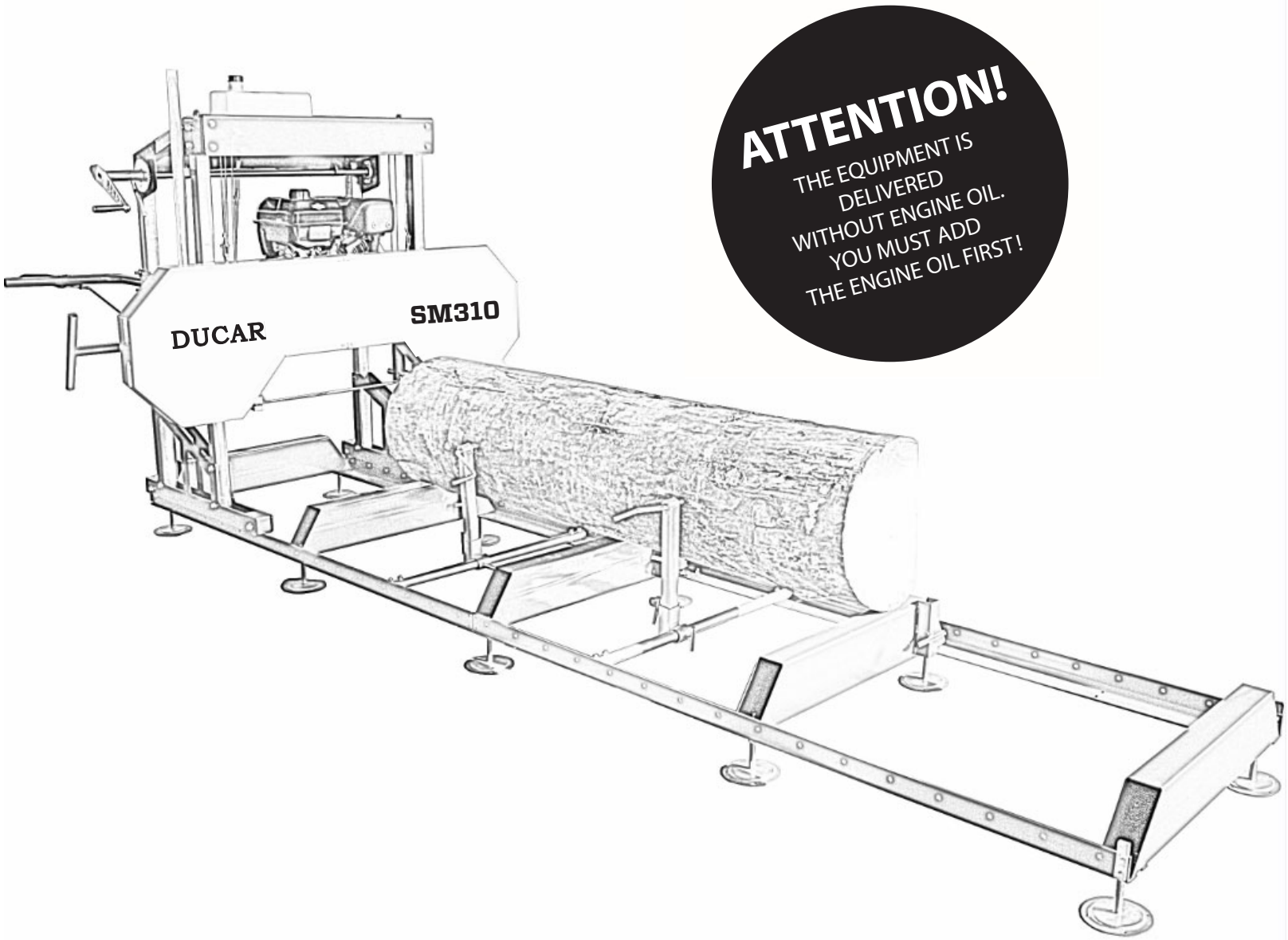
PORTABLE SAWMILLS
SM260 and SM310-DLE

POWERED BY **DUCAR**

15 hp engine, electric starter (SM310-DLE)



ATTENTION!
THE EQUIPMENT IS DELIVERED WITHOUT ENGINE OIL. YOU MUST ADD THE ENGINE OIL FIRST!

WARNING:
Before operating, read and understand all ASSEMBLY AND OPERATION INSTRUCTIONS.
Serious personal injuries may result from not following safety rules and other basic safety precautions.

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INTRODUCTION

Congratulation on your purchase of a DUCAR-powered piece of equipment. In this manual you will find the necessary information about your machine to use it correctly. You must read and understand the entire manual before first use of the machine. This equipment is built for certain application only. We strongly advise you not to modify or use the machine in a way it was not intended to be used. If you have any questions that was not answer in this manual, please contact your local dealer.

CAUTION: you must put oil (10W30) in the DUCAR engine before the first usage.

USE OF THE MACHINE

This sawmill is designed for sawing logs. The machine must be placed on flat, level ground.

SM260	SPECIFICATION
Engine	13 HP Manual start
Maximum log diameter	26" (660mm)
Maximum width of the board	26" (660mm)
Maximum thickness of the board	7" (178mm)
Extension	6 feet 6 inch (1,88m)
Blade dimensions	3690*34*1.07mm (145"*1-1/4"*0.042")
Safe cutting speed	13-15s/m
Blade speed	17m/min

SM310-DLE	SPECIFICATION
Engine	15 HP Electric starter
Maximum log diameter	31" (790mm)
Maximum width of the board	31" (790mm)
Maximum thickness of the board	7" (178mm)
Extension	6 feet 6 inch (1,88m)
Blade dimensions	3960*34*1.07mm (156"*1-1/4"*0.042")
Safe cutting speed	13-15s/m
Blade speed	17m/min

SAFETY RULES

WARNING

Please read and understand the instructions included in this manual. Failure to follow all instructions could result in serious injuries, electric shock and/ore fire.

WARNING

Use the motor only in a well-ventilated area. Carbon monoxide produced by the engine during operation can be fatal. Do not use indoors, near windows or in other protected areas.
NOTE: All federal and province laws and regulations having jurisdiction to cover safety requirements for machine operation take precedence over the statements in this manual. Users of this equipment must comply with these regulations.

WARNING

The warnings, cautions and instructions described in this manual cannot cover all possible conditions or situations. The operator should understand that common sense and caution are factors that cannot be built into this product, but should be provided.

SAVE THIS MANUAL

WORKSPACE

• **Keep the workspace clean**, well lit and tidy. If it isn't, it may cause injuries.
• **Do not use your sawmill if there is a risk of fire or explosion.** For example, in the presence of flammable liquids, gases or dust. Power tools create sparks which may ignite dust or fumes.
• **Keep children and passerby** away when using a power tool. Distractions can cause you to lose control, so people should stay at a safe distance from the work area.
• **Watch out for all power lines, water pipes, electrical circuits** and other mechanical hazards where you work, especially those who could be burried or hidden from the operator who could be accidentally touched and cause injury. bodily injury or property damage.
• **Be aware of your surroundings.** Using power tools in confined work areas can put you in dangerous proximity to cutting tools and rotating parts.

SAFETY WARNINGS FOR INTERNAL COMBUSTION ENGINE

WARNING

Internal combustion engines present special risks during operation and refueling. Read and follow the warning instructions in the engine manual and the safety instructions below. Failure to follow warnings and safety standards can result in serious injury or even death.

• DO NOT operate the machine indoors or in an enclosed space such as a deep trench unless adequate ventilation, such as exhaust fans or ducts, is provided. Engine exhaust gases contain poisonous carbon monoxide; exposure to carbon monoxide can cause unconsciousness and lead to death.
• DO NOT smoke while using the machine.
• DO NOT smoke while refueling.
• DO NOT refuel if the engine is running or hot.
• DO NOT refuel near an open flame.
• DO NOT spill fuel when refueling.
• DO NOT run the engine near an open flame.
• ALWAYS fill the fuel tank in a well-ventilated area.
• ALWAYS replace fuel tank cap as soon as you are done refueling.
• ALWAYS check for cracks or fuel leaks before starting the engine. Do not operate the machine with fuel leaks or loose fuel lines.
• ALWAYS avoid contact with exhaust gases, oil and hot fuel.

PERSONAL SECURITY

• **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 under the influence of drugs, alcohol, medication or tired. A moment of inattention while operating power tools can result in serious injury.
• **Dress appropriately.** Do not wear loose clothing, dangling objects or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothing, jewelry, or long hair can be caught in moving parts. Aerators often cover moving parts and should be avoided.
• **Use safety clothing and equipment.** Use protective goggles or safety glasses with side shields complying with current national standards or, if necessary, a face shield. Use a dust mask in dusty working conditions. This applies to everyone in the work area. Also use safety shoes, hard hat, gloves, dust collection systems and hearing protection, if applicable.
• **Do not overreach. Maintain proper footing and balance at all times.**
• **Remove adjusting wrenches or spanners** before connecting power or turning tool on. A wrench or tool left in place on a rotating part of the tool can cause injury.
• **Never install or remove blades, make blade guide adjustments, perform any other maintenance or make any other adjustments while the engine is running.** Always stop the engine, remove the key and leave the engine off before performing any of the above procedures. Consult your engine manual for safe shutdown procedures to prevent accidental ignition.

USE AND CARE

• **Always** make sure the user is familiar with safety precautions and proper operating techniques before using the machine.
• **Never touch** the engine or muffler while the engine is running or immediately after it has stopped. These areas become hot and can cause burns.
• **Always** close the engine fuel valve when the machine is not in use.
• **Do not force the tool.** Tools do a better and safer job when used the way they were designed.
• **Never operate the sawmill** with a defective switch or throttle. Any power tool that cannot be controlled with the switch is dangerous and must be repaired before use.
• **Stop the engine** and place the switch in the locked or off position before servicing, adjusting, installing accessories or mounting, or storing. Such preventive safety measures reduce the risk of accidental starting of the power tool.
• **Secure the logs** with the wood screw clamp instead of using it with your hand or the help of another. This safety measure allows the tool to be used with two hands.
• **Sawmill storage.** When the sawmill is not in use, store it in a dry, secure place or cover it and out of the reach of children. Inspect the sawmill for proper operation before storing it and before using it again.
• **Maintain your sawmill.** It is recommended that the general condition of the sawmill be examined before use. Keep your sawmill in good working order by adopting a conscientious repair and maintenance program in accordance with the procedures recommended in this manual. If abnormal vibrations or noises occur, shut down the sawmill immediately and have the problem corrected before using it again.
• **Keep saw blades sharp and clean.** Well-maintained bandsaw blades are less likely to bind and are easier to control.
• **Cleaning and lubrication.** Only use mild soap and a damp cloth to clean your machine. Many household cleaners are harmful to the plastic and rubber components of the machine.
• **Use only accessories** recommended by the manufacturer for your model. Attachments that may be suitable for another machine may create a risk of injury if used with that machine.
• **Always operate the sawmill with all safety devices** and guards in place and in working order. DO NOT alter or modify the safety devices. DO NOT operate the sawmill if any safety devices or guards are missing or inoperative.
• **Never leave the sawmill running** if you are not around.
• **Coiled blades can separate** with considerable force and unpredictably in any direction. Always treat rolled blades, including those packed in boxes, with the utmost care.
• **Never use the equipment to cut anything other than lumber** or for any purpose other than the use described in this manual.

EQUIPMENT OPERATION

1. Wear ANSI-certified eye protection behind a full face shield, heavy-duty work gloves, steel-toed work boots, and a dust mask.
2. Use only with assistance.
3. Fill the lubrication tank with clean water and liquid soap.
4. Start and operate the engine according to the supplied engine manual.
5. Step on the throttle to bring the blade up to full speed.
6. Throttle should be fully depressed when saw is under load.
7. Cut the branches from the wood to be treated.
8. Place the wood to be cut on the supports.
9. Slowly move the saw head along the rail and against the wood to make the cut.
10. Cut the rounded sides of the log.
11. Once the log is leveled, panels or posts can be cut to custom specifications.
12. To avoid accidents, turn off the engine and disconnect the spark plug wire after use. Wait for the motor to cool down, clean the external parts with a clean cloth, then store the equipment out of the reach of children.

WARNING

To avoid death or serious injury. Do not cut wood containing foreign objects such as nails, metal parts, etc.

WARNING

The operator and helpers should stay clear of the front and rear faces of the blade whenever the engine is running.

MAINTENANCE

Correct and regular maintenance is essential for operator safety, obtaining good machining results and prolonging the life of your investment.

• **Band Wheel Bearings** - Inspect before each use to ensure that they are not worn. The bearings are sealed and do not need to be greased.

• **Blade Guide Bearings** - Inspect bearing housing for excessive gouges or scratches before use. Replace if necessary.

• **Blade Tension** - Grease the tensioner "T" handle threads when dry or as required. Use extreme pressure grease.

• **Wood screws** - Grease frequently.

• **Belts** - Periodically check the condition and wear of the drive belt and belt. Make sure the blade does not ride on the belt wheels.

• **Drive Belt** - Periodically check drive belt tension.

• **Sawhead Vertical Poles** - Spray poles before use with a silicone-based lubricant such as 3-in-1.

• **Wheel Guards** - Regularly remove any sawdust that may accumulate inside the wheel guards.

• **Lubrication tank** - Fill only with a mixture of water and dish soap or in the winter, use windshield washer fluid. **Do not leave lubricant in the reservoir if the temperature drops below 0°C.**

• **Blade Lubricant** - Never use diesel fuel or kerosene as a blade lubricant. These substances cause premature wear of your belts and poor sawing performance. In winter, replace the water-based lubricant with windshield washer fluid.

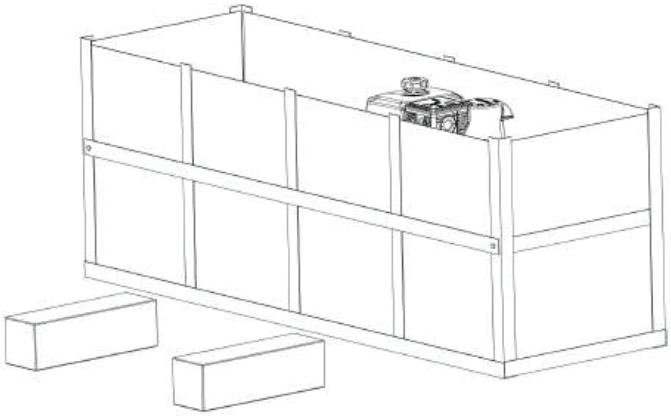
• **Engine** - Check engine oil level before each use and maintain engine according to engine manufacturer's instructions in engine manual. The engine is equipped with an oil alert system and will not start without adding oil before starting.

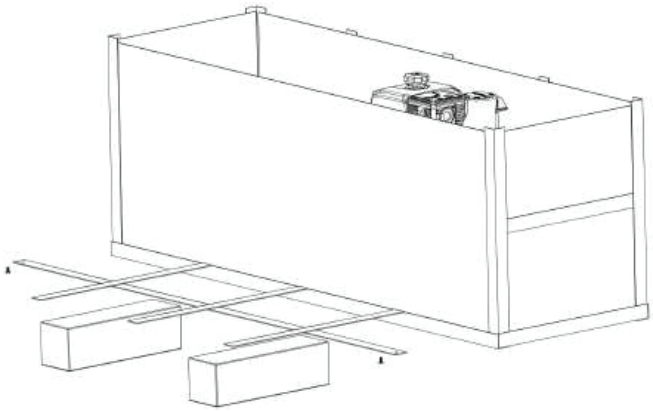
• **Saw head hoist ropes** - regularly before, during and after operations; inspect the cables to make sure they are not worn or bent Make sure the cables are in perfect condition. Wrap a coiled part of cable to prevent premature wear. Replace with new cables if necessary.

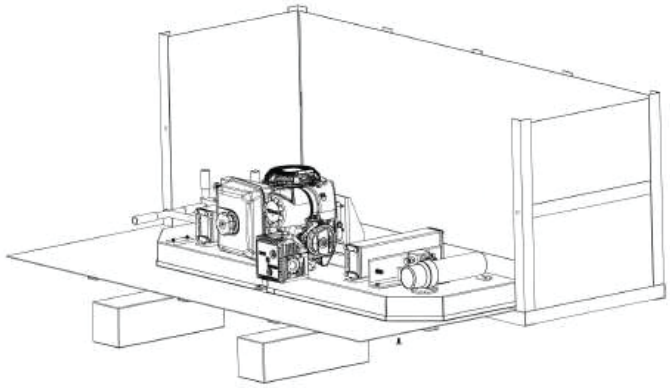
SAWMILL ASSEMBLY

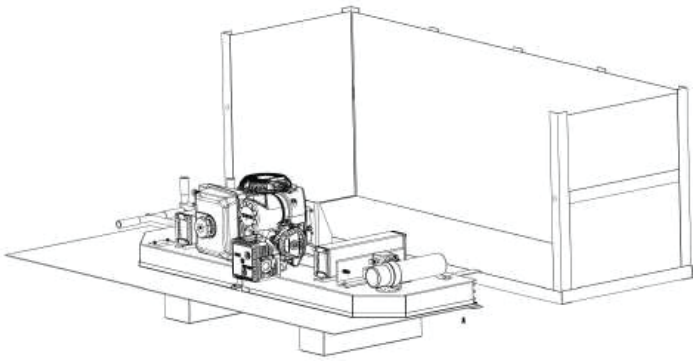
1. UNPACKING

Unpack the contents of the crate except the sawmill head and the two long boxes at the bottom containing the two rail sections. Unlock the front of the crate and lay 6" (150mm) high support blocks in front of the crate. Fold the front of the crate. Carefully lay the sawmill head and cardboard on the 6" (150mm) support blocks. Slide the sawmill head out of the crate as shown below.





