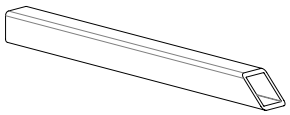
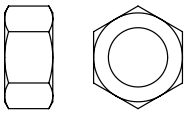
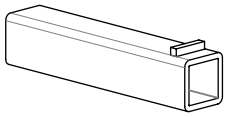
Attach the log clamp assembly to the rails as shown below using two (2) M8 X 20 mm hex bolts and M8 lock nuts.

Note that there are multiple locations along the track where the log clamp can be bolted. Depending on how many track sections are being used, select a log clamp position that will secure the log firmly against a minimum of two log supports.

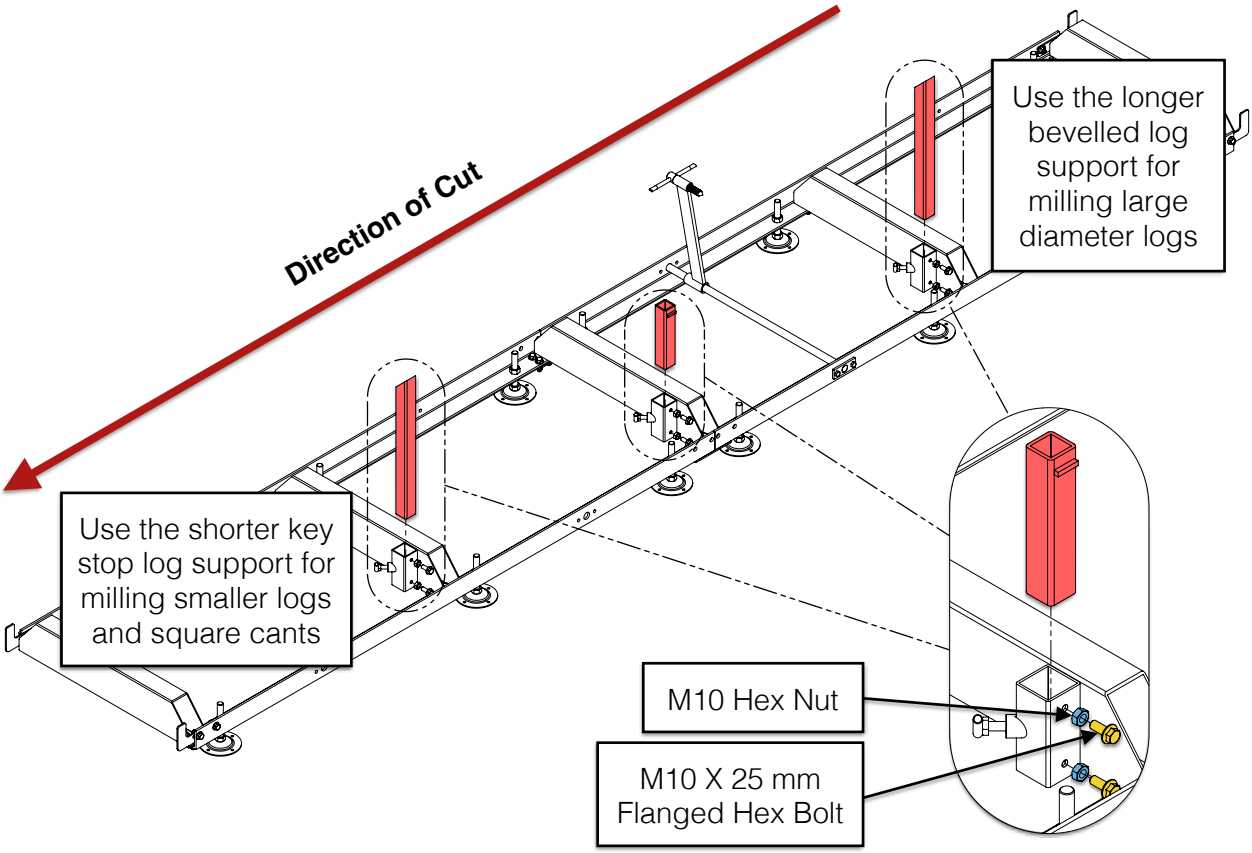


LOG SUPPORTS

Assemble the log supports to the centre and mid bunks using the components and hardware listed in the table below.

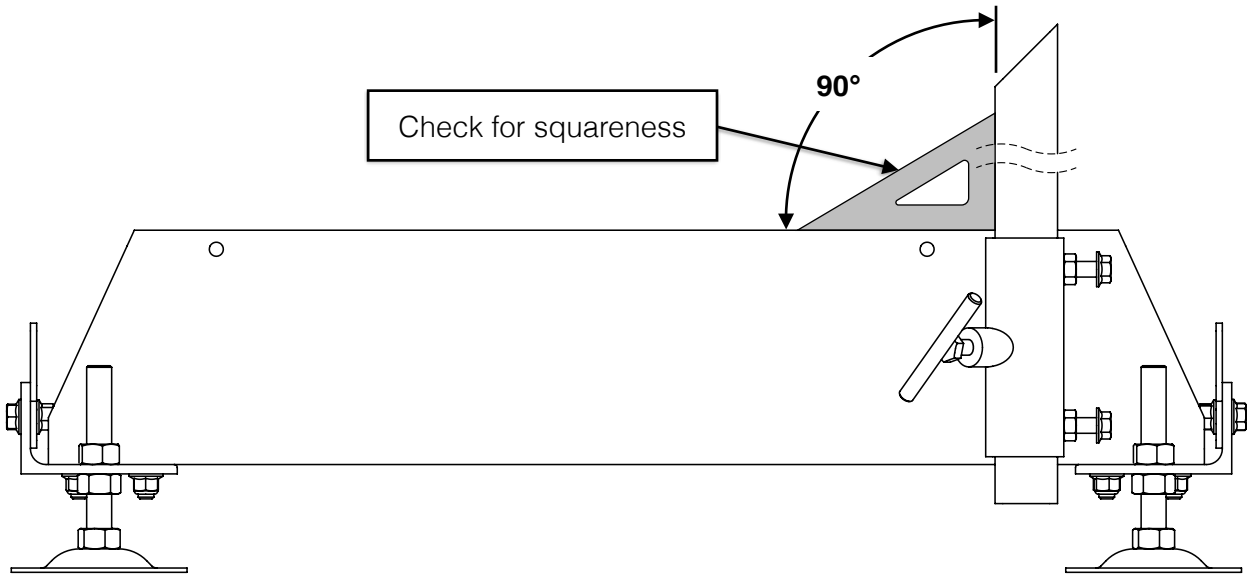
6x	M10 X 25 mm Flanged Hex Bolt		2x	Bevelled Log Support	
6x	M10 Hex Nut		2x	Key Stop Log Support	

Assemble six (6) M10 X 25 mm flanged hex bolts and six (6) M10 hex jam nuts (2 each per bunk) into the threaded holes in the sleeves of all three (3) mid bunks. These bolts are not used to secure the log supports—they help square the log support to the top face of the bunk if necessary. See next page for directions.

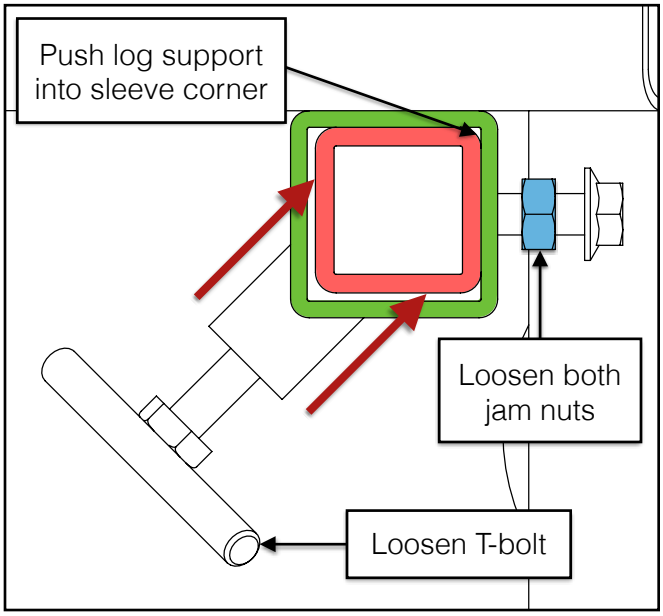


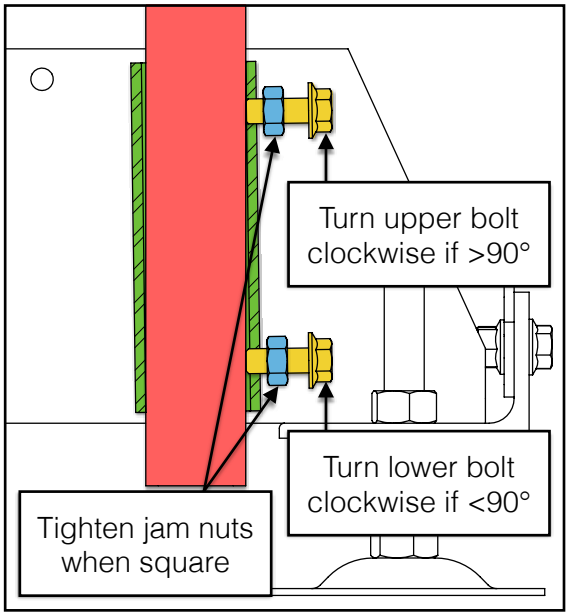
The log supports can be installed into any of the sleeves on the centre or mid bunks.

If the log support is not square (90°) to the top surface of the bunk when the T-bolt is tightened, the two (2) M10 X 25 mm flanged hex bolts can adjust the angle.



Loosen the T-bolt and push the log support into the corner of the bunk sleeve **making sure neither bolt protrudes into the sleeve**. Check for squareness. If the angle is less than 90°, turn the bottom bolt clockwise until the support is square with the bunk. If the angle is greater than 90°, turn the top bolt clockwise until the support is square with the bunk.



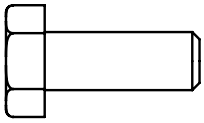
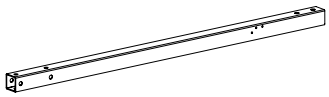


Once the log support is square with the top of the bunk, tighten both jam nuts. Secure the log support with the T-bolt. Repeat the process for the centre and mid bunks as necessary.

3. SAWMILL HEAD ASSEMBLY

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

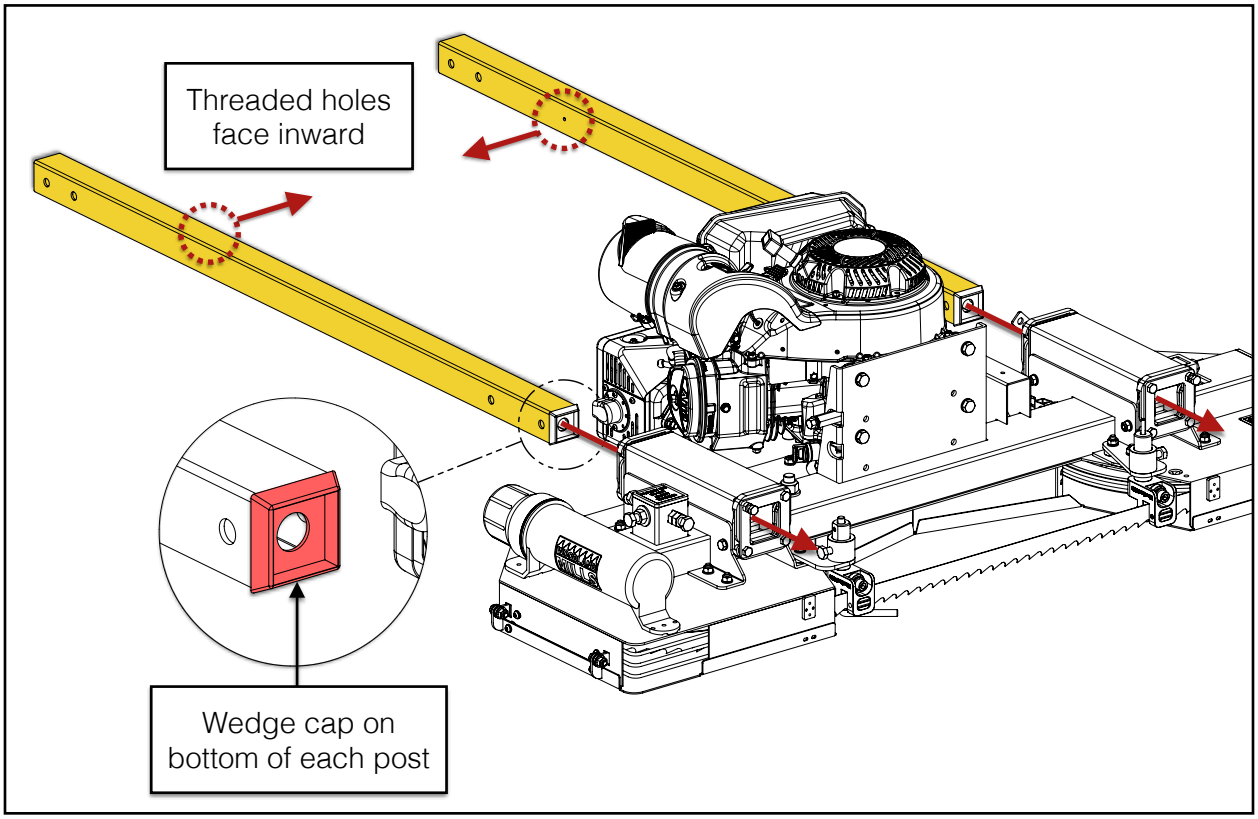
FRONT POSTS

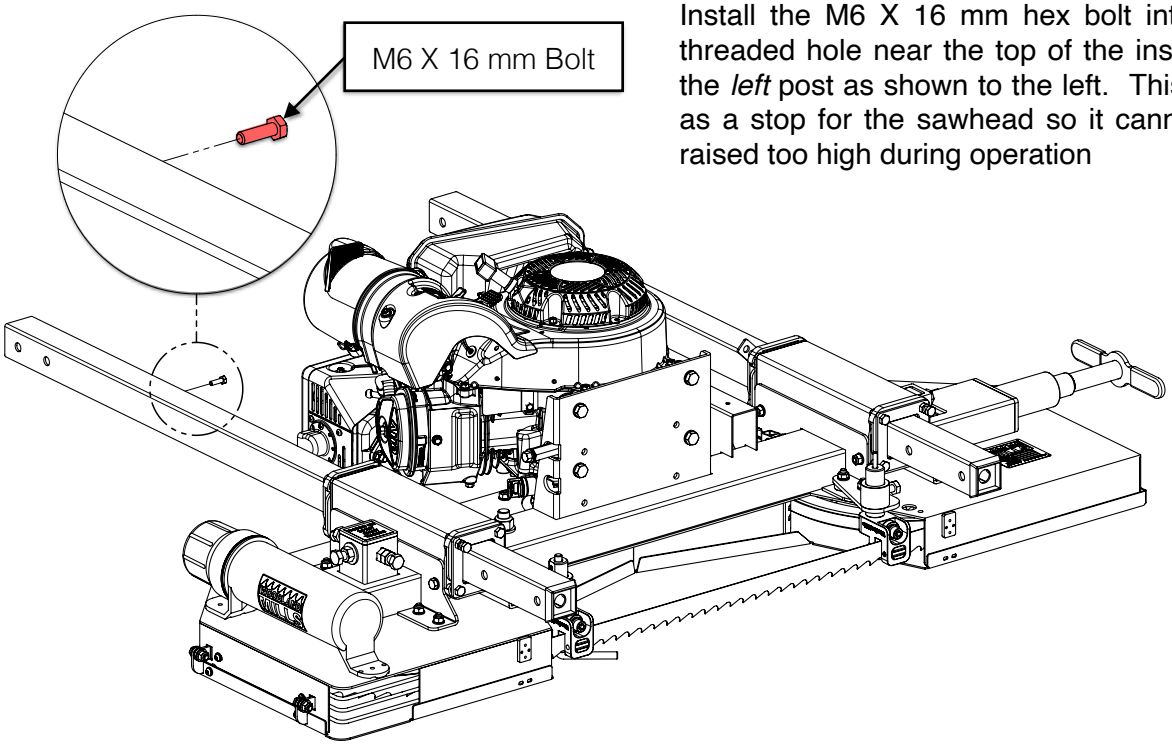
1x	M6 X 16 mm Hex Bolt		2x	Front Post	

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.

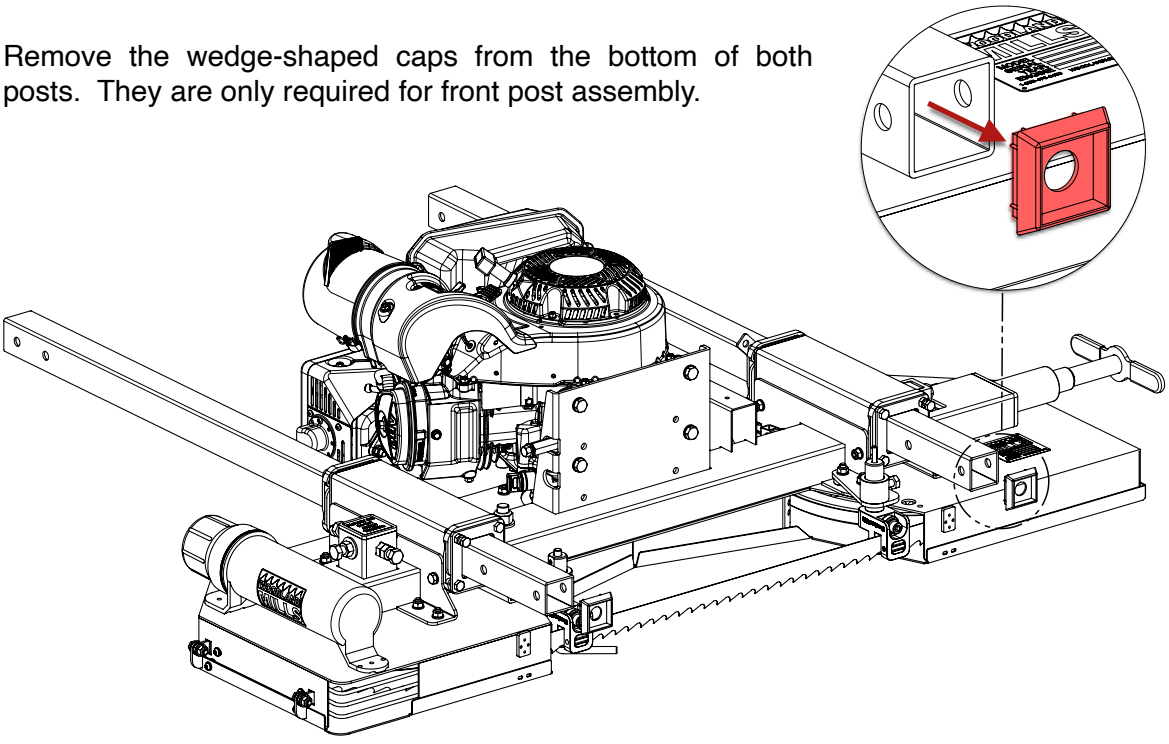
****Orient both posts so the threaded hole faces inward.****





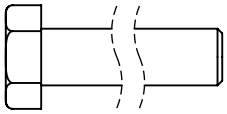
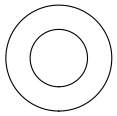
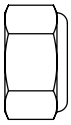
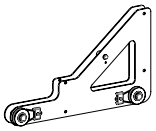
Install the M6 X 16 mm hex bolt into the threaded hole near the top of the inside of the *left* post as shown to the left. This acts as a stop for the sawhead so it cannot be raised too high during operation

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

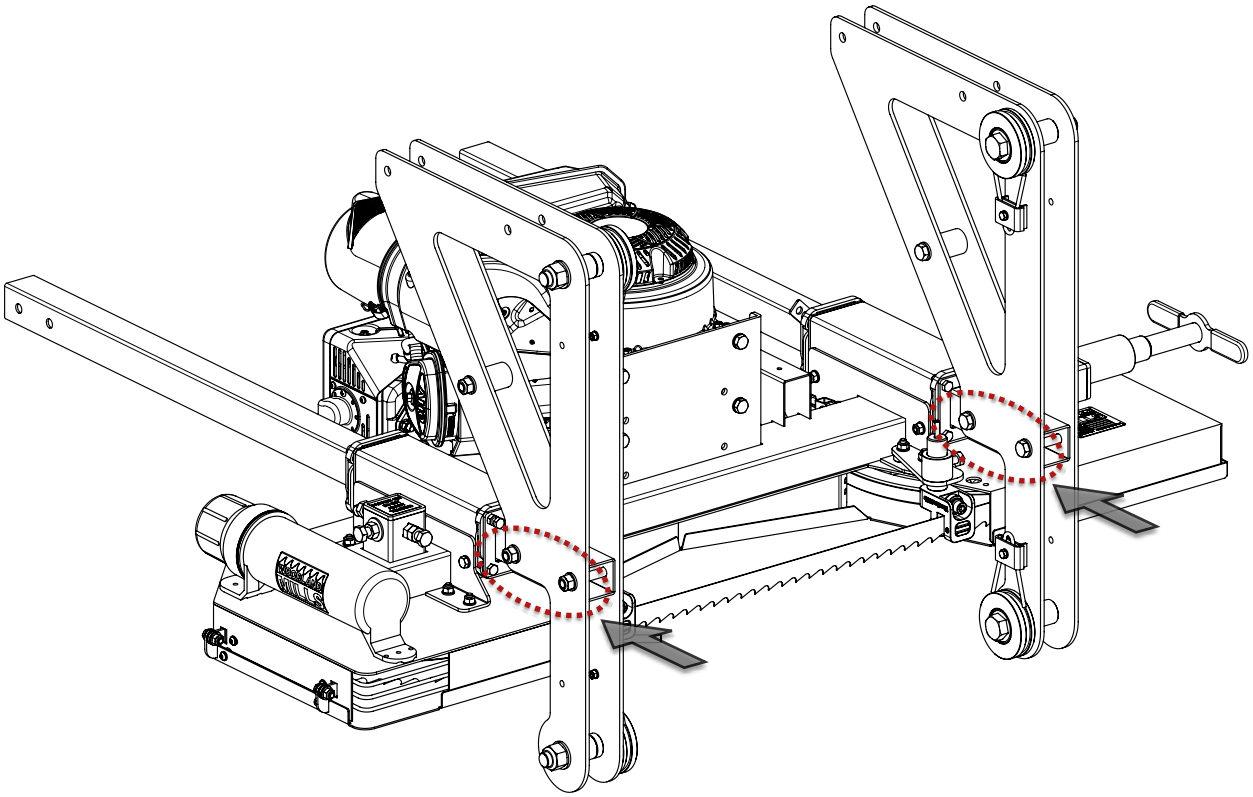


CARRIAGE LEGS

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	

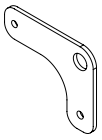
Attach the two (2) carriage leg sub-assemblies to the front posts with four (4) M12 X 80 mm bolts, eight (8) M12 flat washers, and four (4) M12 lock nuts. Be sure the bolts point outward and the carriage wheels are positioned on the inside of the legs. Snug these four (4) M12 bolts just enough so that the plates are flush to the posts but do not fully tighten them. Push the posts all the way up until the carriage leg plates contact the post sleeves.



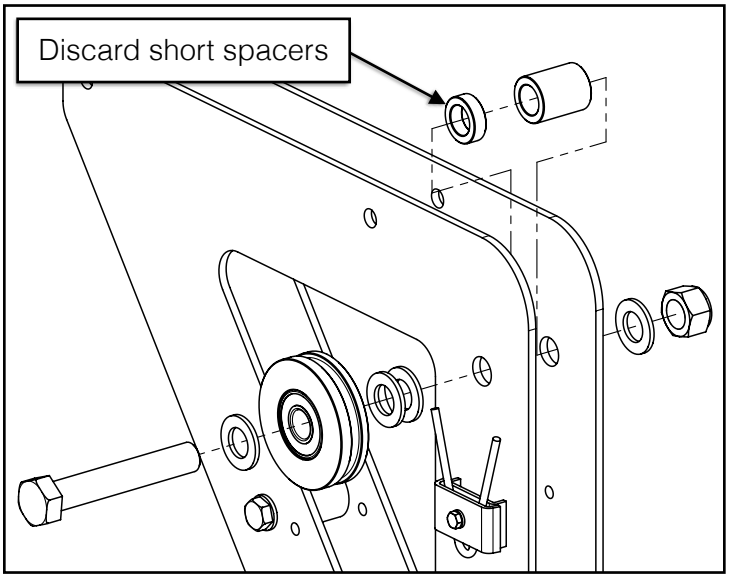
HEAD LOCK-DOWN PLATES

****Woodland Mills sawmill trailer owners only. If a sawmill trailer was not purchased, proceed to the next step.****

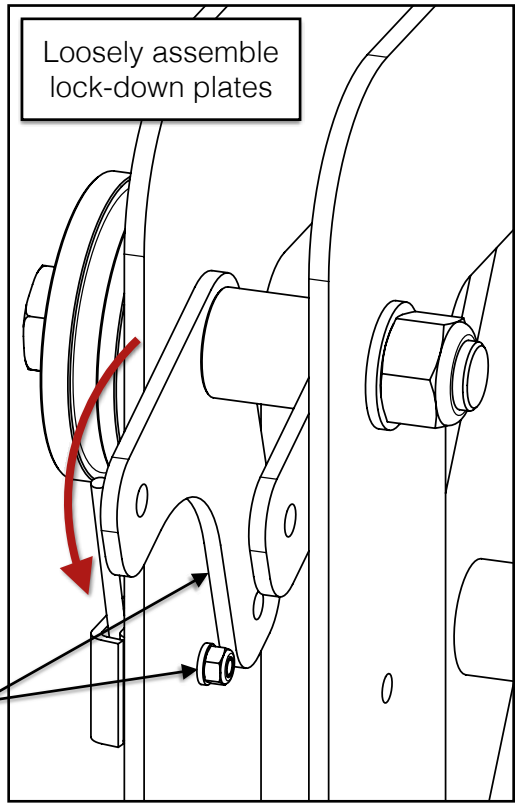
If a Woodland Mills sawmill trailer was purchased with this sawmill, the head lock-down plates can be loosely installed prior to standing the sawhead upright. The lock-down plates come with the sawmill trailers and are not included with the sawmill.

8x	Head Lock-Down Plate	

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.



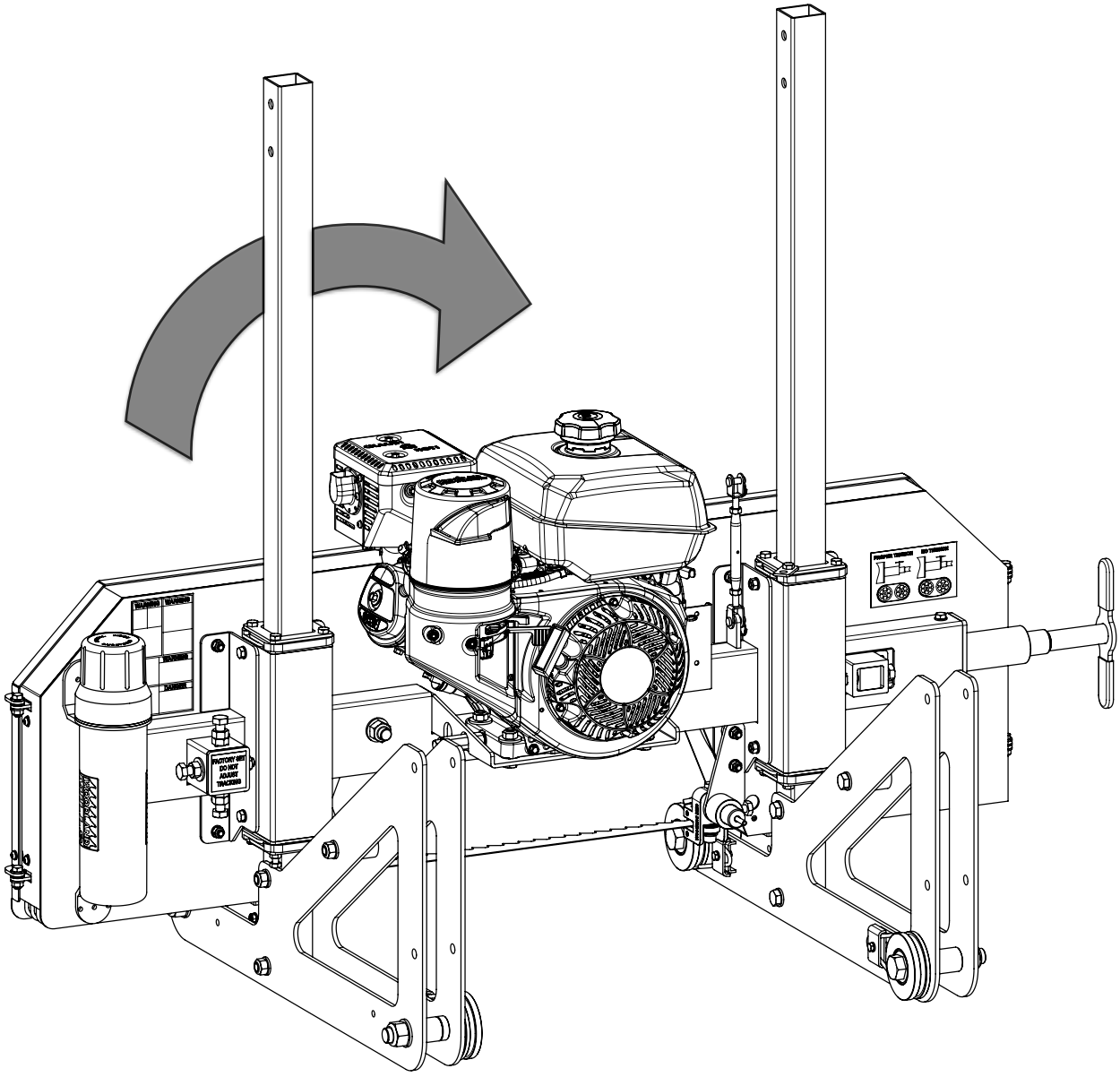
Ensure the longer lock-down plate leg will sit above the wheel sweeper nut when the sawhead is stood upright. This lets the lock-down plates swivel up inside the carriage legs avoiding possible damage until the sawhead is ready to be set on the track.



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.

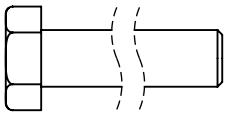
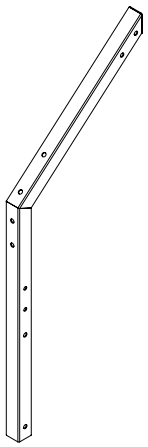
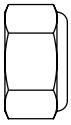
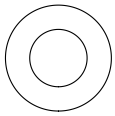
STANDING THE SAWHEAD UPRIGHT

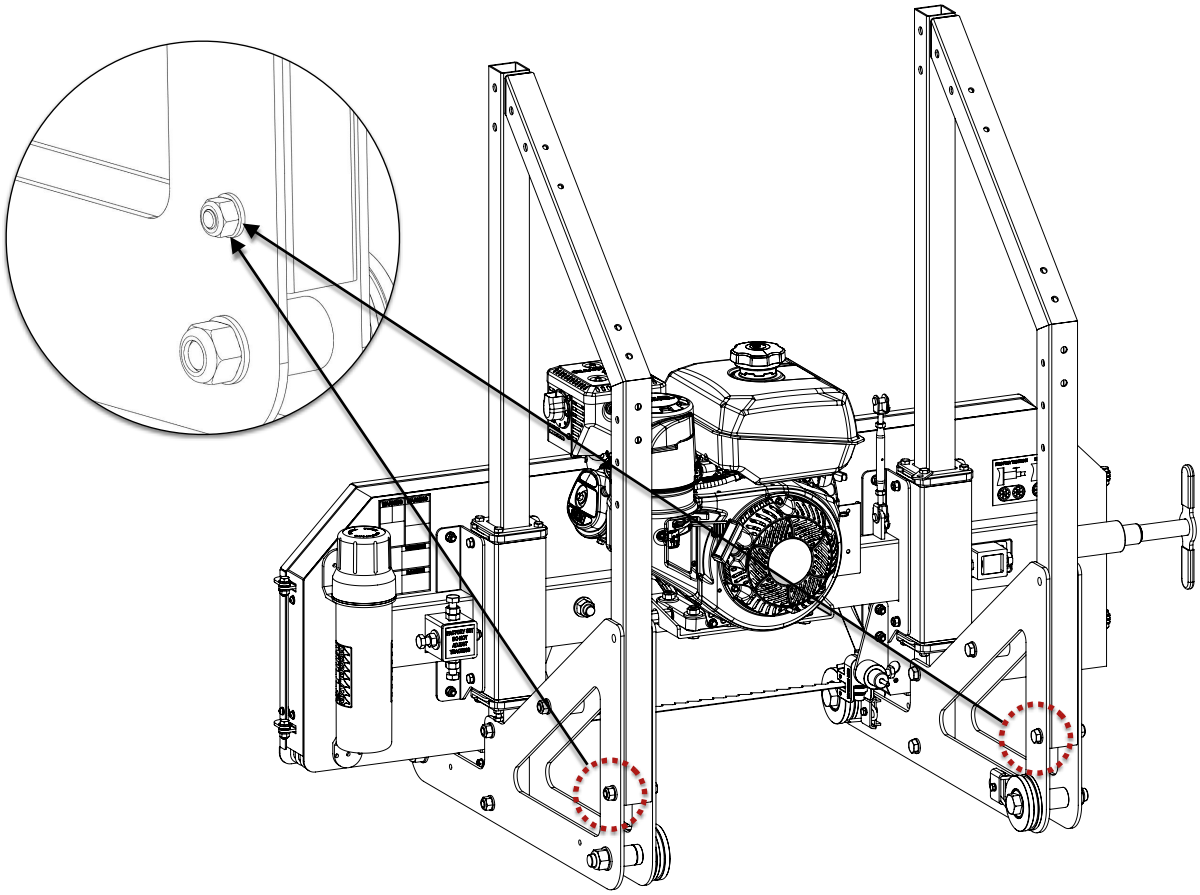
With the help of another person, stand the sawhead upright by rotating it around the rounded profiles at the front of the carriage legs. Do not set the sawhead on the track until instructed to do so later in the assembly process.



REAR POSTS

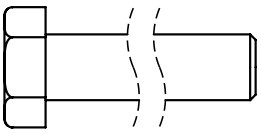
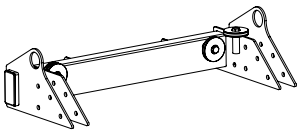
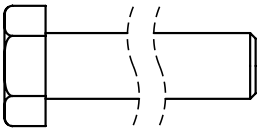
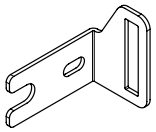
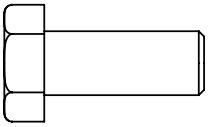
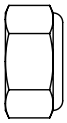
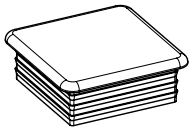
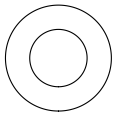
Using the hardware listed below, attach the rear posts between the carriage leg plates using only one (1) M12 X 80 mm bolt, two (2) flat washers, and one (1) lock nut per post.

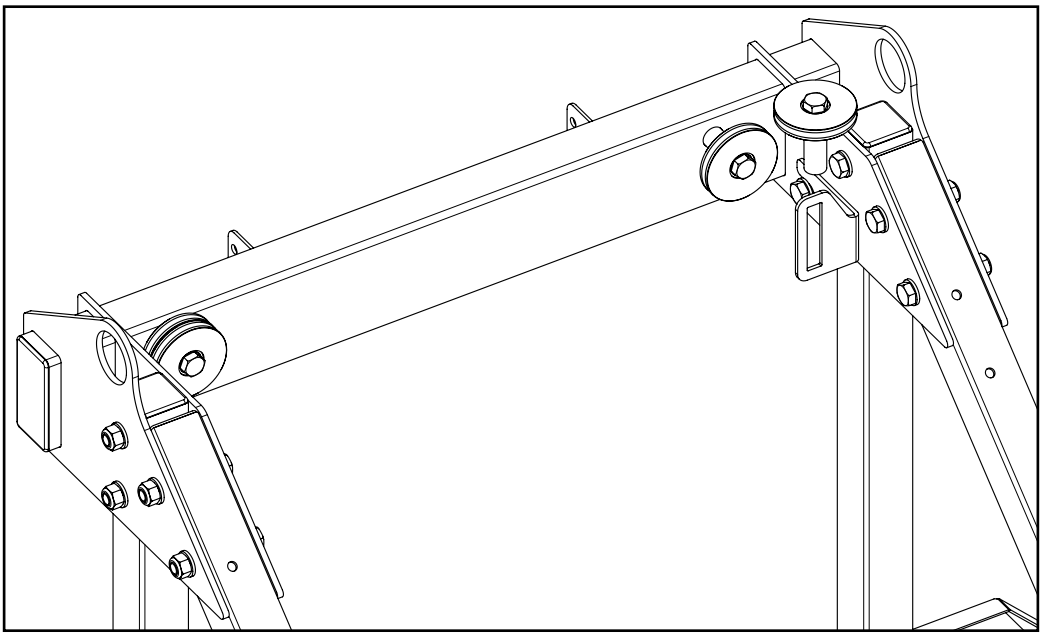
2x	M12 X 80 mm Hex Bolt		2x	Rear Post	
2x	M12 Lock Nut				
4x	M12 Flat Washer				



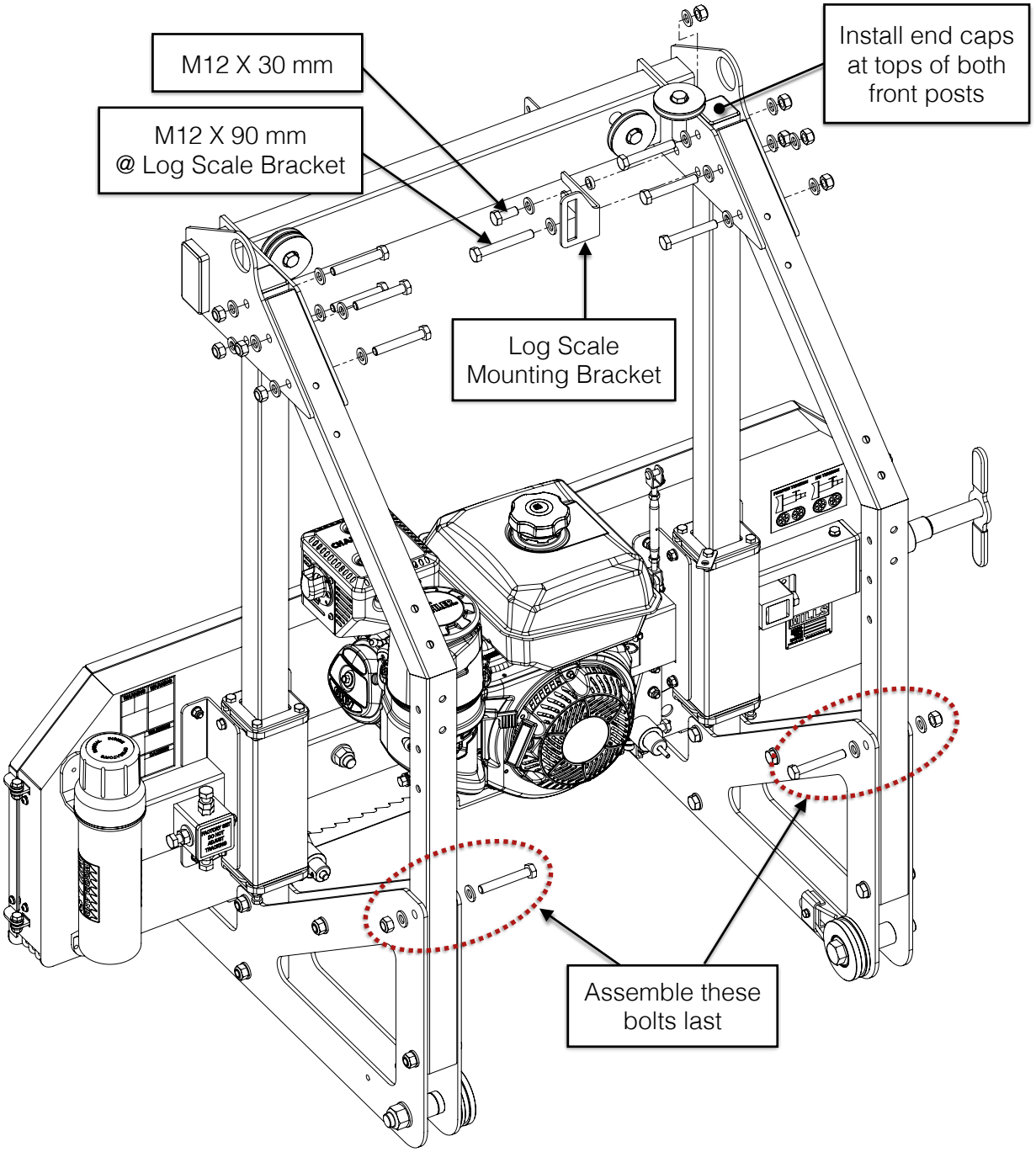
CROSS BEAM

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

1x	M12 X 90 mm Hex Bolt		1x	Cross Beam and Pulley Assembly	
9x	M12 X 80 mm Hex Bolt		1x	Log Scale Mounting Bracket	
1x	M12 X 30 mm Hex Bolt		1x	Spacer [5 mm Lg]	
10x	M12 Lock Nut		2x	End Cap	
21x	M12 Flat Washer				



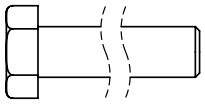
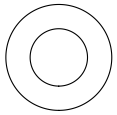
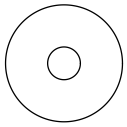
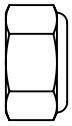
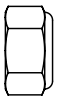
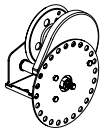
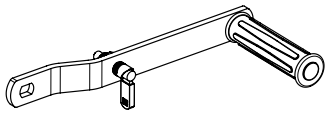
With the help of a second person, slide the cross beam over the carriage posts. Use seven (7) M12 X 80 mm bolts and one (1) M12 X 90 mm bolt (@ log scale mounting bracket) to fasten it in place. Use an M12 flat washer under every bolt head and lock nut.



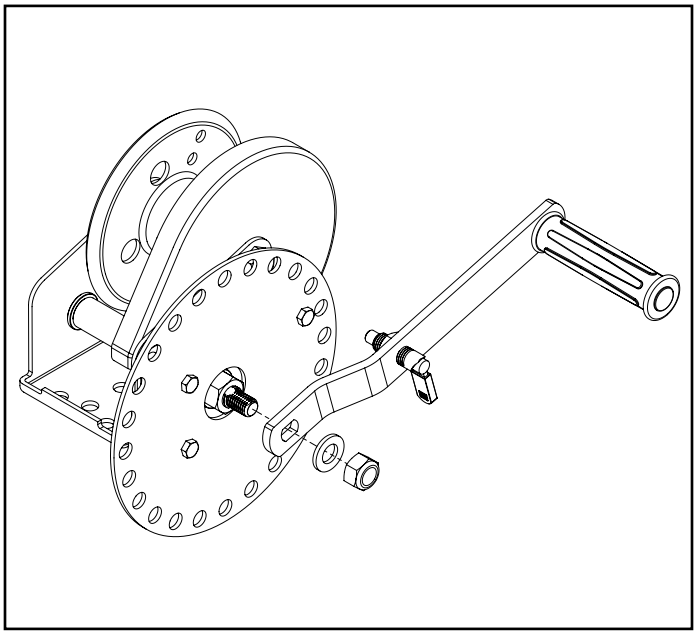
Finally, install two (2) M12 X 80 mm bolts at the top of each carriage leg. Do *not* fully tighten these bolts at this time.

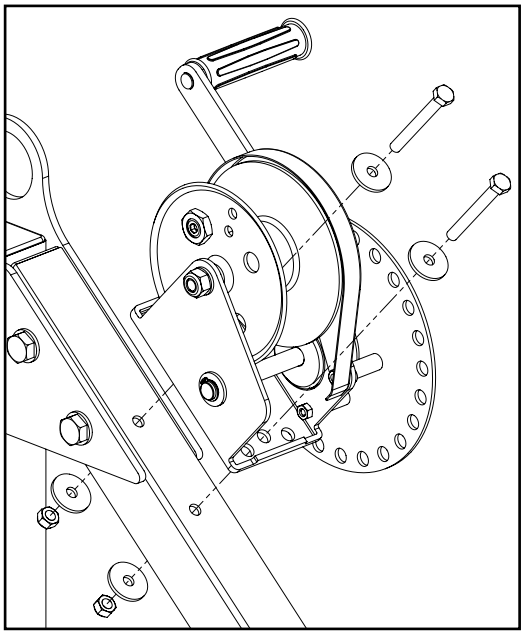
WINCH & LIFT CABLE

Assemble the winch assembly to the right-rear post using the hardware listed below. The wire rope lift cable and index plate come pre-assembled to the winch.

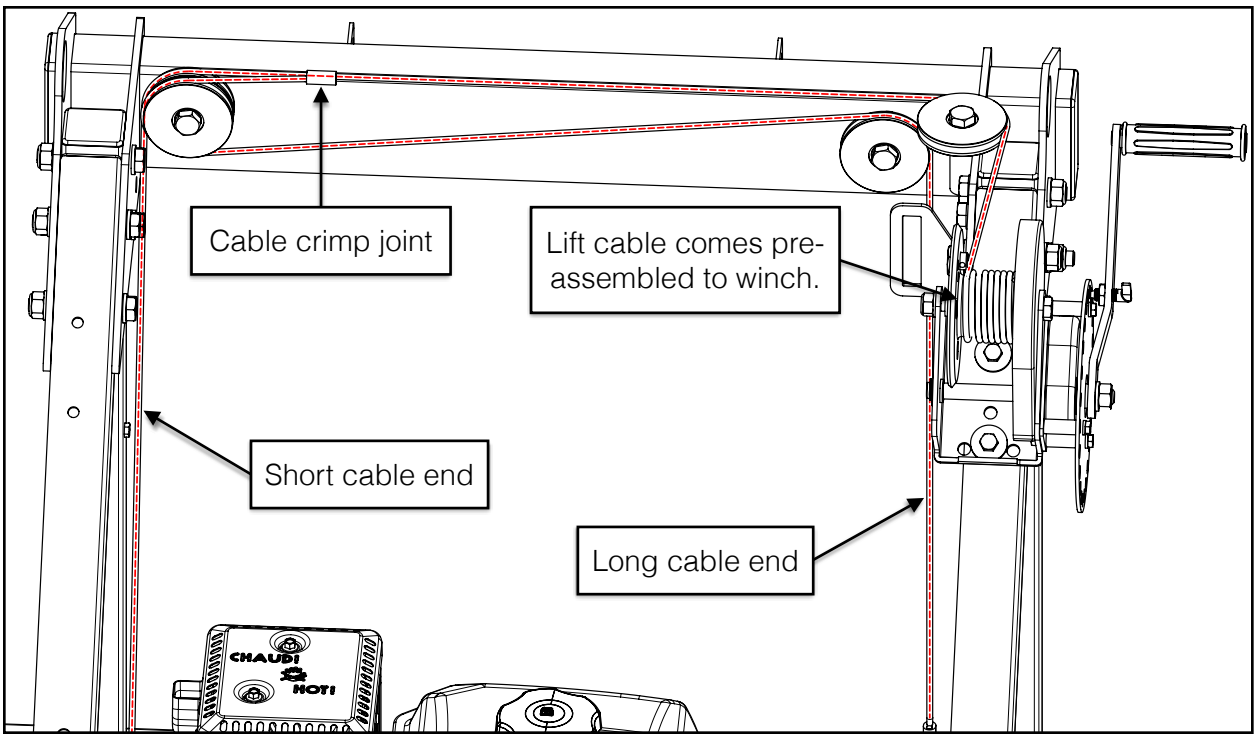
2x	M8 X 70 mm Hex Bolt		1x	M12 Flat Washer	
4x	M8 X 30 mm Fender Washer		1x	M12 Lock Nut	
2x	M8 Lock Nut		1x	Winch Assembly	
			1x	Winch Arm Assembly	

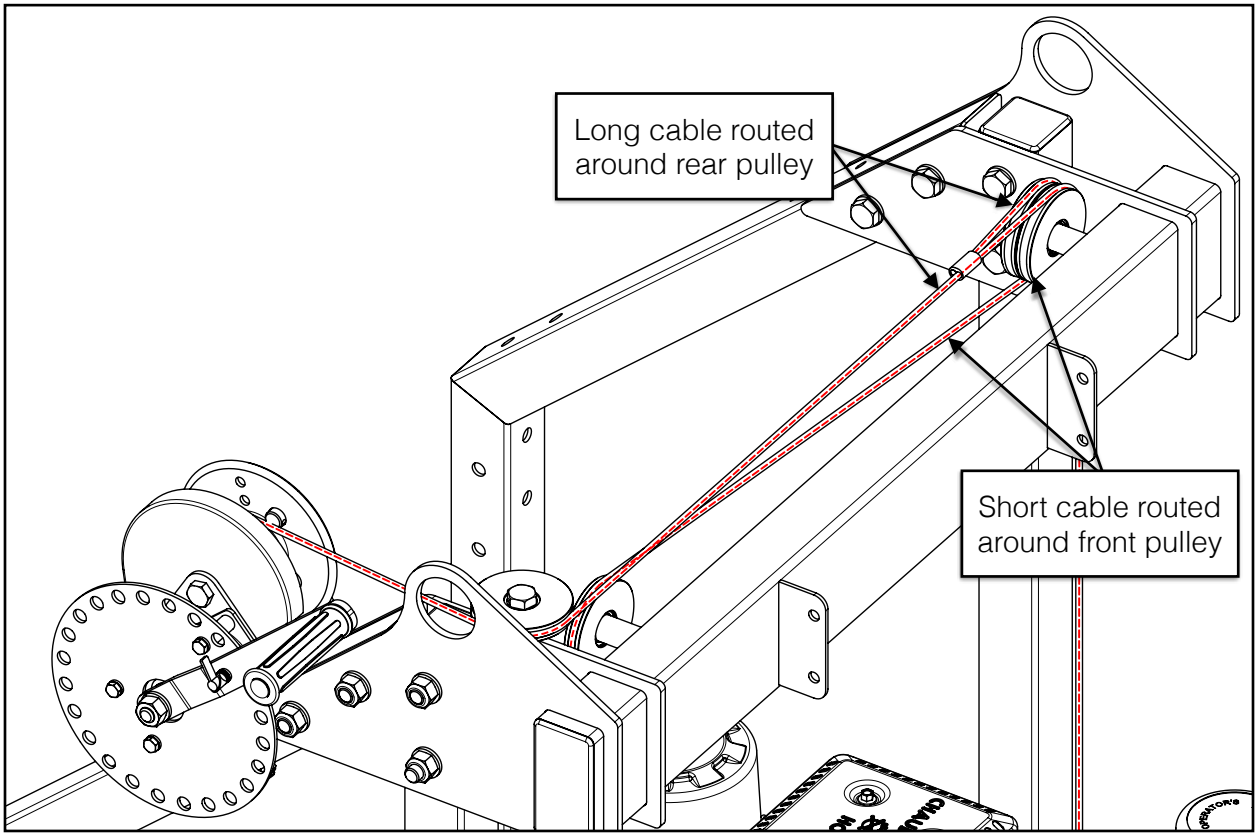
First, assemble the winch arm to the winch using one (1) M12 lock nut and one (1) M12 flat washer. Then assemble the winch to the two (2) holes in the right-rear post near the cross beam. Use two (2) M8 X 70 mm bolts, four (4) fender washers, and two (2) lock nuts. Fully tighten the hardware.



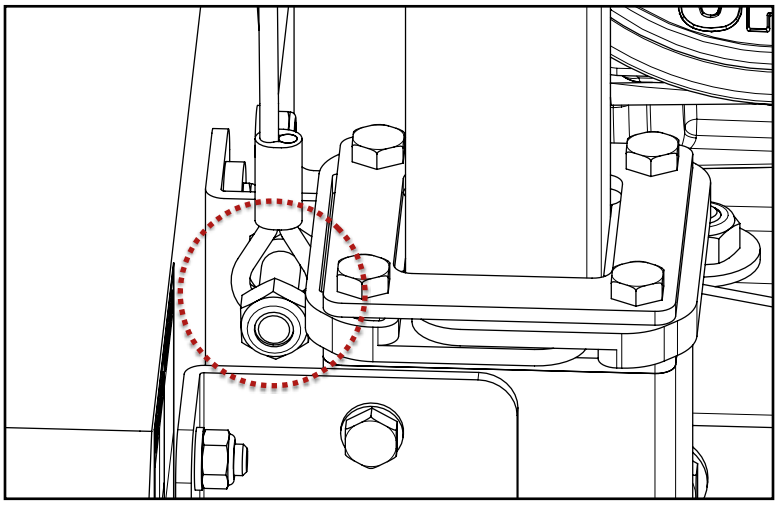


Route the lift cable as shown in the steps below. [Engine removed from some views for clarity.]

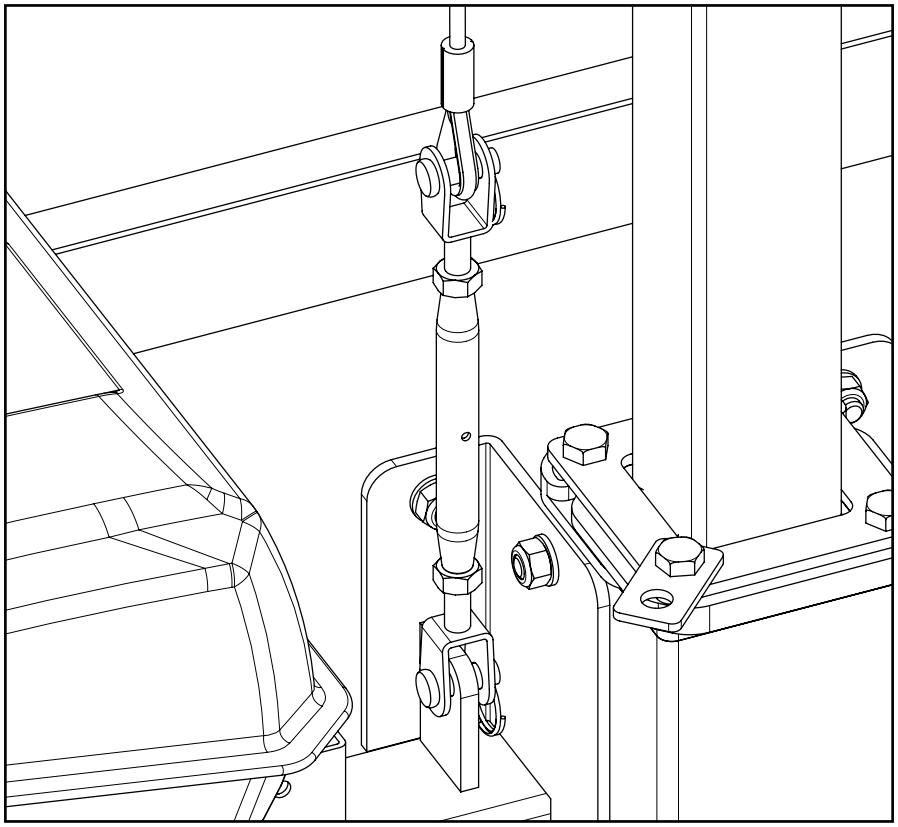




Connect the shorter end of the lift cable to the bolt in front of the left-front post.

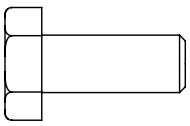
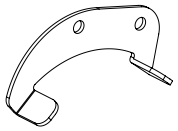
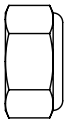
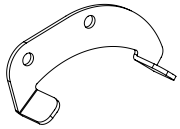
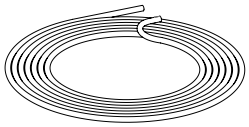
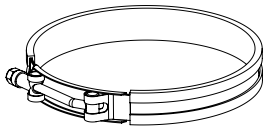
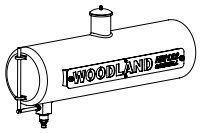


Connect the longer end of the lift cable to the turnbuckle next to the front-right post by removing the upper clevis pin and locking ring. The turnbuckle will be adjusted later when the sawhead is levelled.

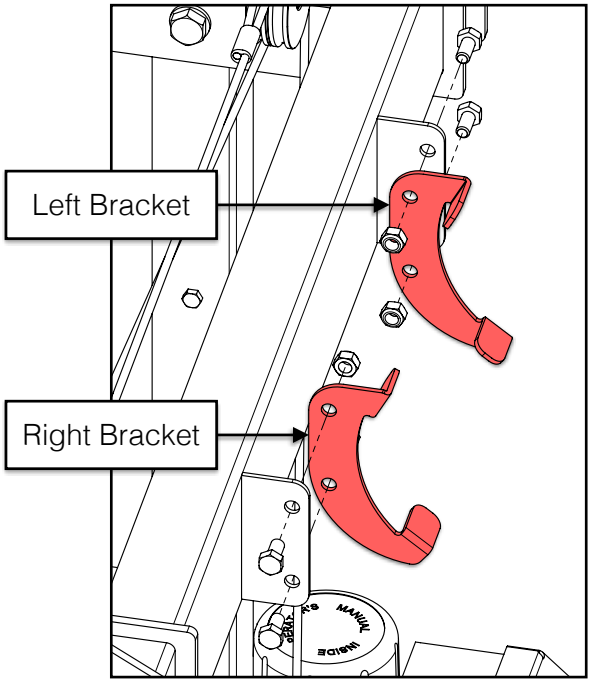


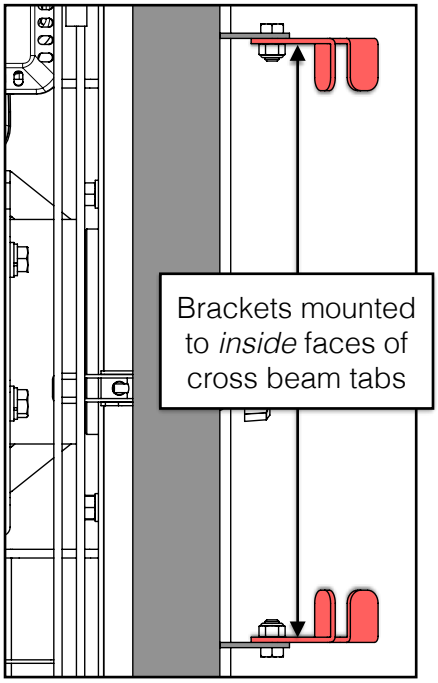
LUBRICATION TANK & TUBING

With the components and hardware listed below, assemble the lubrication tank to the front of the cross beam and route the plastic tubing.

4x	M8 X 16 mm Hex Bolt		1x	Lubrication Tank Backet [Left]	
4x	M8 Lock Nut		1x	Lubrication Tank Backet [Right]	
2x	Lubricant Tubing		2x	Bolt Clamp	
1x	Drip Nozzle		1x	Lubrication Tank Assembly	

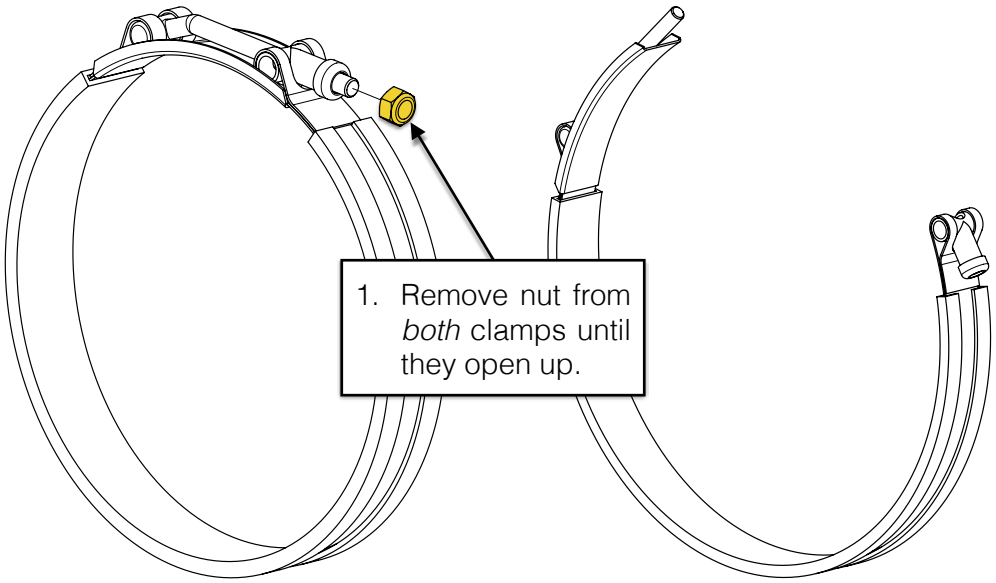
Assemble the left and right lubrication tank brackets to the *inside* faces of the cross beam tabs using four (4) M8 X 16 mm bolts and lock nuts, ensuring the bolts point inward. Do *not* tighten the hardware until instructed.

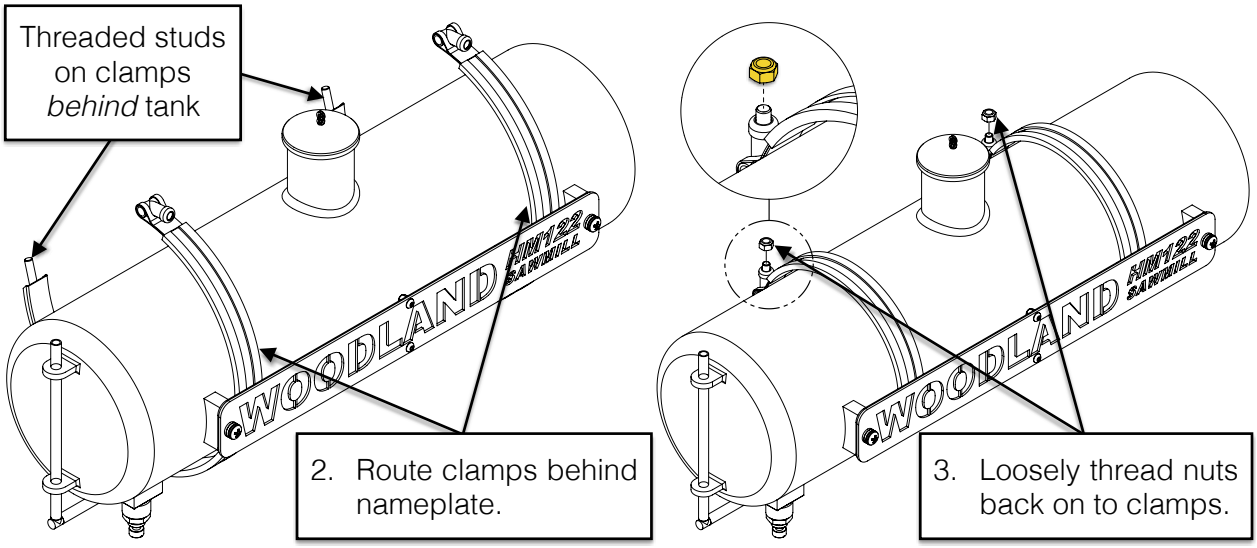




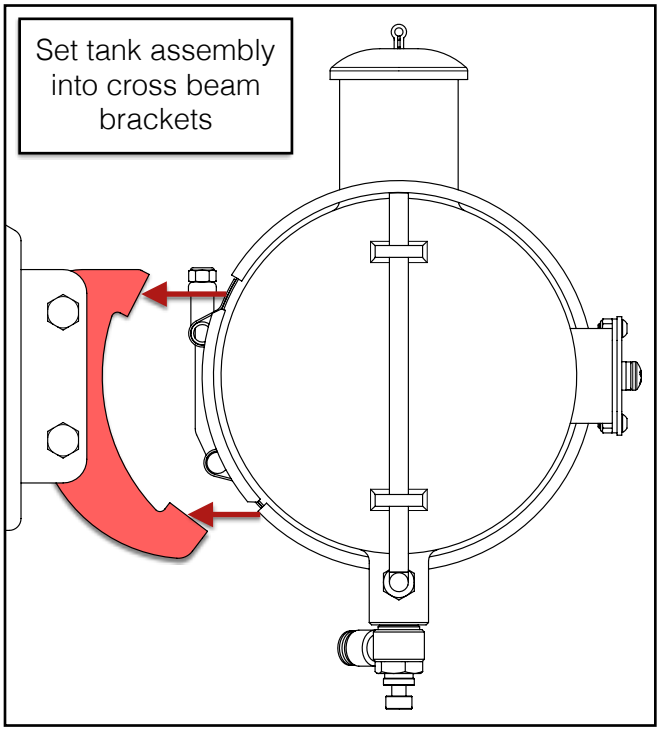
Before the lubrication tank can be attached to the cross beam, the bolt clamps need to be assembled to the tank as follows:

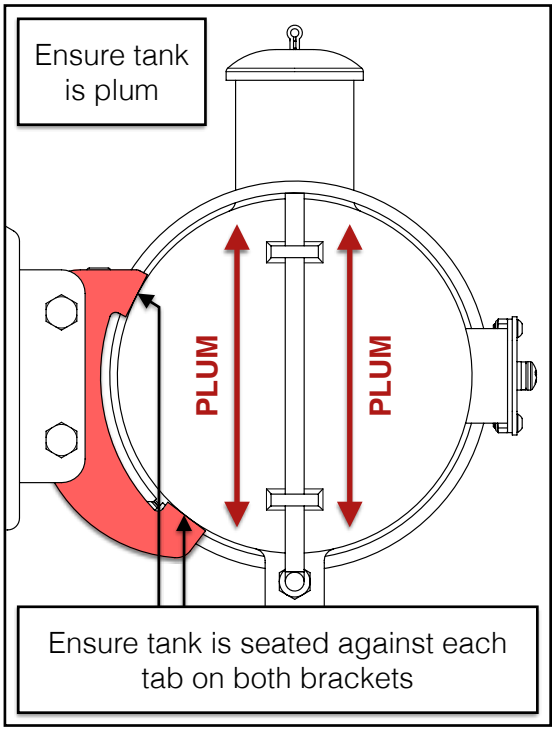
1. Remove the nut from each clamp so the clamp opens up.
2. Slide the clamps up from the bottom of the tank, going behind the nameplate on both sides, until they wrap around the tank.
3. Thread the nut back on to each clamp to close the loop but leave them loose.



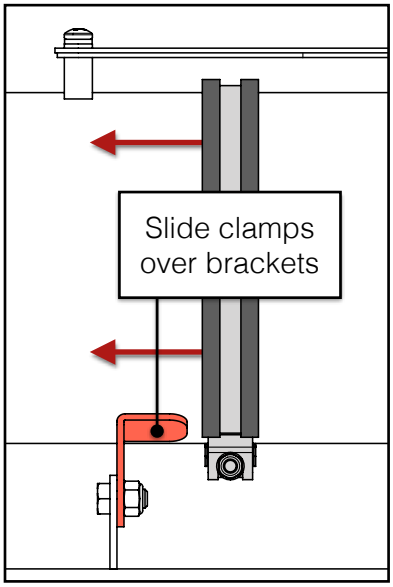


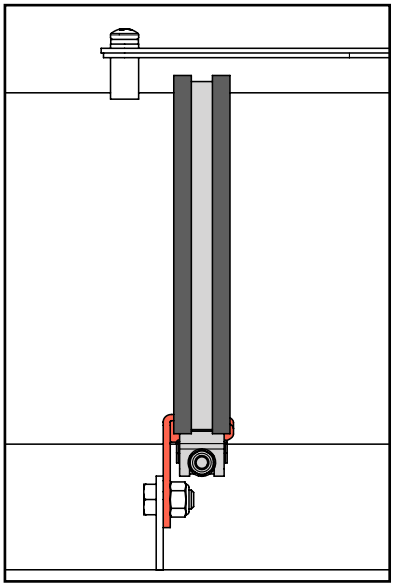
Set the tank assembly into the brackets on the cross beam, ensuring the tank is plum so water will drain freely. The tank must be held in place by hand until the clamps are in place.

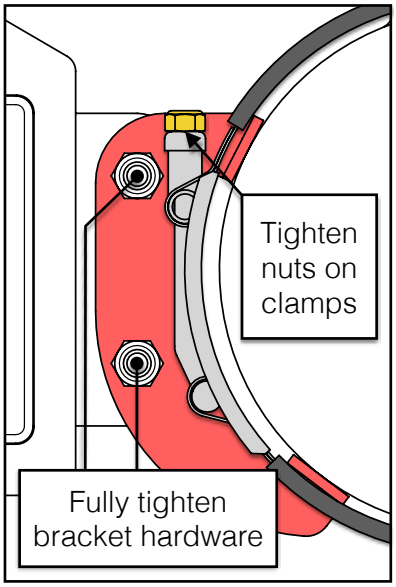




Slide the tank clamps over the tabs on the tank brackets on both sides. Verify the tank is still plum and then tighten the nuts on the clamps. Then fully tighten the bracket hardware until the tank is secure.

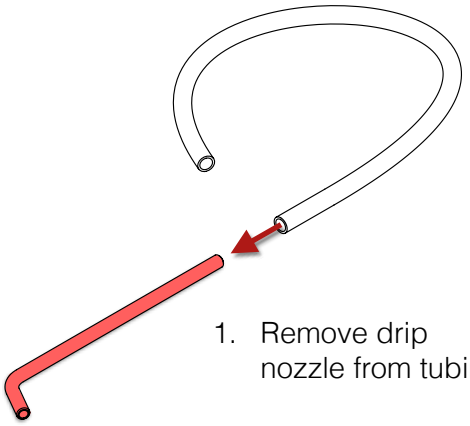




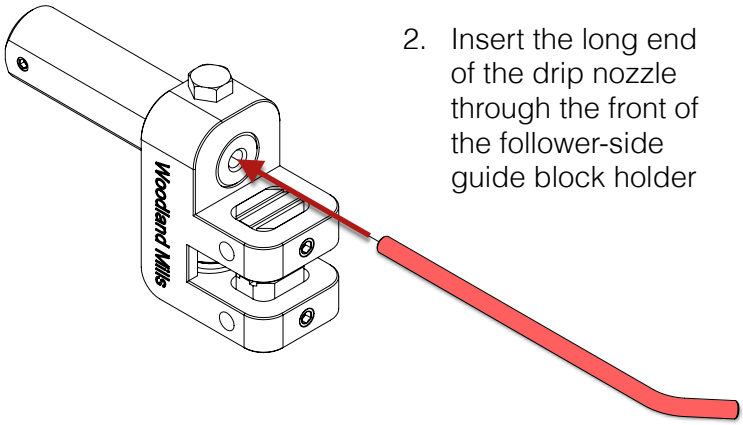


****Do not over-tighten the clamps or the tank could be damaged.****

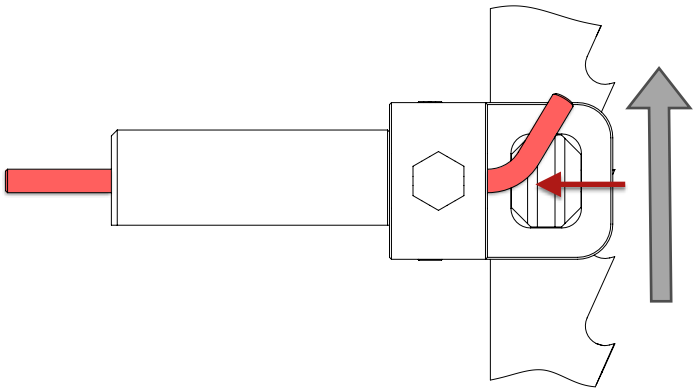
The copper drip nozzle comes assembled to one of the pre-cut lengths of tubing. Remove the the copper drip nozzle from the tubing and assemble it into the *follower-side* guide block holder as shown below. Other sawmill components have been removed for clarity.



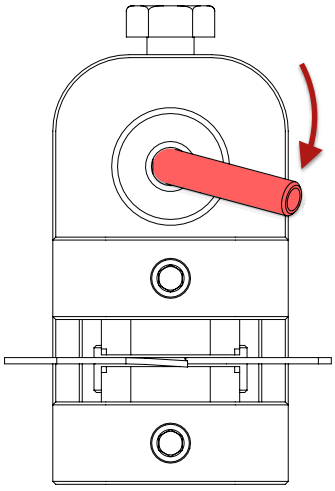
1. Remove drip nozzle from tubing



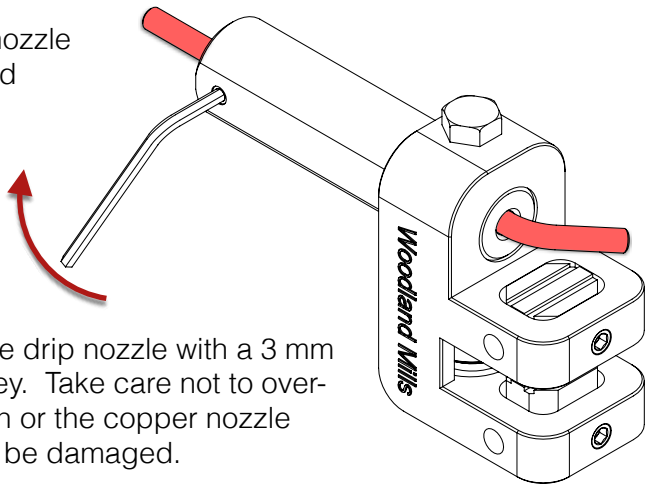
2. Insert the long end of the drip nozzle through the front of the follower-side guide block holder



3. Ensure the drip nozzle is pushed far enough through the guide block holder shaft so that the water will drip onto the blade.