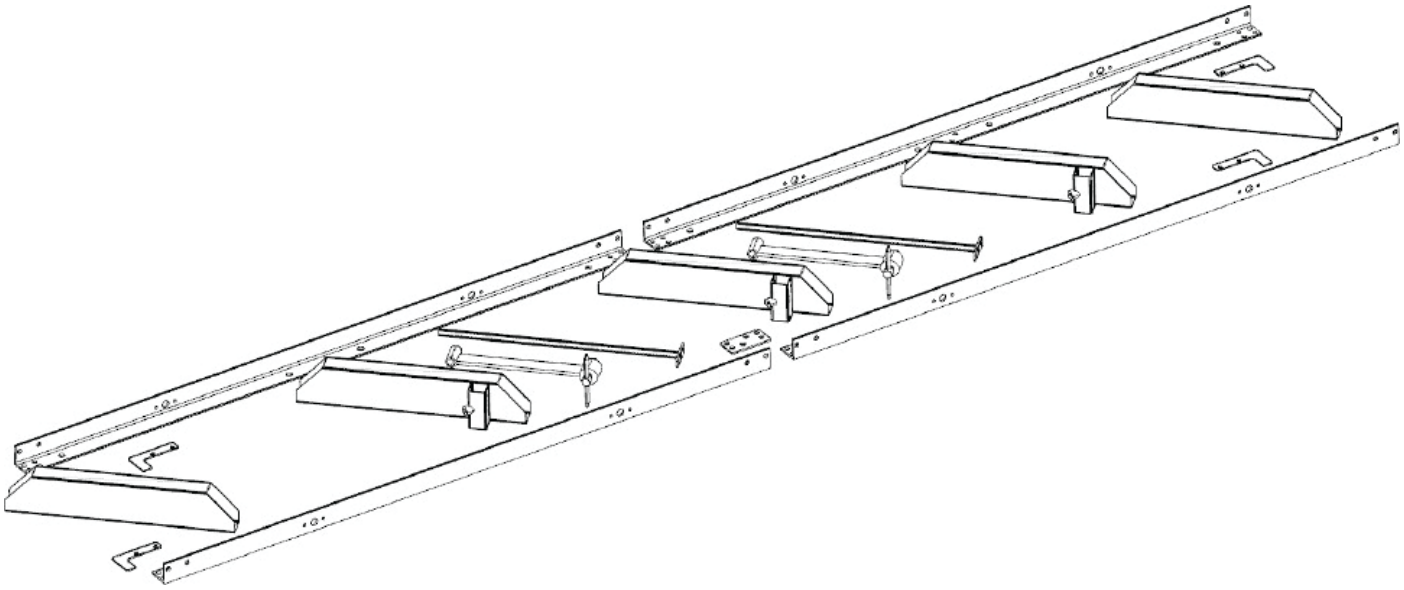




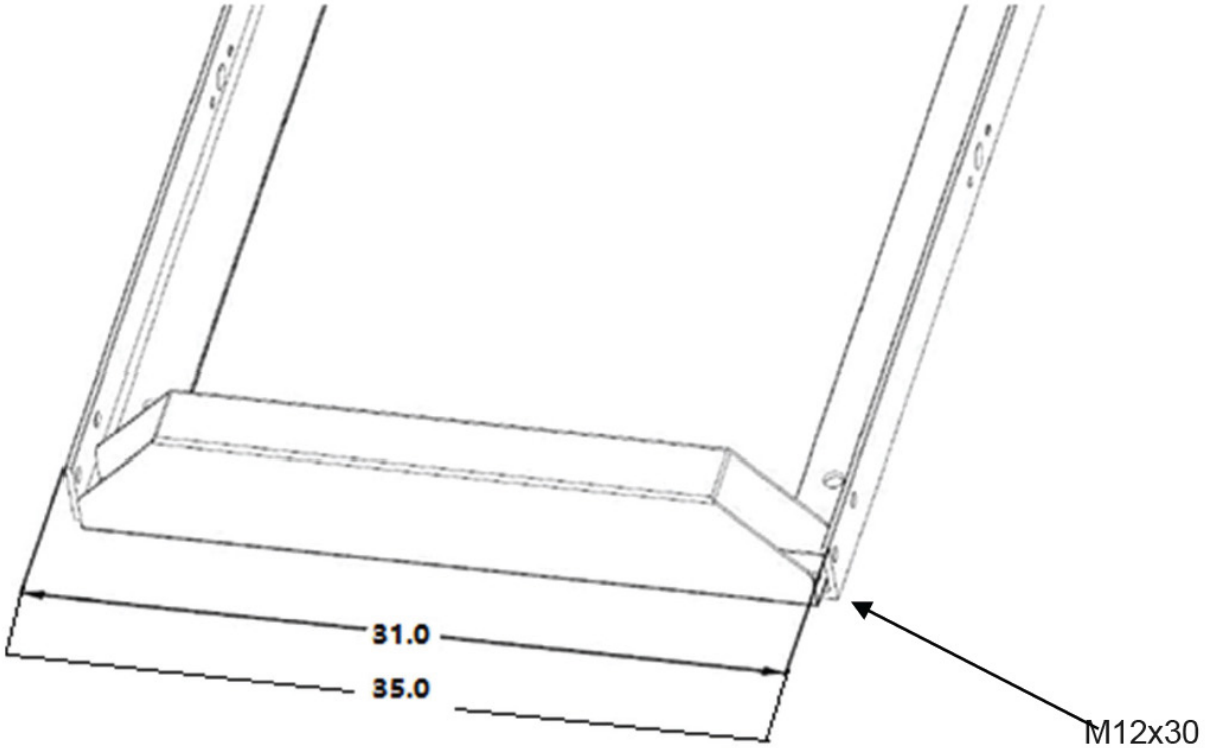
The two long rail boxes can now be removed from the crate and the crate should be removed out of the way.

2. RAIL

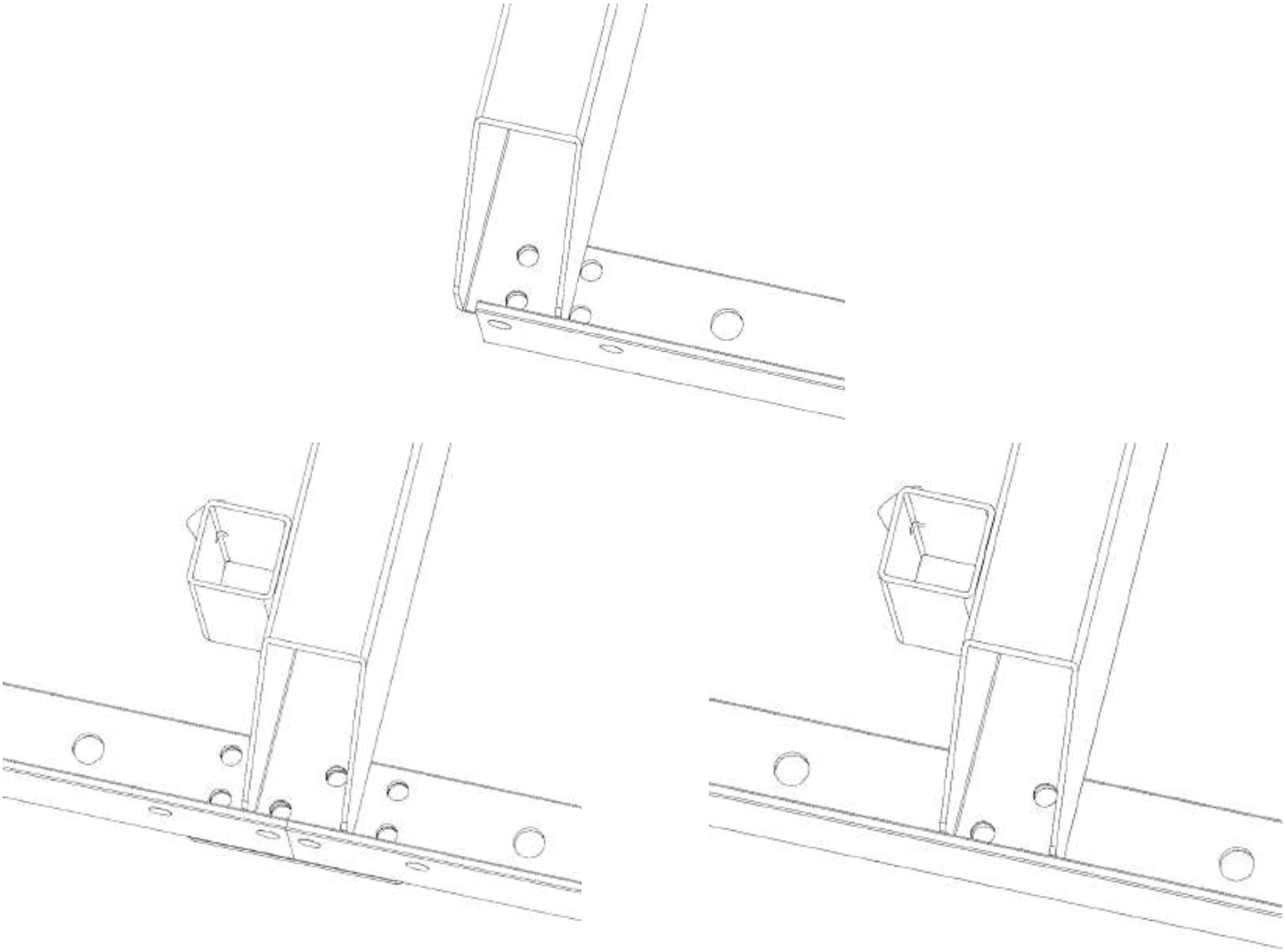
Assemble the track system with the nuts and bolts provided. It is important to assemble and level the rail on a solid foundation before tightening all the nuts and bolts. It is ideal for assembling the rails on a solid, level footing at least 100 mm (4 in) from the ground. This will allow for easy cleaning of sawdust under the tracks and height adjustment of the log racks.



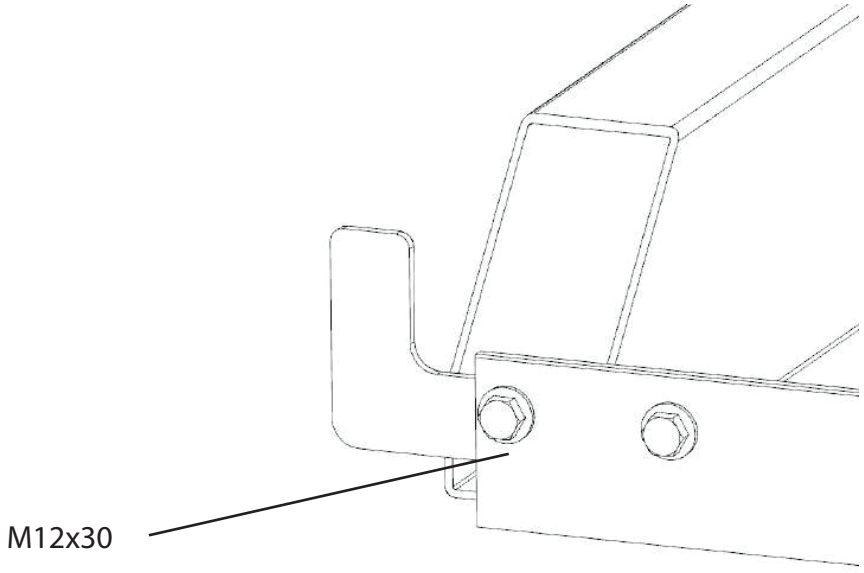
The track width should be assembled to be 31.0" (800mm) to 35.0" (900mm) wide when measuring the width from the outside to the outside of the "L" tracks.



The images below show the assembly of the crosspieces on the "L" tracks. Make sure that the two crosspieces are perpendicular to the rails of the L-track.



Assemble the carriage stops to the ends of the rails (4 stops in total) and tighten the bolts as shown below.

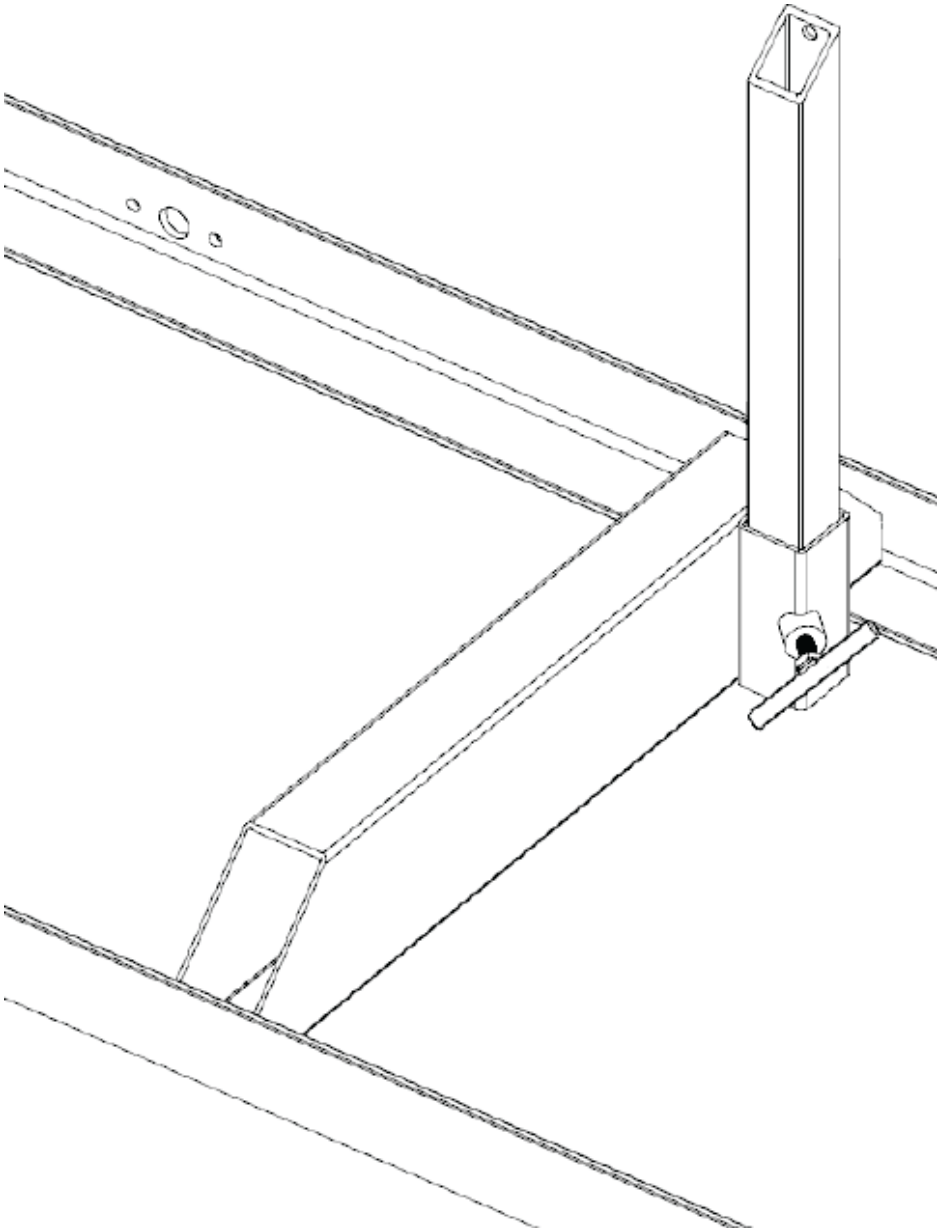


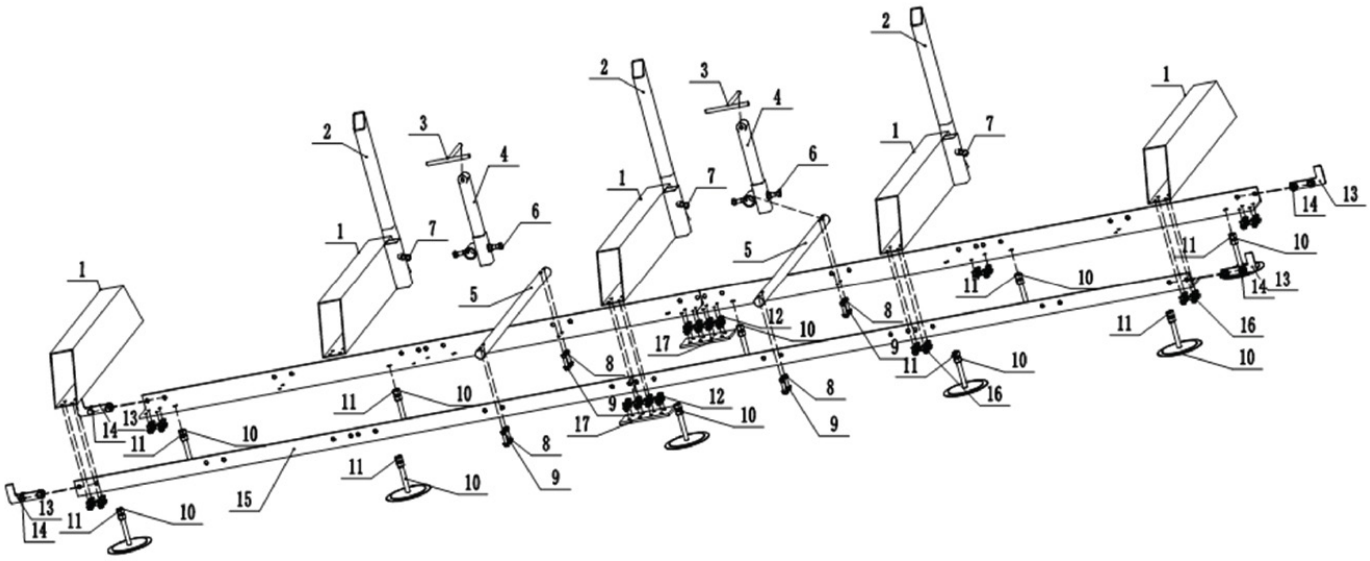
3. SUPPORTS

Assemble the log supports using the pieces shown below.

Attach the log support (assembled) to the rail as shown below with two M8x20mm bolts and nuts provided. Note that there are several places along the rail where you can attach the brackets. Depending on the number of rails that will be used, choose a position of the log clamp that will clamp the log firmly against the log supports.

Insert the log supports into the rail cross supports and secure with the "T" handles as shown in the image below. The threads of the "T" handle should be coated with grease.





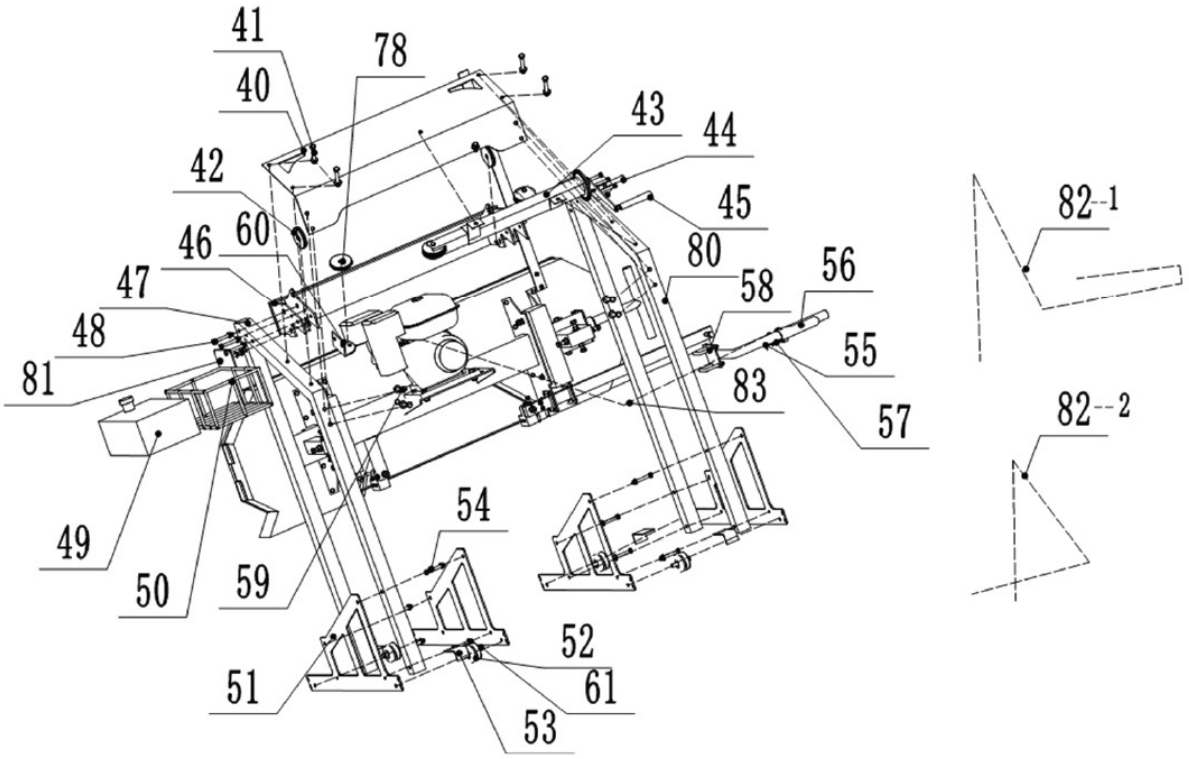
Remarks:

A. After assembly, the center distance of the guide should be between 889 and 901mm. Adjust the nut on the shoe (10) so that the upper plane of the guide rail is on the same horizontal plane and the forward and backward errors are within 2mm.

B. The timber clamp (3,4,5,6,7) is placed in two positions in the middle of the rail using the M12x50 bolts (Note that there are different places along the rail where this assembly can be bolted.

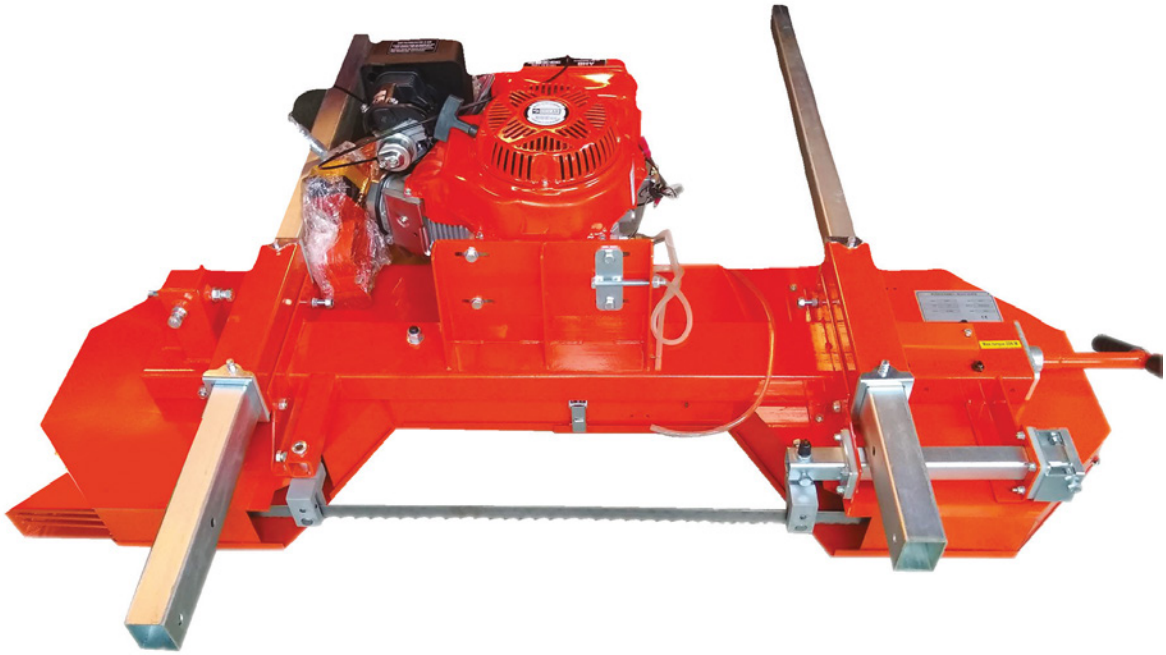
C. After adjustment, lock the nuts to fix all parts of the guide rail.

4. ASSEMBLING THE SAW MILLS HEAD



A. Place the support plate (46) horizontally and insert the two columns (47) in the appropriate position of 46. Fasten the bolts and nuts (48-1), then (48-2), then insert the wheel in steel (78) into the bolts (48-2) to remove the nuts and tighten them.
B. Place the saw head flat and insert the assembly (46,47). Insert Rear Upright (80-1,80-2) into appropriate hole position (46) and secure with four (41) Bolts
C. Take 2 pieces of (51) Wheel Frame and 2 pieces of (52) Adjuster Wheel and 2 pieces of (53) Adjuster Wheel Cover Plate and insert into 2 pieces of (54) Screws for attachment , then install the other end in the same way
D. Install the left and right installed rack into the column holes (47) and (80-1*80-2) and secure them with (54) bolts and nuts
E. Take (40) back cover plate and attach 3 pieces of bolts (41-1) to back cover plate respectively
F. Take the assembly (43), take the screw (41-2) installed in the hole (80-2), then take the hole (41-3 screw fixed in (40)) and tighten
G. Next, connect the cables (82-1) and (82-2) and adjust the level of the saw blade.
H. Install the water tank support, take the bolts (50) and (81) and fix them on (80-1). Place the water tank in (50) and connect it to 30 with a water hose
I. Handle connection. The assembly (55.56.57) is held in place (80-2) by means of two (58) fasteners and connected to the throttle support (83).
J. Installation of ruler. Take the ruler (35) and fix it on the back guard of the saw wheel with (84).
K. Take (36) Ruler Base attach to (46) with two (84) Bolts and adjust slack with Ruler before tightening.
L. Check the screws on each part and tighten them one by one.

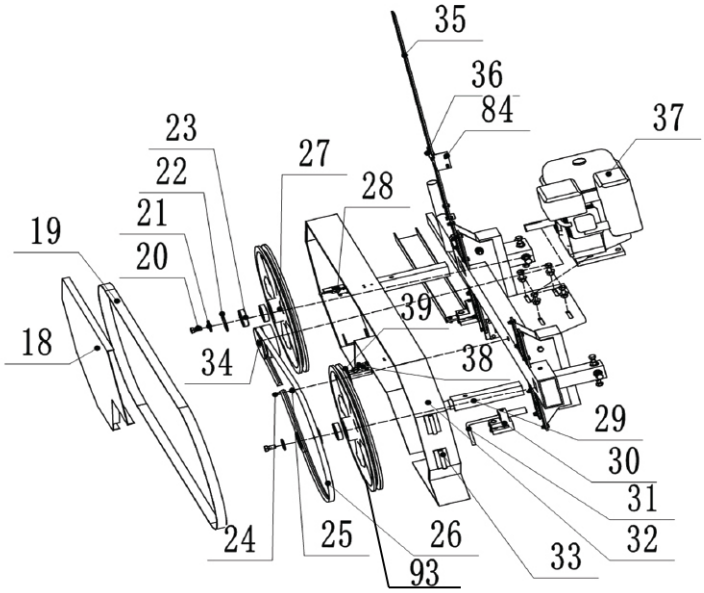
The saw head resting approximately 150 mm (6 in.) from the ground. Slide the 2 front uprights into the slots as shown below.



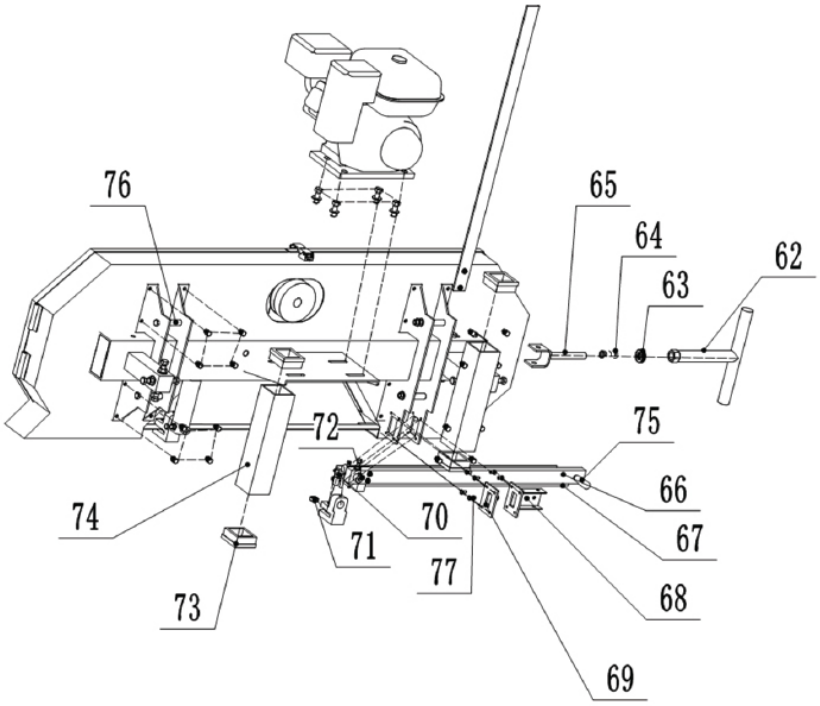
Use 4 of the M12 x 70mm bolts, washers and lock nuts provided. Attach the saw head tray assembly to the bottom of the posts. Make sure the cart wheels are on the inside. Fully tighten these 4 bolts so that the plates are firmly attached to the posts. The posts should be pushed all the way in until the carriage plates touch the sawmill head.

With the help of another person, place the saw head in its vertical position. Fix the rear handle between the plates using the 2 M12 x 70 mm bolts on each side. Do not fully tighten these bolts yet.

Front explosion diagram.



Rear explosion diagram

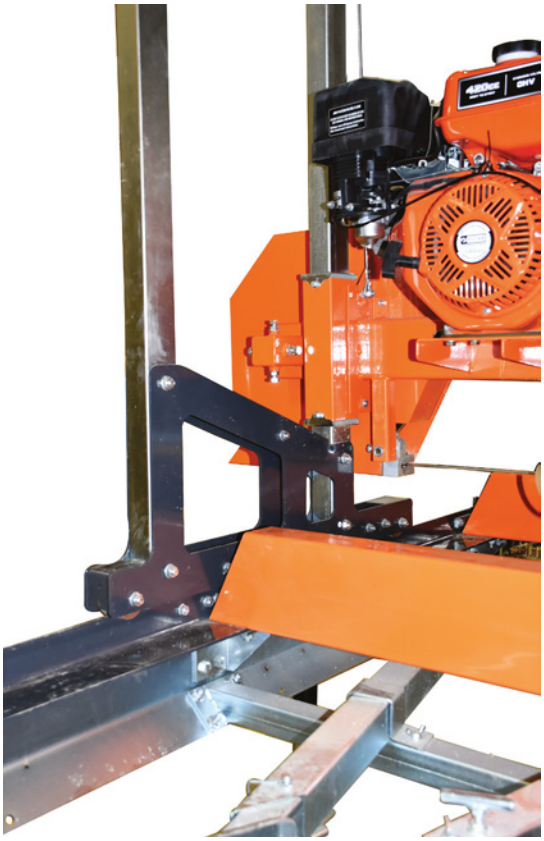


1. Rotate (62) to adjust the handle so that the saw blade achieves the proper stretching force.
2. Spin the saw wheel to check if the saw blade is off track. If so, adjust the rear adjustment bolts up and down until you are snug.
3. The eccentric shaft moves back and forth to form the serrations of the saw blade (about 7mm to 8mm). The correct distance.
4. Install the water pipe to the water tank, then insert the other end of the water pipe into the hole of the guide frame support rod (30) and fix it.