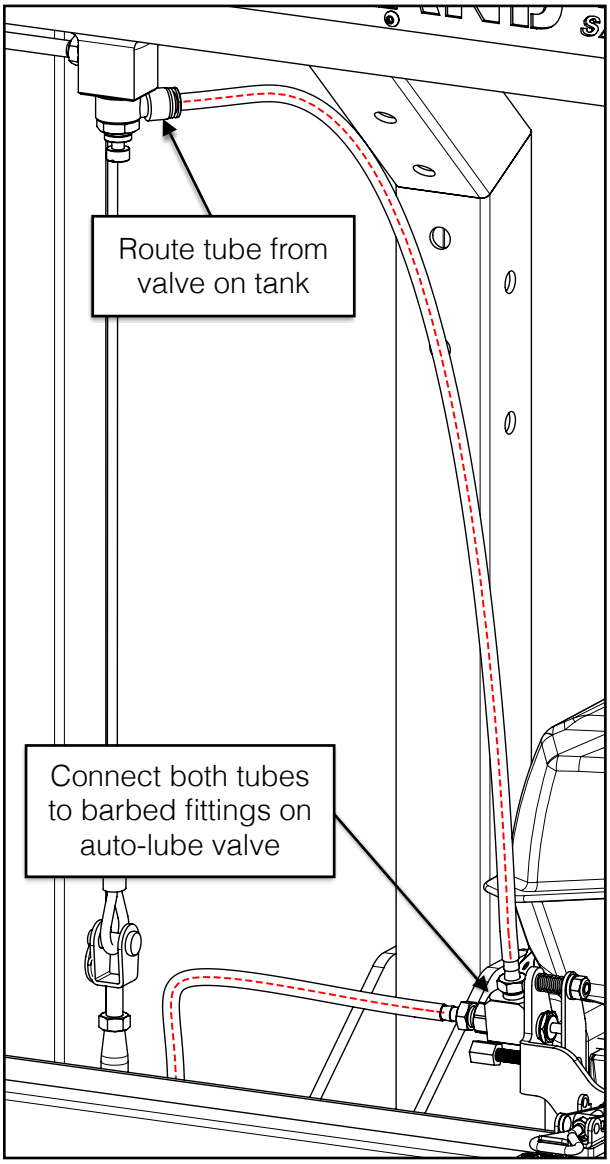
4. Tilt drip nozzle downward

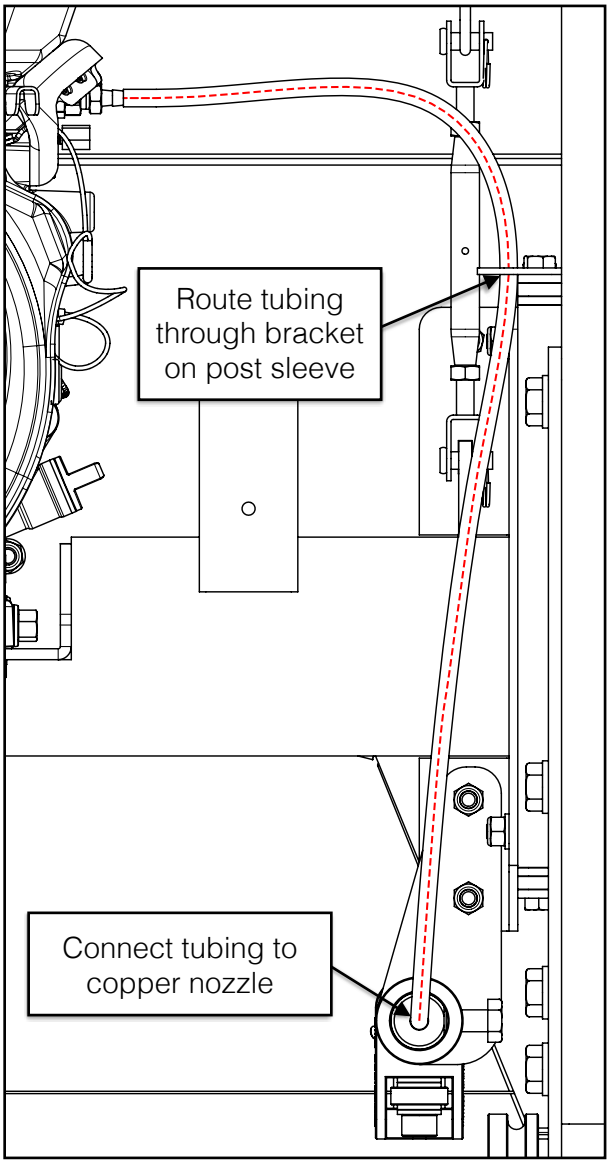


5. Secure drip nozzle with a 3 mm hex key. Take care not to over-tighten or the copper nozzle could be damaged.

Route one length of tubing from the blue ring fitting on the tank to the vertical barbed fitting on the auto-lube valve.

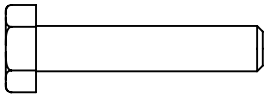
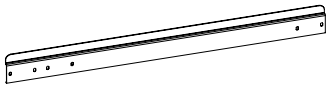
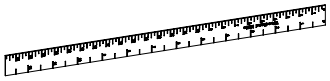
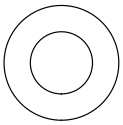
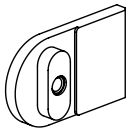
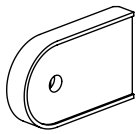
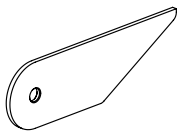
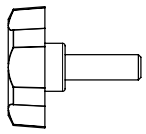
Route the other length of tubing from the horizontal barbed fitting on the auto-lube valve, down to the copper drip nozzle on the guide block holder shaft.



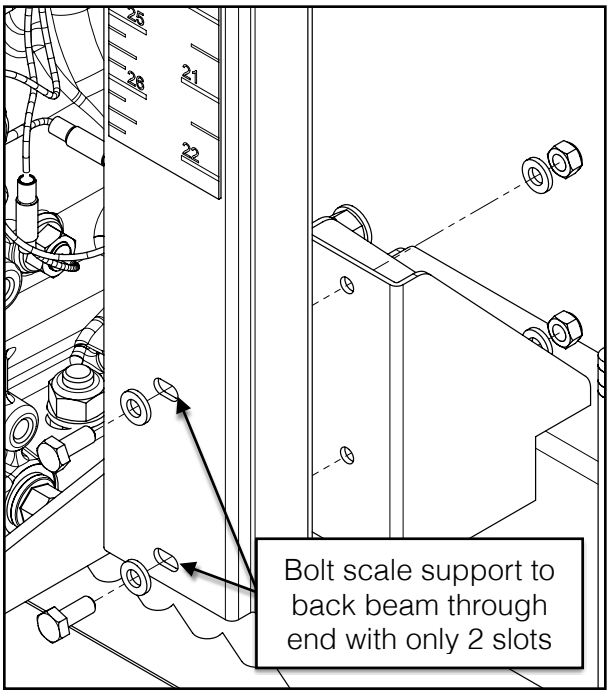


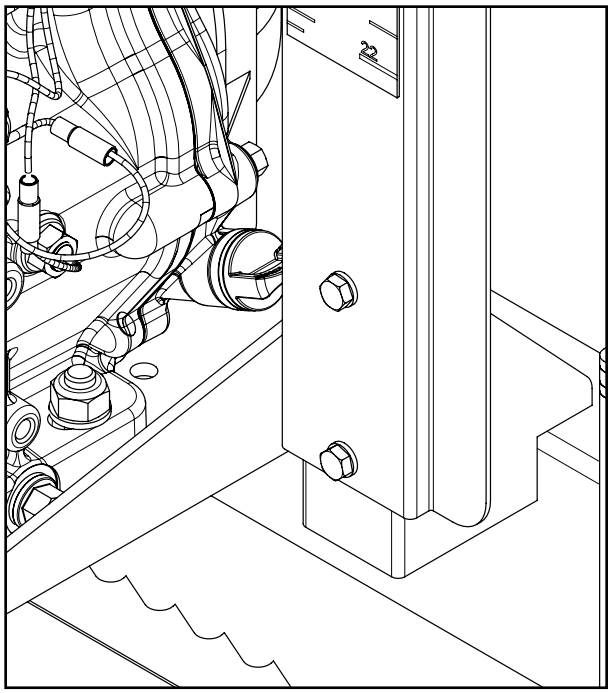
LOG SCALE

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

2x	M6 X 15 mm Hex Bolt		1x	Scale Support	
2x	M6 Lock Nut		1x	Magnetic Scale [White]	
2x	M6 Flat Washer		1x	Magnetic Scale [Yellow]	
			1x	Scale Indicator Arrow Bracket [Rear]	
			1x	Scale Indicator Arrow Bracket [Front]	
			1x	Scale Indicator Arrow	
			1x	M8 X 25 mm Knob	

Bolt the scale support—through the end with only two (2) slots—to the back beam with two (2) M6 X 15 mm bolts, flat washers, and lock nuts as shown below.

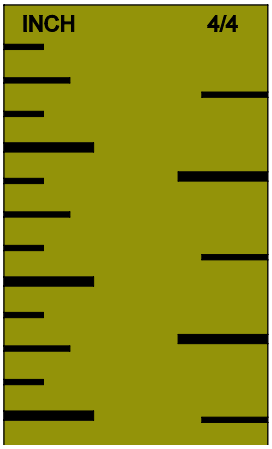


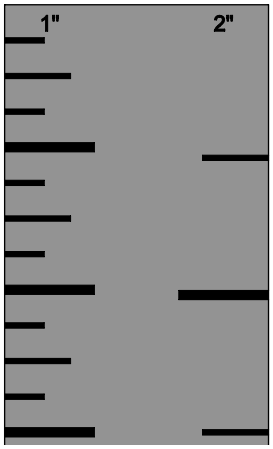


Note: the sawmill comes with two (2) different magnetic scales: one yellow, one white. Each with two different graduations down the left and right sides

Yellow Scale

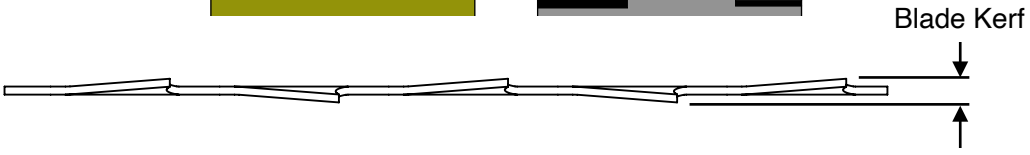
The left side is an inch scale, with the large graduations spaced at 1 in. The right side is "*four quarter*" (4/4) which mills the lumber ⅛ in oversize to allow for finish planing on each side after drying.





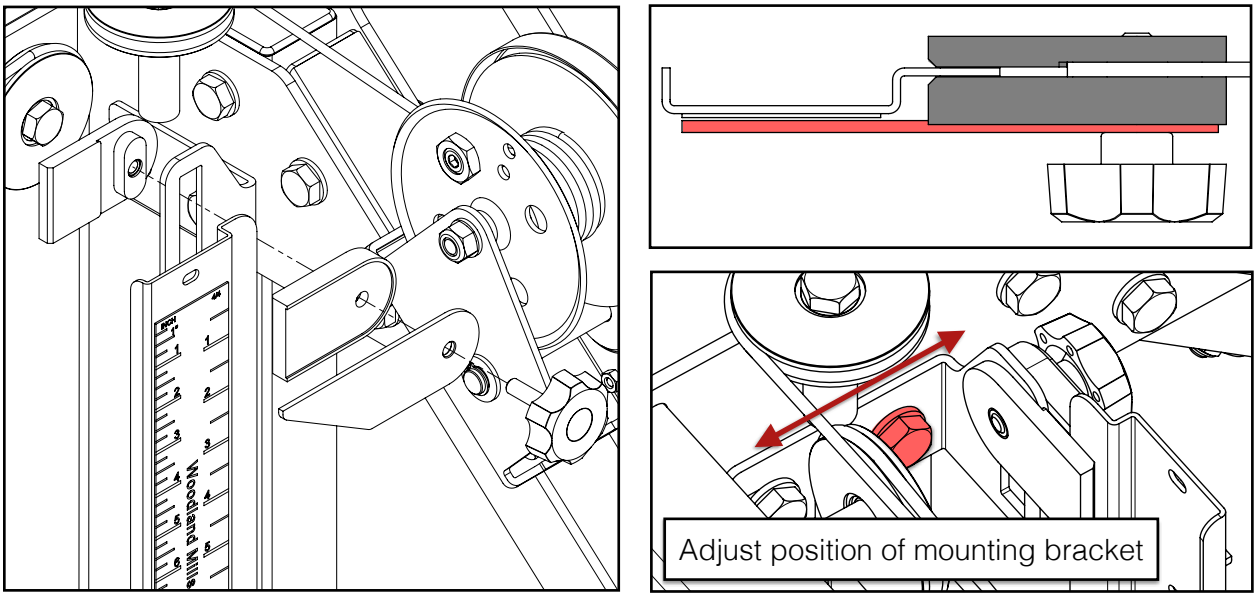
White Scale

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.

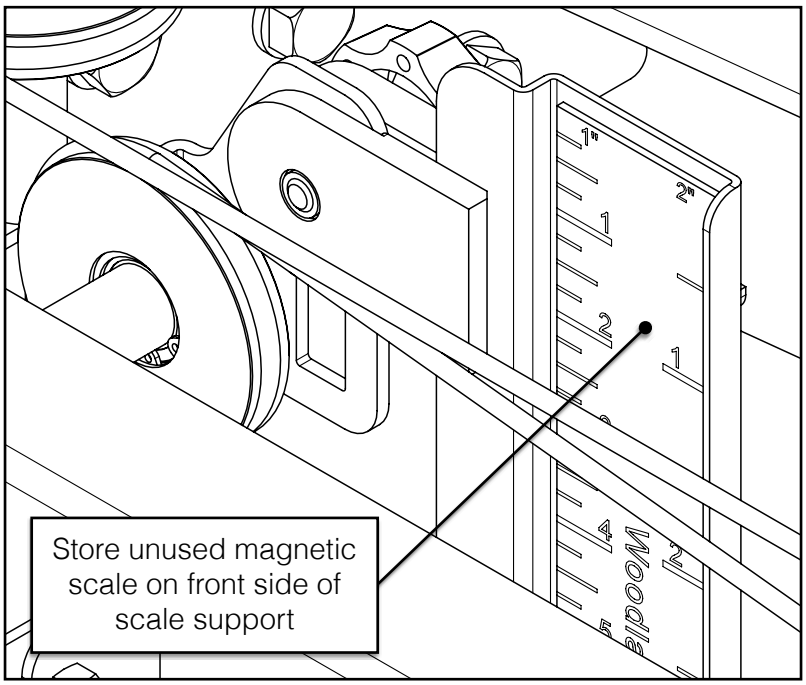


The graduations on the white magnetic scale make allowances for the blade kerf. On the yellow magnetic scale the kerf is not accounted for in the measurements.

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

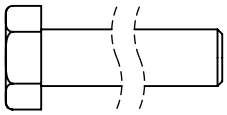
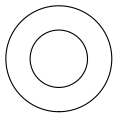
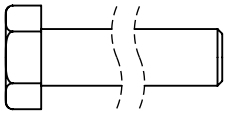
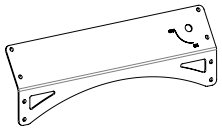
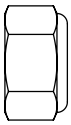


Store the other magnetic scale on the front side of the scale support when not in use.

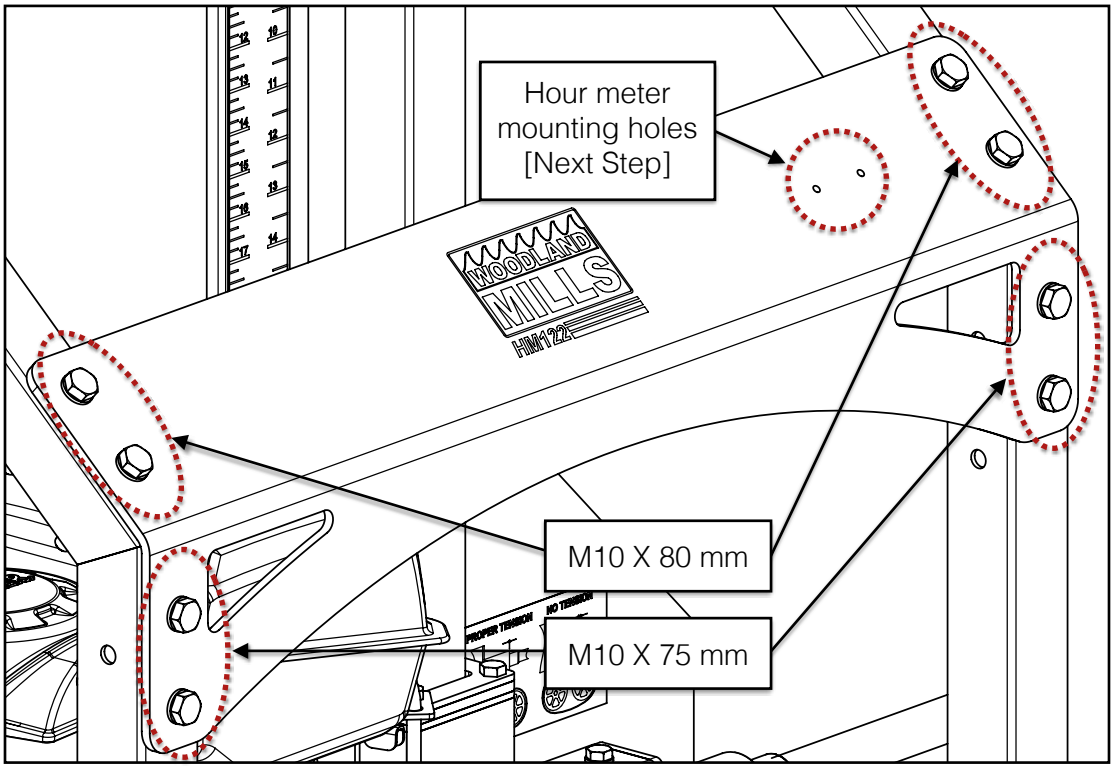


DASHBOARD

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

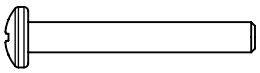
4x	M10 X 80 mm Hex Bolt		16x	M10 Flat Washer	
4x	M10 X 75 mm Hex Bolt		1x	Dashboard	
8x	M10 Lock Nut				

Assemble the dashboard to the rear carriage posts with four (4) M10 X 80 mm bolts through the upper holes and four (4) M10 X 75 mm bolts through the lower holes as shown. Use an M10 flat washer under every bolt head and lock nut. Do *not* fully tighten these bolts at this time.

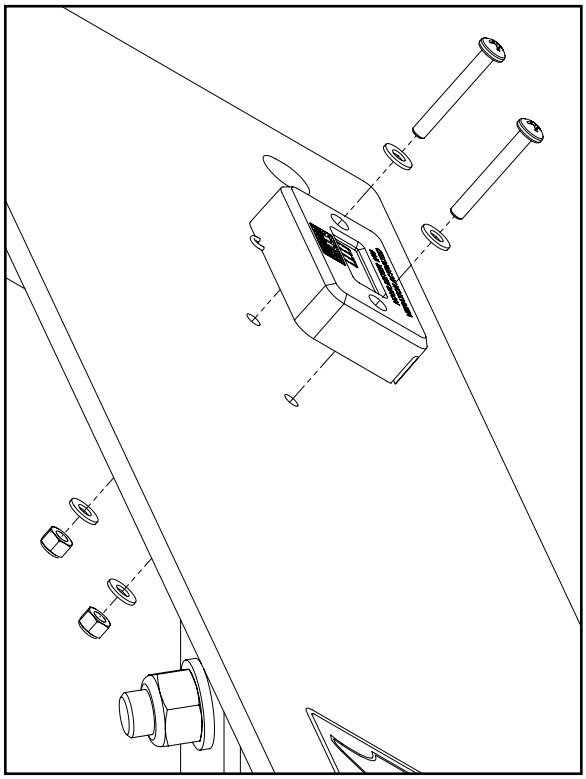


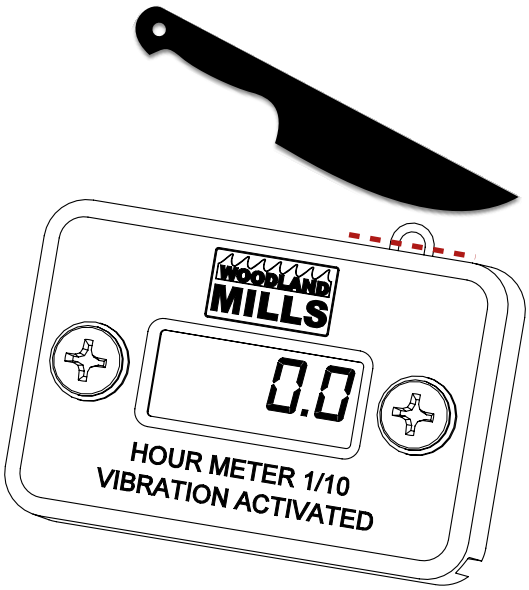
HOUR METER

With the hardware listed below, assemble the hour meter to the dashboard.

2x	M4 X 30 mm Pan Head Screw		4x	M4 Flat Washer	
2x	M4 Lock Nut		1x	Hour Meter	

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.

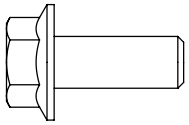
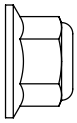




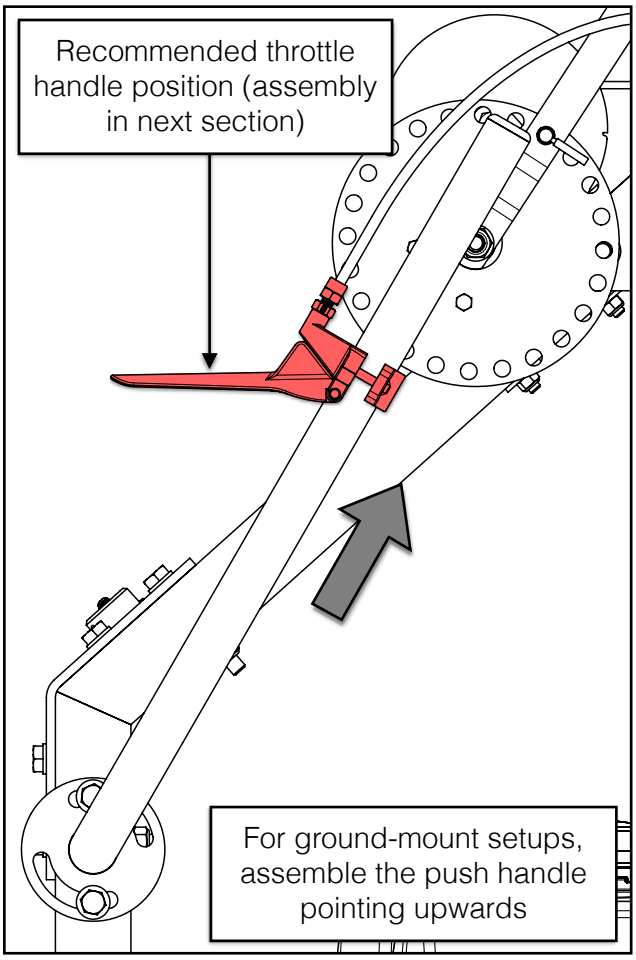
Cut wire loop on hour meter after sawmill is assembled

PUSH HANDLE

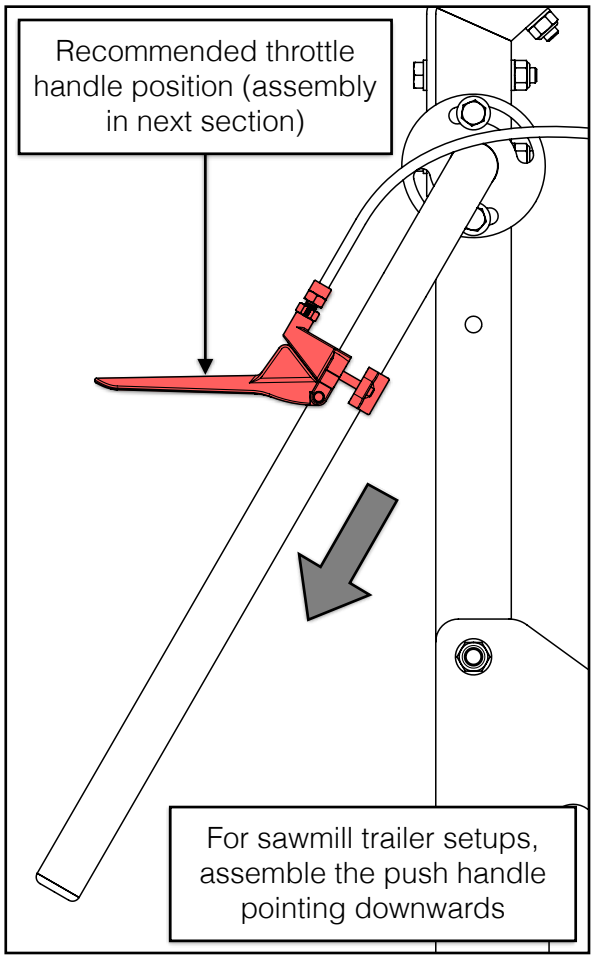
With the hardware listed below, assemble the push handle to the right rear carriage leg.

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

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**).

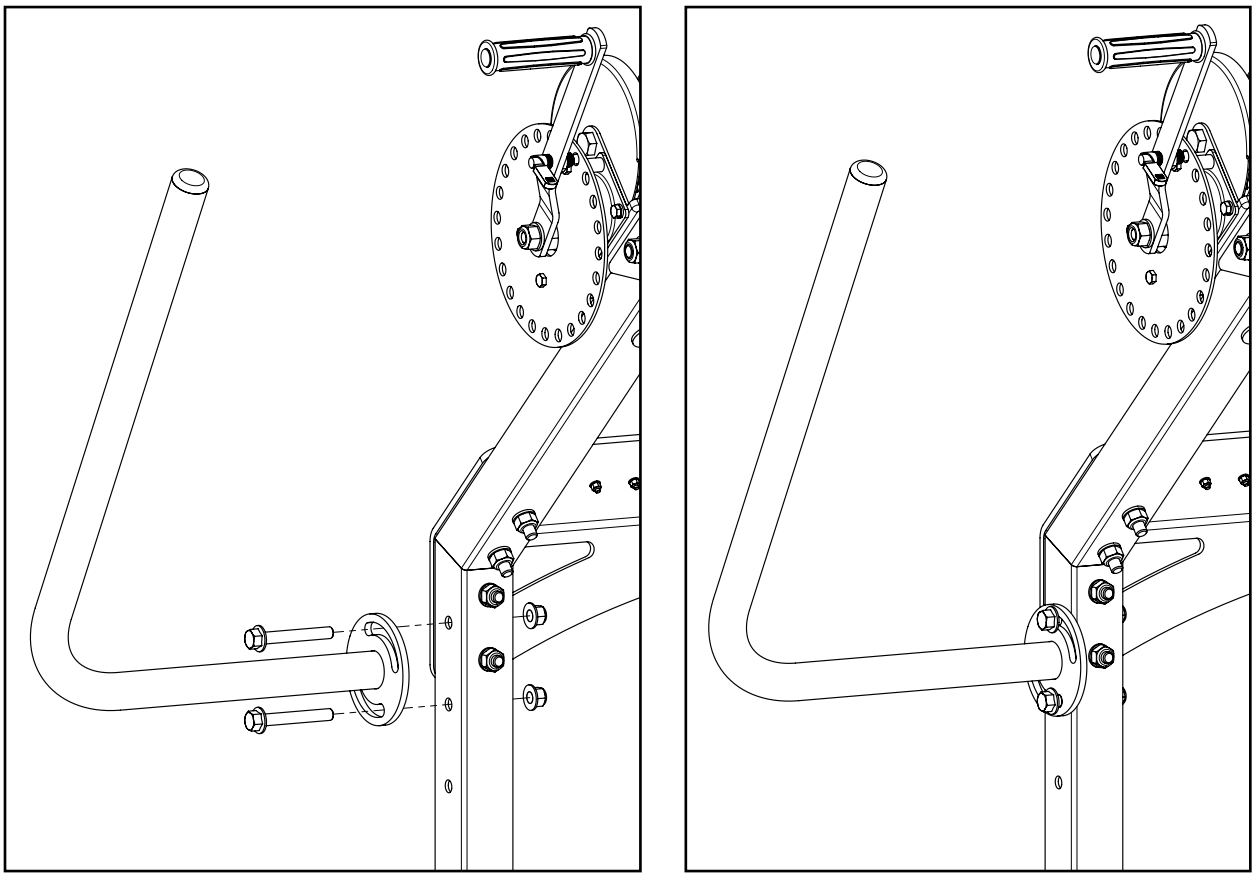


Ground-Mount Push Handle and Throttle Handle Recommended Position



Sawmill Trailer Push Handle and Throttle Handle Recommended Position

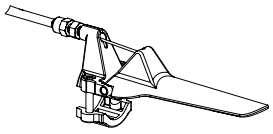
When a desired push handle orientation has been decided upon, attach the push handle to the side of the post using two (2) M10 X 70 mm bolts and M10 flanged lock nuts as shown below. Fully tighten these bolts.



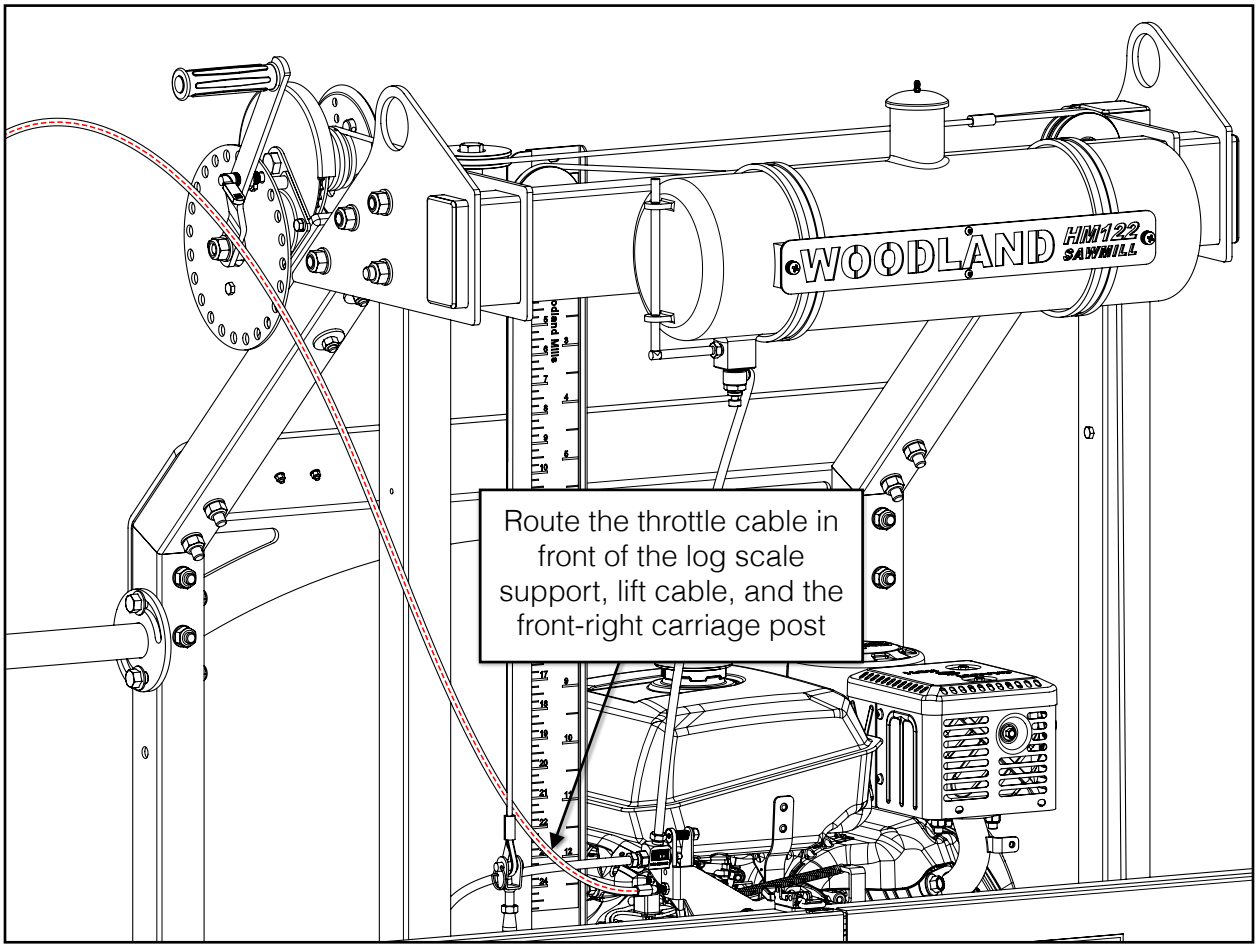
The push handle can be adjusted/rotated forwards or backwards to suit the ergonomics of the operator in either ground-mount or sawmill trailer configurations.

THROTTLE HANDLE AND CABLE

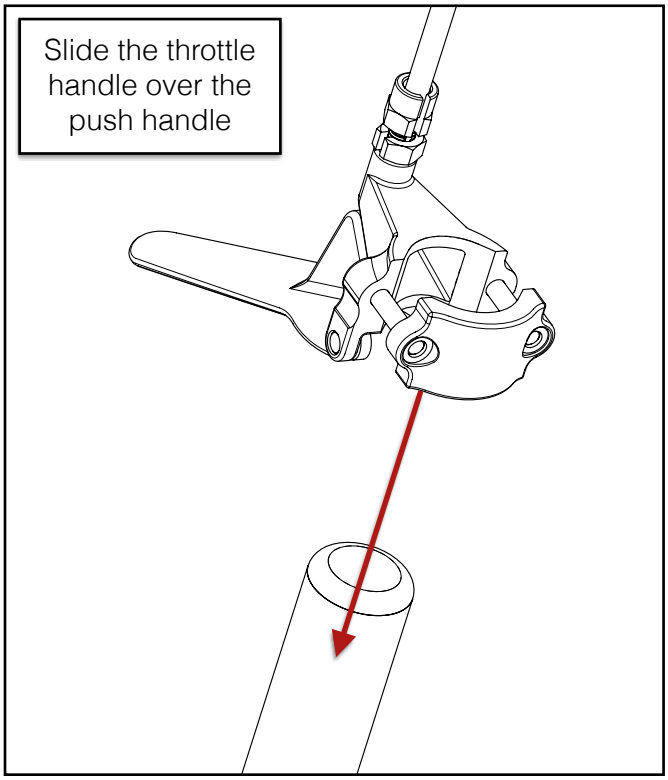
The throttle handle and its mounting hardware come loosely assembled. The throttle cable is already connected between the handle and throttle lever on the engine.

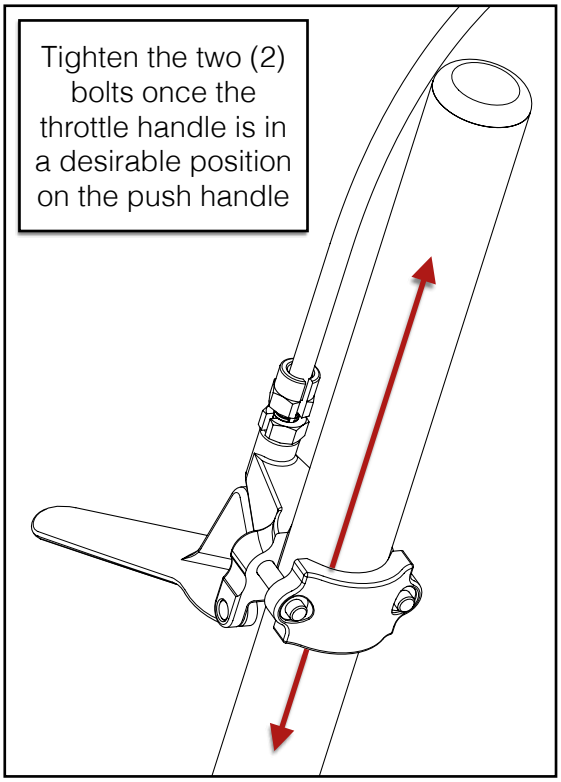
1x	Throttle Handle Assembly	

Before assembling the throttle handle to the push handle, ensure the throttle cable routes from the engine, then in front of the log scale support, lift cable, and the front-right carriage post as shown below.



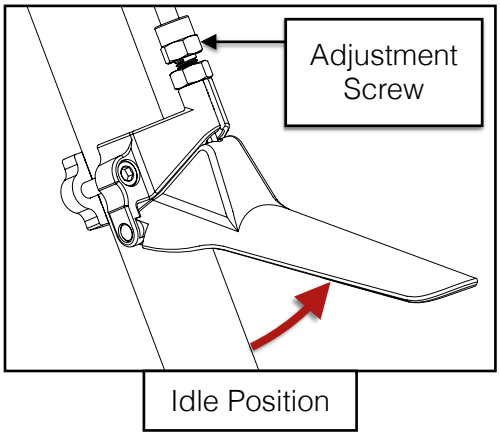
Slide the throttle handle assembly over the end of the push handle. The throttle can be positioned anywhere along the length of the push handle as desired by the operator. Fully tighten the two (2) bolts to secure the throttle handle.

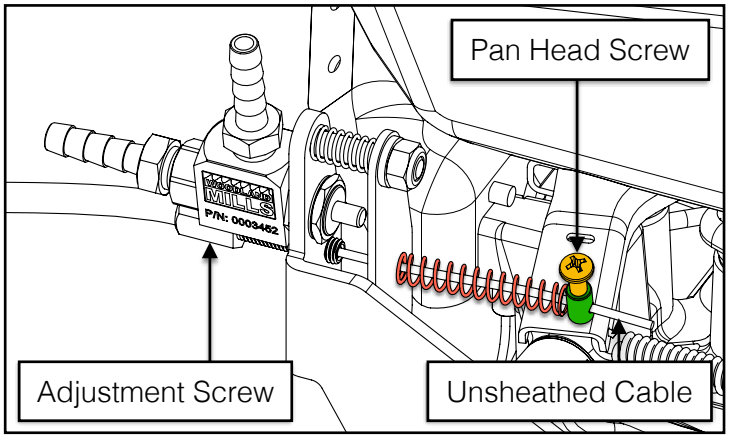




To take the slack out of the throttle cable, first loosen the M4 Phillips pan head screw where the unsheathed portion of the cable is attached to the engine. Pull the throttle handle all the way up until it stops (Idle Position). Ensure each end of the throttle cable is fully nested into both adjustment screws. Then use pliers to pull the unsheathed end of the cable until it is tight.

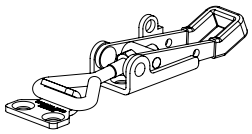
Tighten the Phillips pan head screw while the cable is being pulled tight to secure it.