1. PLACE HEAD ON RAIL

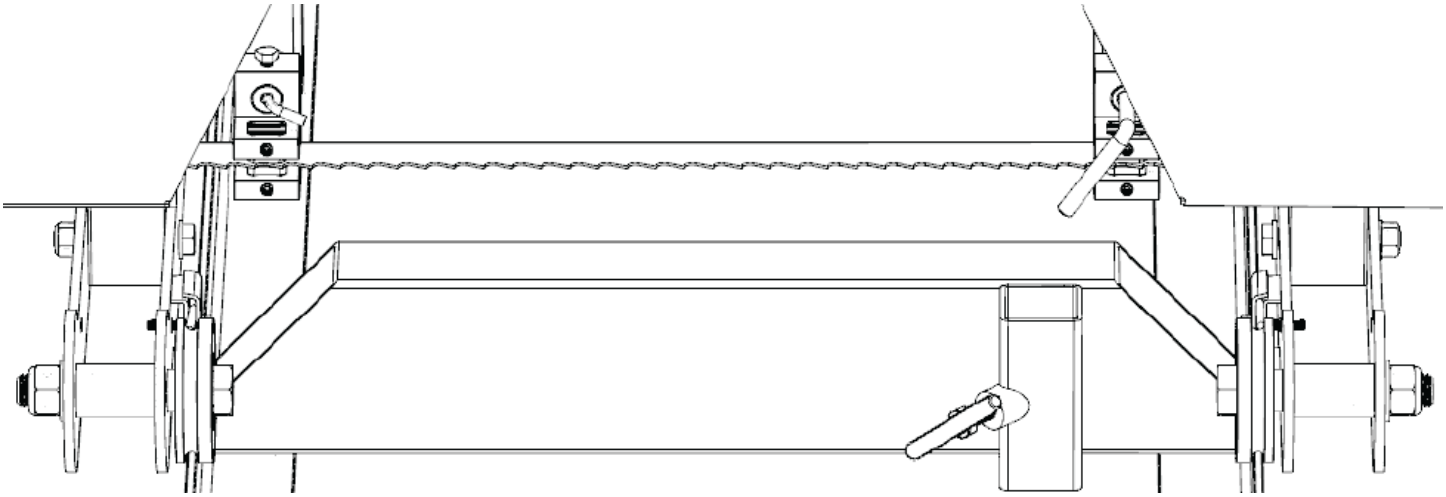
At this point, most sawhead bolts should only be hand tightened. They will be fully tightened when the head is on the rail and seated securely in place.

Please ask someone to help you with this step. Start by removing the "L" shaped hooks at the end of the rails. The head can be directed towards the rail until it is positioned behind the rail as shown below. Once in this position, the head can be tilted back so that the two front wheels are no longer touching the ground. The head can then be used in place while the two front wheels rest it on the rail so that the grooves in the cart wheels fit around the "L" rails. Finally, two people can lift off the back of the sawmill head and move it forward so that two rear wheels are on the tracks. Finally, the "L" shaped brackets can be reattached to the rails.



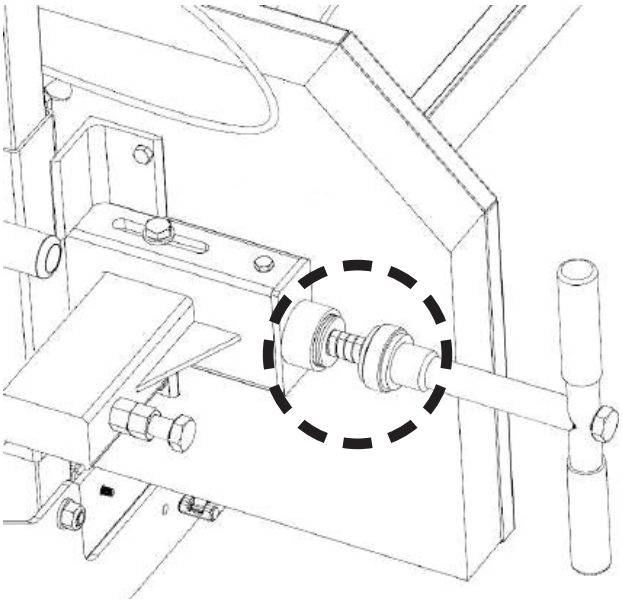
With the saw head nowin place on the track, all of the head screws can be tightened.

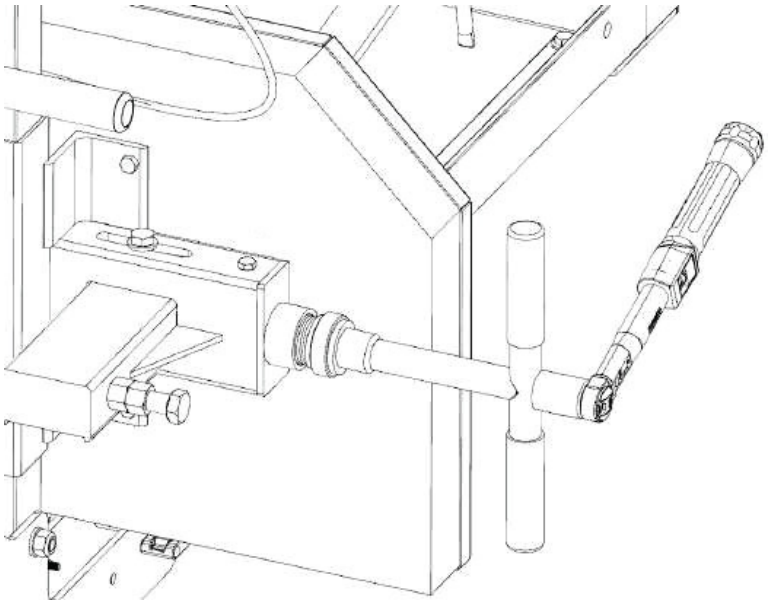
Using a tape measure, take a measurement between the blade and the top of the tube, left and right. The distance should be equal on both sides. If not, you will need to adjust the cable ends on the right side to raise or lower the right side. Refer to the step below for adjustment instructions.



Using a 14mm wrench, turn the nut clockwise to raise one side of the sawmill head or counterclockwise to lower it. Carefully check the height of the blade as indicated in the previous step. Once the measurement is consistent on both sides, tighten the corresponding nuts to secure.

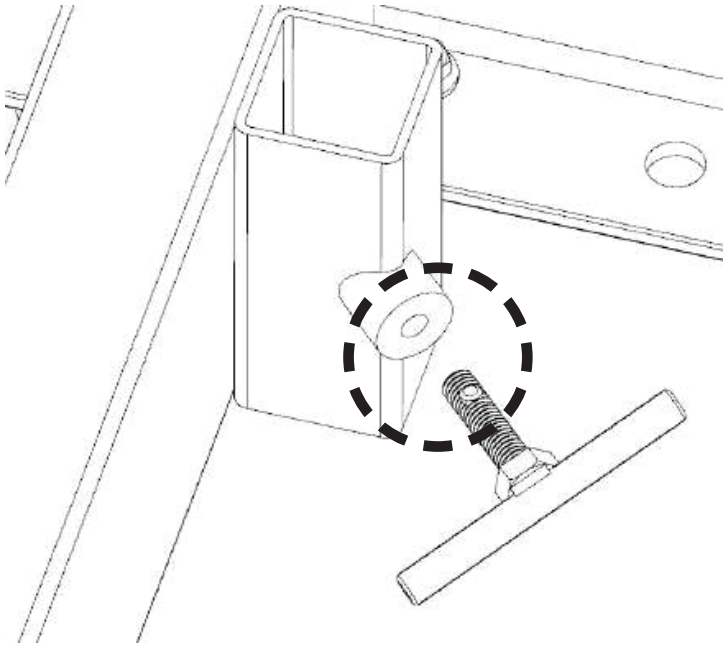
Add waterproof grease to the threads of the blade tension "T" handle and to the face of the washer before use. Proper blade tension is achieved when a 24mm socket is used on a torque wrench to tighten the handle to 17nM (12.5 ft lbs, 150 inch lbs). See pictures below.





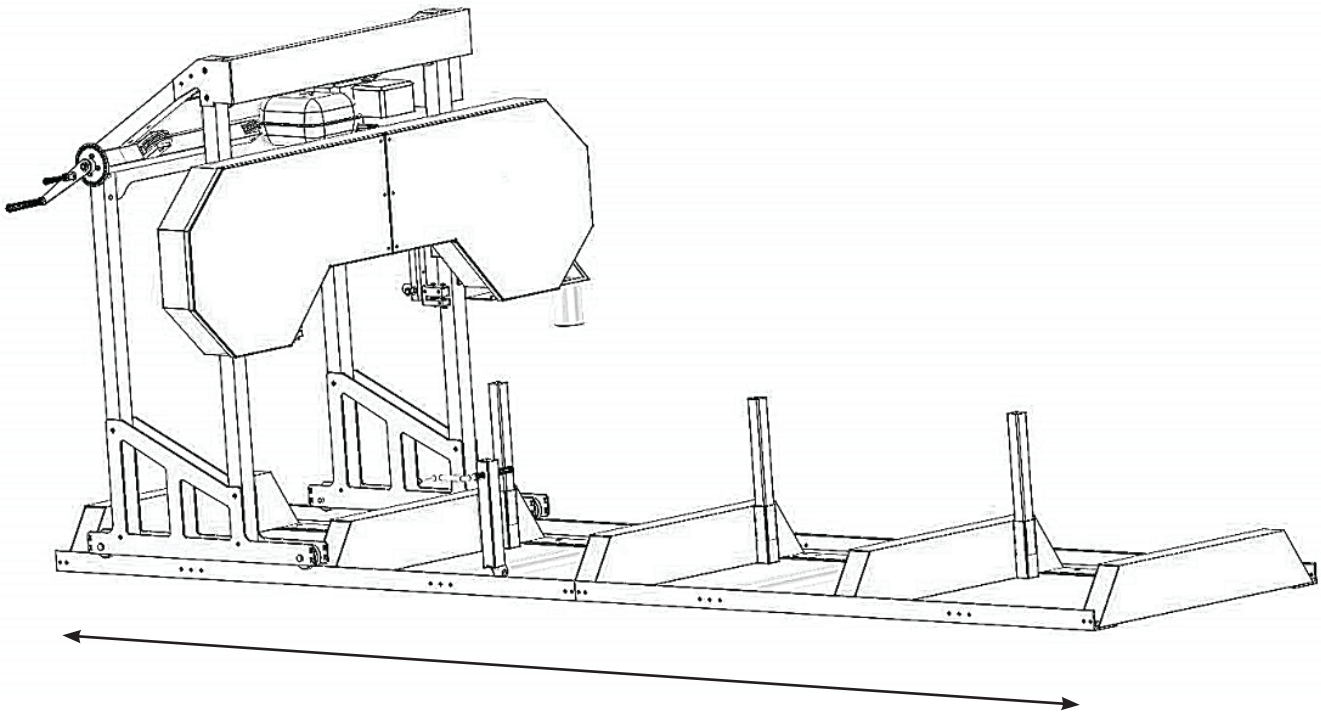
Note - It is very important to reduce blade tension by turning the «T» handle counter clockwise when the sawmill is not in use. Otherwise, the rubber belts will be flat. These flat areas will cause the trimmer head to vibrate excessively the next time you use it.

Add grease to all sawmill "T" threads.



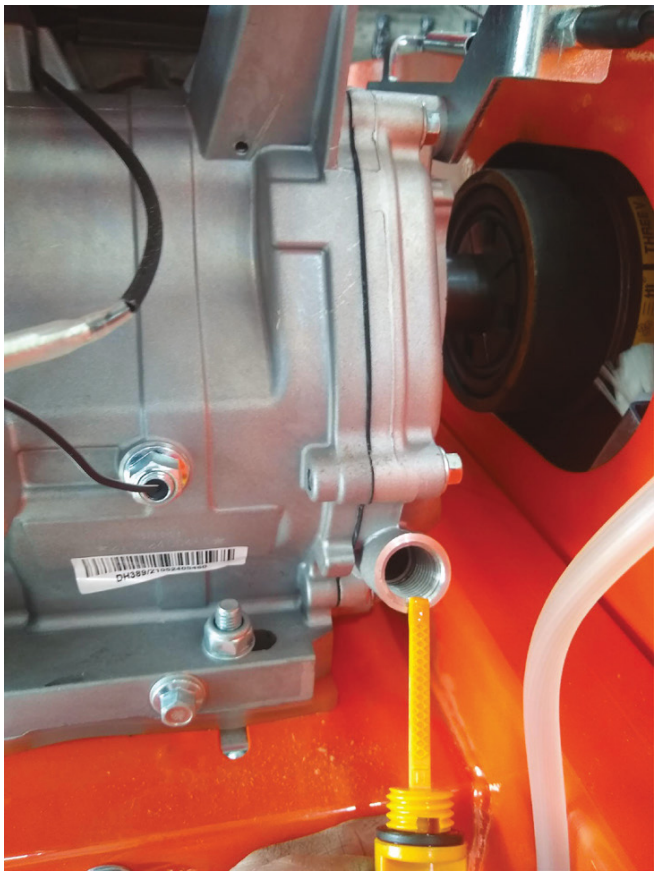
Two latches are present in the center.

Push the saw head forward and back of the rail system to ensure that the width of the rail allows the saw head to move freely. If it binds or feels tight, the cart wheel spacing can be re-adjusted by adding or removing washers.

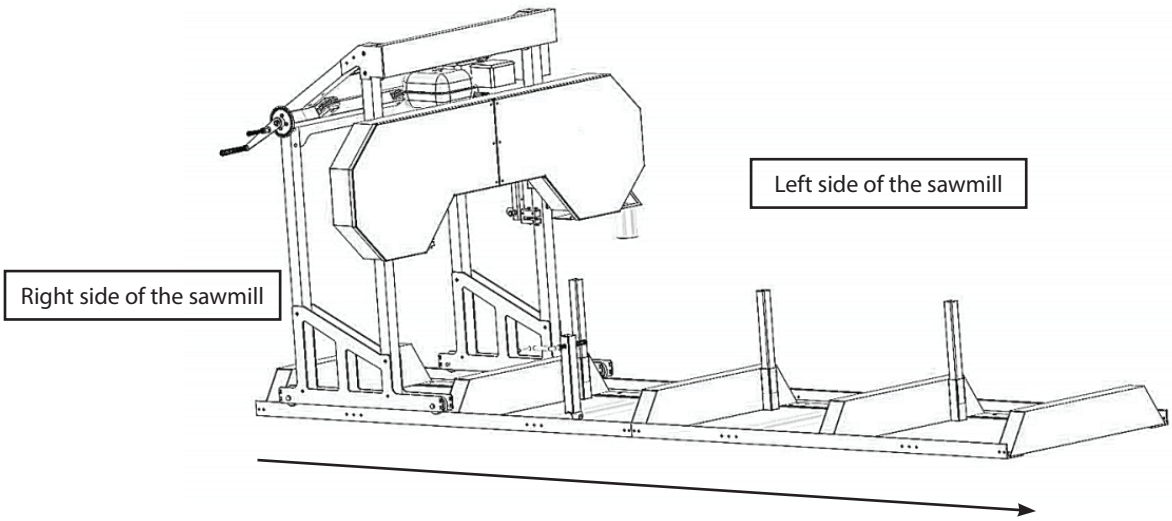


2. ENGINE

Refer to the engine manual before operating your sawmill. Please note that the engine does not contain gasoline or engine oil when shipped. It is imperative to put oil (10W30) in the engine with the 1st use. In addition, the engine is equipped with an oil alert system, which means that if the oil level in the crankcase is low or empty, the spark plug will cut power and not start. The correct oil level is reached when the oil is about to overflow.



Always cut in direction shown below. The log brackets should always be on the left side and the log clamp should always be on the right side of the log. If you don't cut in the right direction, the log will unlodge and could even cause damage or injury.



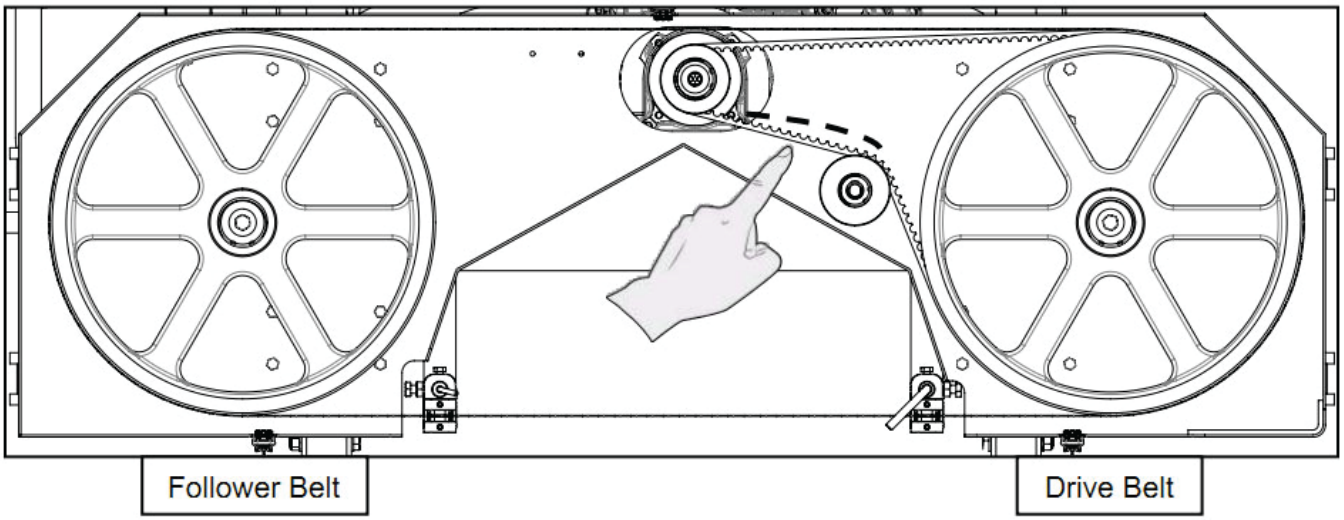
Now that your sawmill is assembled, please follow the «SAWMILL SETUP PROCEDURES» in the next section.