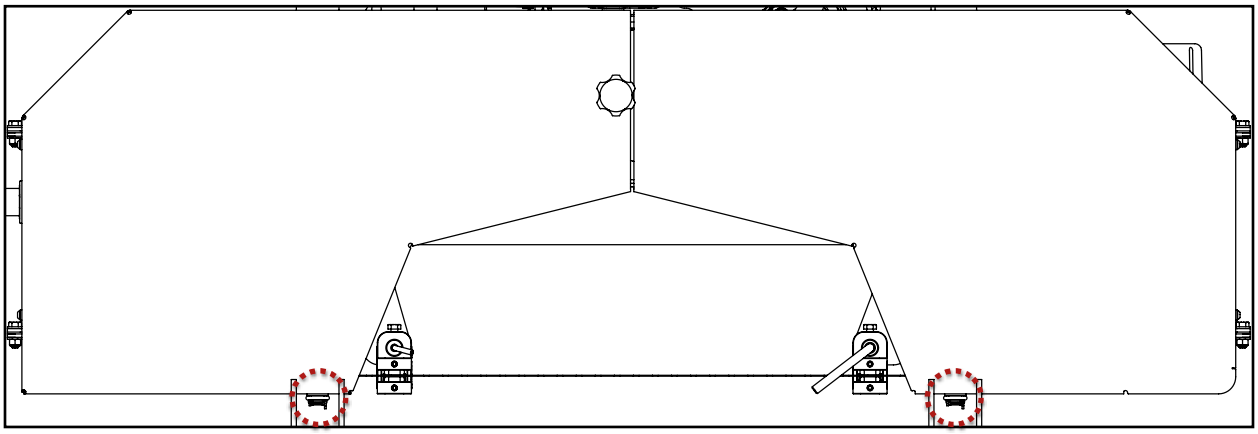


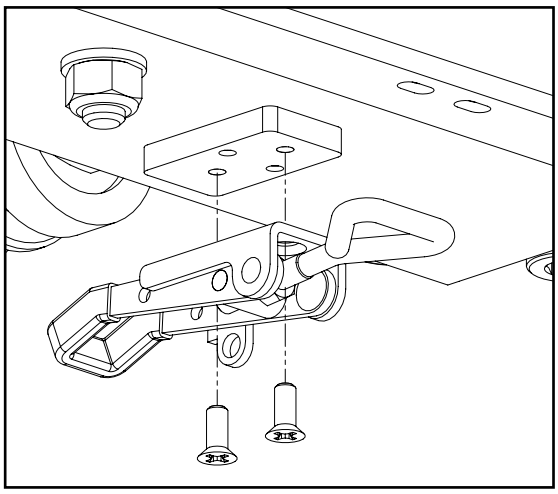
BAND WHEEL DOOR LATCHES

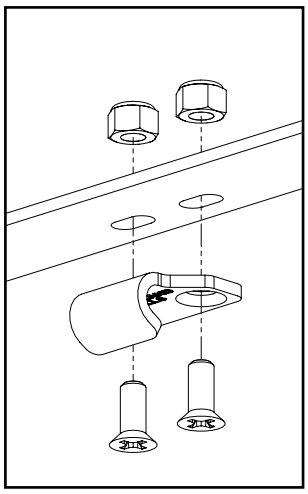
Using the hardware listed below, assemble the two (2) bottom band wheel door latches.

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.

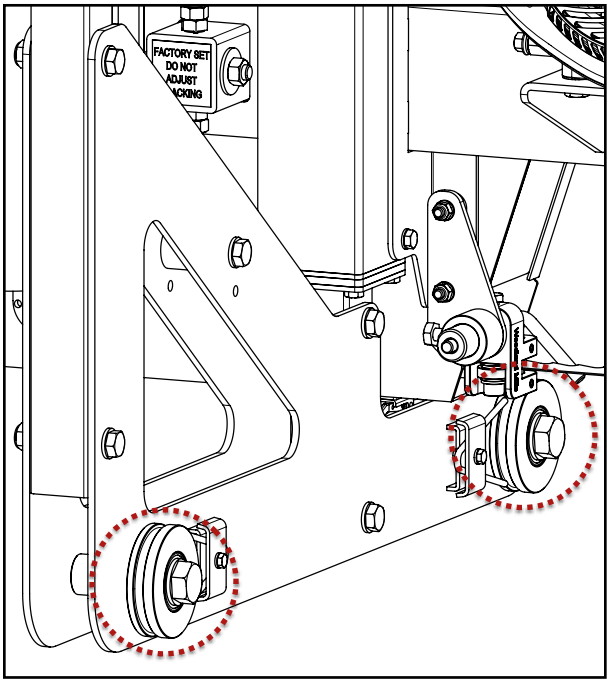


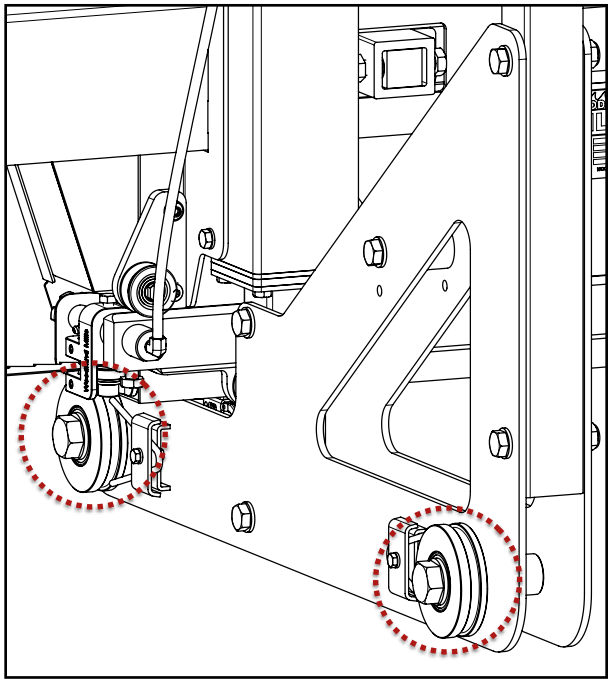




TIGHTEN CARRIAGE WHEEL BOLTS

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



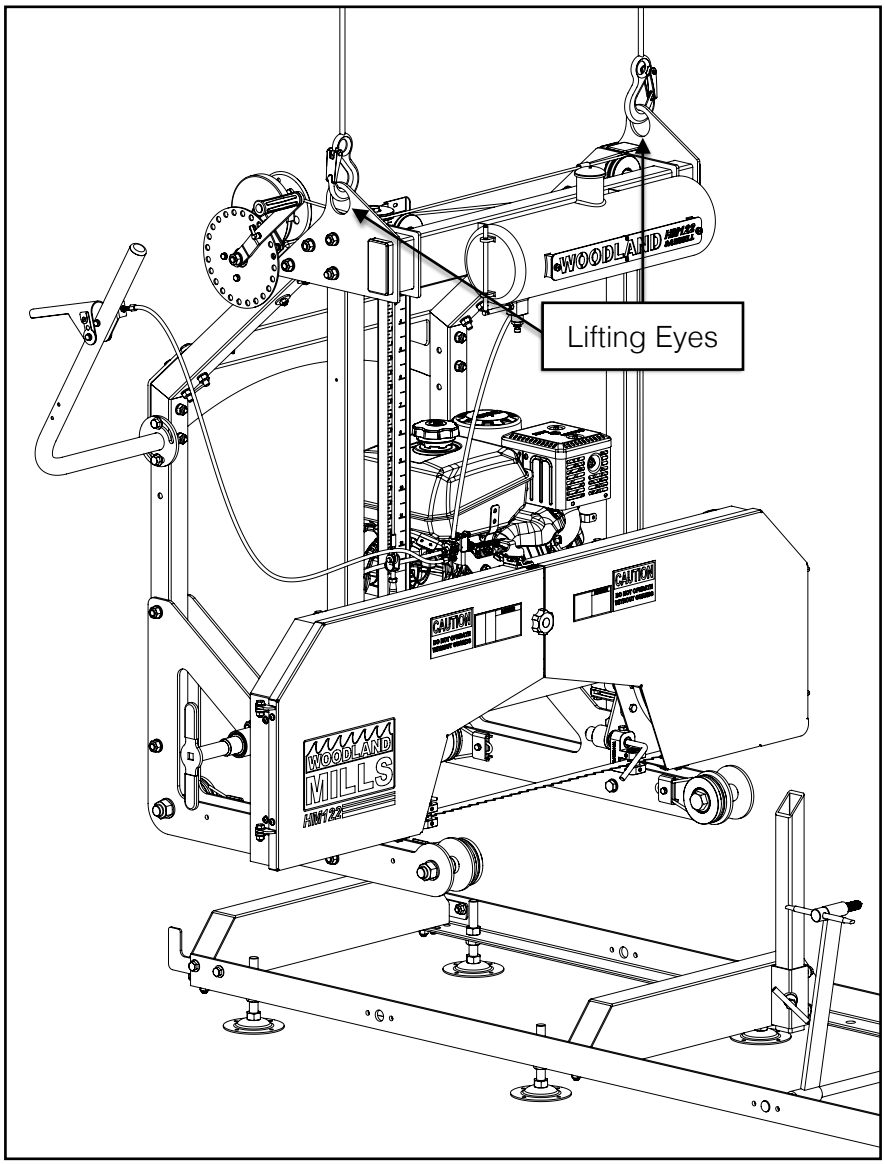


4. PLACING THE HEAD ON THE TRACK

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

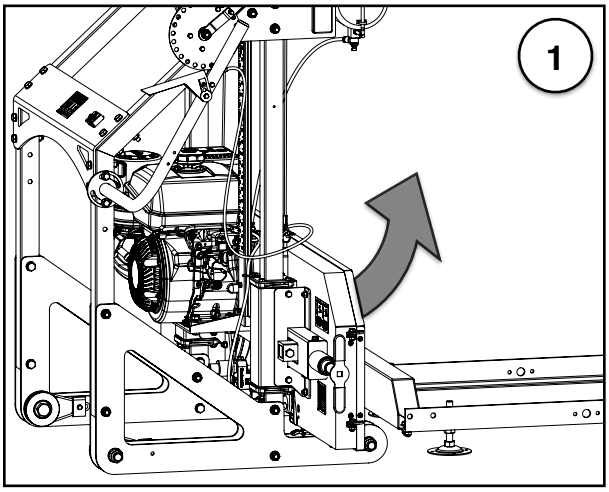
If a tractor or forklift is available, the head can be lifted onto the track with a lifting strap or chain with a minimum rating of 1000 lb. [450 kg]. Attach the lifting strap/chain to the lifting eyes, raise the head up, and rest it on the track so that the grooves in the carriage wheels fit around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

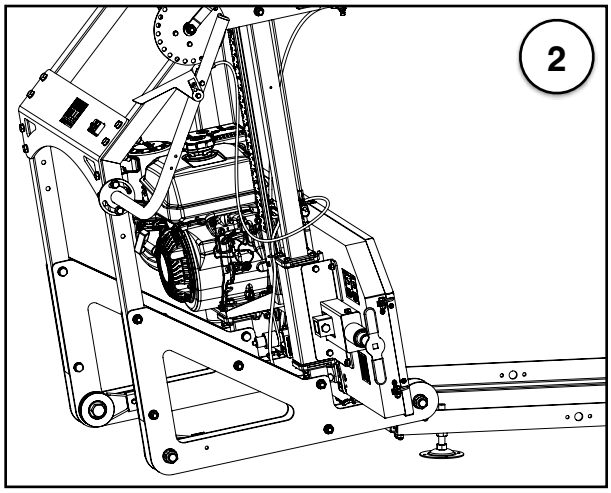


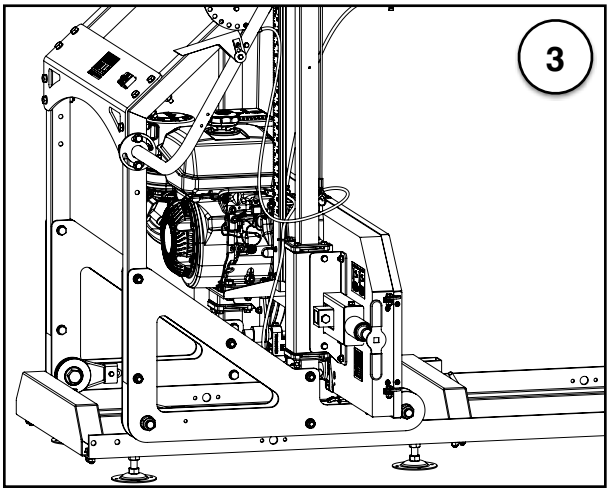
METHOD 2

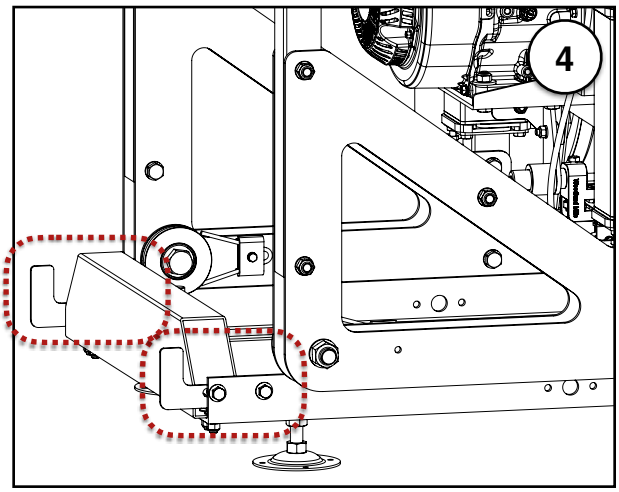
At least two people are required for this step. Start by removing the two (2) carriage stops from one end of the track. The head can be walked over to the track until positioned behind it (**Figure 1**). Once in this position, tilt the head backwards so that the front two wheels are off the ground. Walk 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**).







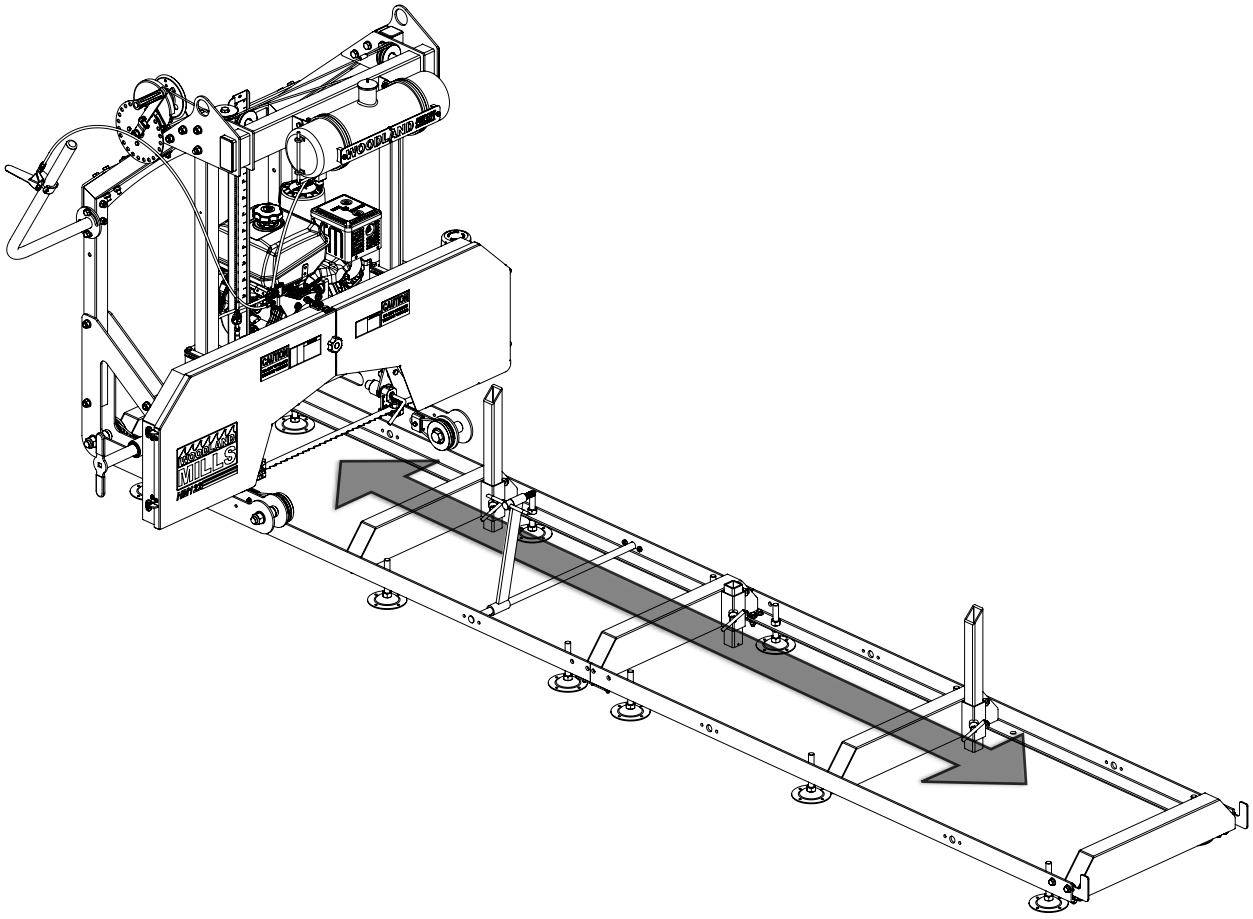


With the sawmill head assembly now resting on the track, grab hold of the one side of the cross beam and perform a shake-down of the head. Shaking the head will help settle the components into their proper position that may have become misaligned either due to tolerances during the assembly process or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

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

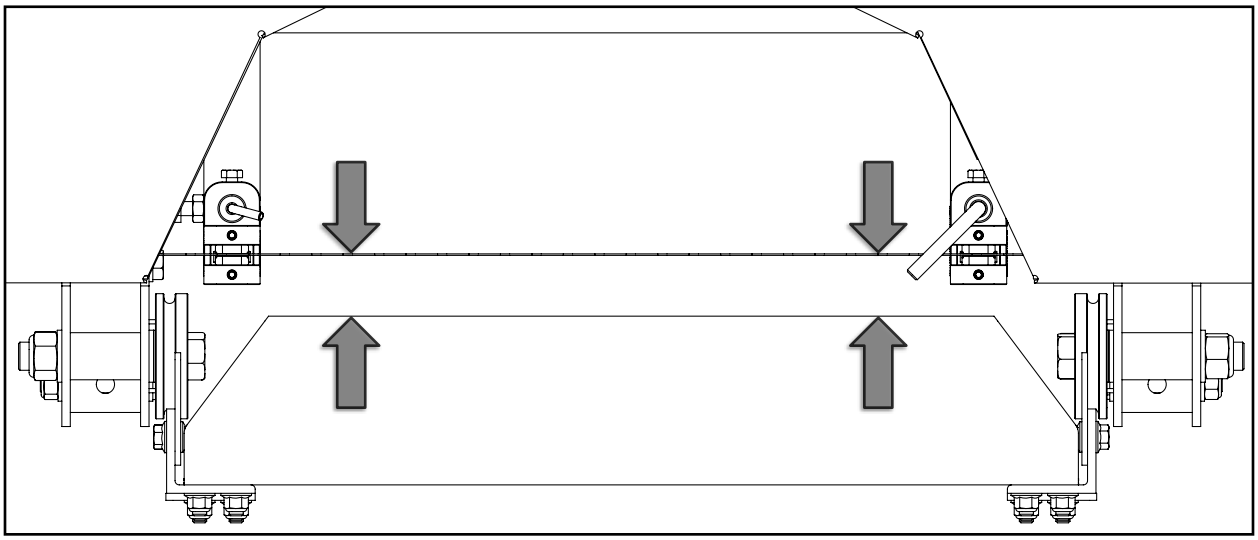
ROLLING THE SAWMILL HEAD ASSEMBLY

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.



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 must be equal. If the measurements are not equal, adjust the turnbuckle to either raise or lower the right side until it matches the left.

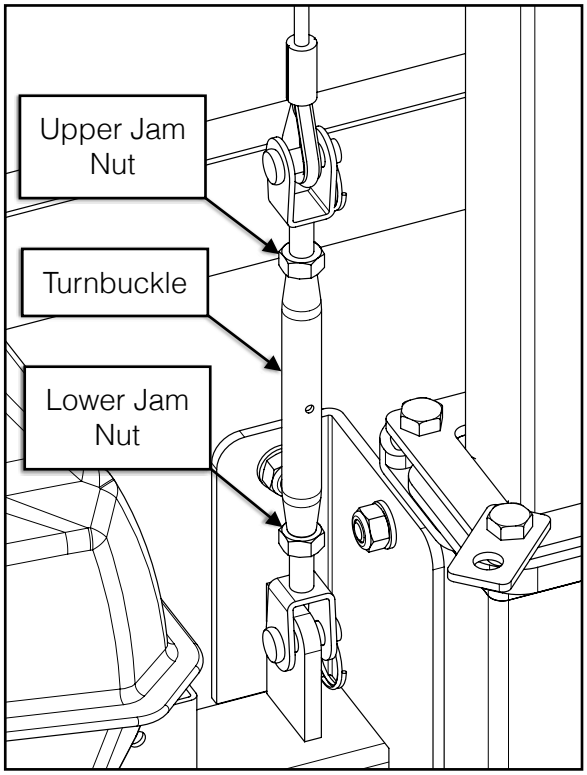


To make adjustments, start by backing off both the upper and lower jam nuts so that the turnbuckle is free to rotate. Note: one of the jam nuts is a left-hand thread while the other is a right-hand thread.

To raise the right side of the sawmill head, rotate the turnbuckle so that it draws the jam nuts *towards* the turnbuckle.

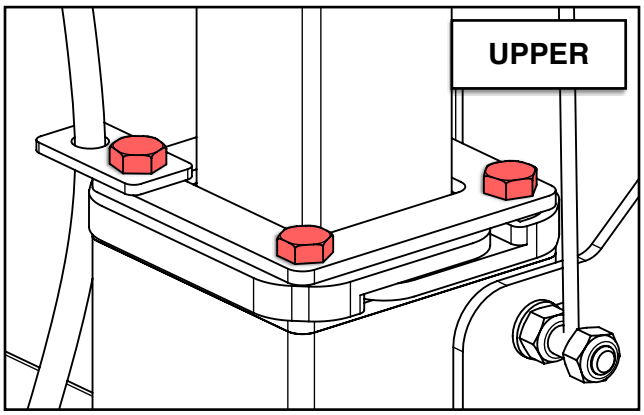
To lower the right side of the sawmill head, rotate the turnbuckle so that it pushes the jam nuts *away* from the turnbuckle.

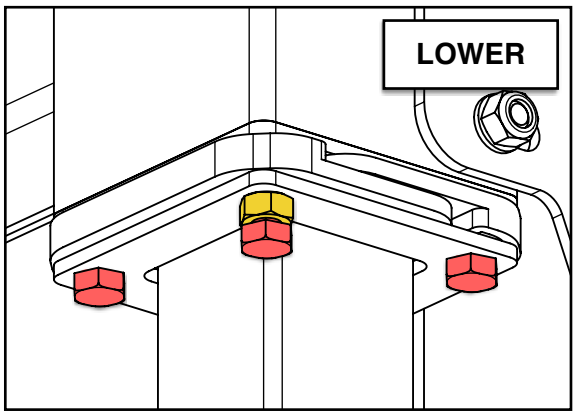
Once the measurements are equal between the blade and bunk on both sides, tighten the upper and lower jam nuts against the turnbuckle to secure it in place.



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.



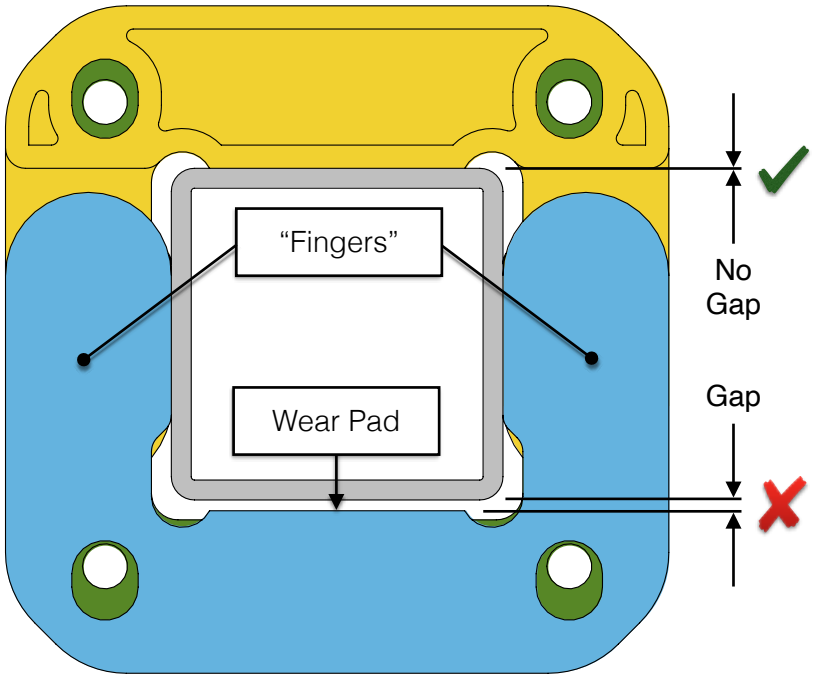


Push the bushings together (front-to-rear) so that there is no gap between the bushing wear pads and the front/rear faces of the post as shown below.

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.

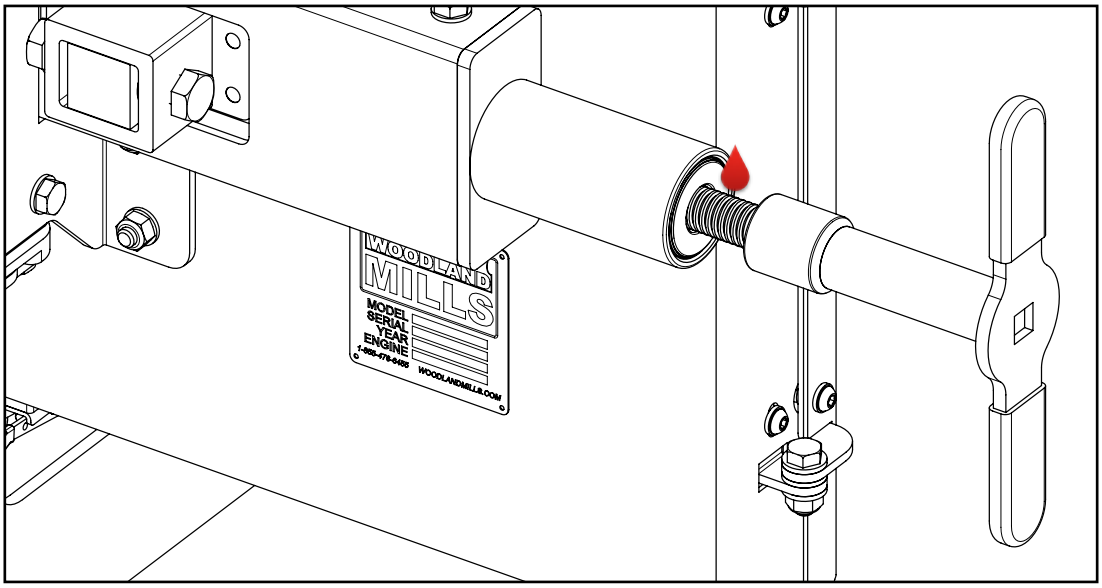
The bushing holes are slotted to allow for this future adjustment.



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*."

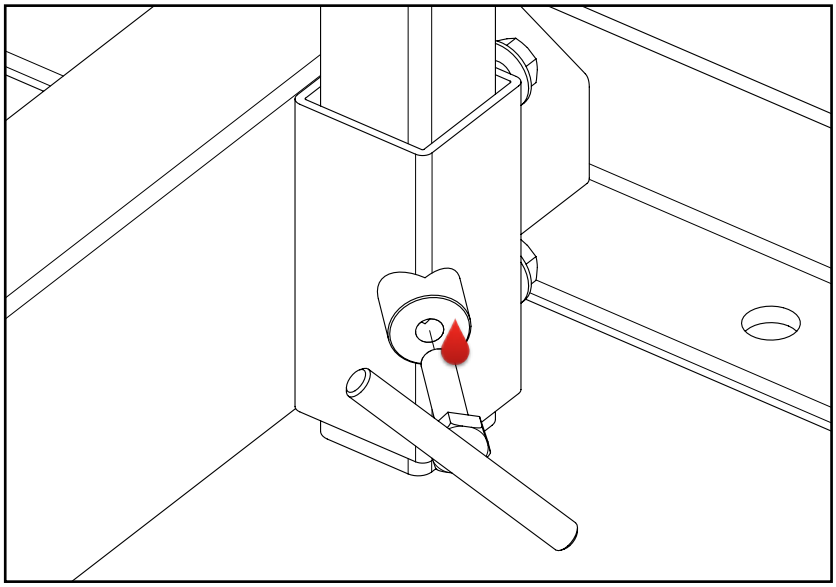
GREASING THREADS

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



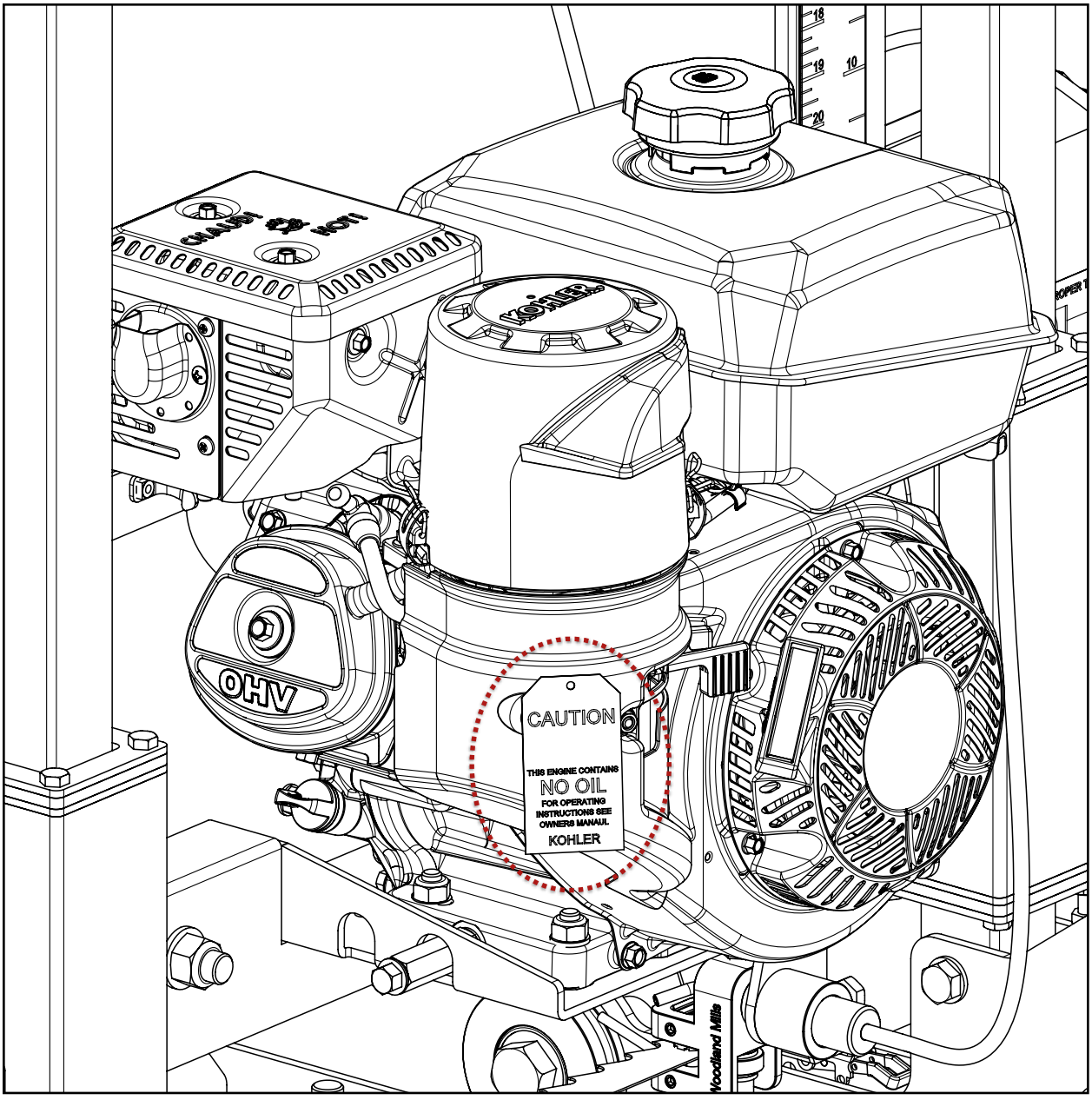
****Note: It is very important to take the tension off the blade by turning the T-handle in the counter-clockwise direction when the sawmill is not in use. Failure to do so will result in flat spots on the rubber belts. These flat spots will cause the mill to vibrate excessively during subsequent uses.****

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



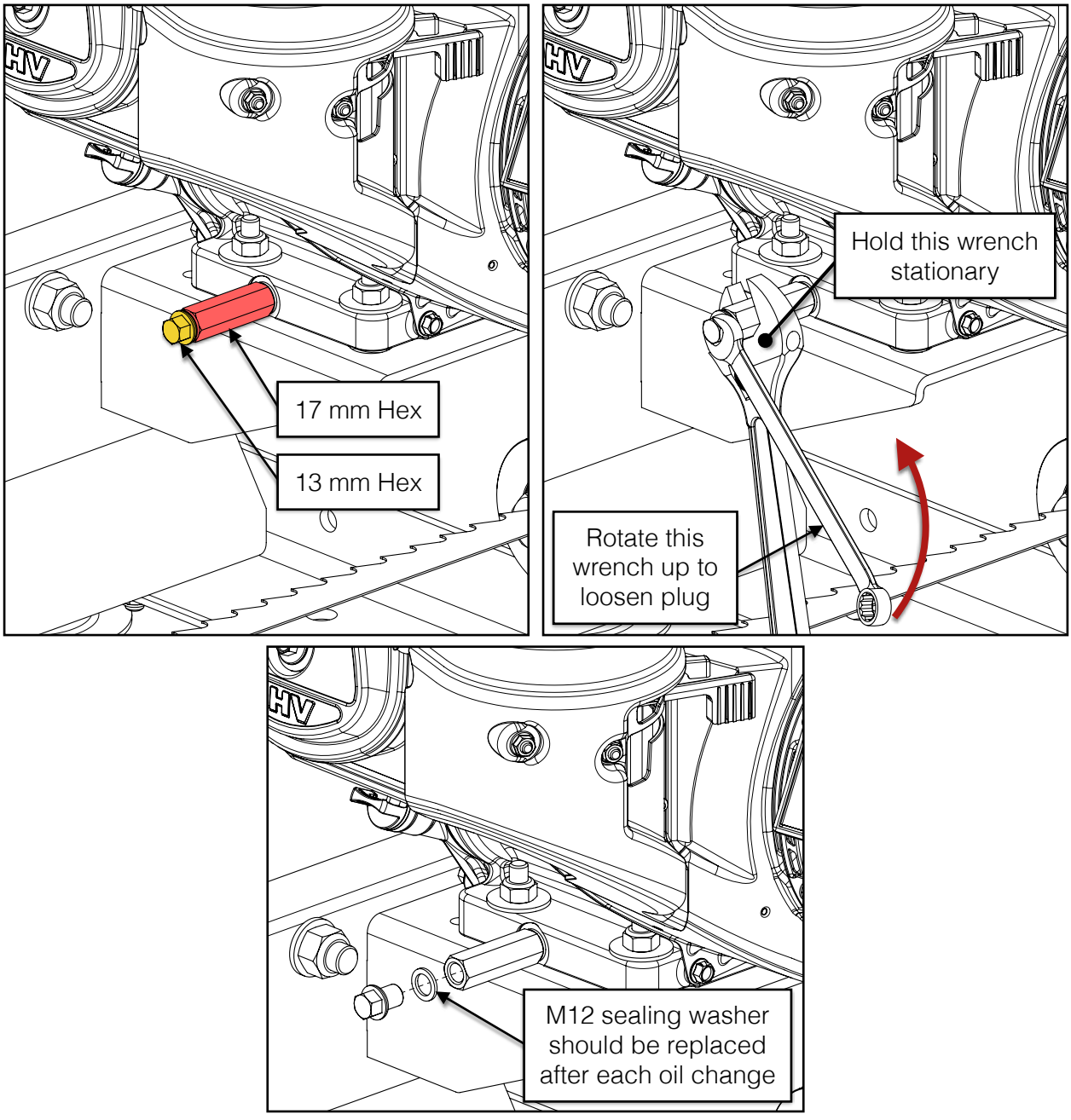
ENGINE OIL

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.

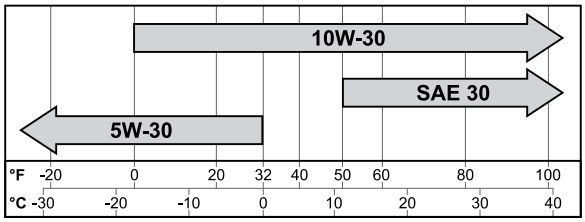


Repeat the process in reverse to re-install the drain plug. Remember to hold the brass extension stationary with a second wrench when tightening the plug.

PRE START-UP CHECKLIST

1. Fill the engine with high octane (low ethanol) premium gas only. Never run low grade gasoline in the sawmill.
2. Fill the engine with oil using the table below based on your engine model and operating air temperatures:

Engine	Model	Horsepower	Capacity	
			US Quarts (qt)	Litres (L)
Kohler	CH270	7 hp	0.63	0.6
Kohler	CH395	9.5 hp	1.16	1.1
Kohler	CH440	14 hp	1.16	1.1



****Note: Engines are *not* equipped with a clutch reduction system, therefore, reference to this in the Kohler manual can be ignored. The engine is also equipped with an oil alert system that will prevent the engine from starting if the oil level is low.****

3. **Do not run lubricant for the initial 30 minutes of milling.** Run the blade dry to break-in the belts. After the belts have been broken-in, the below lubricant can be used:

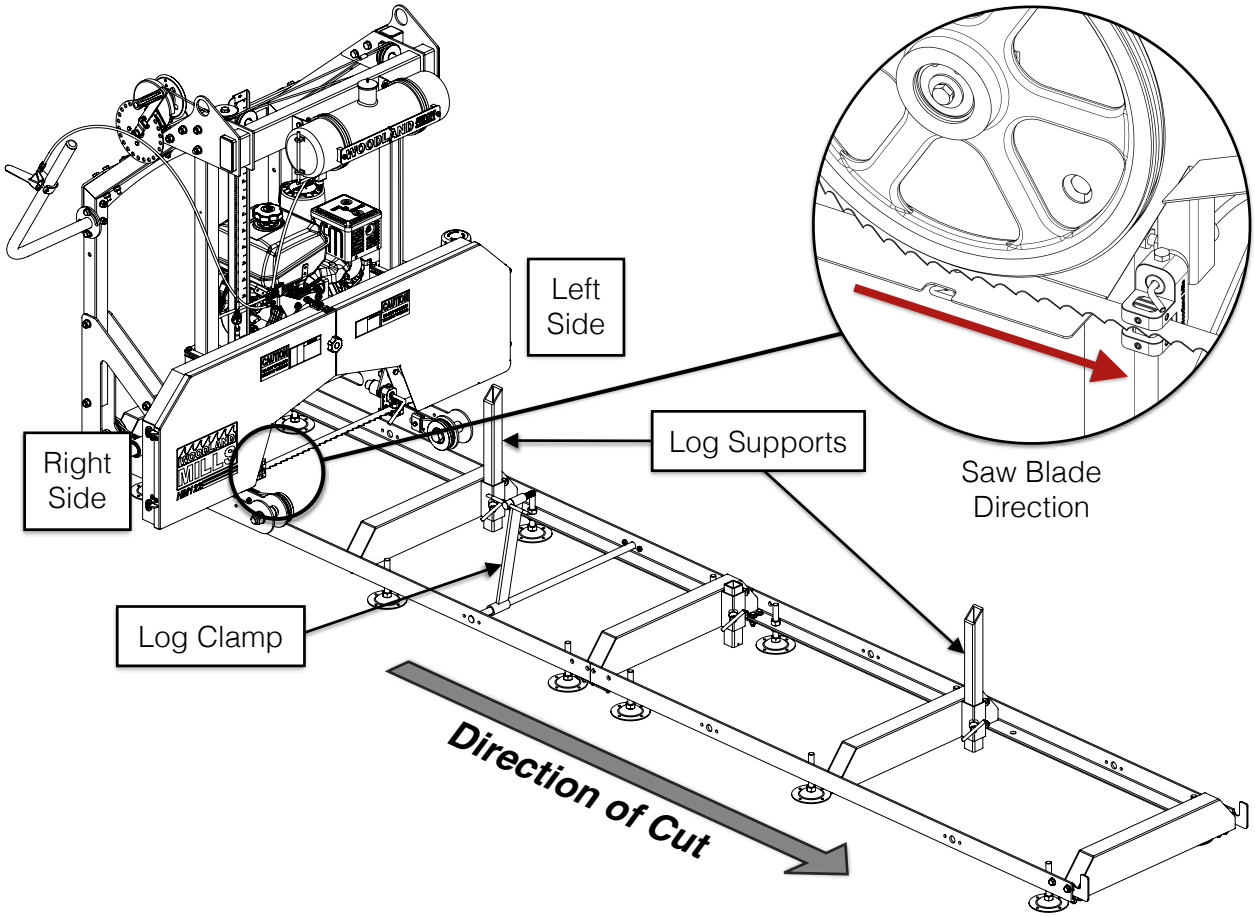
   34°F (1°C) and warmer: Water with 1 tsp (5 mL) of liquid dish soap per tank.
   32°F (0°C) and colder: Winter windshield washer fluid.

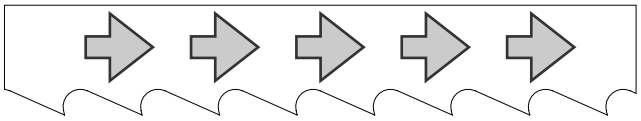
****Never use diesel fuel or other chemicals as they will prematurely deteriorate the rubber belts and can stain the wood.****

4. Test the ***blade tracking*** to ensure the blade band is centred on both band wheels.
5. Check blade tension to ensure it is ***fully tensioned***. Refer to the label on the back of the blade guard near the blade tensioning T-handle.
6. Ensure the wire loop on the dashboard hour meter has been cut so it will record the hours of use on the machine.
7. To start the engine and begin milling: turn the choke and gas on. Pull the engine cord or turn key (electric-start engine models only). Once the engine starts, turn the choke off slowly and let the engine warm up for 1 minute. ***Always mill at full throttle***.
8. After the first hour of use, inspect the drive belt tension and adjust if required. Refer to the operator's manual for detailed tensioning instructions.

SAWMILL SET-UP PROCEDURES
DIRECTION OF CUT

Always cut in the direction shown below. The log clamp is 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.





Saw Blade Teeth Orientation

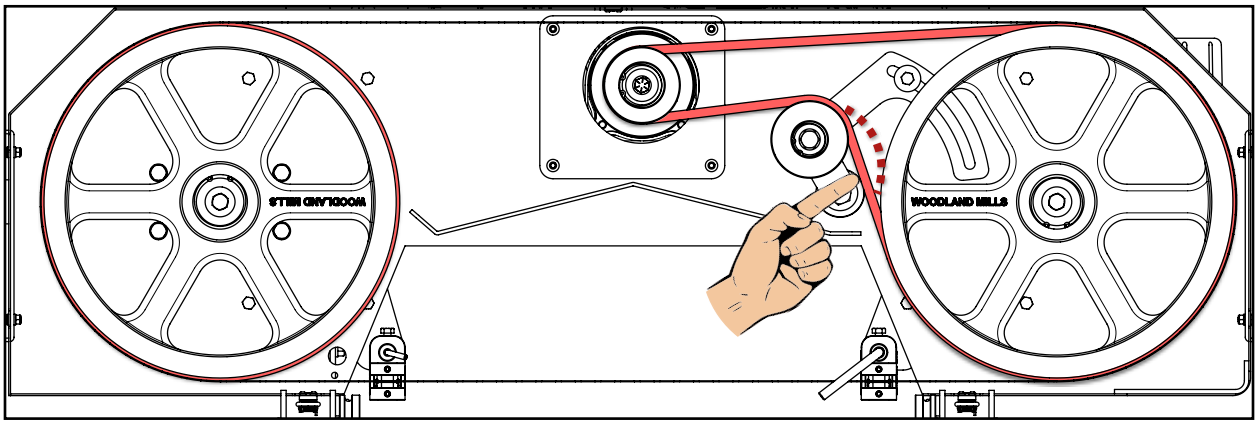
Always ensure the saw blade teeth are orientated such that they are cutting *into* the wood and not being dragged backwards across it. Some blade manufacturers ship their saw blades inside out (backwards) due to manufacturing processes and they must be flipped prior to installation.

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

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.

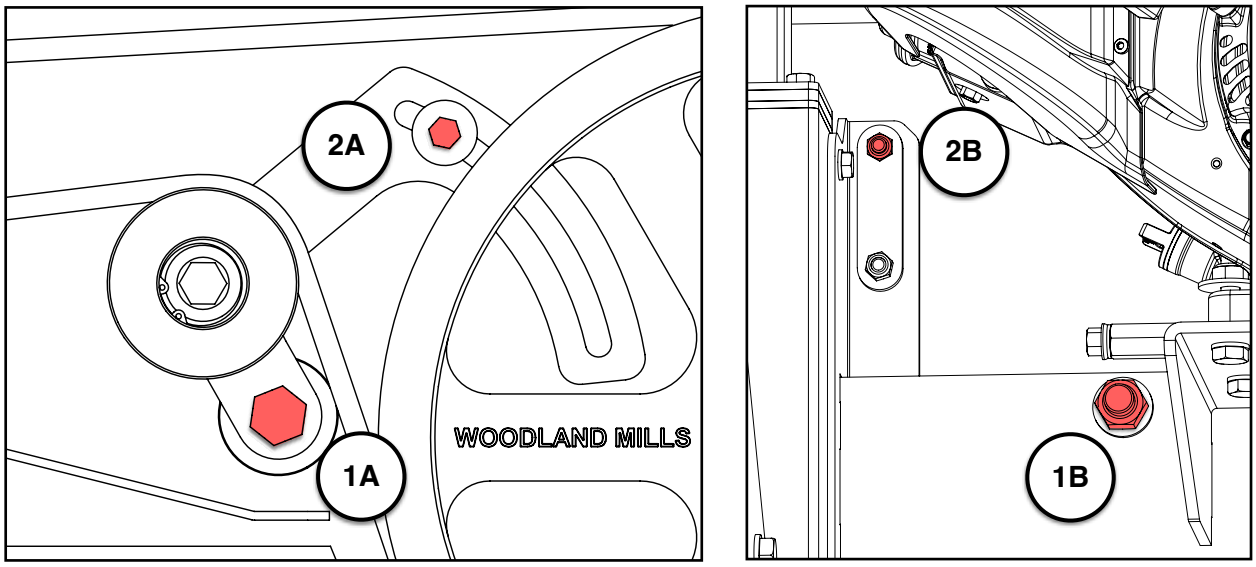
To check the drive belt tension, push against it firmly and measure the deflection. There should be no more than ¼ in [6 mm] of movement. If the belt deflection exceeds this amount it will need to be tightened as described below.



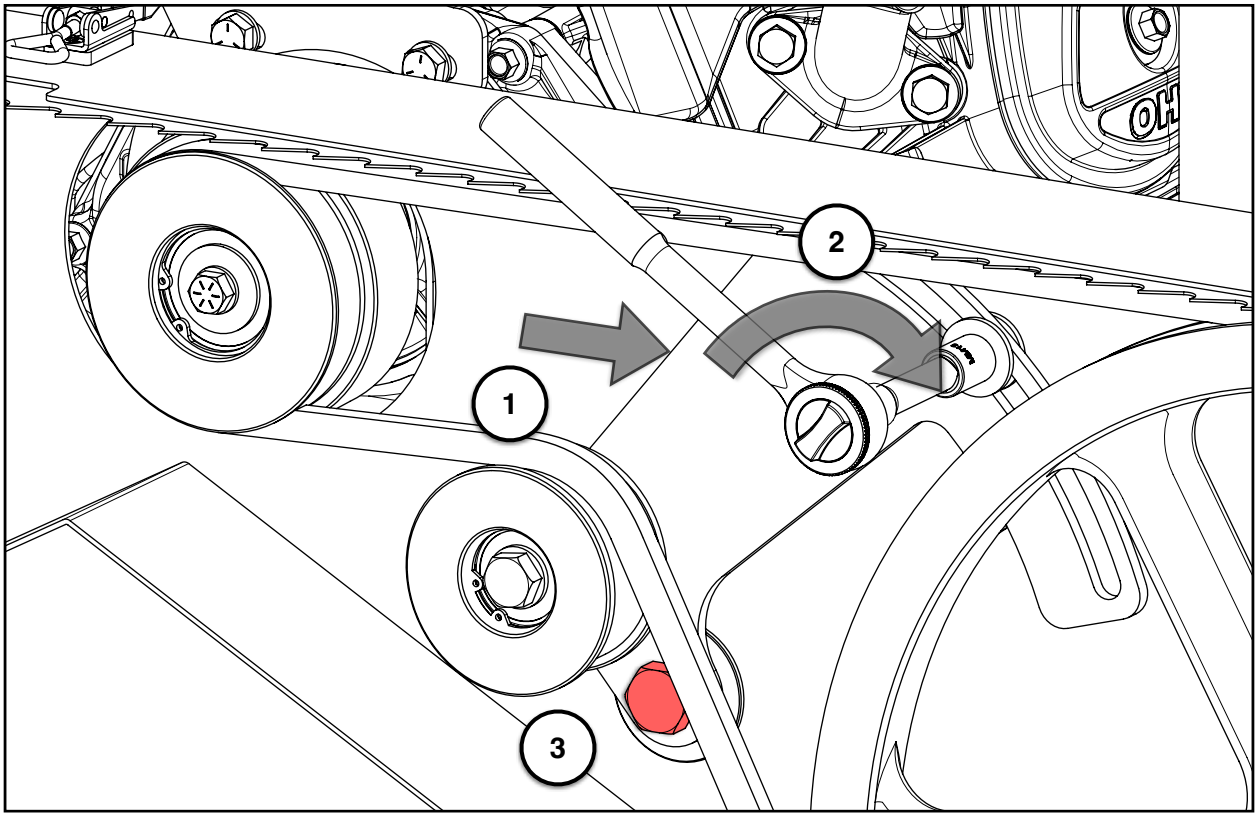
****Never attempt to adjust the belt tension with the engine running. As a safety precaution, remove the spark plug cap.****

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.****

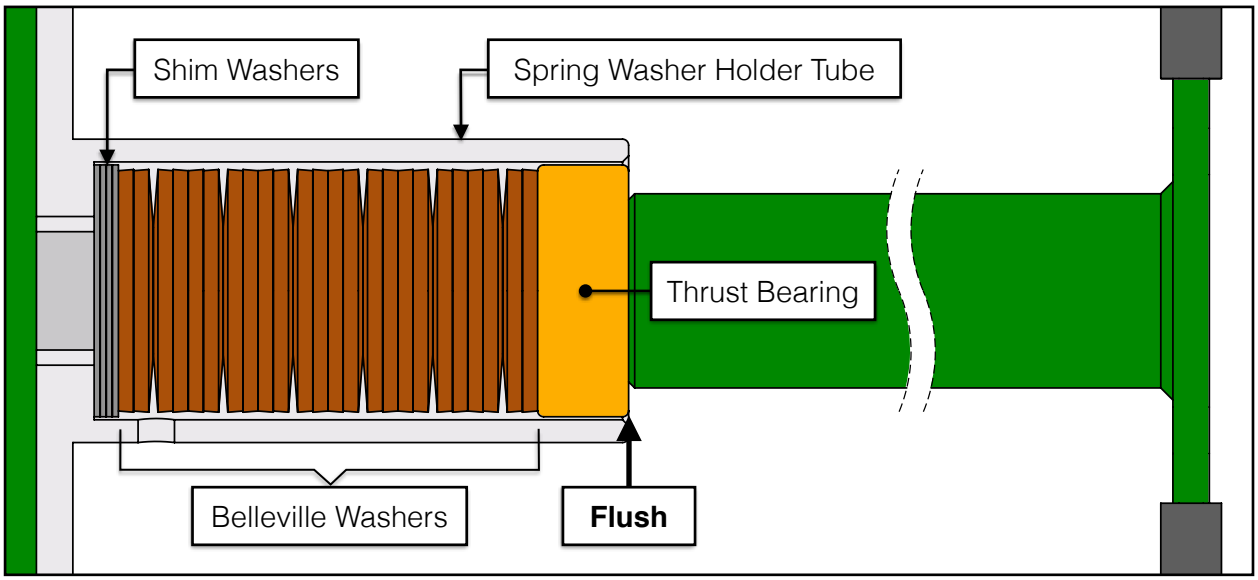


Once both bolts are loose, firmly push the belt tensioner towards the band wheel until the belt is tight (**#1**), then tighten the upper bolt in the curved slot in a clockwise direction using a 13 mm socket (**#2**). Re-check the belt tension to ensure a maximum of ¼ in [6 mm] deflection and then tighten the M16 bolt and lock nut when the deflection is correct (**#3**).



BLADE TENSION

The 2020 and newer Woodland Mills sawmills use an ACME threaded rod for blade tensioning mounted within an assembled stack of Belleville washers for blade cushioning. This combined assembly allows for predictable and repeatable tensioning throughout all temperature ranges with minimal wear and maintenance.



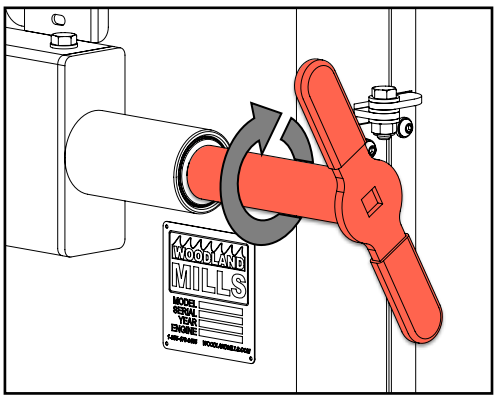
Below is a table comparing the positive and negative effects of low and high blade tension.

Low Tension 2→2-½ Turns	Recommended Tension 2-½→3 Turns	High Tension 3→3-½+ Turns
• Unpredictable tracking	• Holds tracking properly	• Accelerated belt wear
• Wavy cuts	• Cuts accurately. Optimal blade life	• Unpredictable tracking
• Blades rely more on guides	• Optimal bearing life	• Overheated blades. Blade breakage
	• Optimal belt life	• Accelerated bearing wear

TENSIONING METHOD

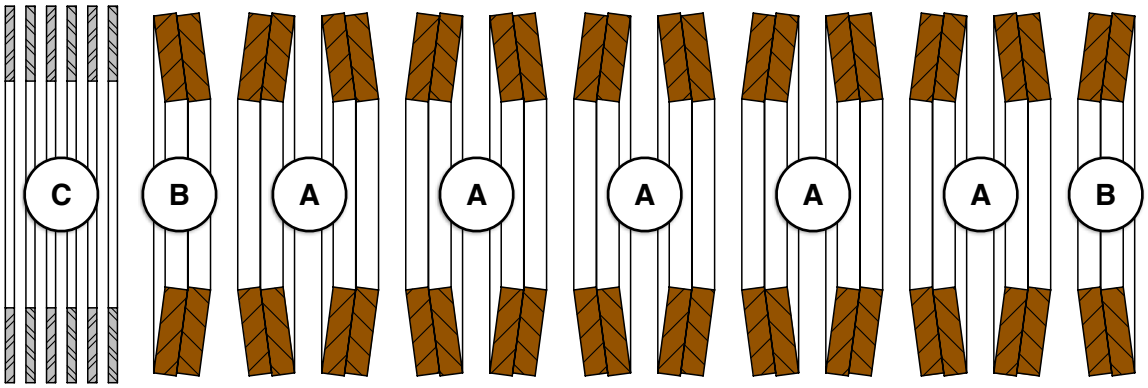
Count Turns: Spin the tension handle to remove slack in the blade and snug the handle up to the thrust bearing. From this point, 2-½ to 3 full turns will put the blade tension within the recommended range.

This will account for wear and settlement without any future calibration.



BELLEVILLE WASHER STACK

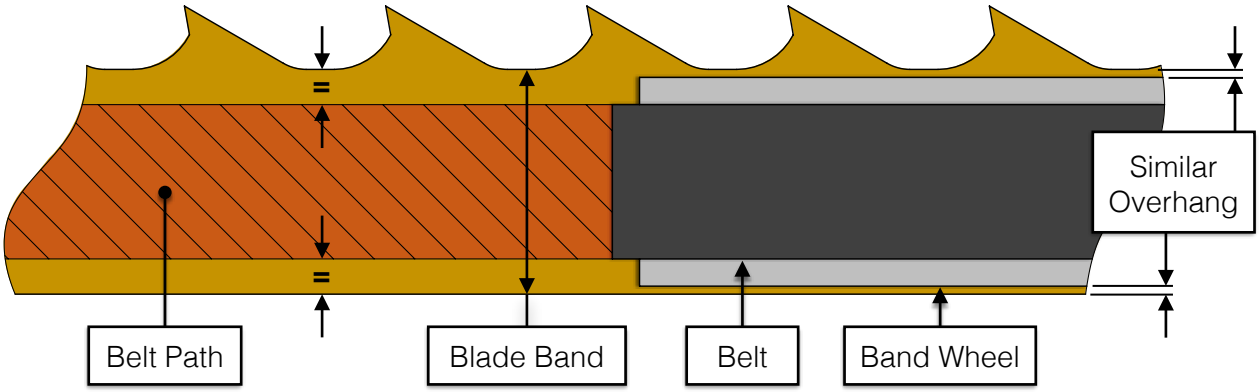
If the spring washer holder is removed for maintenance (e.g. greasing or replacement), ensure the twenty-four (24) Belleville washers inside are oriented and installed as shown below. There are five (5) groups of four washers (4)—each containing two (2) opposing nested pairs Ⓐ—with a single nested pair Ⓑ at each end. There may also be up to six (6) shims Ⓒ installed on the left (inner) end of the stack.



BLADE TRACKING

Blade tracking is the fine-tuning of the band wheel angles to "hold" the blade during cutting. This "hold" position maintains the blade's location during most sawing conditions, with the guide bearings and blocks acting as occasional supports. A properly tracked sawmill will hold the band portion of the blade centred on the belts without any guides in contact with the blade.

This image shows the "ideal position" with the blade band centred on the belts & band wheels.



Precise measurements are not required to centre the blade band with the belts & band wheels. Visually confirming the front and back of the blade overhang a similar amount is adequate.

What Happens when Tracking is "Off?"

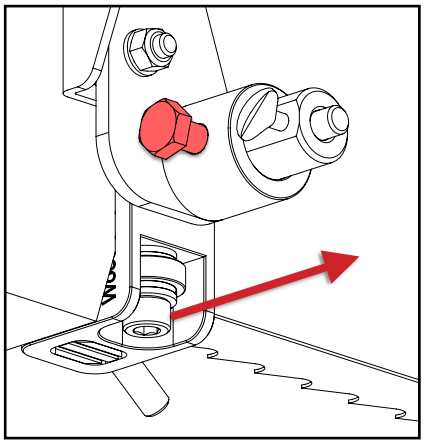
- Excessive blade guide bearing wear
- Wavy cuts caused by uneven tension within the blade
- Overheating blades / blade breakage
- Excessive belt wear
- Blade will not stay on the belts

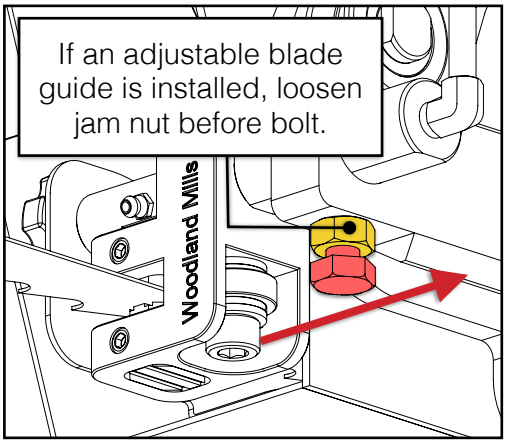
Important Points:

- Tracking testing can only be made with a blade installed.
- Tracking testing is done under full blade tension. A fully tensioned blade is when the tension handle is snugged to the thrust bearing and then rotated a further 2-½ to 3 full turns.
- Tracking *adjustments* are made at three (3) turns off full blade tension.
- The blade should run in the same location on both the follower and drive-side belts.
- Guide assemblies should *always* be pushed all the way back, clear of the back of the blade. Nothing should ever be in contact with the blade when testing or making tracking adjustments.
- The following test and adjustments should only be attempted with drive and follower belts that are in good repair and keeping the blade up off the cast iron band wheels.
- Tuning the blade tracking is a process of testing and adjusting—re-testing and adjusting—re-testing and adjusting. The number of cycles is determined by how far off the tracking was at the start of the process.
- Please see the following pages for testing and adjustment procedures.

TEST PROCEDURE

1. Always wear safety gloves and eyewear. Never attempt to adjust the blade tracking with the engine running. Remove the spark plug cap as a safety precaution.
2. Loosen the blade guide assemblies, push them back as far as possible, and secure. This will ensure the guide blocks and bearings will not touch the blade during the test.



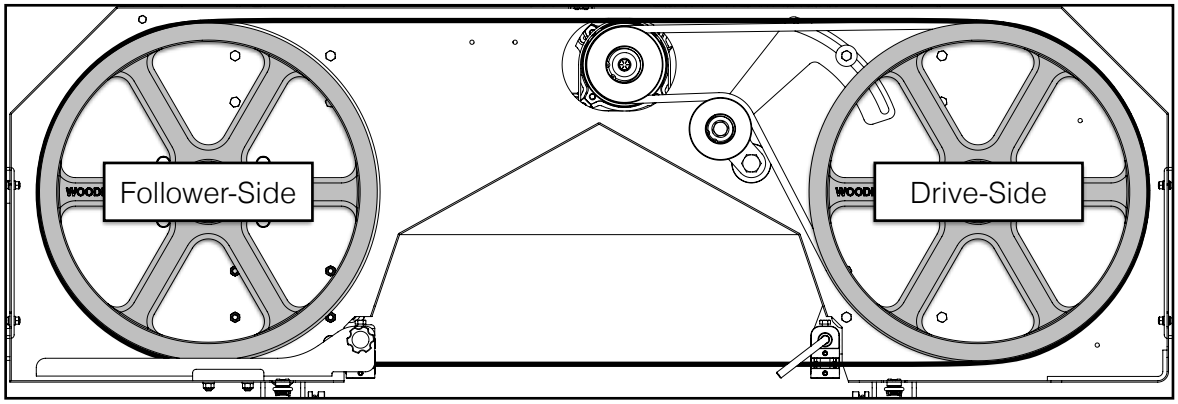


3. Install a blade if one is not already installed.
4. Fully tension the blade by snugging the tension handle to the thrust bearing and rotate it a further 2-½ to 3 full turns.
5. Start rotating the band wheels by hand in the direction of cut observing how the blade moves *forward* or *rearward* on the belts to find its "hold" position.

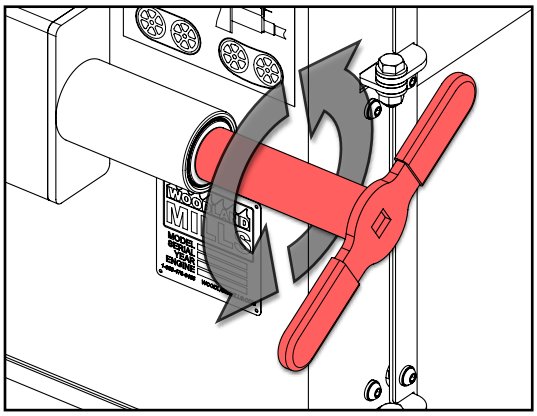
****If the blade looks as if it is going to come off during hand rotations—STOP—and proceed to the *Follower-Side* or *Drive-Side Adjustment* as required.****

Important Points Before Making Adjustments:

- Start adjusting the side that is furthest out of spec first.
- Since adjustments made to one side can affect the other side, always adjust one side first, rerun this test procedure, then adjust the other side if needed.
- Because ¼ turn adjustment increments are recommended, it is common to run this test a few times between multiple adjustments before correct tracking is achieved.

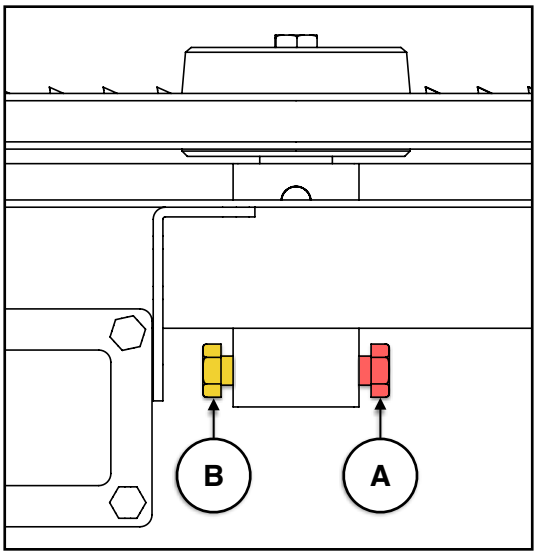


FOLLOWER-SIDE ADJUSTMENT



1. Back off the blade from full tension by three (3) full turns of the tension handle.

****Ensure blade guides are still pushed back and clear of the blade.****



2. Adjust the blade position:

FORWARD

To move the blade *forward* on the belt:

i. Loosen the right-side bolt Ⓐ ¼ turn.

ii. Tighten the left-side bolt Ⓑ to clamp the follower shaft back in place.

—OR—

REARWARD

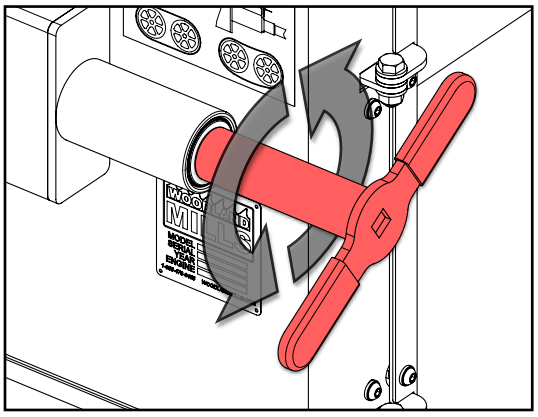
To move the blade *rearward* on the belt:

i. Loosen the left-side bolt Ⓑ ¼ turn.

ii. Tighten the right-side bolt Ⓐ to clamp the follower shaft back in place.

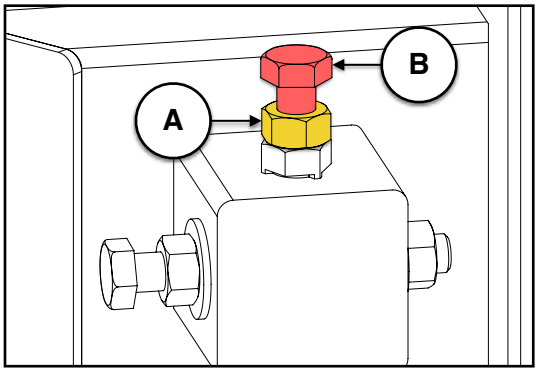
3. Repeat the ***Test Procedure*** to see if further adjustment is needed.
4. Repeat the follower-side adjustment steps and test procedure as many times as necessary until the blade is tracking properly.

DRIVE-SIDE ADJUSTMENT

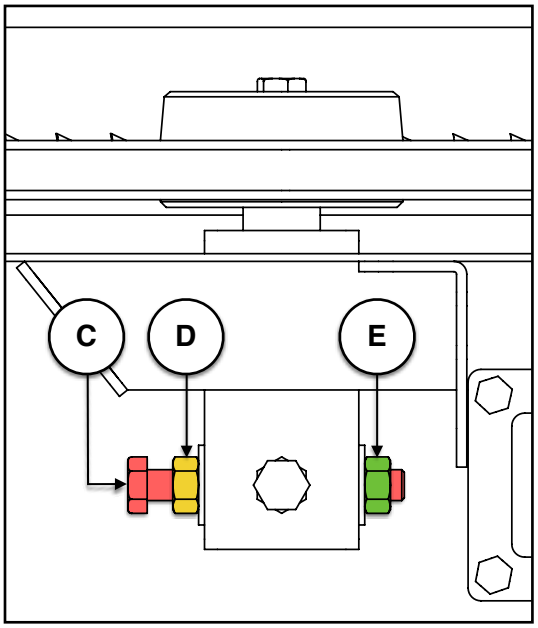


1. Back off the blade from full tension by three (3) full turns of the tension handle.

****Ensure blade guides are still pushed back and clear of the blade.****



2. Loosen the jam nut Ⓐ on the upper bolt.
3. Loosen the upper bolt Ⓑ ½ turn.



4. Adjust the blade position:

FORWARD

To move the blade *forward* on the belt:

i. Hold the horizontal bolt Ⓒ stationary with a wrench.
ii. Loosen the right-side nut Ⓔ ¼ turn.
iii. tighten the left-side nut Ⓓ.

—OR—

REARWARD

To move the blade *rearward* on the belt:

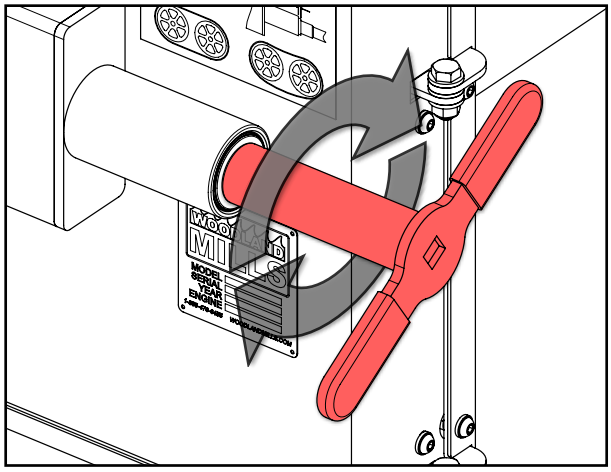
i. Hold the horizontal bolt Ⓒ stationary with a wrench.
ii. Loosen the left-side nut Ⓓ ¼ turn.
iii. tighten the right-side nut Ⓔ.

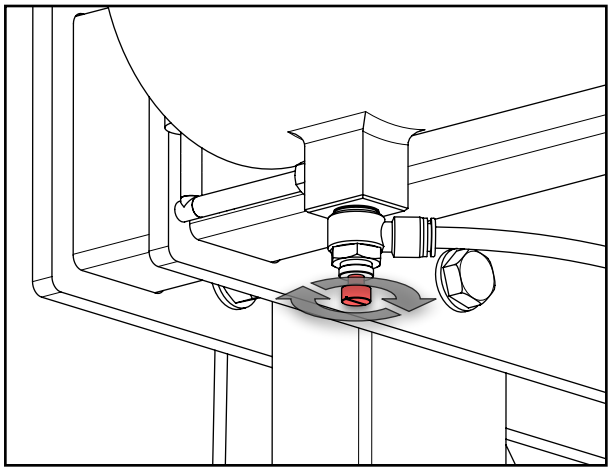
5. Re-tighten the upper bolt Ⓑ followed by the upper jam nut Ⓐ.
6. Repeat the ***Test Procedure*** to see if further adjustment is needed.
7. Repeat the drive-side adjustment steps and test procedure as many times as necessary until the blade is tracking properly.

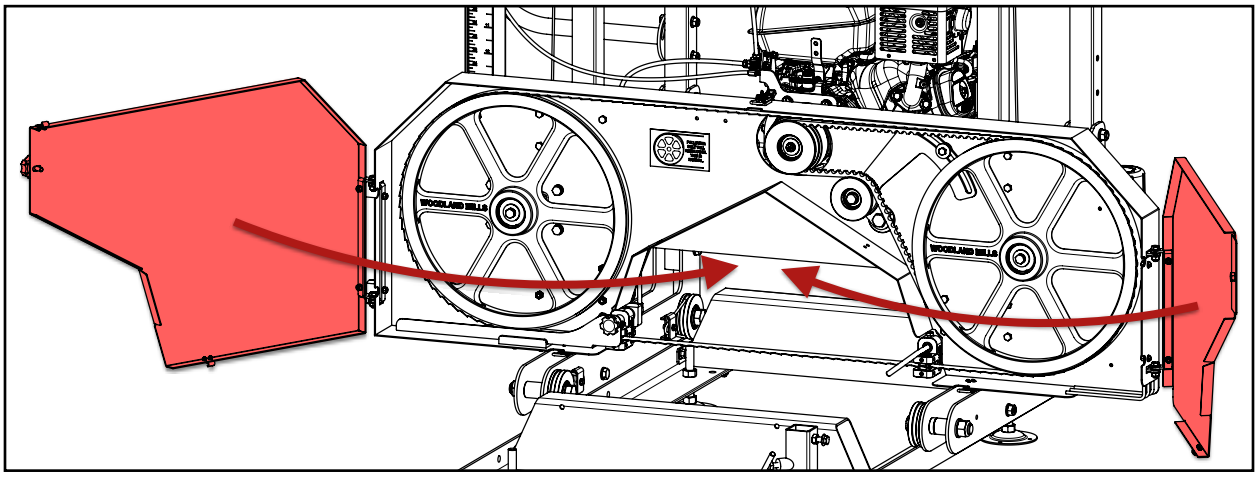
TRACKING RUN-IN

Once the band wheel angles have been tuned and the blade's "hold" position is correct as per the test procedure:

1. Fully tension the blade by snugging the tension handle to the thrust bearing and rotate it a further 2-½ to 3 full turns.
2. Disable lubrication by closing the valve on the tank.
3. Close and latch the band wheel housing doors.
4. Start the engine.
5. Take the engine slowly up to half throttle for fifteen (15) seconds, then full throttle for an additional fifteen (15) seconds, and then turn the engine off and wait for the blade to stop spinning.
6. Open the band wheel housing doors and confirm the tracking settings have held.
7. Bring the guides forward into place and set as per the following section, ***BLADE GUIDE ADJUSTMENT***.

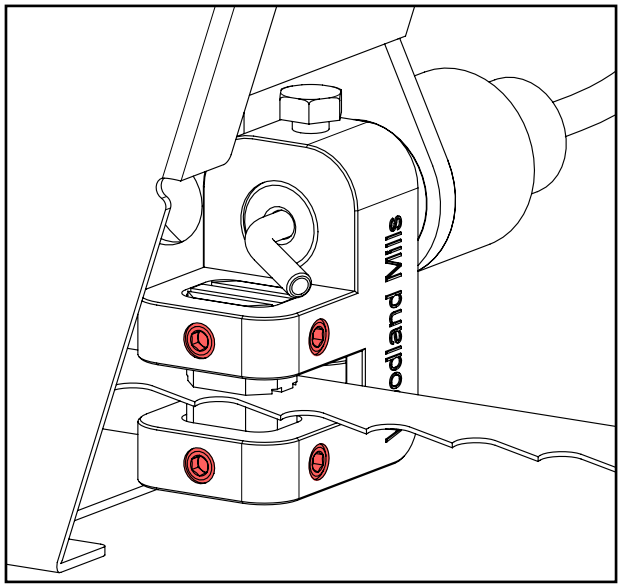




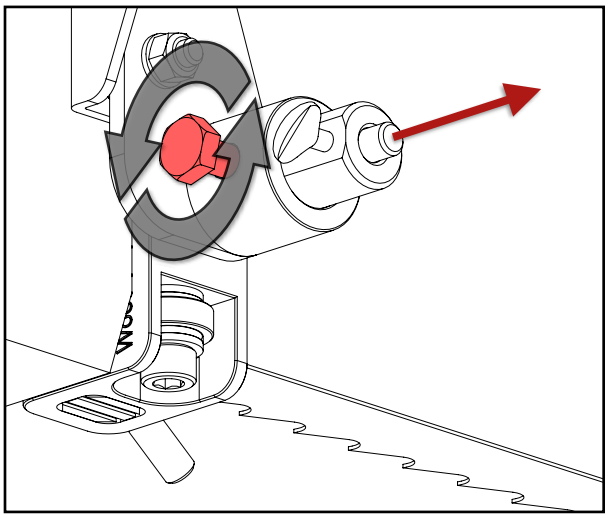


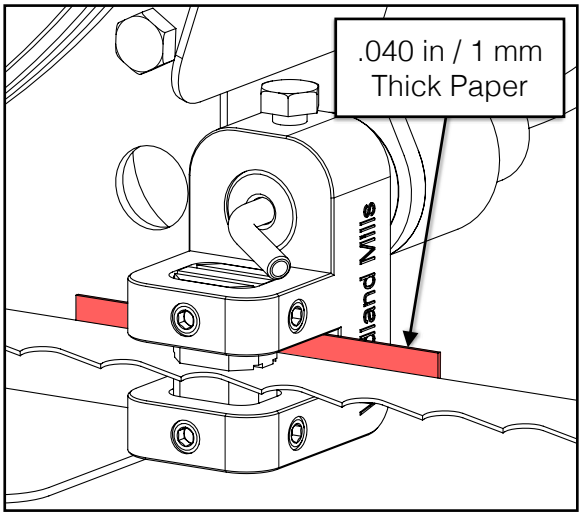
BLADE GUIDE ADJUSTMENT

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.