SAWMILL INSTALLATION PROCEDURES

BELT TENSION

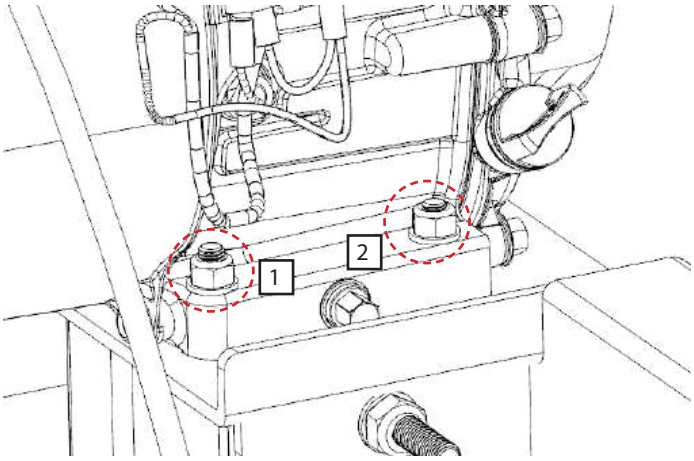
Follower Belt - This is a polyurethane belt that sits tightly in the "V" groove of the wheel. No adjustment is required for this strap.

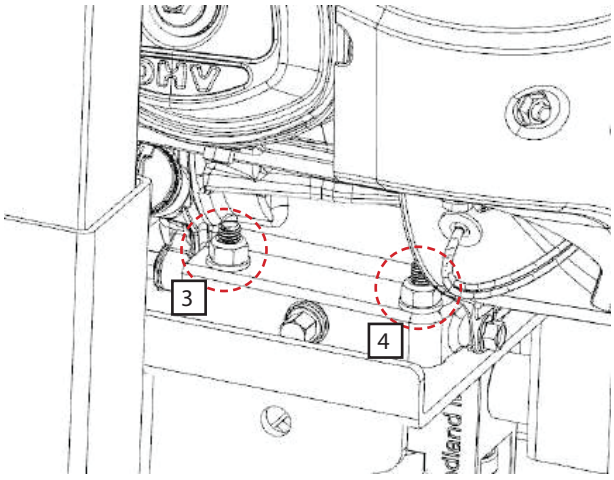
Drive Belt - To check the tension on the drive belt, try with your hand to deflect the belt firmly up and down. There should be no more than 1/4" (6mm) of deviation. If the belt deviates more than this, it will need to be retightened as described below.



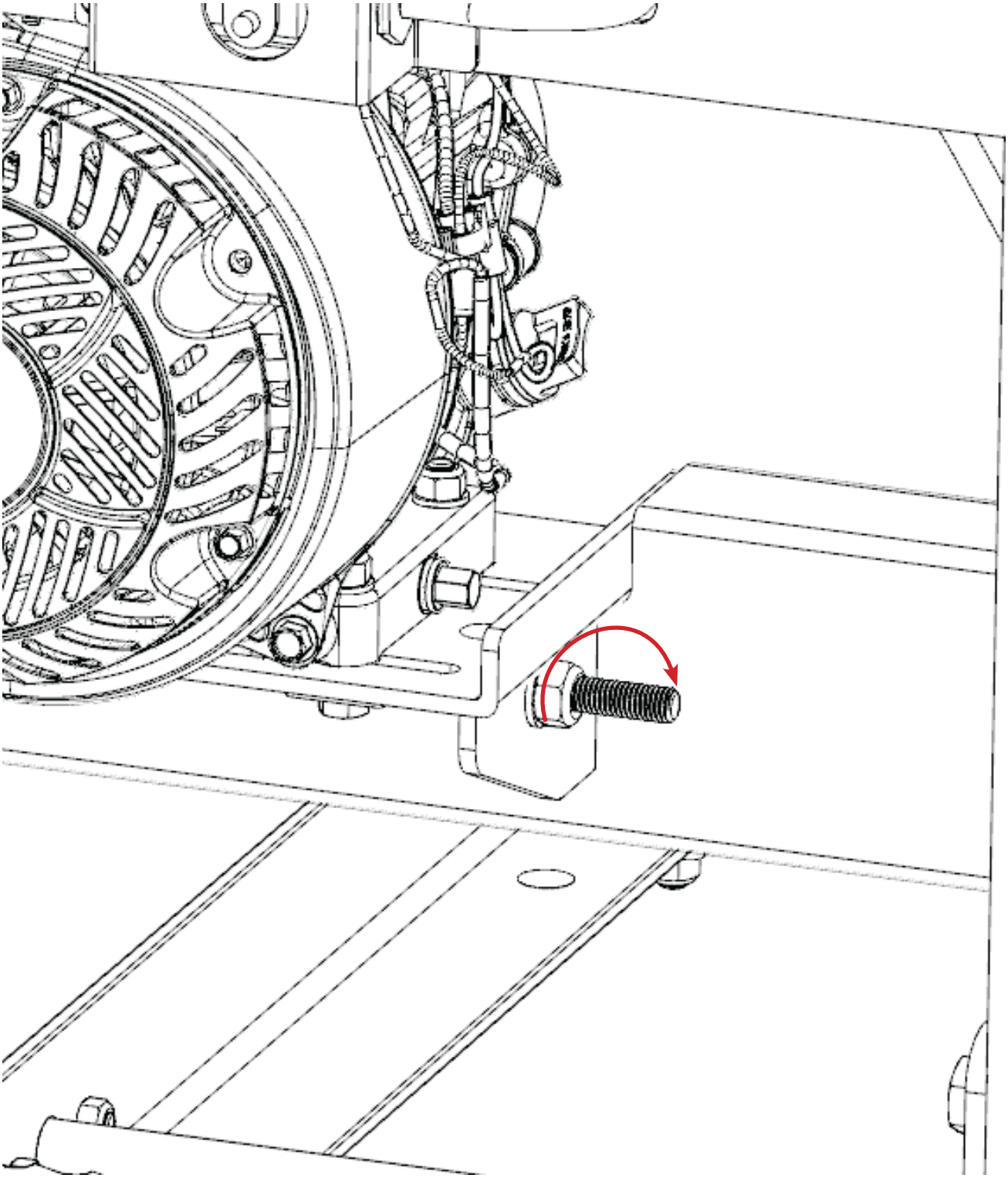
** Never attempt to adjust the belt tension while the engine is running. For safety, remove the spark plug cap **

Start by loosening the four bolts that secure the engine to the engine mount to tighten the drive belt.



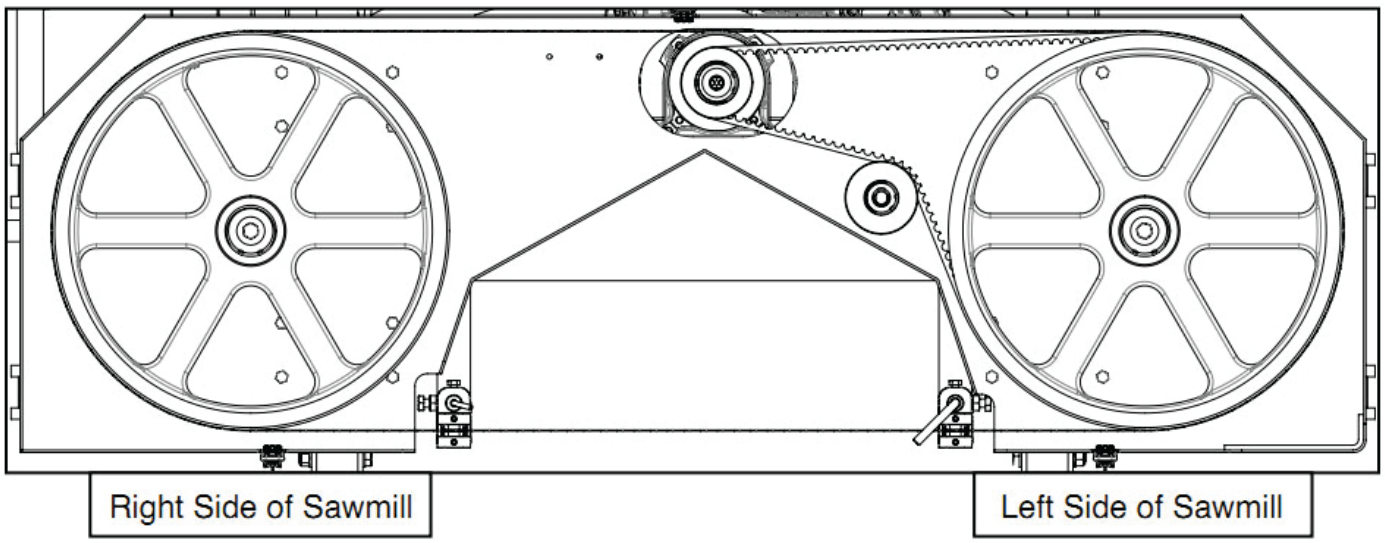


The motor is now free to slide on the motor mounting plate, turn the horizontal stud nut clockwise. This will pull the motor towards the stud and apply more tension to the belt. Perform this step gradually while checking to see if the belt is properly deflected. It is also important to ensure that the motor remains perpendicular to the drive belt. Overtightening can cause the motor to twist on the mounting plate, which can lead to belt alignment issues and premature wear. Once the desired belt tension is set, tighten the four motor bolts.
Also, if the belt is too tight, the horizontal stud nut can be turned counterclockwise.



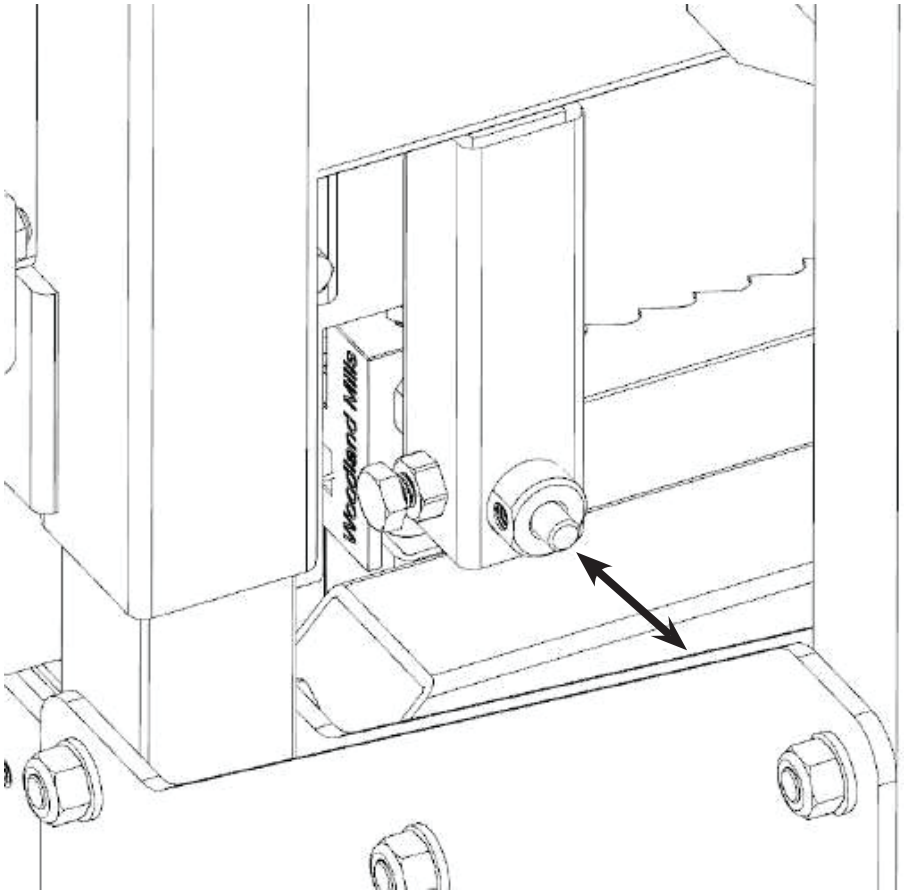
2. BLADE ALIGNMENT

Please ensure that the engine is not running to adjust the blade tracking. As a precaution, remove the spark plug cap. It is recommended to wear safety equipment like glasses and gloves when working with the blade, as it is very sharp.

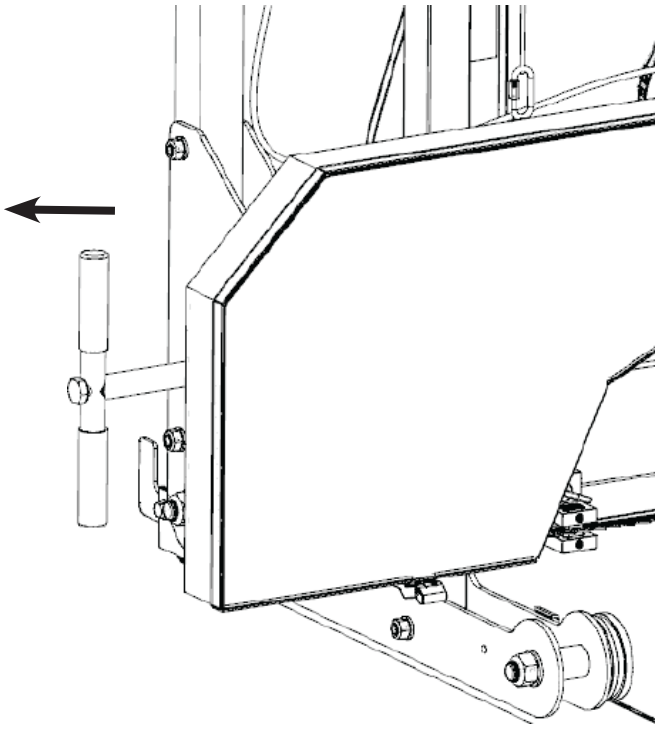


See page 33 to adjust the blade.

Loosen the blade guide bolt with a 16mm socket. The shaft should now be able to slide back and out of the way. Perform this step on both guide assemblies. This will ensure that the bearings do not influence blade tracking when adjusting.

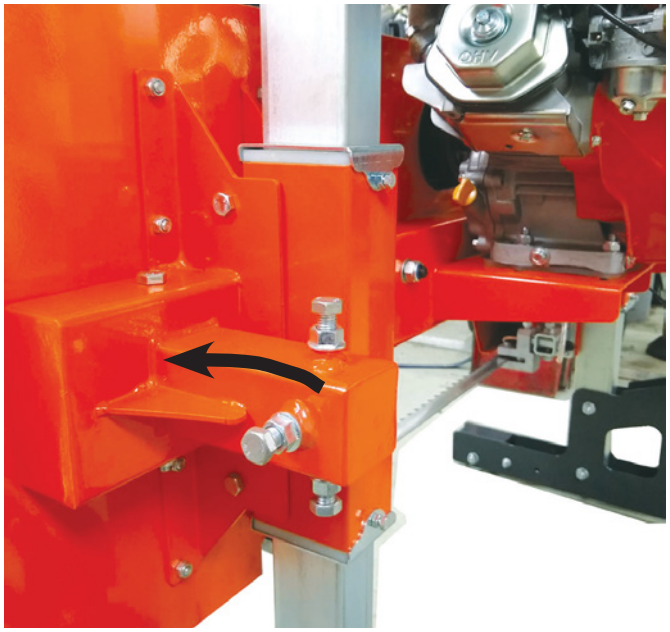


To reduce blade tension, turn the "T" handle counterclockwise one full turn from the maximum tension position.