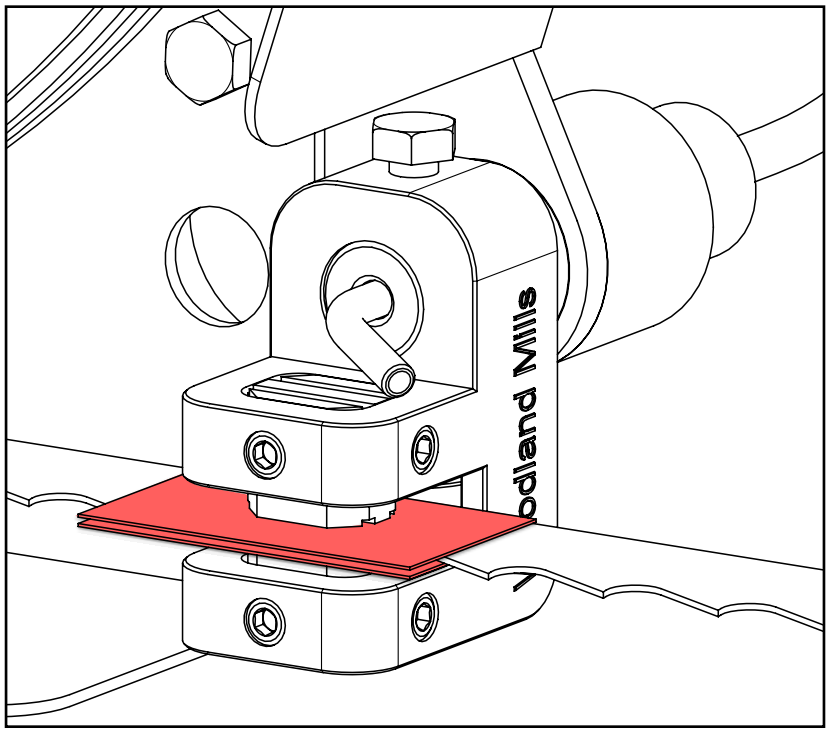


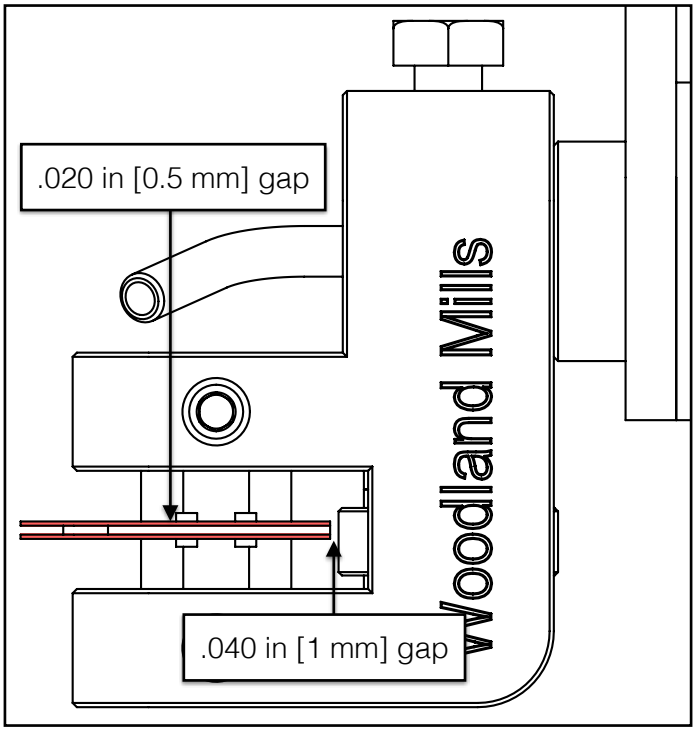
Loosen the blade guide assembly bolts on both guide block holders so that the round shaft is free to slide back and forth. Position it so that there is a thick paper-sized gap (.040 in or 1 mm) between the bearing and the back of blade. Re-tighten the bolt against the flat on the shaft to secure the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





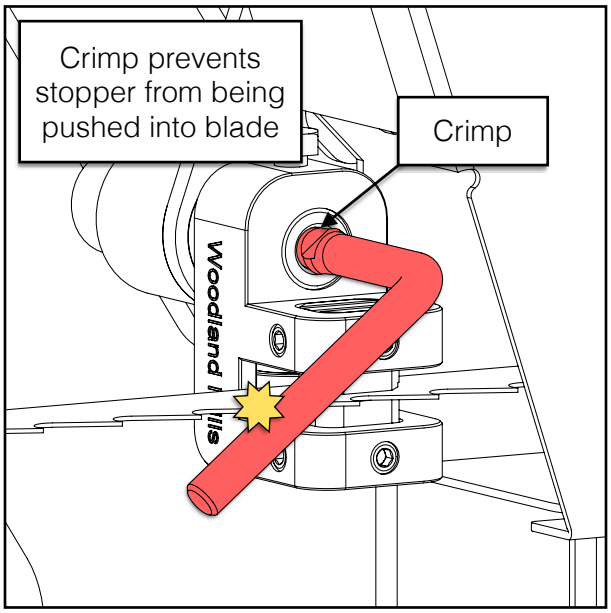
Using a feeler gauge or thick piece of paper (.020 in / 0.5 mm), place it between the blade and both guide blocks and then tighten the set screws.

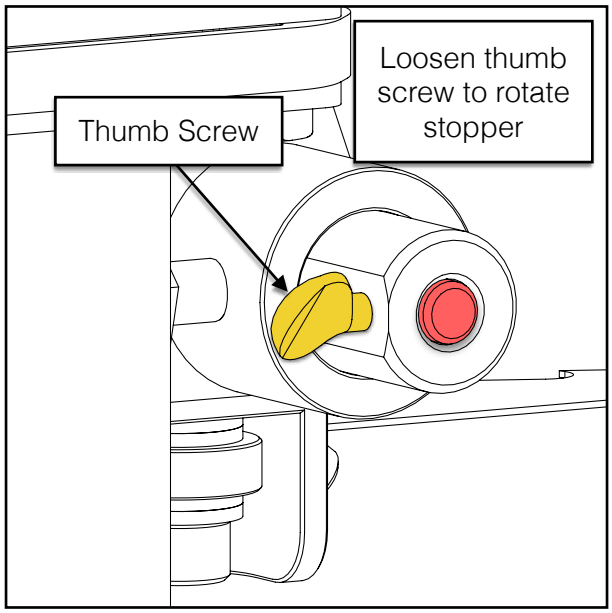




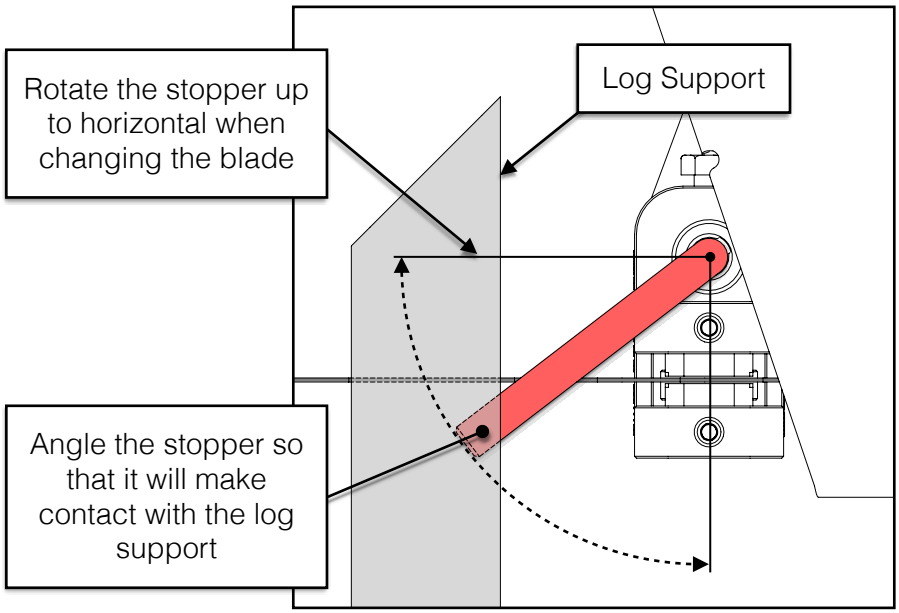
BLADE STOPPER ADJUSTMENT

The drive-side guide block holder is equipped with a blade stopper. The stopper prevents the blade from running into the log supports during a cut. There is a crimp on the stopper shaft that also prohibits it from being pushed backwards into the blade. The angle of the stopper is adjusted by loosening the thumb screw located at the rear of the guide block holder shaft.





Angle the stopper so that it will make contact with the log support as shown below. The sawhead may have to be *lowered*—or the log support *raised*—to verify contact between the two prior to making cuts. Note: rotate the stopper up to horizontal when changing the blade.



Steps:

1. Loosen the thumb screw.
2. Set the stopper angle.
3. Tighten the thumb screw.

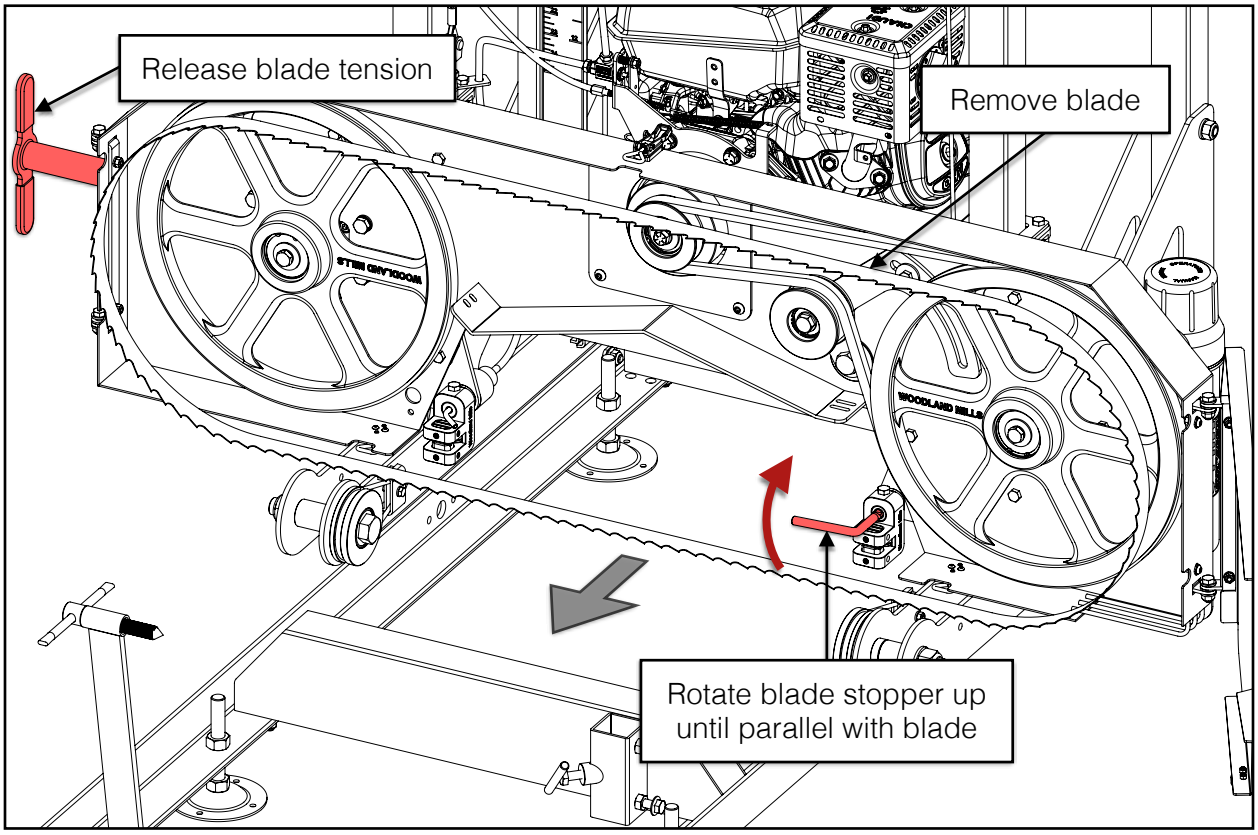
SAWMILL MAINTENANCE

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:

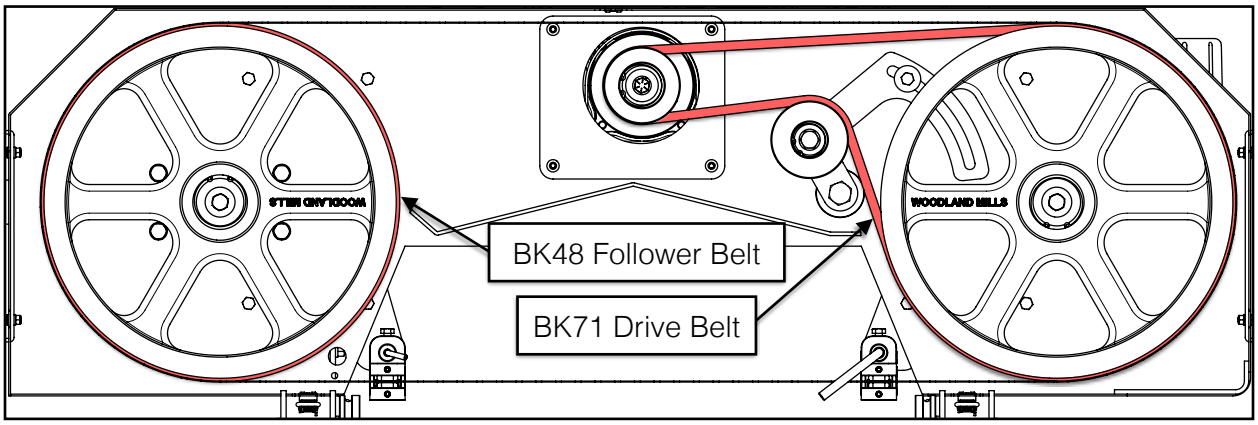
1. Turn the green T-handle counter-clockwise to release the tension from the blade until it is loose.
2. Open the band wheel housing doors.
3. Rotate the blade stopper up on the drive-side guide block holder.



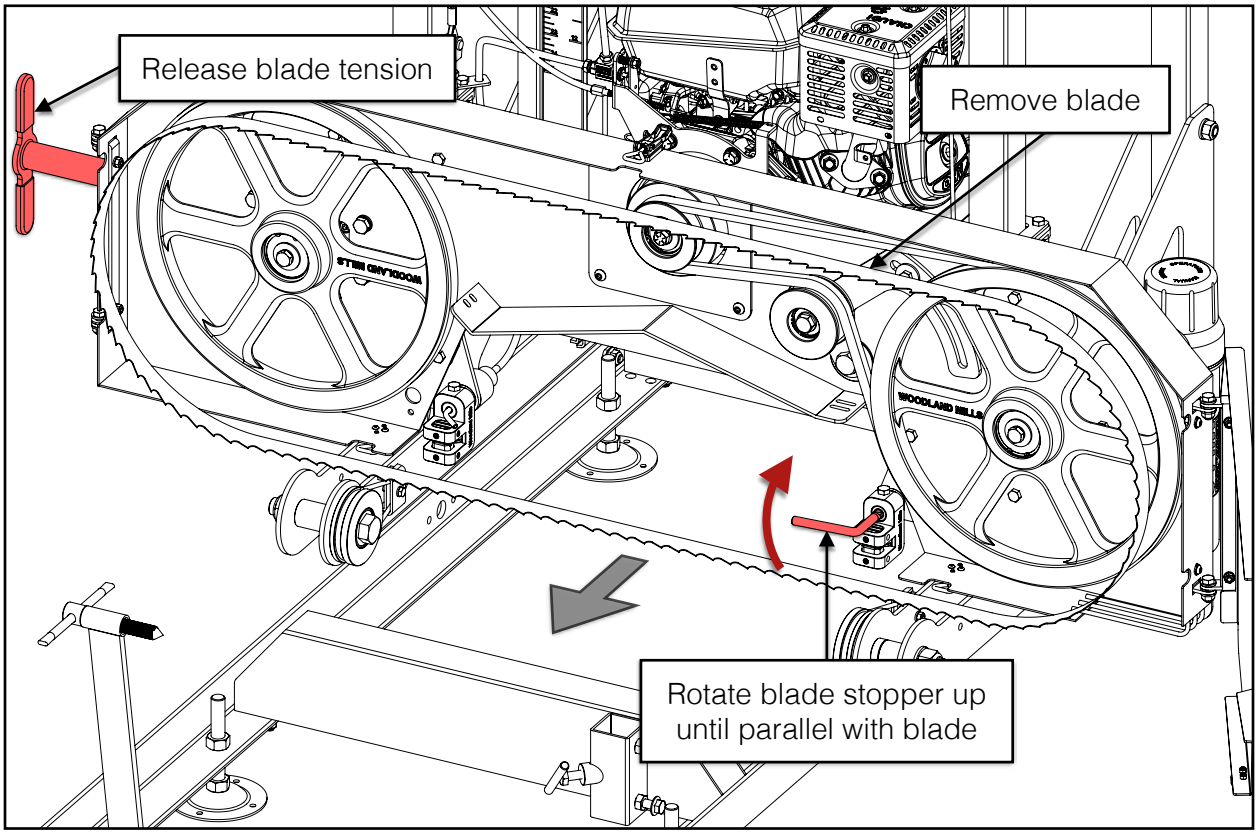
The blade is now sufficiently loose and can be easily pulled straight out the front. Install a new blade following the reverse order of steps and then set the proper blade tension.

REPLACING BELTS

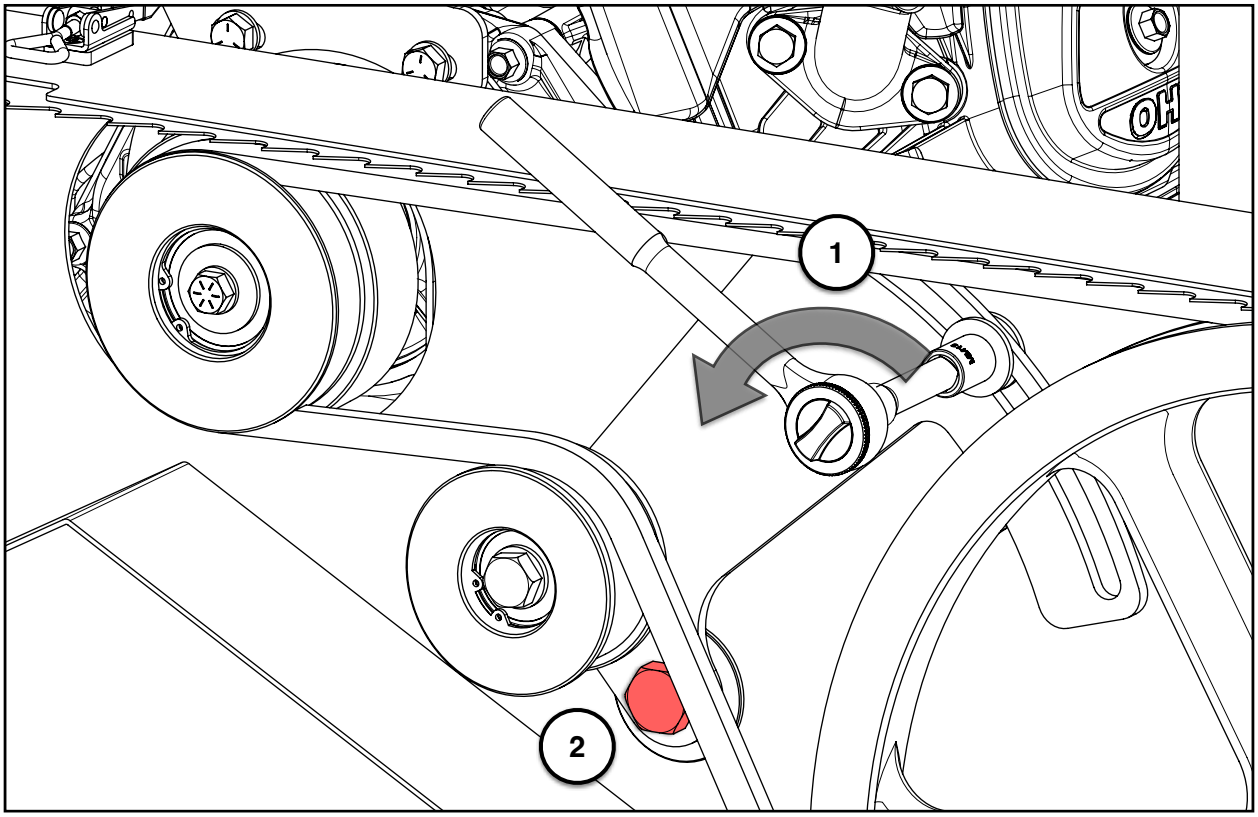
Never attempt to replace the belts with the engine running. As a safety precaution, remove the spark plug cap. Gloves and safety glasses must be worn when replacing the belts. There are two V-belts on the sawmill: a BK71 Kevlar belt on the drive side and a BK48 Kevlar belt on the follower side.

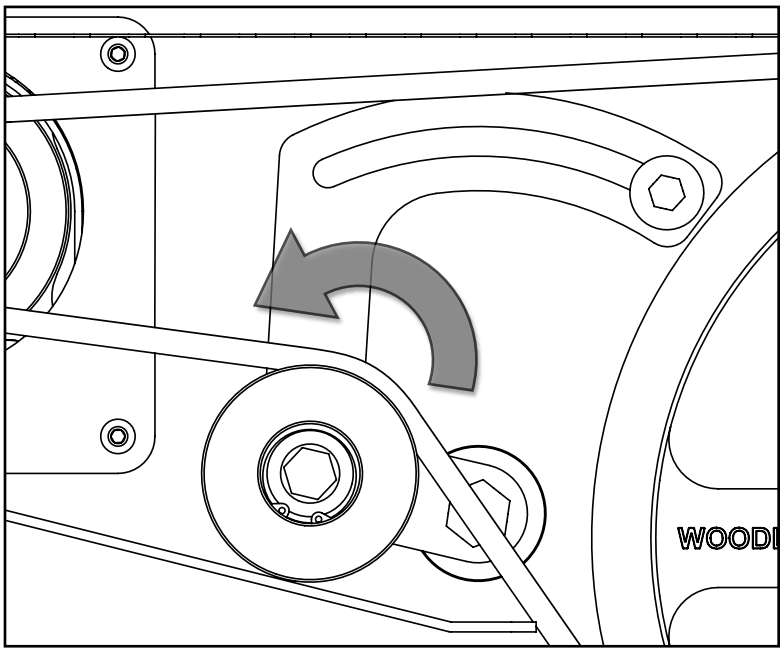


First, remove the blade following the procedure outlined in section, ***CHANGING THE BLADE***.



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.

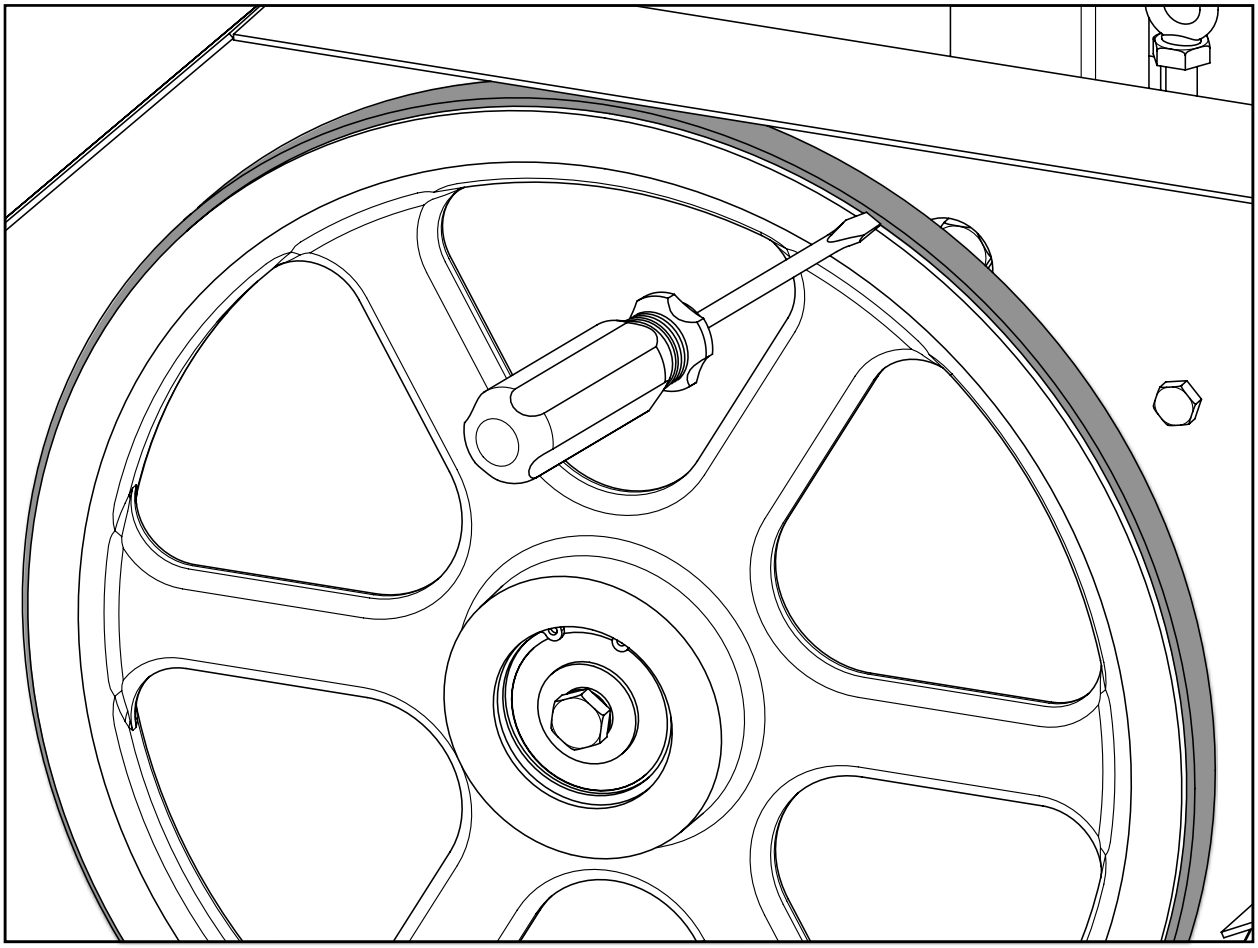




Once both bolts are loose, the belt tensioner will rotate counter-clockwise until the idler pulley comes to rest on the band wheel housing. The belt can now easily be removed by hand and a new belt installed.

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

The BK48 follower belt is changed by prying it off and installing the new one with the aid of a slotted screwdriver.



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

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

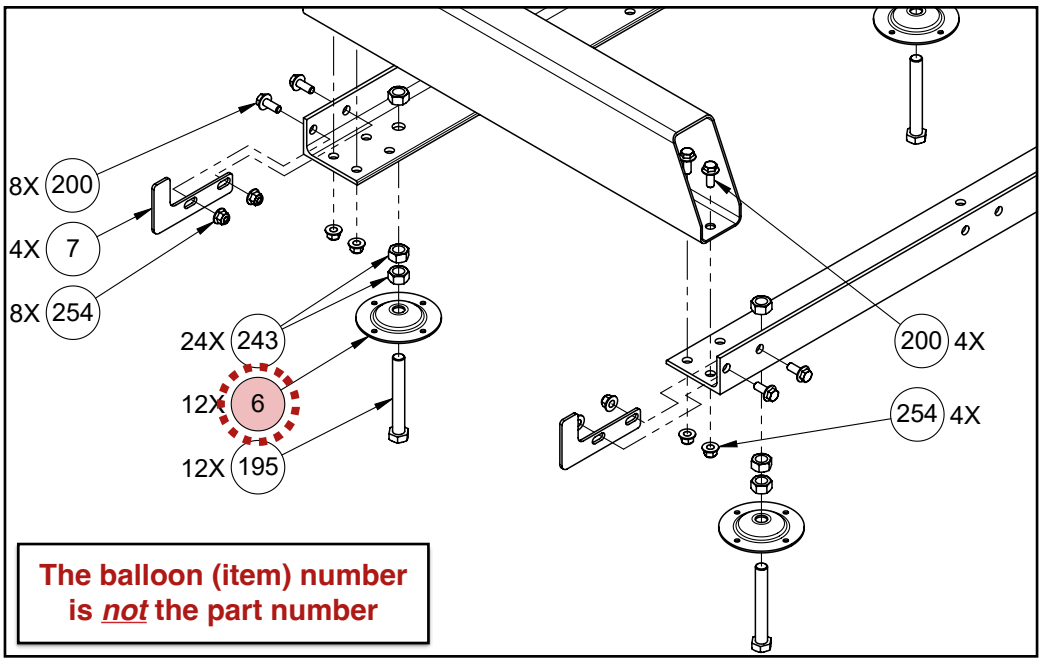
TROUBLESHOOTING

Problem/Issue	Possible Causes	Resolution Options
Producing wavy cuts	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.	1. Tighten blade. Refer to page 75. 2. Gap between guide blocks and blade are incorrect. Refer to page 82. 3. Adjust blade tracking. Refer to page 77. 4. Install new blade. Refer to page 85. Always use blade lubricant. 5. Install new blade. Refer to page 85. 6. Slow feed rate down and push head slower through log.
Last board is tapered or narrow in middle	1. Track is not level.	1. Track needs to be checked for level and adjusted so it is square. Track should also be set up on a firm, sturdy base so deflection does not occur from heavy logs or the sawmill head.
Blade dulls quickly	1. Logs are not clean. 2. Foreign objects in log.	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	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. 7. Too much water on blade. 8. New belts not dressed. 9. Belt tensioner idler pulley not adjusted properly.	1. Tighten blade. Refer to page 75. 2. Gap between guide blocks and blade are incorrect. Refer to page 82. 3. Adjust blade tracking. Refer to page 77. 4. Install new belts. Refer to page 86. 5. Install new blade. Refer to page 85. 6. Slow feed rate down and push head slower through log. 7. Valve on water tank is letting out too much water. Reduce flow by turning dial on valve. 8. Run the sawmill without lubrication for 30 minutes in order to dress new belts sufficiently before adding water for lubrication. Refer to page 71 (#3). 9. Call Woodland Mills Technical Support.
Blades are breaking	1. Too many blade sharpenings. 2. Inadequate blade tension. 3. Improper blade guide set up. 4. Improper blade tracking. 5. Pushing mill too quickly.	1. Replace blade. Refer to page 85. 2. Binding between guide blocks when blade is too loose. Tighten blade. Refer to page 75. 3. Gap between guide blocks and blade are incorrect. Refer to page 82. 4. Adjust blade tracking. Refer to page 77. 5. Slow feed rate down and push head slower through log.
Blade is slowing down or stopping when milling	1. Inadequate blade tension. 2. Improper drive belt tension. 3. Pushing mill too quickly.	1. Tighten blade. Refer to page 75. 2. Belts are worn or too loose. Replace. Refer to page 86. 3. Slow feed rate down and push head slower through log.
Mill is not cutting or cutting very slowly	1. Dull blade. 2. Blade is on backwards.	1. Install new blade. Refer to page 85. 2. Remove blade and flip it inside out. The teeth should be facing in the direction of the log supports.

Problem/Issue	Possible Causes	Resolution Options
Mill is vibrating excessively	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.	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 86. 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 67.
Sawhead difficult to raise or lower	1. Sawhead not level. 2. Front posts not lubricated.	1. Level the sawhead by adjusting the turnbuckle next to the front-right post. Refer to page 66. 2. Spray front posts with water resistant silicone lubricant.

REPLACEMENT PARTS ORDERING

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



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

PARTS LIST

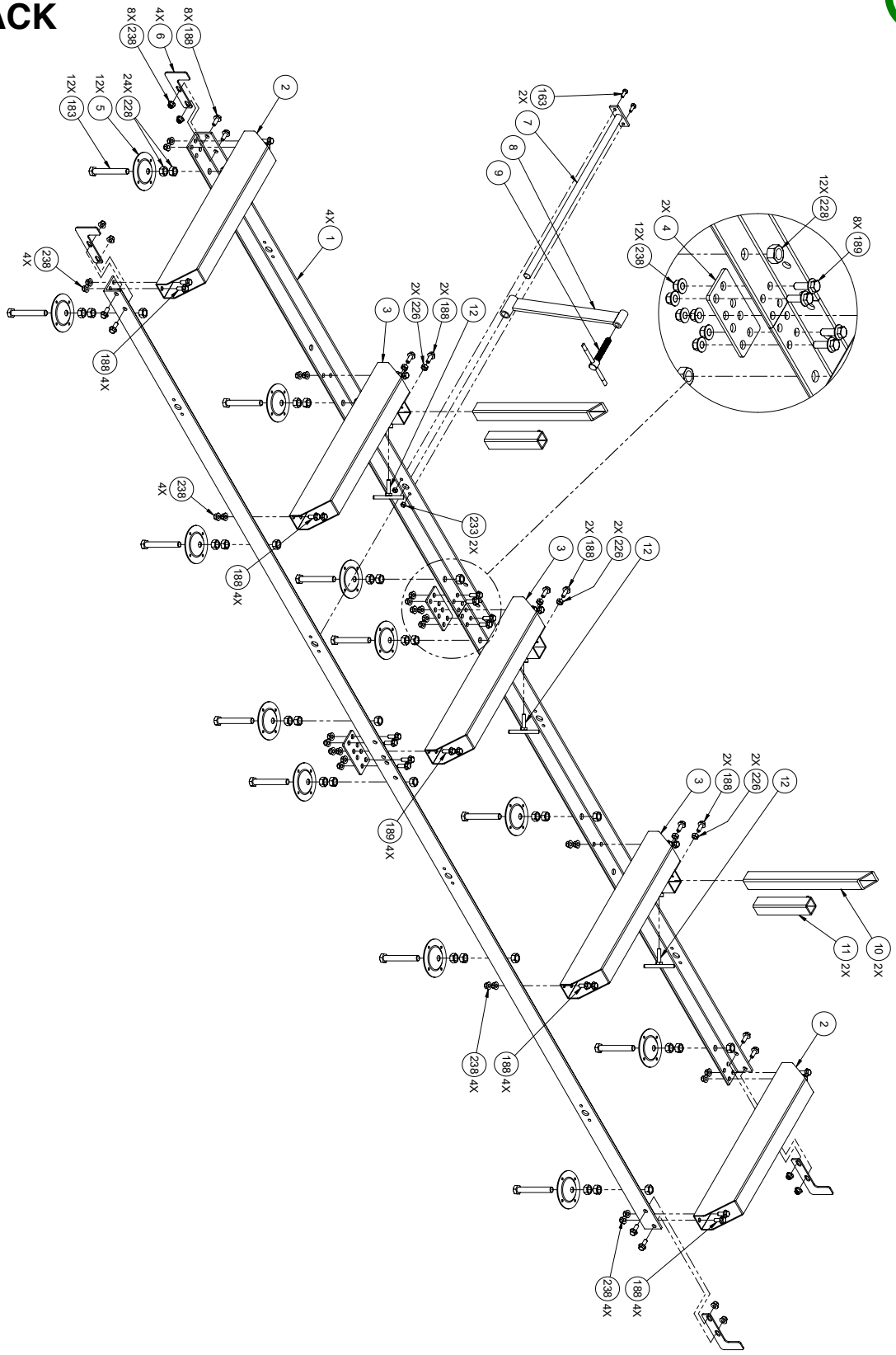
Item	Quantity		Part No.	Description
	14 hp	9.5 hp		
1	4	4	0001073	TRACK RAIL, 58.5 mm TALL
2	2	2	0001075	LOG BUNK, END
3	2	2	0001080	LOG BUNK, MID
4	1	1	0001084	LOG BUNK, CENTER
5	2	2	0001072	REINFORCEMENT PLATE, 90 X 200 mm
6	12	12	0001071	LEVELLING FOOT BASE
7	4	4	0001055	CARRIAGE STOP
8	1	1	0001062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

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

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

EXPLODED ASSEMBLY VIEWS

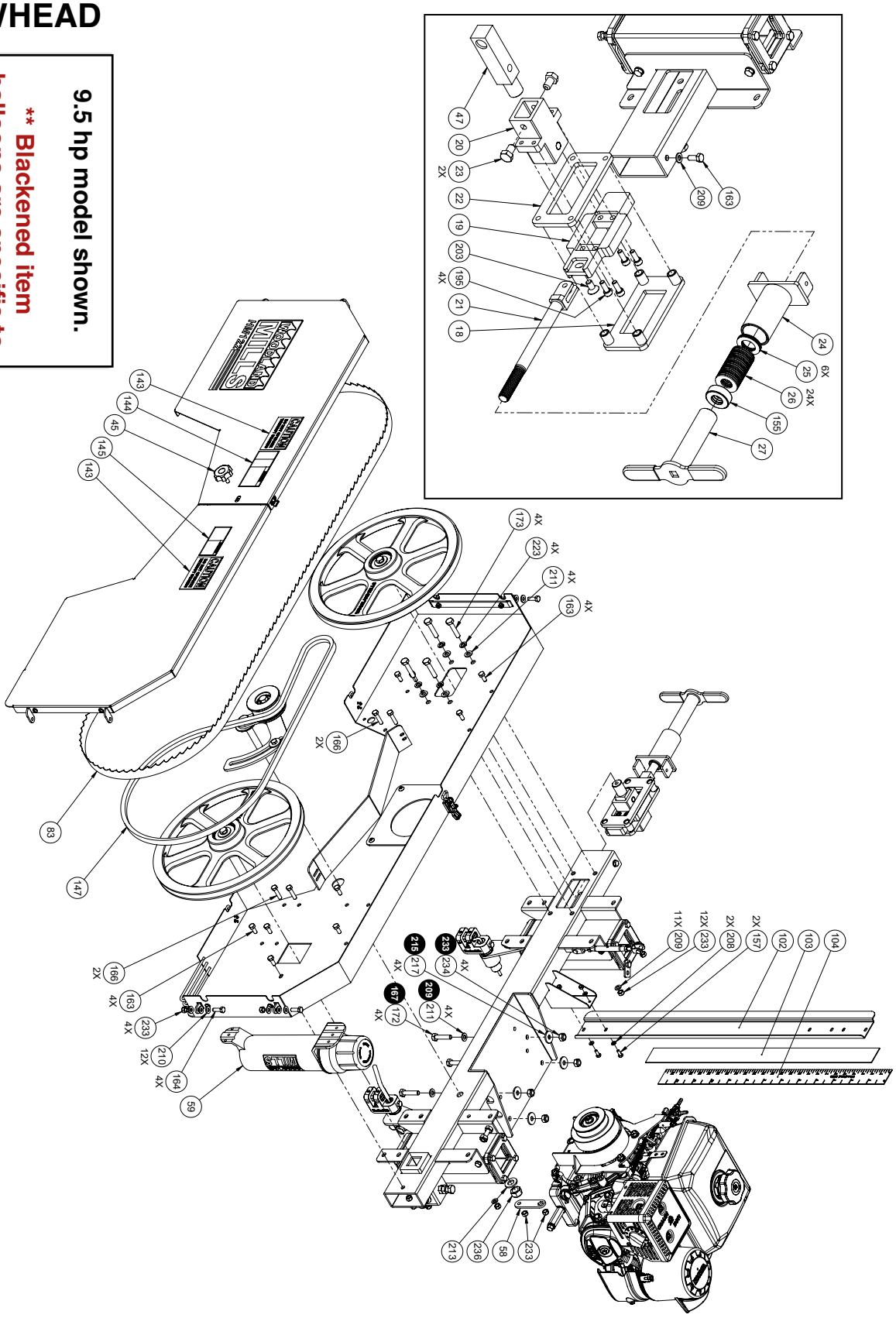
TRACK



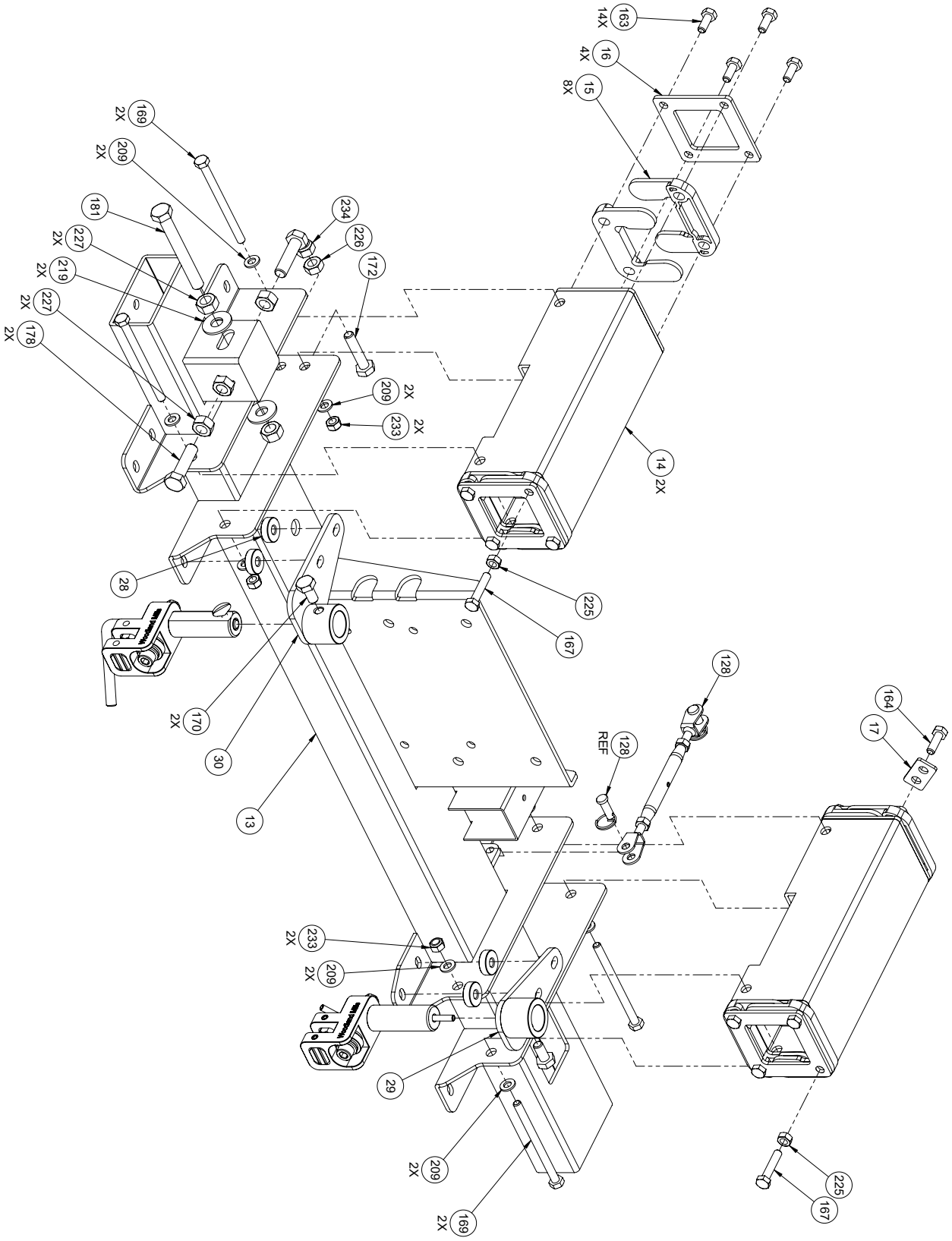
SAWHEAD

9.5 hp model shown.

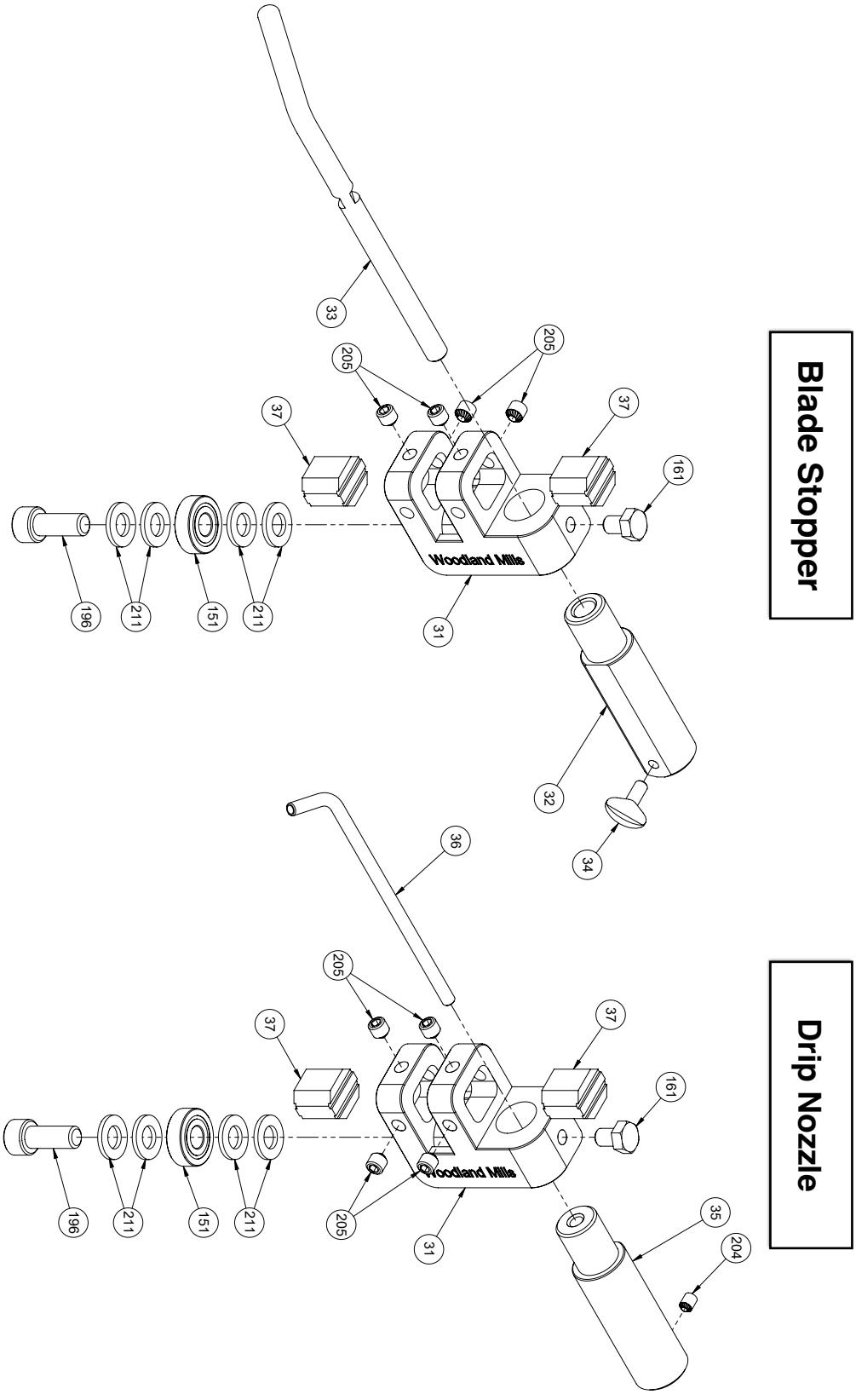
**** Blackened item balloons are specific to 7 horsepower model. ****



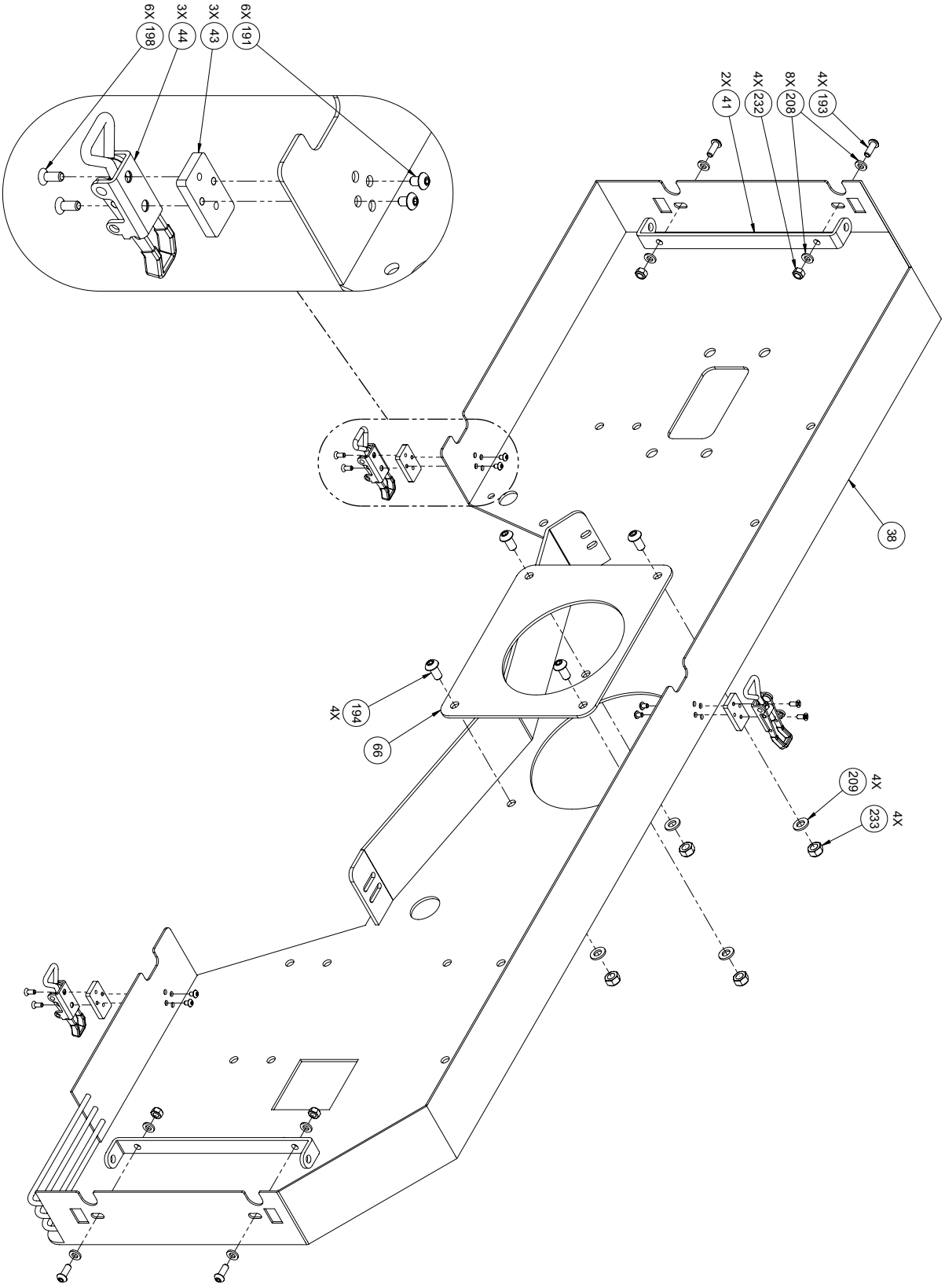
BACK BEAM


163 14X
16 4X
15 8X
169 2X
209 2X
181
227 2X
219 2X
227 2X
178 2X
234
226
172
209 2X
233 2X
14 2X
28
225
167
170 2X
30
13
128
128 REF
164
17
233 2X
209 2X
29
209 2X
169 2X
225
167

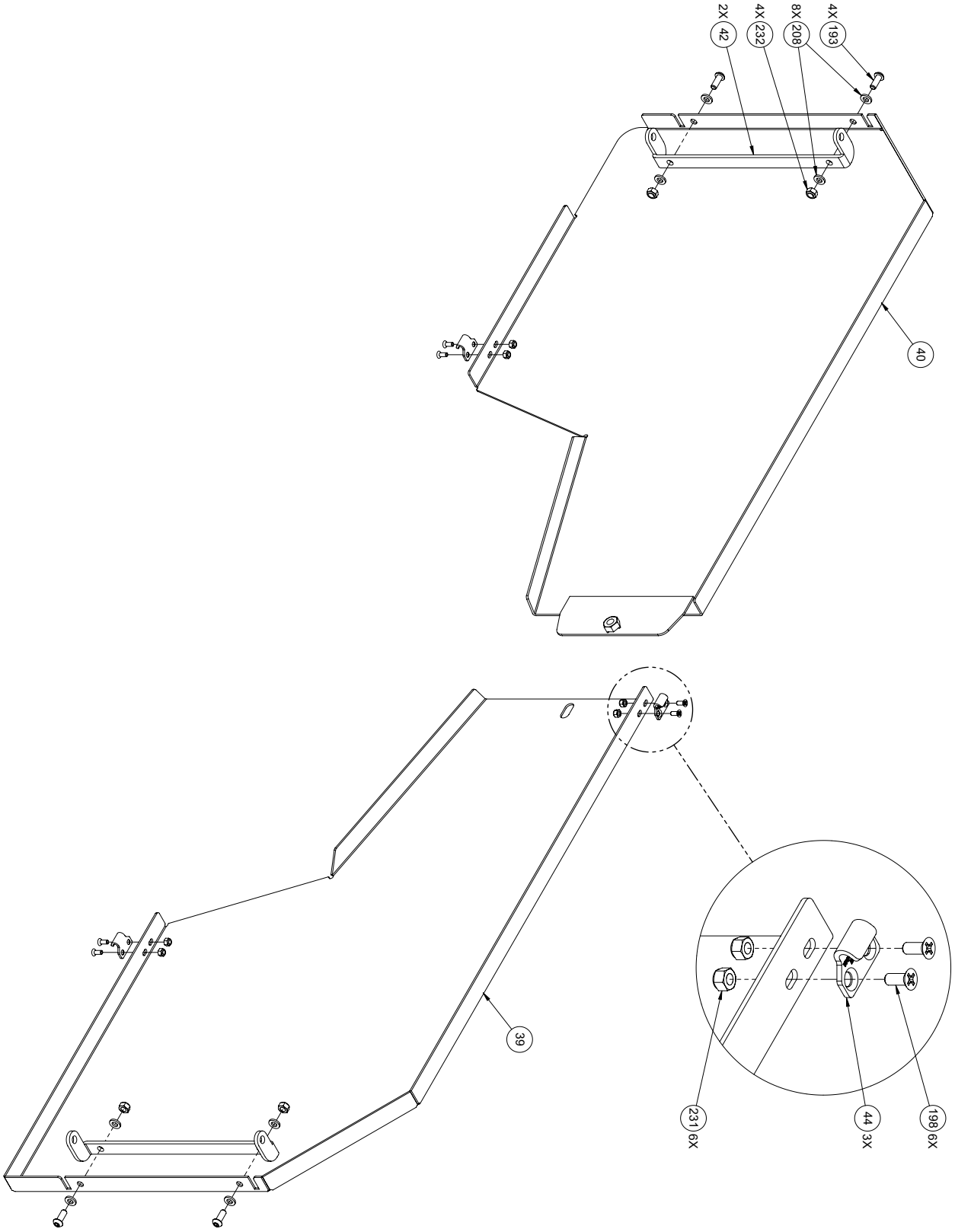
GUIDE BLOCK HOLDERS



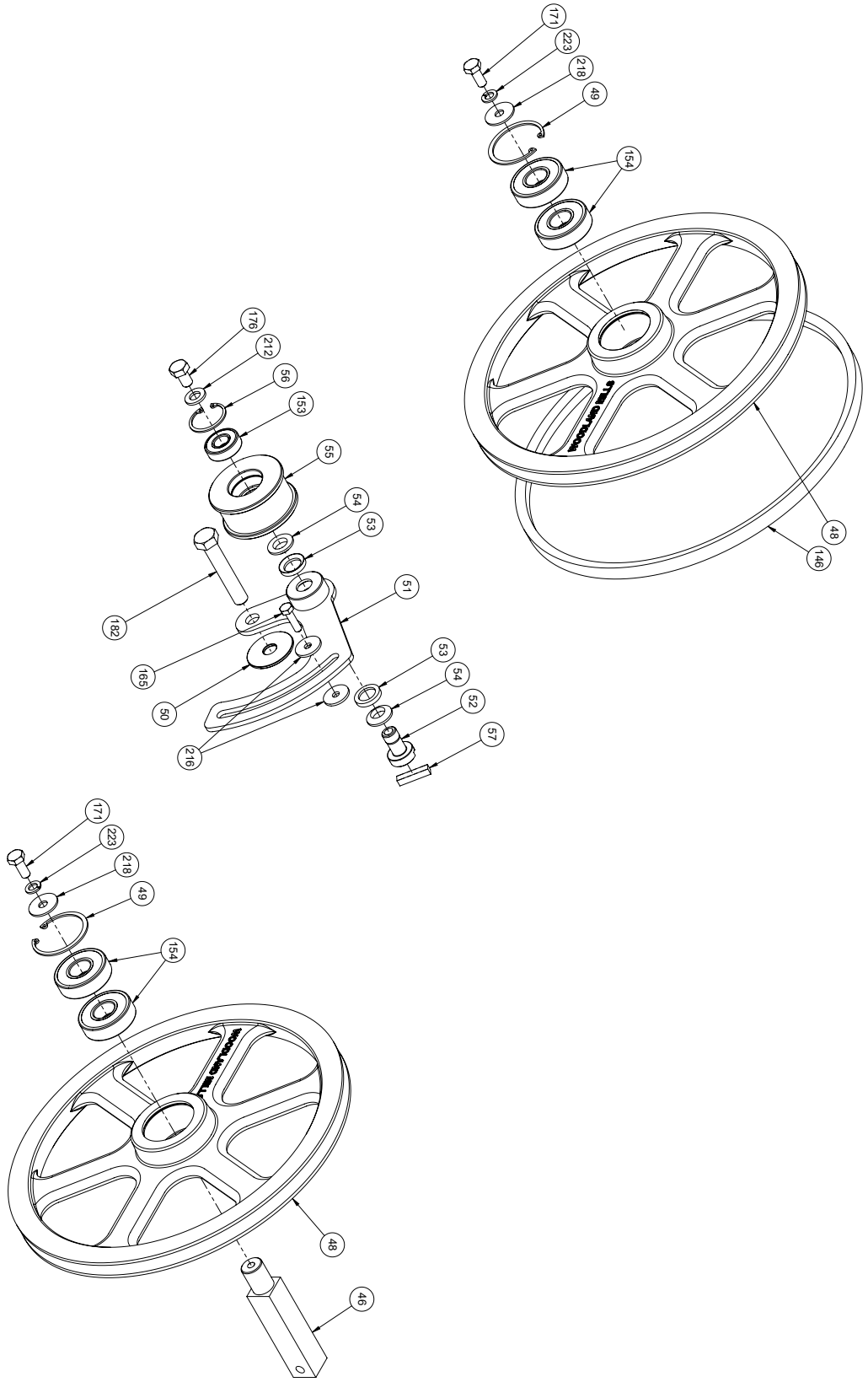
BAND WHEEL HOUSING



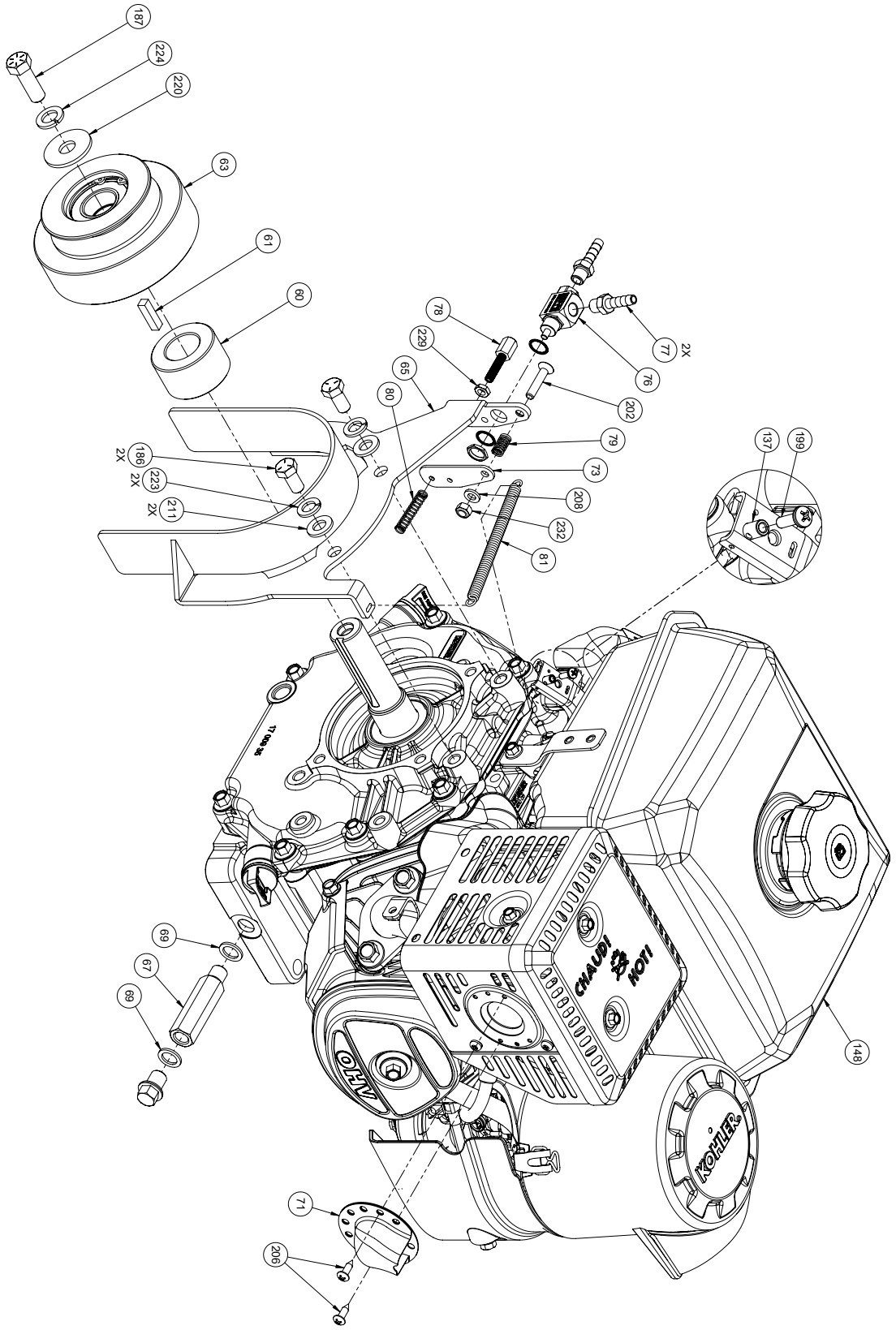
BAND WHEEL HOUSING DOORS



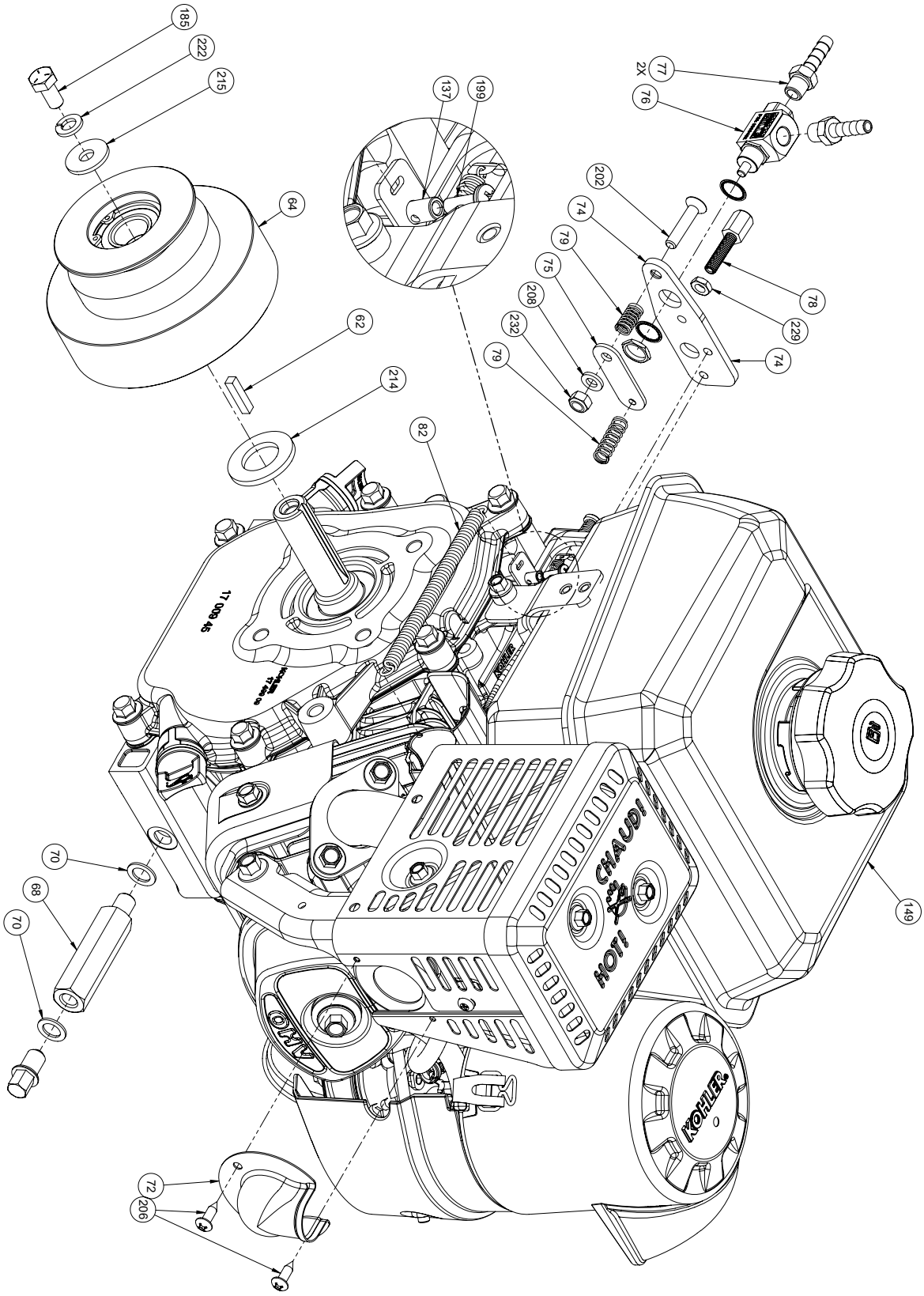
BAND WHEELS AND BELT TENSIONER



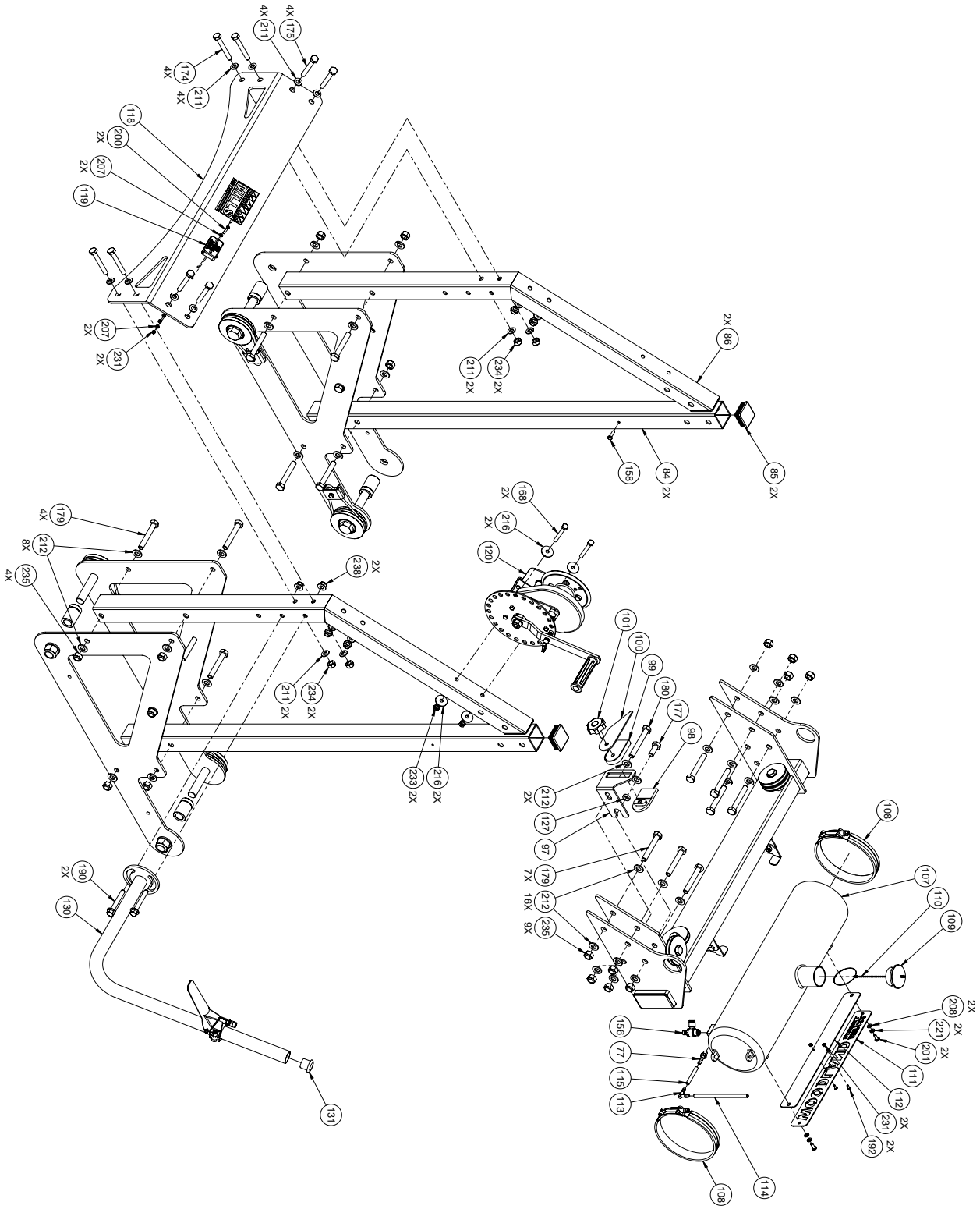
ENGINE COMPONENTS—9.5 hp



ENGINE COMPONENTS—7 hp



CARRIAGE


4X 211
4X 175
4X 174
4X 211
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2X 200
2X 207
119
2X 207
2X 231
2X 86
211 2X
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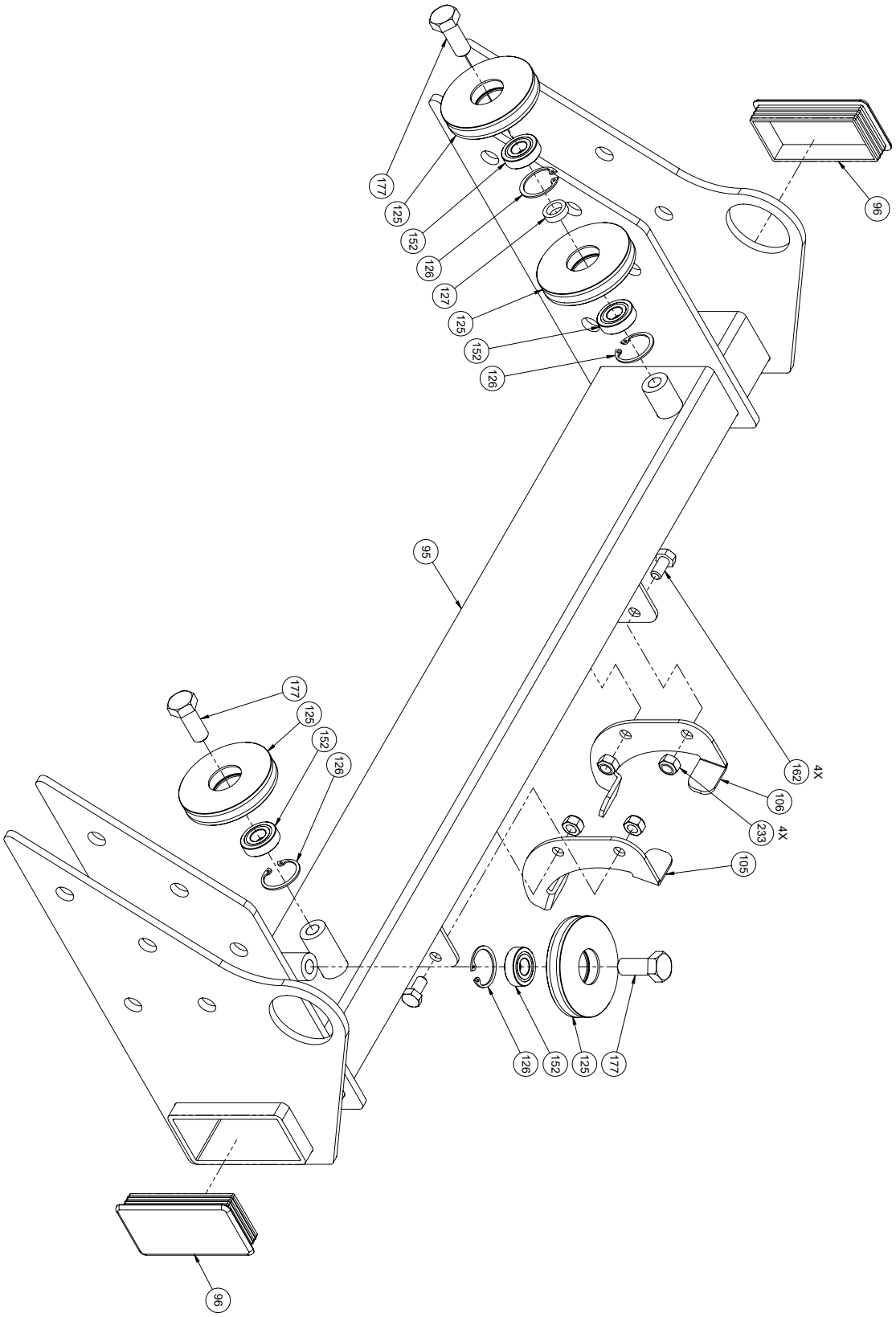
84 2X
85 2X
168 2X
216 2X
120
4X 179
8X 212
4X 235
238 2X
211 2X
234 2X
233 2X
216 2X
101
100
99
180
177
98
2X 212
127
97
7X 179
16X 212
9X 235
108
107
110
109
2X 190
130
131
156
77
115
113
208 2X
221 2X
201 2X
111
112
231 2X
192 2X
108
114