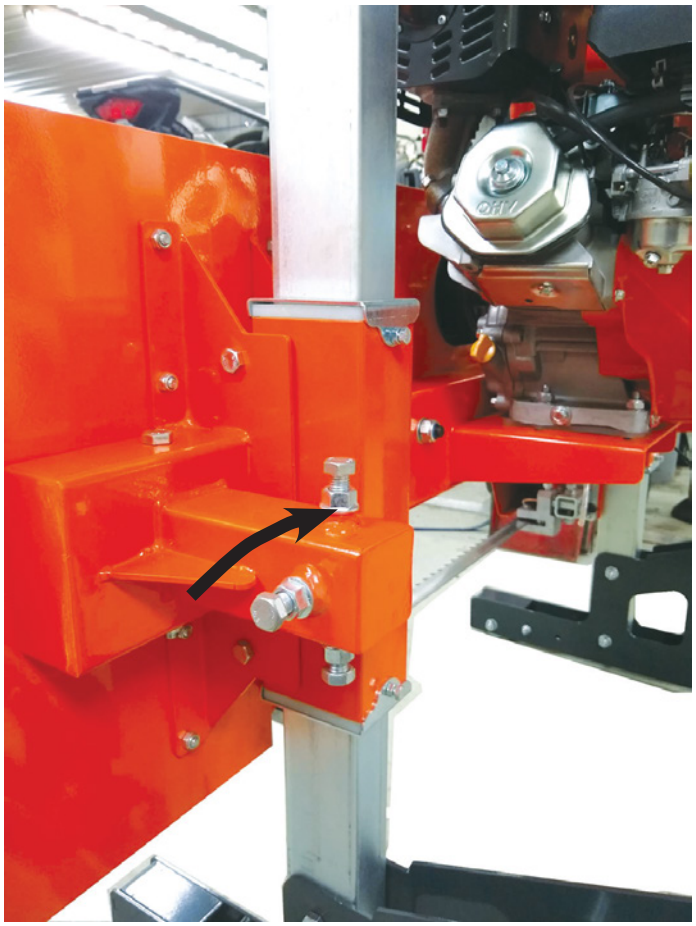


Right side adjustment

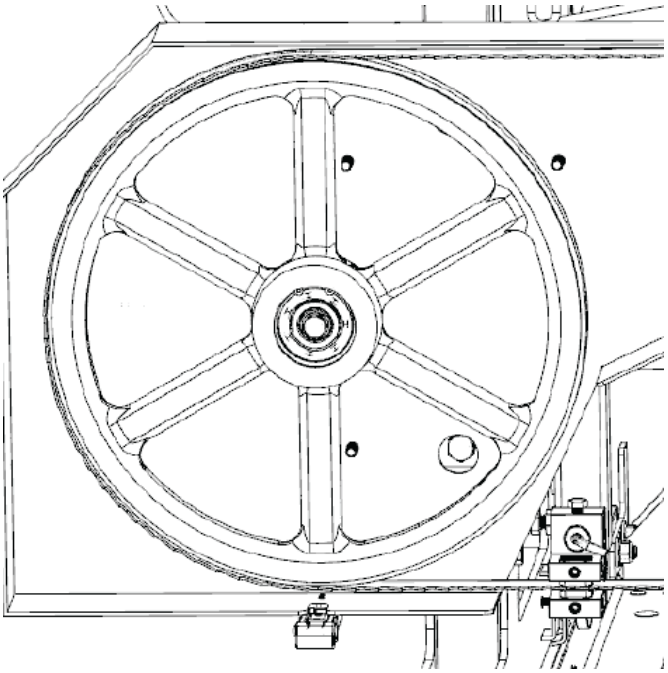
Loosen the tracking alignment lock nut using a wrench



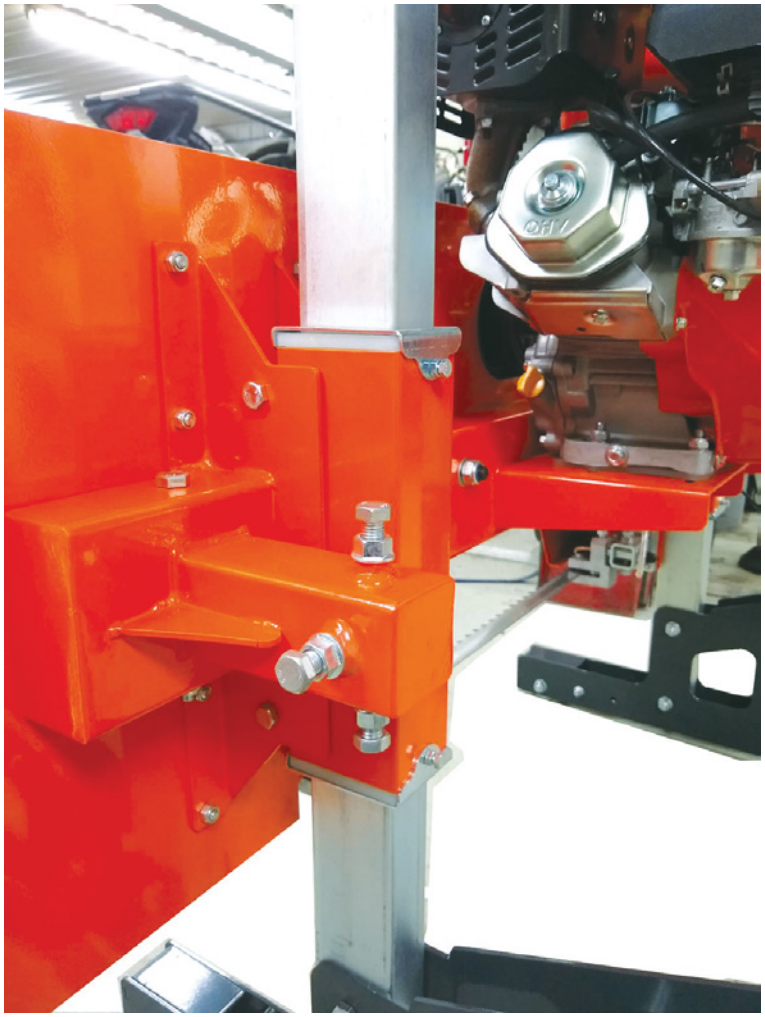
You can now turn the alignment bolt to change the angle of the band wheel to follow the blade. To move the blade further back on the band wheel.



Wearing gloves, spin the wheel with your hand and see the changing path of the blade. Measure the distance again and repeat the steps above to compensate further if needed. The best measurement possible is 10mm (3/8") or check that the back of the blade is aligned with the back of the tape wheel.

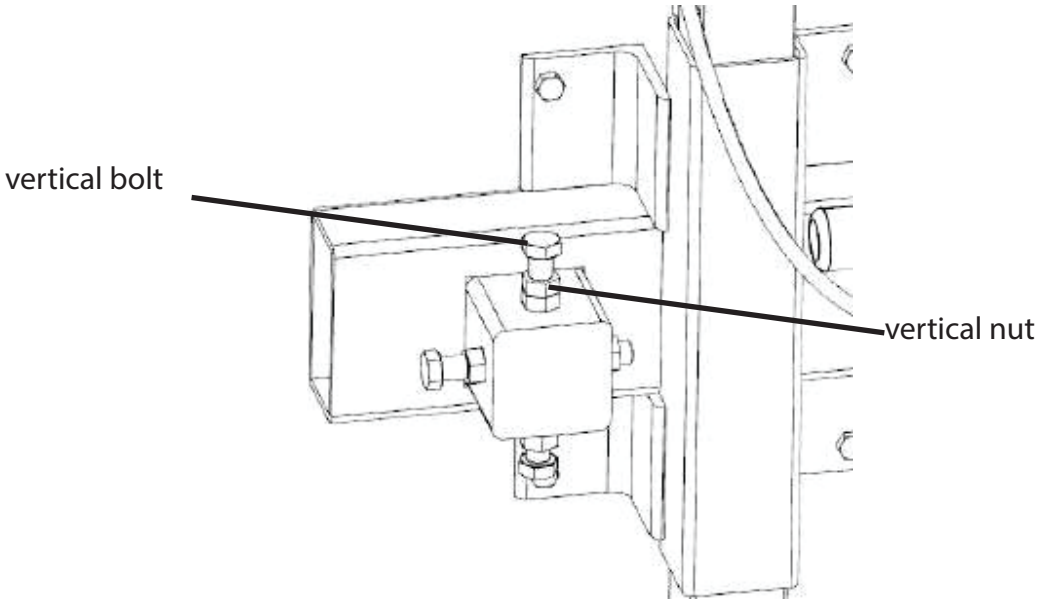


Once satisfied with the settings, tighten the jam nut clockwise.

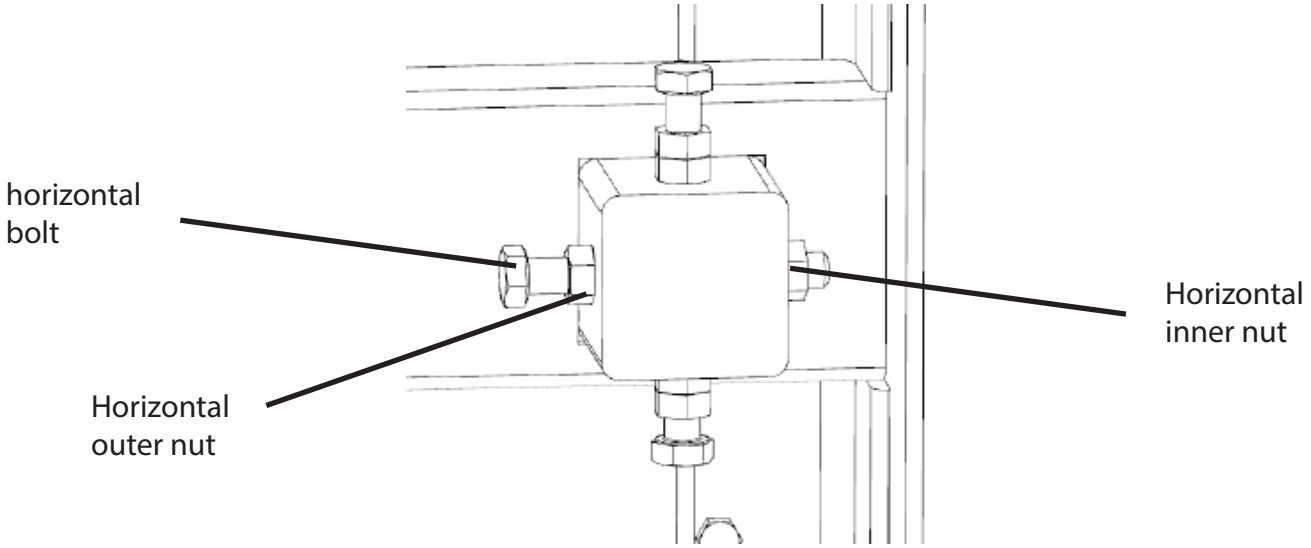


Left side adjustment
To adjust the left side of the sawmill, start over by removing blade tension by turning the "T" handle one turn counterclockwise. Using an 18mm wrench, loosen the vertical nut half a turn. Then loosen the "vertical bolt" half a turn. This will remove the clamping force from the ribbon wheel shaft caused by these two bolts and allow it to move freely in the following steps.

Advance the blade
Using a wrench, hold the 'horizontal bolt' in place with a wrench and turn the 'inner horizontal' nut counterclockwise 1/2 turn. Keep the «horizontal bolt» still and turn the «horizontal outer nut» half a turn clockwise. This has now moved the "horizontal bolt" and tape wheel shaft, allowing the blade to move further forward.

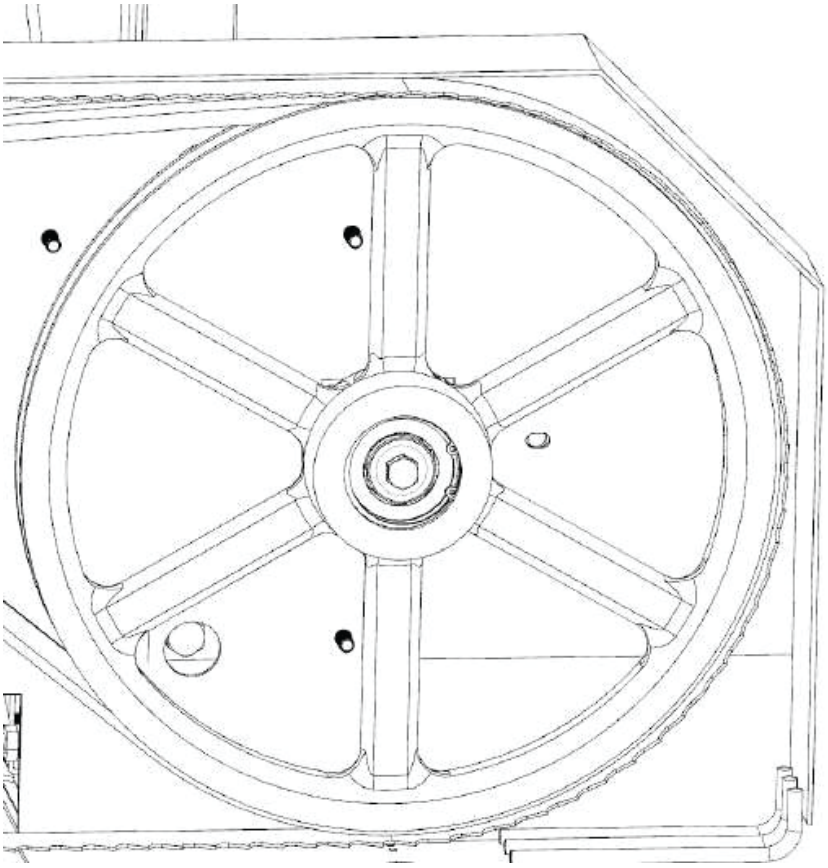


Roll back the blade
Using a wrench, hold the "horizontal bolt" still and turn the outer horizontal nut half a turn counterclockwise. While holding the "horizontal bolt" still, turn the "inner horizontal" nut half a turn clockwise. This step has now moved the "horizontal bolt" and strip wheel shaft causing the blade to move further back.
Tighten the vertical bolts, then the nuts to secure the ribbon wheel shaft in the vertical position.



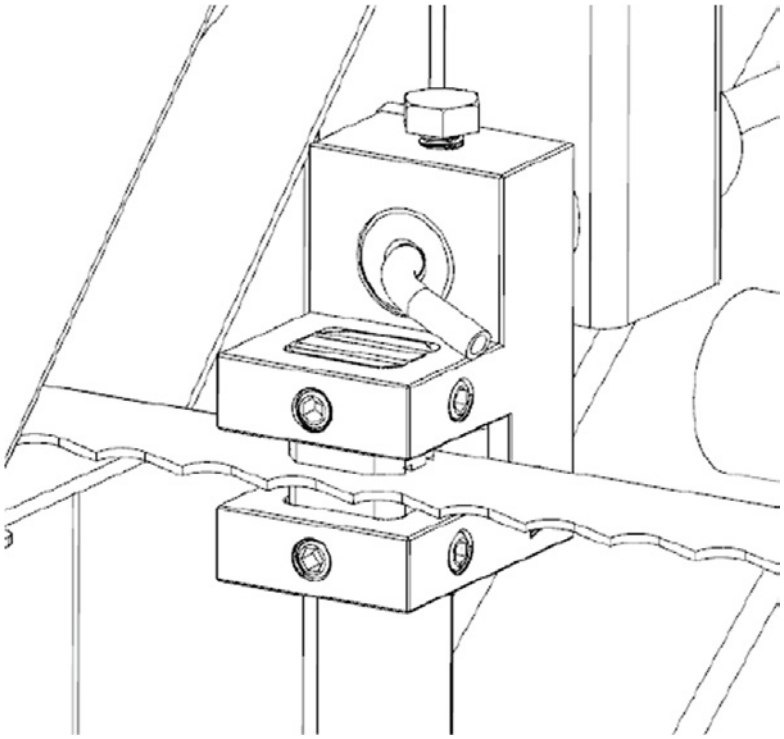
Tighten the blade by turning the "T" handle one full turn clockwise (to achieve a pressure of 34 N-m). With gloves on, spin the wheel with your hand and observe the changing path of the blade. Measure the distance and repeat the above step to further adjust if needed. The best measure is 10 mm (3/8 in) or check that the back of the blade is aligned with the back of the tape wheel. Once the blade tracks properly, return the blade guides to the blade. Keep a thick paper distance (0.040 in. or 1 mm) between the blade guide bearing and the blade's back. You can find more information about this in the next section.

BLADE GUIDE ADJUSTMENT.