CROSS BEAM


177
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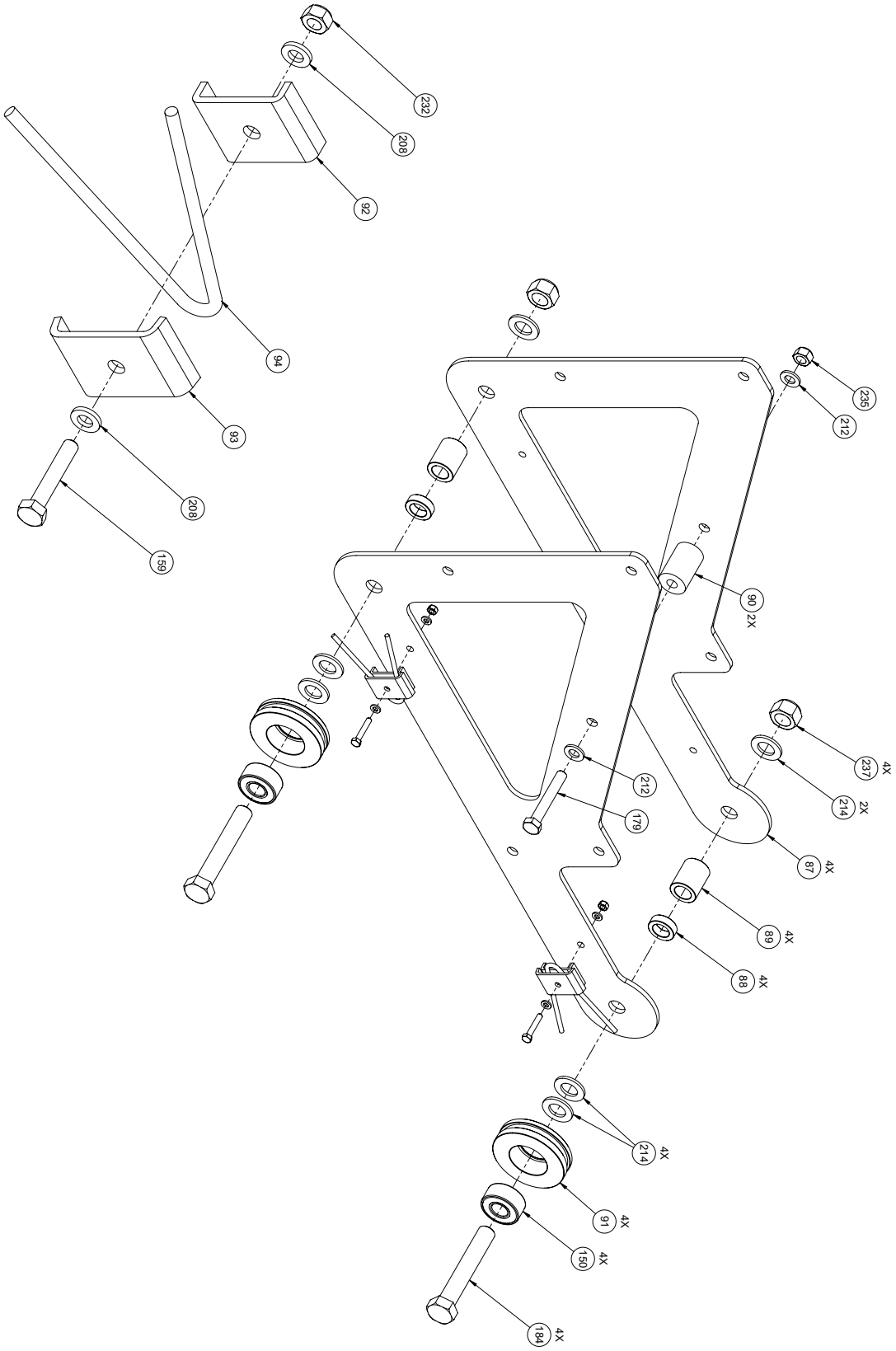
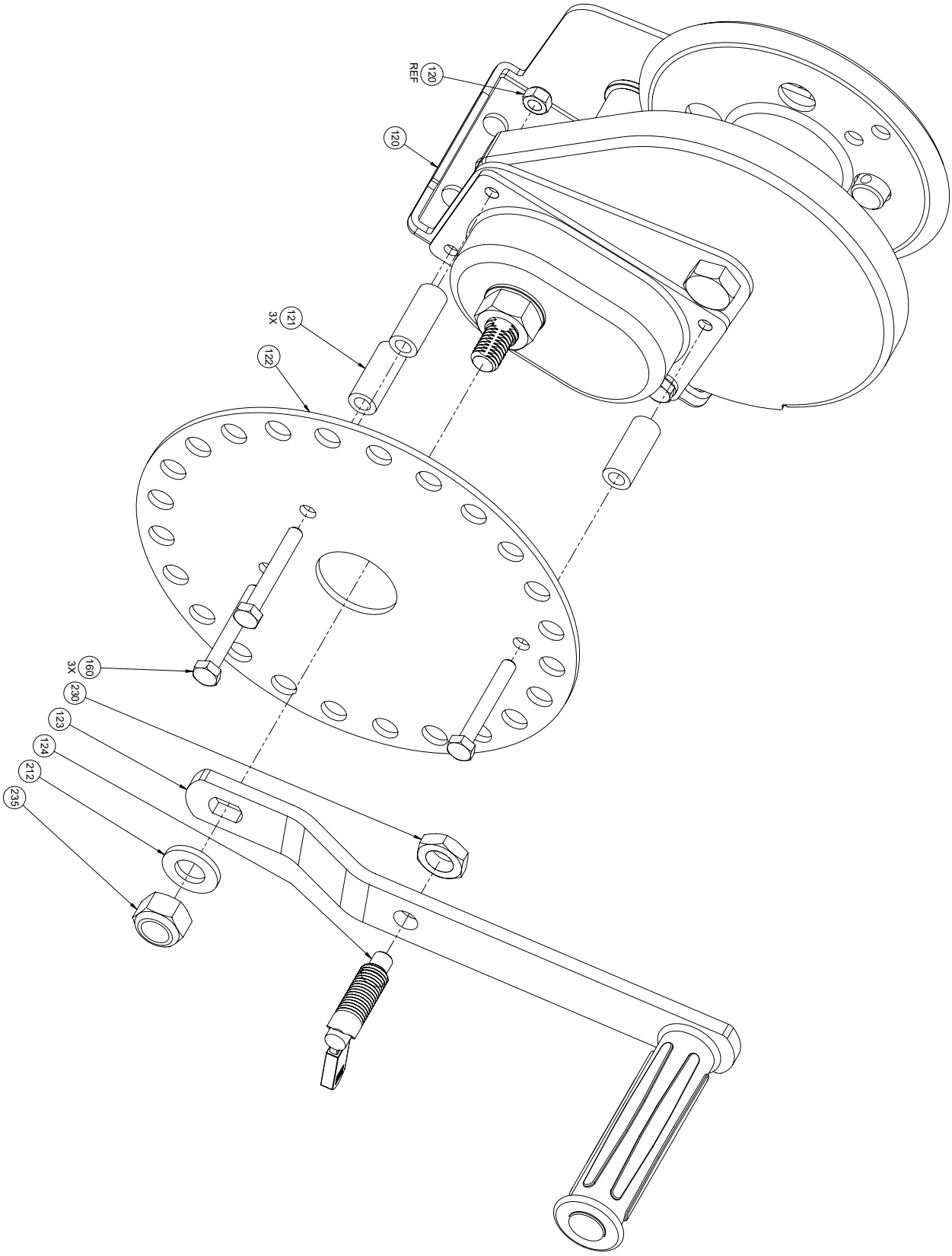
152
126
96
95
177
125
152
126
162
4X
106
233
4X
105
126
152
125
177
96

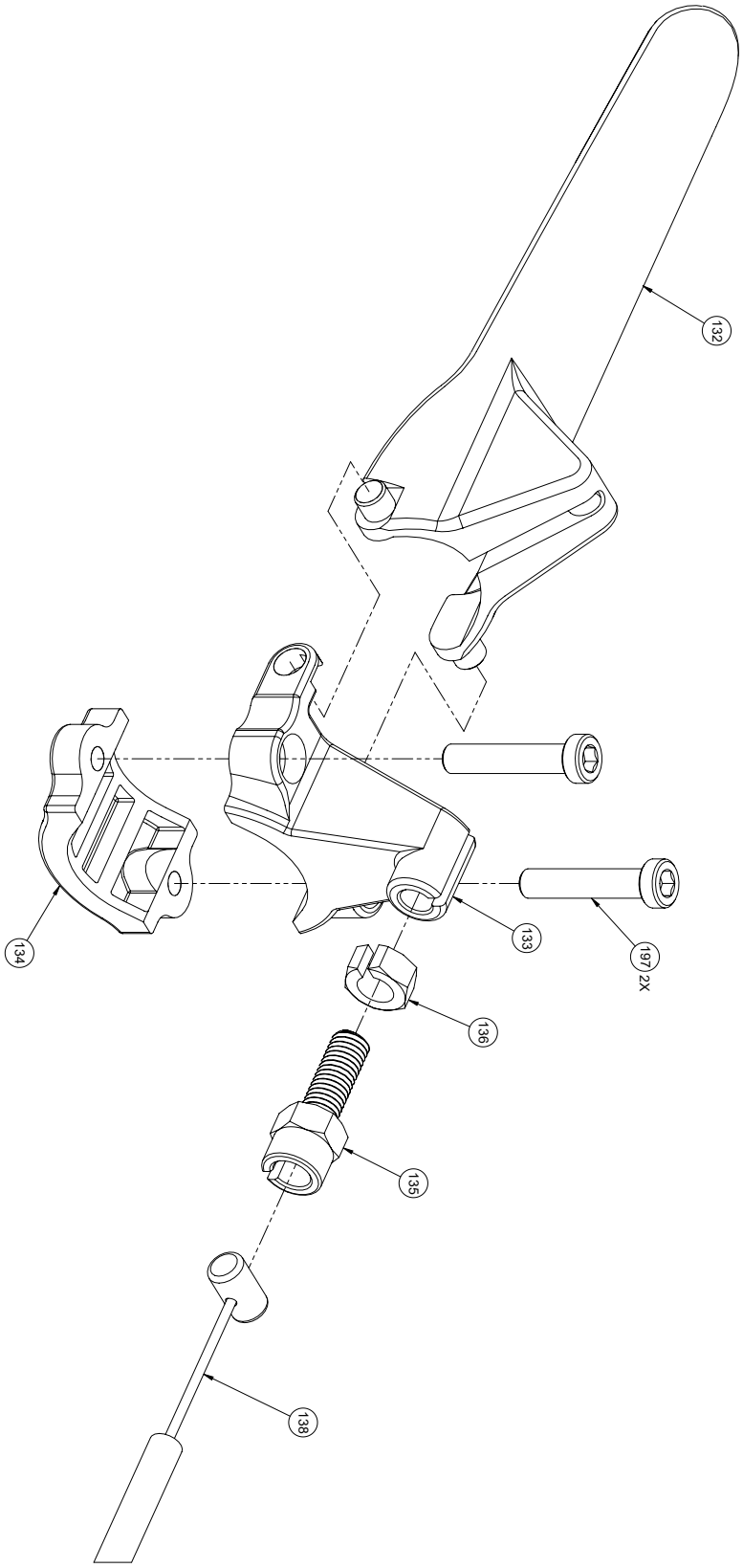
CARRIAGE LEG, WHEEL, AND SWEEPER



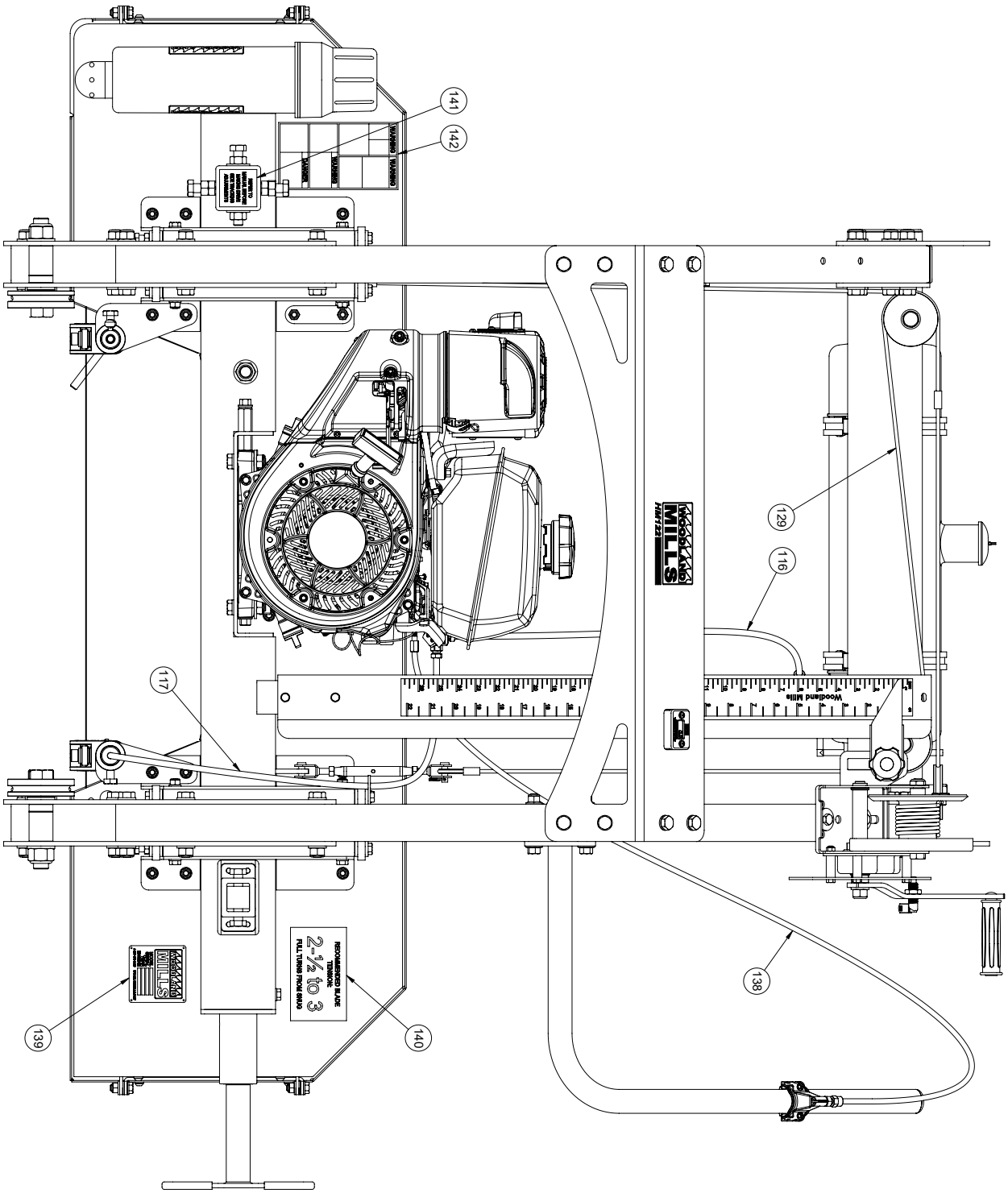
WINCH



THROTTLE HANDLE



CABLES, TUBING & LABELS



PARTS LIST

Highlighted rows are items specific to HM122-9.5 (9.5 Horsepower) sawmill.

Item	Quantity		Part No.	Description
	9.5 hp	7 hp		
1	4	4	0001459	TRACK RAIL, 63 X 60 mm, 1950 mm LG
2	2	2	0001457	LOG BUNK, END
3	3	3	0001458	LOG BUNK, MID
4	2	2	0001463	REINFORCEMENT PLATE, 63.5 X 126 mm
5	12	12	0001071	LEVELLING FOOT BASE
6	4	4	0001055	CARRIAGE STOP
7	1	1	0001460	SHAFT, SCREW-TYPE LOG CLAMP
8	1	1	0001461	ARM, SCREW-TYPE LOG CLAMP
9	1	1	0001462	SCREW-TYPE LOG CLAMP
10	2	2	0001056	LOG SUPPORT, BEVELLED, 450 mm LG
11	2	2	0001465	LOG SUPPORT, KEY STOP, 190 mm LG
12	3	3	0001059	T-BOLT, M10 X 1.5, 40 mm LG
13	1	1	0002071	BACK BEAM
14	2	2	0002063	POST SLEEVE
15	8	8	0004235	POST SLEEVE BUSHING, U-SHAPED, 50 X 50 mm POST
16	4	4	0001126	POST SLEEVE LOCKING PLATE, 50 X 50 mm POST
17	1	1	0001020	LUBRICATION TUBING BRACKET, FLAT
18	1	1	0002058	RAPIDCHANGE MOUNTING PLATE, 165 X 85 mm
19	1	1	0002059	RAPIDCHANGE TENSION BLOCK, 165 X 85 mm
20	1	1	0002054	RAPIDCHANGE SHAFT SLEEVE
21	1	1	0005457	TENSION ROD, RAPIDCHANGE, TR18X3 THD, 220 mm LG
22	1	1	0002060	RAPIDCHANGE BACK PLATE, 165 X 85 mm
23	2	2	0002350	HEX BOLT, M12 X 1.25, 20 mm LG, 2.5 mm CHAMFER
24	1	1	0003117	SPRING WASHER HOLDER, RAPIDCHANGE, 100 X 50 mm
25	6	6	0002637	SPRING WASHER SHIM, 25 ID X 41.5 OD X 1 mm THK
26	24	24	0006088	BELLEVILLE WASHER, 20.4 ID, 40 OD, 2.5 THK, 3.45 mm TALL, 2111 lb WORKING LOAD
27	1	1	0005452	TENSION HANDLE, RATCHET MOUNT, OFFSET THD, 139 mm LG
28	4	4	0002023	SPACER, ADJUSTABLE BLADE GUIDE
29	1	1	0002072	GUIDE BLOCK HOLDER BRACKET, RIGHT
30	1	1	0002073	GUIDE BLOCK HOLDER BRACKET, LEFT
31	2	2	0001093	GUIDE BLOCK HOLDER
32	1	1	0001096	GUIDE BLOCK HOLDER SHAFT, BLADE STOPPER
33	1	1	0002759	SAW BLADE STOPPER, CRIMPED, 82.5 mm LG
34	1	1	0006891	THUMB SCREW, SPADE-HEAD, SST, M6 X 1, 10 mm LG
35	1	1	0001091	GUIDE BLOCK HOLDER SHAFT, DRIP NOZZLE
36	1	1	0001092	DRIP NOZZLE, 6 mm DIA
37	4	4	0001090	GUIDE BLOCK
38	1	1	0002039	BAND WHEEL HOUSING
39	1	1	0002041	BAND WHEEL DOOR, RIGHT
40	1	1	0002043	BAND WHEEL DOOR, LEFT
41	2	2	0001954	BAND WHEEL HOUSING INNER HINGE BRACKET
42	2	2	0001955	BAND WHEEL HOUSING OUTER HINGE BRACKET

Item	Quantity		Part No.	Description
	9.5 hp	7 hp		
43	3	3	0003161	LATCH SPACER
44	3	3	0002248	ADJUSTABLE DRAW LATCH
45	1	1	0001659	KNOB, MULTI-LOBE, 48 mm OD, M8 X 1.25, 17 mm LG
46	1	1	0001104	DRIVE SHAFT, 30 mm SQ, 125 mm LG, 25 mm DIA
47	1	1	0001993	FOLLOWER SHAFT, RAPIDCHANGE, 30 mm SQ, 108.5 mm LG, 25 mm DIA
48	2	2	0001482	BAND WHEEL, 16 in
49	2	2	0004820	RETAINING RING, INTERNAL, 62 mm BORE (65 mm GROOVE)
50	1	1	0002017	BELT TENSIONER SHAFT SPACER
51	1	1	0002752	BELT TENSIONER ARM
52	1	1	0002644	BELT TENSIONER IDLER SHAFT
53	2	2	0005282	LEVELLING WASHER, FEMALE, M16
54	2	2	0005283	LEVELLING WASHER, MALE, M16
55	1	1	0002645	IDLER PULLEY, SPHERICAL ALIGNMENT, 33 mm WD, 80 mm DIA
56	1	1	0004816	RETAINING RING, INTERNAL, 40 mm BORE (42.5 mm GROOVE)
57	1	1	0002646	PARALLEL KEY, 8 X 8 mm, 37 mm LG
58	1	1	0002019	NUT LOCKING PLATE
59	1	1	0001655	MANUAL TUBE
60	1	-	0001217	CLUTCH SPACER, 27 ID X 50.5 OD X 30 mm LG
61	1	-	0001137	PARALLEL KEY, 1/4 X 1/4 in, 1 in LG
62	-	1	0001877	PARALLEL KEY, 3/16 X 3/16 in, 7/8 in LG
63	1	-	0001823	CLUTCH ASSEMBLY, 1 in [25.4 mm] SHAFT, 87 mm DIA PULLEY
64	-	1	0001508	CLUTCH ASSEMBLY, 3/4 in [19.05 mm] SHAFT, 80 mm DIA PULLEY
65	1	-	0007082	CLUTCH HOUSING GUARD, VALVE MOUNT BRACKET, 9.5 & 14 hp
66	1	1	0002047	GASOLINE ENGINE CUTOUT COVER
67	1	-	0002079	OIL DRAIN EXTENSION, 56 mm LG, M12 X 1.5 THD
68	-	1	0002080	OIL DRAIN EXTENSION, 61 mm LG, M10 X 1.25 THD
69	2	-	0006224	SEALING WASHER, M12
70	-	2	0006223	SEALING WASHER, M10
71	1	-	0001136	EXHAUST REDIRECT, 9.5 & 14 hp KOHLER ENGINES
72	-	1	0004438	EXHAUST REDIRECT, 7 hp KOHLER ENGINES
73	1	-	0006978	VALVE ACTUATION TAB, 9.5 & 14 hp
74	-	1	0006215	VALVE MOUNT BRACKET, 7 hp
75	-	1	0006225	VALVE ACTUATION TAB, 7 hp
76	1	1	0003452	STEM VALVE, 1/8 in NPT FEMALE, 1/8 in STEM TRAVEL
77	3	3	0005127	FITTING, ADAPTER, BARBED, 1/8 in NPT MALE TO 1/4 in HOSE
78	1	1	0001985	CABLE ADJUSTMENT SCREW, 2 mm CABLE, M6 X 1, 25 mm LG
79	1	2	0004982	COMPRESSION SPRING, CLOSED GROUND ENDS, 8.5 mm OD, 0.9 mm DIA WIRE, 27 mm LG
80	1	-	0005578	COMPRESSION SPRING, CLOSED GROUND ENDS, 7.49 mm OD, 0.81 mm WIRE DIA, 40 mm LG, 0.21 lb/mm
81	1	-	0005103	EXTENSION SPRING, HOOK ENDS, 8.5 mm OD, 1.5 mm DIA WIRE, 100 mm LG
82	-	1	0007056	EXTENSION SPRING, HOOK ENDS, 8.5 mm OD, 1.5 mm DIA WIRE, 110 mm LG
83	1	1	0001485	SAW BLADE, 7/8 in PITCH, 142 TEETH, 1-1/4 WD X 125 LG X .042 in THK
84	2	2	0002101	FRONT POST, 50 X 50 mm, 1230 mm LG
85	2	2	0001660	PLASTIC END CAP, SQ, 50 X 50 mm
86	2	2	0002851	BACK POST, 50 X 50 mm
87	4	4	0001466	CARRIAGE SIDE PLATE
88	4	4	0001967	SPACER, 20.5 ID X 32 OD X 10 mm LG

Item	Quantity		Part No.	Description
	9.5 hp	7 hp		
89	4	4	0001966	SPACER, 20.5 ID X 32 OD X 40 mm LG
90	2	2	0001102	SPACER, 13 ID X 33.5 OD X 50 mm LG
91	4	4	0001037	CARRIAGE WHEEL
92	4	4	0001019	WHEEL SWEEPER INNER BRACKET
93	4	4	0001017	WHEEL SWEEPER OUTER BRACKET
94	4	4	0001018	WHEEL SWEEPER CABLE
95	1	1	0002103	CROSS BEAM
96	2	2	0001661	PLASTIC END CAP, RECT, 100 X 50 mm
97	1	1	0002240	LOG SCALE MOUNTING BRACKET
98	1	1	0002097	SCALE INDICATOR ARROW BRACKET, REAR
99	1	1	0002098	SCALE INDICATOR ARROW BRACKET, FRONT
100	1	1	0002099	SCALE INDICATOR ARROW
101	1	1	0002764	KNOB, MULTI-LOBE, 48 mm OD, M8 X 1.25, 25 mm LG
102	1	1	0002040	SCALE SUPPORT
103	1	1	0003233	MAGNETIC SCALE, 27 in, YELLOW
104	1	1	0003235	MAGNETIC SCALE, 27 in, WHITE
105	1	1	0007794	LUBRICATION TANK BRACKET, RIGHT
106	1	1	0007795	LUBRICATION TANK BRACKET, LEFT
107	1	1	0007543	LUBRICANT TANK, 10 L [2.6 gal], NO TABS
108	2	2	0007528	TIGHT-SEAL BOLT CLAMP, M6 X 1
109	1	1	0001132	TANK CAP
110	1	1	0005221	BEAD CHAIN, 3 mm BEAD, 140 mm LG
111	1	1	0002110	NAMEPLATE, HM122
112	1	1	0002038	NAMEPLATE BACKING
113	1	1	0005117	FITTING, ELBOW, 90°, BARBED, 6 mm ID TUBE, WHITE
114	1	1	0002809	SIGHT LEVEL TUBING, LUBRICATION TANK
115	1	1	0002691	LUBRICATION TUBING, TANK-TO-ELBOW, 2-3/16 in [55 mm] LG
116	1	1	0002748	LUBRICATION TUBING, TANK-TO-VALVE, 8 mm OD, 28 in [710 mm] LG
117	1	1	0002749	LUBRICATION TUBING, VALVE-TO-BLADE, 8 mm OD, 28 in [710 mm] LG
118	1	1	0002105	DASHBOARD
119	1	1	0002671	HOUR METER
120	1	1	0001497	WINCH, 1200 lb
121	3	3	0001499	SPACER, 7 ID X 12 OD X 29 mm LG
122	1	1	0001500	CRANK HANDLE INDEX PLATE, 190 mm DIA
123	1	1	0001498	WINCH HANDLE, 1200 lb
124	1	1	0001889	INDEX PLUNGER, M12 X 1.5, SST
125	4	4	0001099	WIRE ROPE PULLEY, 6001-2RS BEARING, 73 mm DIA
126	4	4	0004813	RETAINING RING, INTERNAL, 28 mm BORE (29.4 mm GROOVE)
127	2	2	0002813	SPACER, 12 ID X 18 OD X 5 mm LG
128	1	1	0002768	TURNBUCKLE, 80 mm STROKE, M8 X 1.25 X 60 mm SHANK, 8 mm CLEVIS
129	1	1	0002746	WIRE ROPE LIFT CABLE, 4 mm DIA, 124.6 in [3165 mm] LG
130	1	1	0004511	PUSH HANDLE, ADJUSTABLE, CLAMPING THROTTLE HANDLE
131	1	1	0001662	PLASTIC END CAP, ROUND, 32 mm OD
132	1	1	0004245	THROTTLE HANDLE GRIP
133	1	1	0004246	THROTTLE HANDLE TOP CLAMP, 32 mm TUBE
134	1	1	0004247	THROTTLE HANDLE BOTTOM CLAMP, 32 mm TUBE
135	1	1	0004248	CABLE ADJUSTMENT SCREW, SPLIT, 2 mm CABLE, M8 X 1.25, 22 mm LG
136	1	1	0005666	HEX NUT, CLS 8, M8 X 1.25, SPLIT

Item	Quantity		Part No.	Description
	9.5 hp	7 hp		
137	1	1	0001112	THROTTLE CABLE BARREL CLAMP
138	1	1	0006104	THROTTLE CABLE, 56.3 in [1430 mm] LG CABLE, 47.3 in [1200 mm] LG
139	1	1	0001839	LABEL, SERIAL NUMBER
140	1	1	0006993	LABEL, RECOMMENDED BLADE TENSION BY TURNS
141	1	1	0005688	LABEL, DRIVE-SIDE TRACKING
142	1	1	0002769	LABEL, DANGER/WARNING COLLAGE
143	2	2	0002766	LABEL, CAUTION: DO NOT OPERATE WITHOUT GUARDS
144	1	1	0002770	LABEL, DANGER: MOVING PARTS CUT/CRUSH
145	1	1	0002771	LABEL, DANGER: BANDSAW BLADE WILL CUT
146	1	1	BK48	V-BELT, KEVLAR, BK48
147	1	1	BK71	V-BELT, KEVLAR, BK71
148	1	-	CH395-3149	ENGINE, KOHLER COMMAND PRO HORIZONTAL, 9.5 hp
149	-	1	CH270-3152	ENGINE, KOHLER COMMAND PRO HORIZONTAL, 7 hp
150	4	4	5204-2RS	BALL BEARING, SEALED, ANG-CONT, DOUBLE ROW, 20 mm SFT, 47 mm HSG, 20.6 mm WD
151	2	2	6000-2RS	BALL BEARING, SEALED, 10 mm SFT, 26 mm HSG, 8 mm WD
152	4	4	6001-2RS	BALL BEARING, SEALED, 12 mm SFT, 28 mm HSG, 8 mm WD
153	1	1	6203-2RS	BALL BEARING, SEALED, 17 mm SFT, 40 mm HSG, 12 mm WD
154	4	4	6305-2RS	BALL BEARING, SEALED, 25 mm SFT, 62 mm HSG, 17 mm WD
155	1	1	51204	THRUST BEARING, SINGLE DIR, W/ HSG, 20 mm SFT, 40 mm HSG, 14 mm WD
156	1	1	SLS-03-08	FLOW CONTROL VALVE, RA, 3/8 NPT, 8 mm QUICK-CONNECT TUBE
157	2	2	HHB-MBE069FCJ	HEX HEAD BOLT, CLS 8.8, M6 X 1, 15 mm LG, FULL
158	1	1	HHB-MBE075FCJ	HEX HEAD BOLT, CLS 8.8, M6 X 1, 20 mm LG, FULL
159	4	4	HHB-MBE090FCJ	HEX HEAD BOLT, CLS 8.8, M6 X 1, 35 mm LG, FULL
160	3	3	HHB-MBE100FCJ	HEX HEAD BOLT, CLS 8.8, M6 X 1, 45 mm LG, FULL
161	2	2	HHB-MBJ063FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 12 mm LG, FULL
162	4	4	HHB-MBJ071FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 16 mm LG, FULL
163	25	25	HHB-MBJ075FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 20 mm LG, FULL
164	5	5	HHB-MBJ080FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 25 mm LG, FULL
165	1	1	HHB-MBJ085FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 30 mm LG, FULL
166	4	4	HHB-MBJ090FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 35 mm LG, FULL
167	2	6	HHB-MBJ095FCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 40 mm LG, FULL
168	2	2	HHB-MBJ125PCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 70 mm LG, 22 mm LG THD
169	4	4	HHB-MBJ165PCJ	HEX HEAD BOLT, CLS 8.8, M8 X 1.25, 110 mm LG, 22 mm LG THD
170	2	2	HHB-MBM075FCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 20 mm LG, FULL
171	2	2	HHB-MBM080FCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 25 mm LG, FULL
172	5	1	HHB-MBM100FCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 45 mm LG, FULL
173	4	4	HHB-MBM105FCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 50 mm LG, FULL
174	4	4	HHB-MBM130PCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 75 mm LG, 26 mm LG THD
175	4	4	HHB-MBM135PCJ	HEX HEAD BOLT, CLS 8.8, M10 X 1.5, 80 mm LG, 26 mm LG THD
176	1	1	HHB-MBR075FCJ	HEX HEAD BOLT, CLS 8.8, M12 X 1.75, 20 mm LG, FULL
177	4	4	HHB-MBR085FCJ	HEX HEAD BOLT, CLS 8.8, M12 X 1.75, 30 mm LG, FULL
178	2	2	HHB-MBR100FCJ	HEX HEAD BOLT, CLS 8.8, M12 X 1.75, 45 mm LG, FULL
179	17	17	HHB-MBR135PCJ	HEX HEAD BOLT, CLS 8.8, M12 X 1.75, 80 mm LG, 30 mm LG THD
180	1	1	HHB-MBR145PCJ	HEX HEAD BOLT, CLS 8.8, M12 X 1.75, 90 mm LG, 30 mm LG THD
181	1	1	HHB-MBR155FCJ	HEX HEAD BOLT, CLS 8.8, M12 X 1.75, 100 mm LG, FULL
182	1	1	HHB-MCA145PCJ	HEX HEAD BOLT, CLS 8.8, M16 X 2, 90 mm LG, 38 mm LG THD
183	12	12	HHB-MCA175FCJ	HEX HEAD BOLT, CLS 8.8, M16 X 2, 120 mm LG, FULL

Item	Quantity		Part No.	Description
	9.5 hp	7 hp		
184	4	4	HHB-MCF175PCJ	HEX HEAD BOLT, CLS 8.8, M20 X 2.5, 120 mm LG, 46 mm LG THD
185	-	1	HHB-UBR015FGE	HEX HEAD BOLT, GR 5, 5/16-24, 5/8 in LG, FULL
186	2	-	HHB-UBU017FGE	HEX HEAD BOLT, GR 5, 3/8-16, 3/4 in LG, FULL
187	1	-	HHB-UCA025FGJ	HEX HEAD BOLT, GR 8, 7/16-20, 1-1/4 in LG, FULL
188	30	30	FHH-MBM080FCM	HEX BOLT, FLANGED, CLS 10.9, M10 X 1.5, 25 mm LG, FULL
189	12	12	FHH-MBM085FCM	HEX BOLT, FLANGED, CLS 10.9, M10 X 1.5, 30 mm LG, FULL
190	2	2	FHH-MBM125PCM	HEX BOLT, FLANGED, CLS 10.9, M10 X 1.5, 70 mm LG, 26 mm LG THD
191	6	6	BHS-MAW051FTA	BUTTON HEAD SCREW, CLS 10.9, M4 X 0.7, 6 mm LG, FULL
192	2	2	BHS-MAW059FCM	BUTTON HEAD SCREW, CLS 10.9, M4 X 0.7, 10 mm LG, FULL
193	8	8	BHS-MBE071FCM	BUTTON HEAD SCREW, CLS 10.9, M6 X 1, 16 mm LG, FULL
194	4	4	BHS-MBJ071FCM	BUTTON HEAD SCREW, CLS 10.9, M8 X 1.25, 16 mm LG, FULL
195	4	4	SHC-MBJ075FCP	SHCS, CLS 12.9, M8 X 1.25, 20 mm LG, FULL
196	2	2	SHC-MBM080FCP	SHCS, CLS 12.9, M10 X 1.5, 25 mm LG, FULL
197	2	2	LSH-MBE085PCP	SHCS, LP, CLS 12.9, M6 X 1, 30 mm LG, 18 mm LG THD
198	12	12	PFH-MAW059FCM	SCREW, PFH, CLS 10.9, M4 X 0.7, 10 mm LG, FULL
199	1	1	PPH-MAW063FTA	SCREW, PPH, SST, M4 X 0.7, 12 mm LG, FULL
200	2	2	PPH-MAW085FCE	SCREW, PPH, CLS 4.8, M4 X 0.7, 30 mm LG, FULL
201	2	2	PPH-MBE067FCE	SCREW, PPH, CLS 4.8, M6 X 1, 14 mm LG, FULL
202	1	1	HFH-MBE085PCM	SCREW, HFH, CLS 10.9, M6 X 1, 30 mm LG, 18 mm LG THD
203	1	1	HFH-MBM075FCM	SCREW, HFH, CLS 10.9, M10 X 1.5, 20 mm LG, FULL
204	1	1	KCS-MBE055TA	SET SCREW, KNURLED CUP POINT, SST, M6 X 1, 8 mm LG
205	8	8	KCS-MBJ055TA	SET SCREW, KNURLED CUP POINT, SST, M8 X 1.25, 8 mm LG
206	2	2	PST-UBC015FAJ	SCREW, PPH, ST, NO. 10, 5/8 in LG
207	4	4	FTW-MAW000AJ	FLAT WASHER, M4
208	31	31	FTW-MBE000AJ	FLAT WASHER, M6
209	24	28	FTW-MBJ000AJ	FLAT WASHER, M8
210	12	12	FTW-MBJ000NA	FLAT WASHER, M8, NYLON
211	34	28	FTW-MBM000AJ	FLAT WASHER, M10
212	40	40	FTW-MBR000AJ	FLAT WASHER, M12
213	1	1	FTW-MCA000AJ	FLAT WASHER, M16
214	12	13	FTW-MCF000AJ	FLAT WASHER, M20
215	-	5	FDW-MBJ073000AJ	FENDER WASHER, M8, 24 mm OD
216	6	6	FDW-MBJ079000AJ	FENDER WASHER, M8, 30 mm OD
217	4	-	FDW-MBM079155AJ	FENDER WASHER, M10, 30 mm OD, 3 mm THK
218	2	2	FDW-MBM083000AJ	FENDER WASHER, M10, 34 mm OD
219	2	2	FDW-MBR080000AJ	FENDER WASHER, M12, 31 mm OD
220	1	-	FDW-MBR086000AJ	FENDER WASHER, M12, 37 mm OD
221	2	2	SLW-MBEAJ	SPLIT LOCK WASHER, M6
222	-	1	SLW-MBJAJ	SPLIT LOCK WASHER, M8
223	8	6	SLW-MBMAJ	SPLIT LOCK WASHER, M10
224	1	-	SLW-MBRAJ	SPLIT LOCK WASHER, M12
225	2	2	HXN-MBJCH	HEX NUT, CLS 8, M8 X 1.25
226	7	7	HXN-MBMCH	HEX NUT, CLS 8, M10 X 1.5
227	4	4	HXN-MBRCH	HEX NUT, CLS 8, M12 X 1.75
228	36	36	HXN-MCACH	HEX NUT, CLS 8, M16 X 2
229	1	1	THN-MBECC	HEX NUT, THIN, CLS 4, M6 X 1
230	1	1	THN-MBRCC	HEX NUT, THIN, CLS 4, M12 X 1.75
231	10	10	HLN-MAWCH	LOCK NUT, CLS 8, M4 X 0.7

Item	Quantity		Part No.	Description
	9.5 hp	7 hp		
232	15	15	HLN-MBECH	LOCK NUT, CLS 8, M6 X 1
233	34	38	HLN-MBJCH	LOCK NUT, CLS 8, M8 X 1.25
234	13	9	HLN-MBMCH	LOCK NUT, CLS 8, M10 X 1.5
235	20	20	HLN-MBRCH	LOCK NUT, CLS 8, M12 X 1.75
236	1	1	HLN-MCACH	LOCK NUT, CLS 8, M16 X 2
237	4	4	HLN-MCFCH	LOCK NUT, CLS 8, M20 X 2.5
238	38	38	FLN-MBMCL	LOCK NUT, FLANGED, CLS 10, M10 X 1.5

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