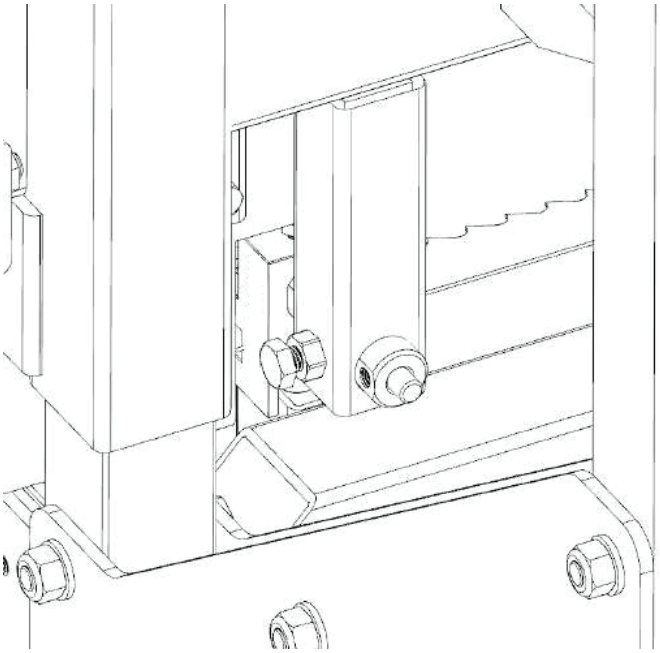


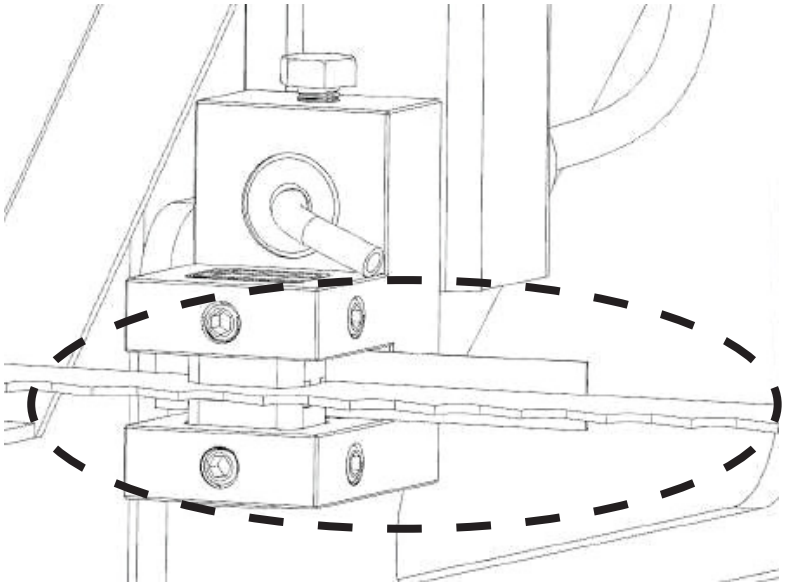
3. BLADE GUIDE ADJUSTMENT

Never adjust the guide blocks or bearing while the engine running. As a precaution, remove the spark plug cap. It is also advisable to check that the blade tracks correctly before carrying out the operation described below. Blade tracking is discussed on the previous page. With a 4mm Allen key, loosen the blade guide blocks on the left and right sides. They should be free to slide up and down.

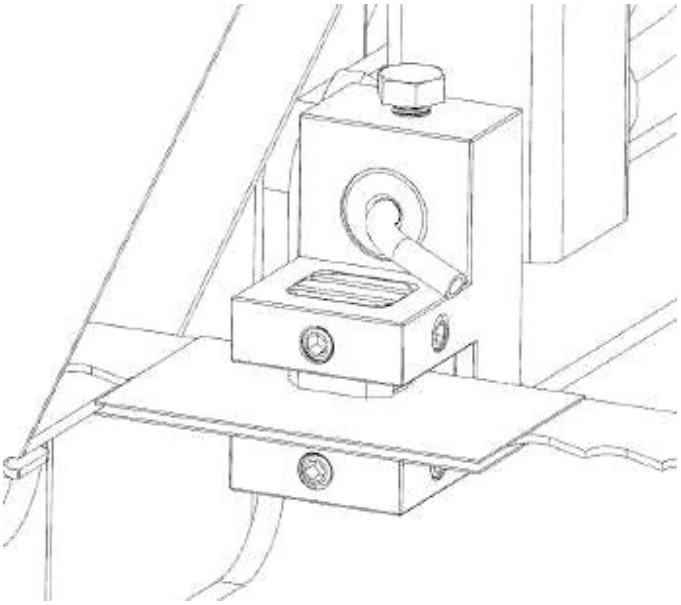


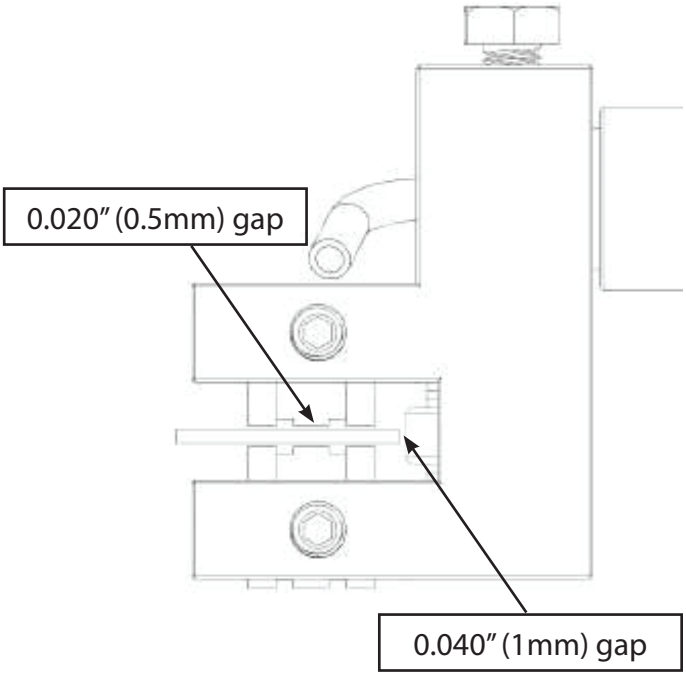
Loosen the blade guide bolt with a 16mm wrench. The round shaft should now be free to slide back. Place it so that there is a gap between the holder and the back of the blade (0.040 in. or 1 mm). Tighten the bolt against the flat of the shaft to secure the assembly in position.





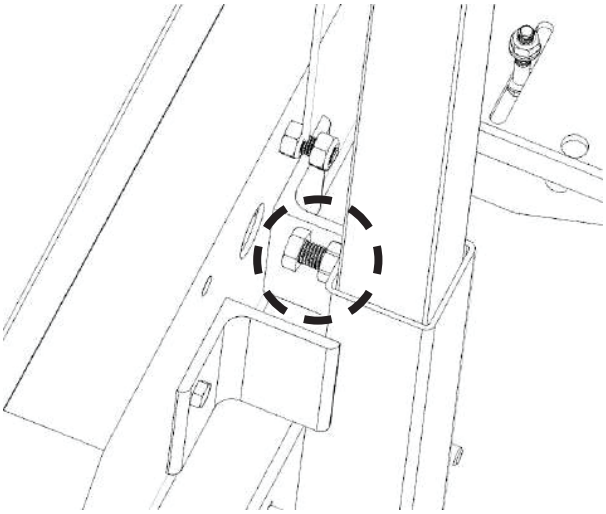
Using a thick piece of paper (0.020" or 0.5mm) between the blade and the two blade guide blocks, tighten the screws.

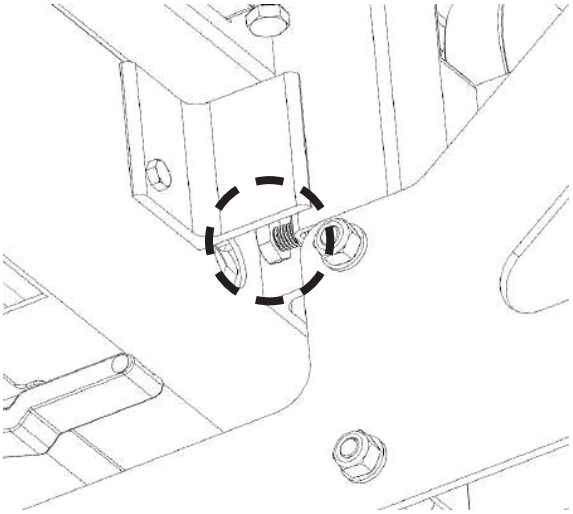




4. NYLON BOLTS ADJUSTMENT

Tighten the 4 nylon bolts so the head is secure on the posts, yet free to slide up and down. There are 2 bolts on the left and right side of the sawmill, one top and one bottom.

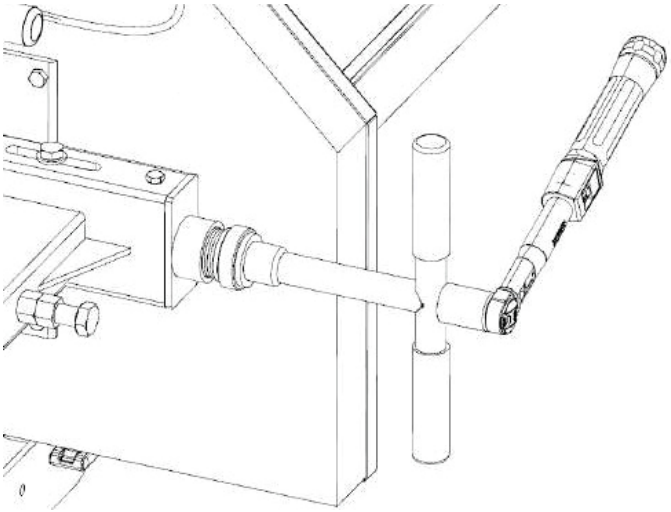


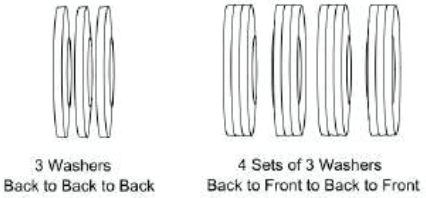


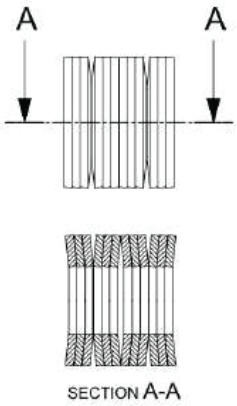
SAWMILL MAINTENANCE

1. BLADE TENSION

Use a torque wrench with 22mm socket to tighten the "T" handle for the correct blade tension (17Nm). Make sure the spring washers are installed as pictured below.



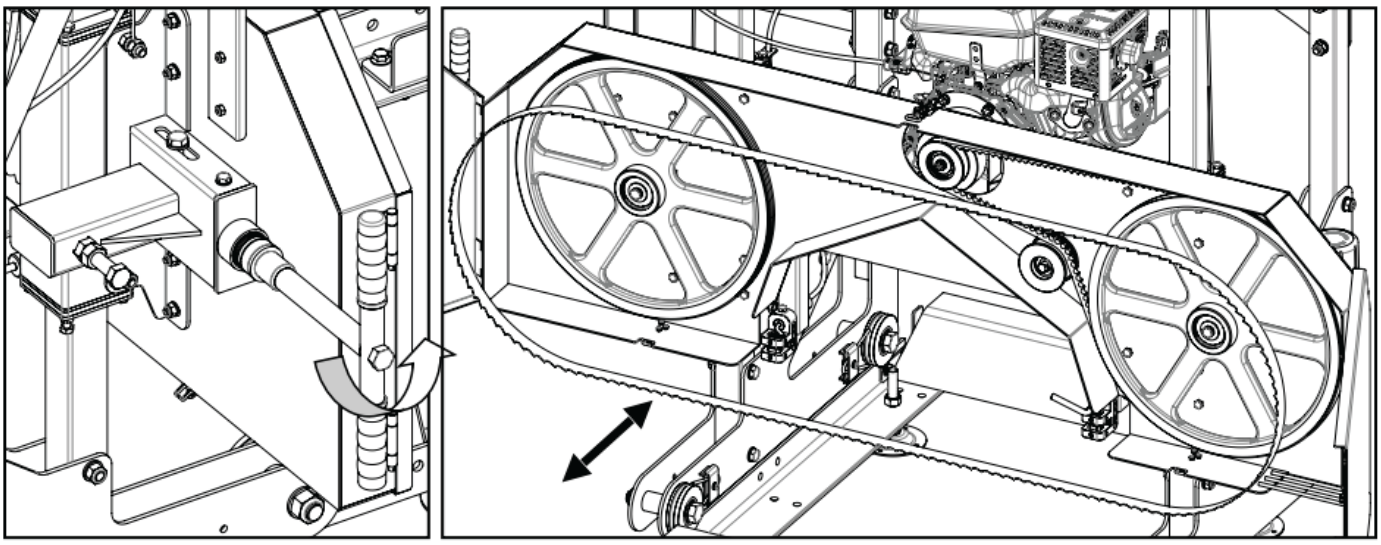




2. CHANGE THE BLADE

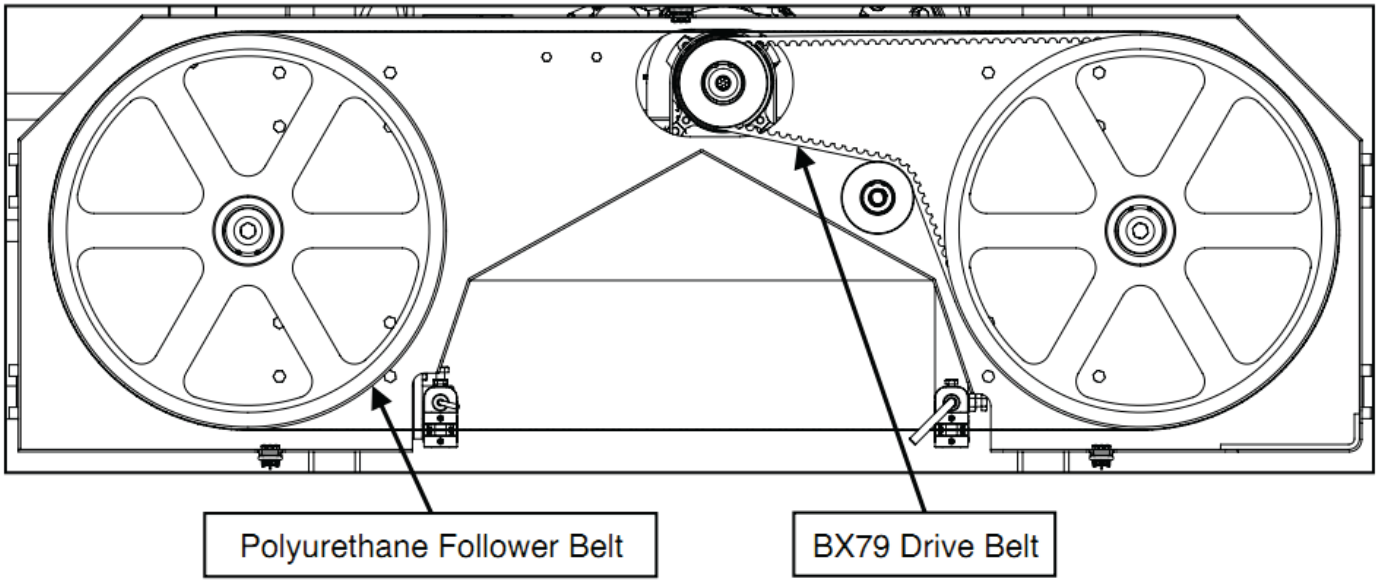
Never attempt to change the blade while the motor running. As a precaution, remove the spark plug cap. It is recommended to wear gloves and safety glasses while changing blades.

Turn the "T" handle counter-clockwise to remove tension from the blade, then open the blade guard. The blade should now be loose and free to come out the front. The new blade can now be installed, the guards closed and the blade tension properly adjusted.

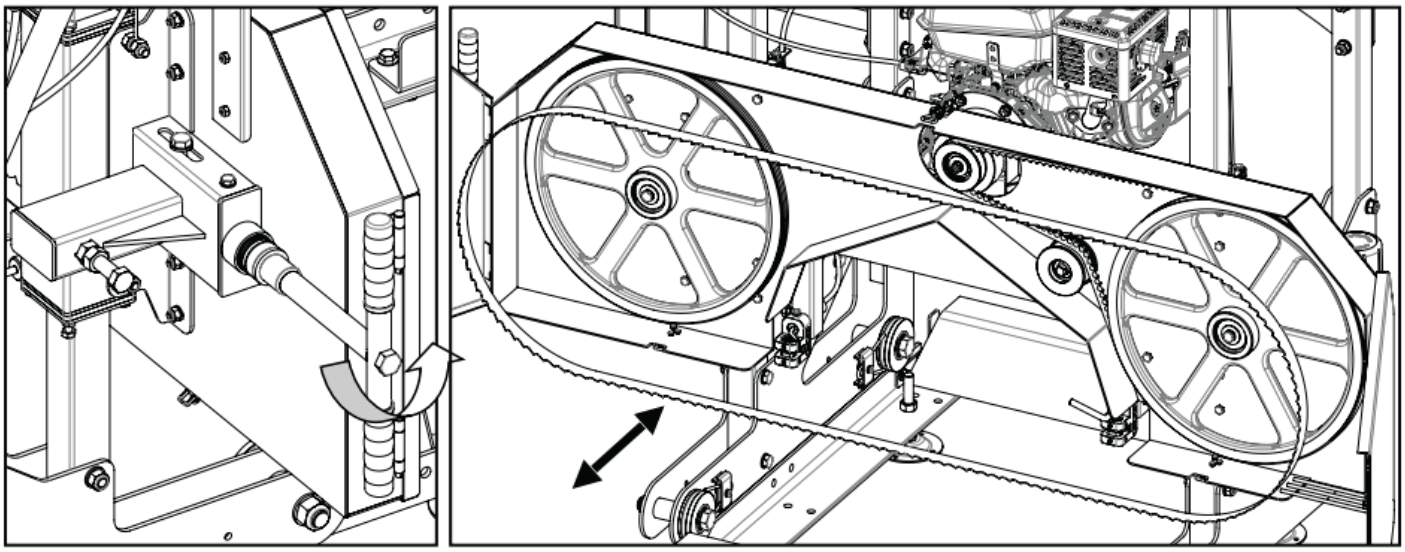


3. BELTS REPLACEMENT

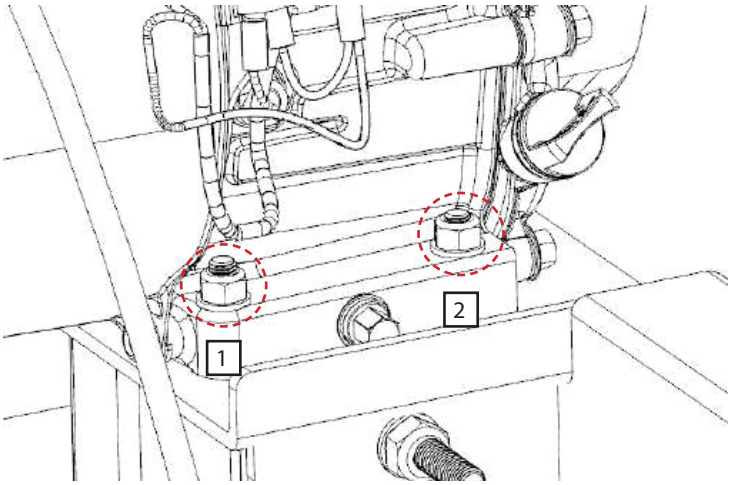
Do not replace belts while the engine is running. As a precaution, remove the spark plug cap. It is recommended to wear gloves and safety glasses when replacing belts. There are two V-belts on the machine. It is recommended to use a BX79 toothed belt for the drive side and a polyurethane follower belt

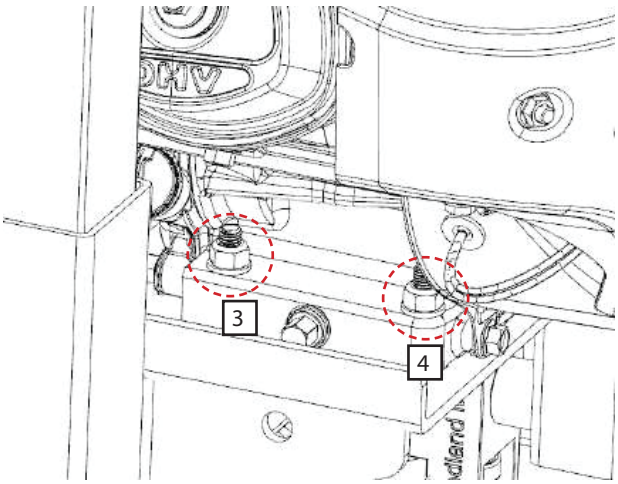


Turn the "T" handle counter-clockwise to release the blade tension, then open the blade guard. The blade should be loose and free to come out the front.



To change the belt on the drive side, loosen the four bolts that secure the motor to the mount using a wrench.





Now that the motor is able to slide on the mounting plate, turn the 17mm nut on the horizontal post counterclockwise. This will allow the engine to spin and will also reduce belt tension. You can now remove the old belt and install the new one. Adjust the tension of the new belt by referring to the BELT TENSIONING instructions in the Setup section of the manual.

You can now change the belt by lifting it up and installing the new one using slotted screwdrivers. The blade can now be reinstalled, guards closed, and blade tension properly adjusted.

* Note that blade alignment is subject to change and will require adjustment when new belts are installed. Refer to "BLADE ALIGNMENT" for more information.*

TROUBLESHOOTING

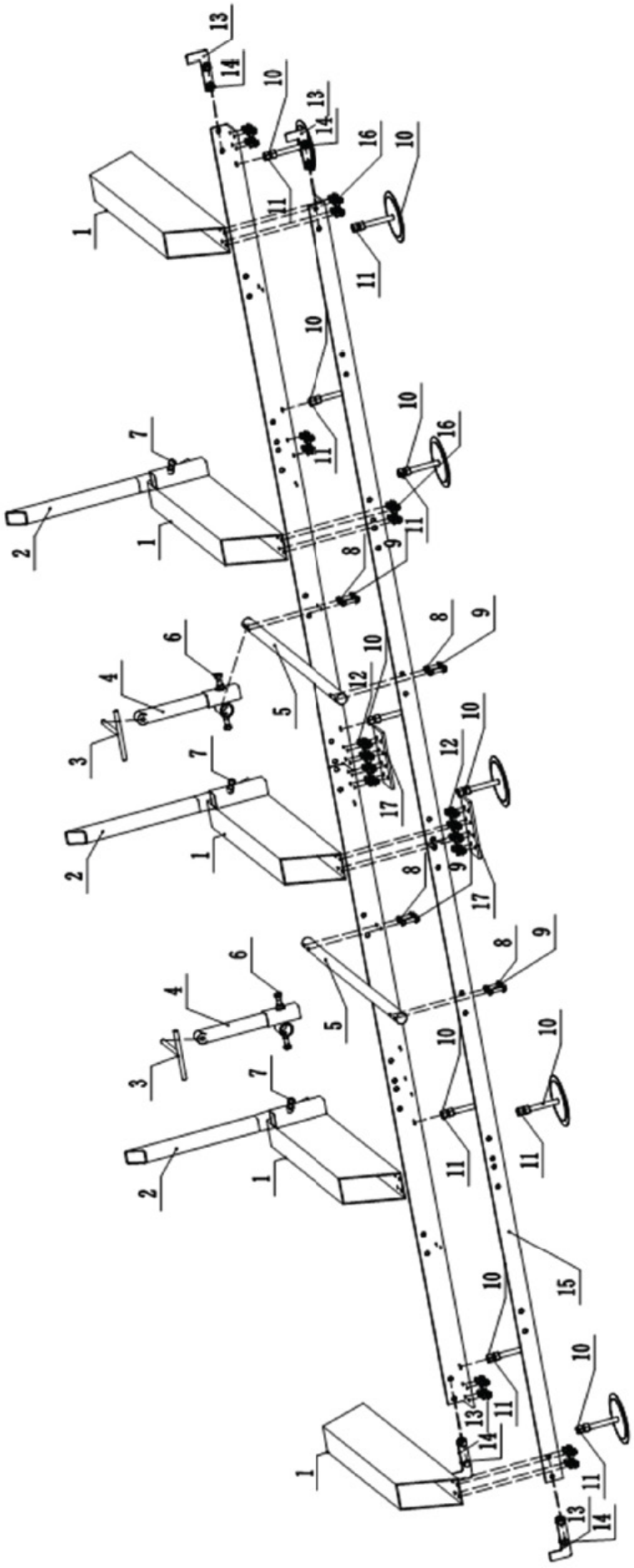
PROBLEM	POSSIBLE CAUSE	SOLUTION
Produce curvy cuts	1. Insufficient blade tension. 2. Incorrect blade guide configuration. 3. Poor blade tracking. 4. Sap builds up on the blade. 5. Blade is dull. 6. The mill is pushed too quickly.	1. Adjust the tension of the blade. See page 38. 2. The gap between the blade guide blocks is not correct. See page 36. 3. Change the adjustment of the blade tracking. Refer to page 30. 4. Install a new blade. See page 38. Always use blade lubricant. 5. Install a new blade. See page 38. 6. Slow the feed rate and push the head more slowly into the log.
The last board is narrow or tapered in the middle.	1. Rails are not level.	1. Rails should be checked and leveled correctly. They should also be installed on a firm and solid floor/base to prevent deformation of the logs or the saw head.
The blade becomes dulls quickly.	1. Wood is not clean. 2. Foreign objects in the wood	1. Check logs for sand or dirt and remove as much as possible before cutting. 2. The tree may contain nails, staples, old fence, etc.
The blade detaches from the band wheels.	1. Insufficient blade tension. 2. Incorrect blade guide configuration. 3. Poor blade tracking. 4. The belts are worn out. 5. The blade is dull. 6. Pushing the cutting head too quickly.	1. Adjust tension of the blade. Refer to page 38. 2. The gap between guide blocks and the blade is incorrect. Refer to page 36. 3. Adjust tracking of the blade. Refer to page 30. 4. Change old belts for new belts. Refer to page 39. 5. Change old blade for new blade. Refer to page 38. 6. Slow the feed rate and push the head more slowly into the log.
The blades break.	1. Too many blade sharpenings. 2. Insufficient blade tension. 3. Incorrect blade guide configuration. 4. Poor blade tracking. 5. Pushing the cutting head too quickly.	1. Change old blade for new blade. Refer to page 38. 2. Adjust tension of the blade. Binding between guide blocks when the blade is too loose. Refer to page 38. 3. Gap between guide blocks and blade is incorrect. Refer to page 36. 4. Adjust tracking of the blade. Refer to page 30. 5.Slow the feed rate and push the head more slowly into the log.
The blade slows down or stops when milling.	1. Insufficient blade tension. 2. Improper drive belt tension. 3. Pushing the cutting head too quickly.	1. Adjust the tension of the blade. Refer to page 38. 2. If belt is too worn out, replace, if not it may be too loose. Refer to page 39. 3. Slow the feed rate and push the head more slowly into the log.
Cutting head does not cut or cuts very slowly.	1. The blade is dull. 2. The blade is installed incorrectly	1. Change the blade for a new one. Refer to page 38. 2. Remove the blade and turn it over. The sharp edge must face in the direction of the log racks.
The cutting head vibrates excessively.	1. Bracket that holds the log is not tight. 2. The belts are deformed. 3. Wheel bearing problem. 4. Pushing the cutting head too quickly. 5. Some bolts may be loose.	1. Make sure the log is tight against the log supports and against the supports. 2. Belts may have flats leaving blade tension tight when not in use. Replace the belts if that is the case. Refer to page 39. 3. Inspect and replace wheel bearings if they are worn out. 4. Slow the feed rate and push the head more slowly into the log. 5. Make sure all bolts are tight.

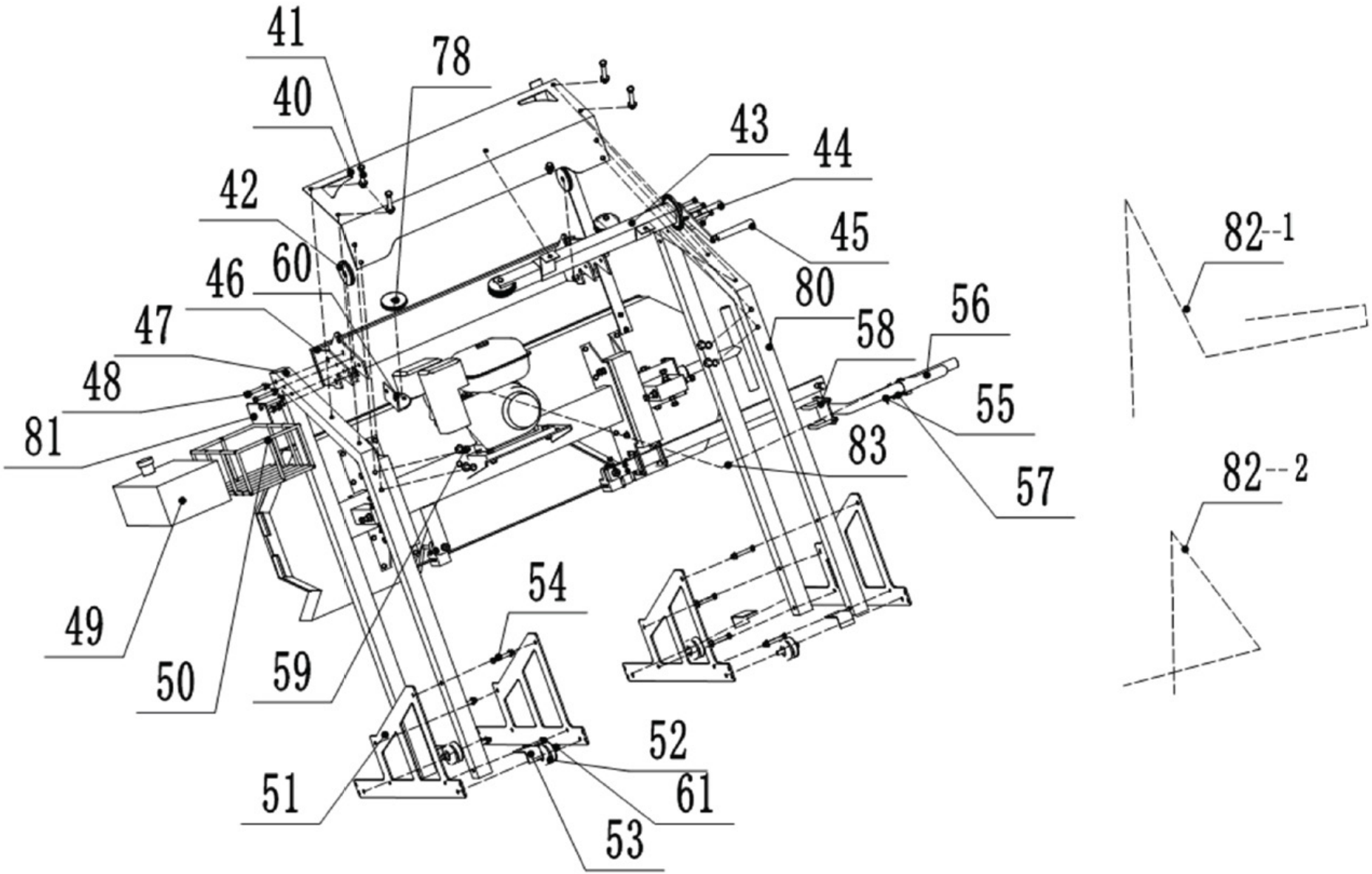
PARTS LIST

No.	Description	Quantity
1	Wood base	5
2	wood clamping device base	3
3	Lock handle	2
4	Lock column	2
5	Locking slider	2
6	Bolt M12X40	4
7	Bolt M12X40	3
8	Bolt M10X60	8
9	Nut M10	8
10	Guide rail adjustment frame	10
11	Nut M14	20
12	Guide rail connecting bolt M10X40/nut M10	8
13	Guard plate	4
14	Guard plate Bolt M12X25/Nut M12	8
15	Guide rail	4
16	Wood base bolt M10X40/nut M10	20
17	guild rail connecting plate	2
18	Protecting cover door	2
19	Saw blade	1
20	Saw wheel locking bolt M10X25	2
21	Saw wheel locking flat washer	2
22	Circlip 62X1.5	2
23	Bearing 6206	4
24	Tensioner bolt M8X25	1
25	Tensioner flat washer	1
26	B type V-belt 2032	1
27	Saw wheel	1
28	Protecting cover lock	2
29	Saw wheel bracket shaft	2
30	Saw blade guide frame	2
31	Saw blade guard frame	1
32	Main body protection cover	1
33	Protection cover hinge	4
34	Driving wheel	1
35	Ruler	1
36	Ruler base	1
37	Engine	1
38	Stroke switch/model KM02	1
39	Tensioner	1
40	Main part rear guard	1
41	Rear guard lock bolt M10X80/nut M10	8
42	Lifting wheel	10
43	Lifting wheel main part	1
44	Lifting frame lock handle	1
45	Lifting frame handle	1
46	Main part front guard	1
47	Main part column	2

PARTS LIST

No.	Description	Quantity
48	front guard lock bolt M12X80	4
48.1	front guard lock bolt M12X100	2
48.2	front guard lock bolt M10X80/ nut M10	8
48.3	front guard lock nut M12	8
49	Water tank	1
50	Water tank rack	1
51	Wheel frame	4
52	Guide wheel	4
53	Guild wheel guard plate	4
54	Below fixing frame lock bolt M12X80/nut M12	8
55	Push handle	1
56	Throttle handle	1
57	spring	1
58	Fixed U frame 50X70	2
59	Rear guard plate lock bolt M10X75/nut M10	7
60	Lifting guide wheel fixing frame	1
61	Guide wheel shaft bolt M12X75/nut M12	4
62	Saw blade lock handle	1
63	Thrust bearing 51104	1
64	Spring	1
65	Saw blade tightening lock block	1
66	Retractable rod	1
67	Adjustable protection cover	1
68	Retractable frame plate	1
69	Retractable guide sleeve	2
70	Saw blade lock block	4
71	Saw blade guide bearing 628	2
72	Saw blade support shaft	2
73	Column guide sleeve	4
74	Guide sleeve tube	2
75	Retractable rod handle	1
76	Guide sleeve shaft	4
77	Retractable saw frame bolt M8X25/nut M8	8
78	Guide wheel	10
79	Brush	2
80	Rear column 80-1,80-2	2
81	Water tank bolt M8X15	2
82	Oil rope	2
83	Throttle cable	1
84	Ruler boltM6X15	4
93	Driving pulley W/Groove	1

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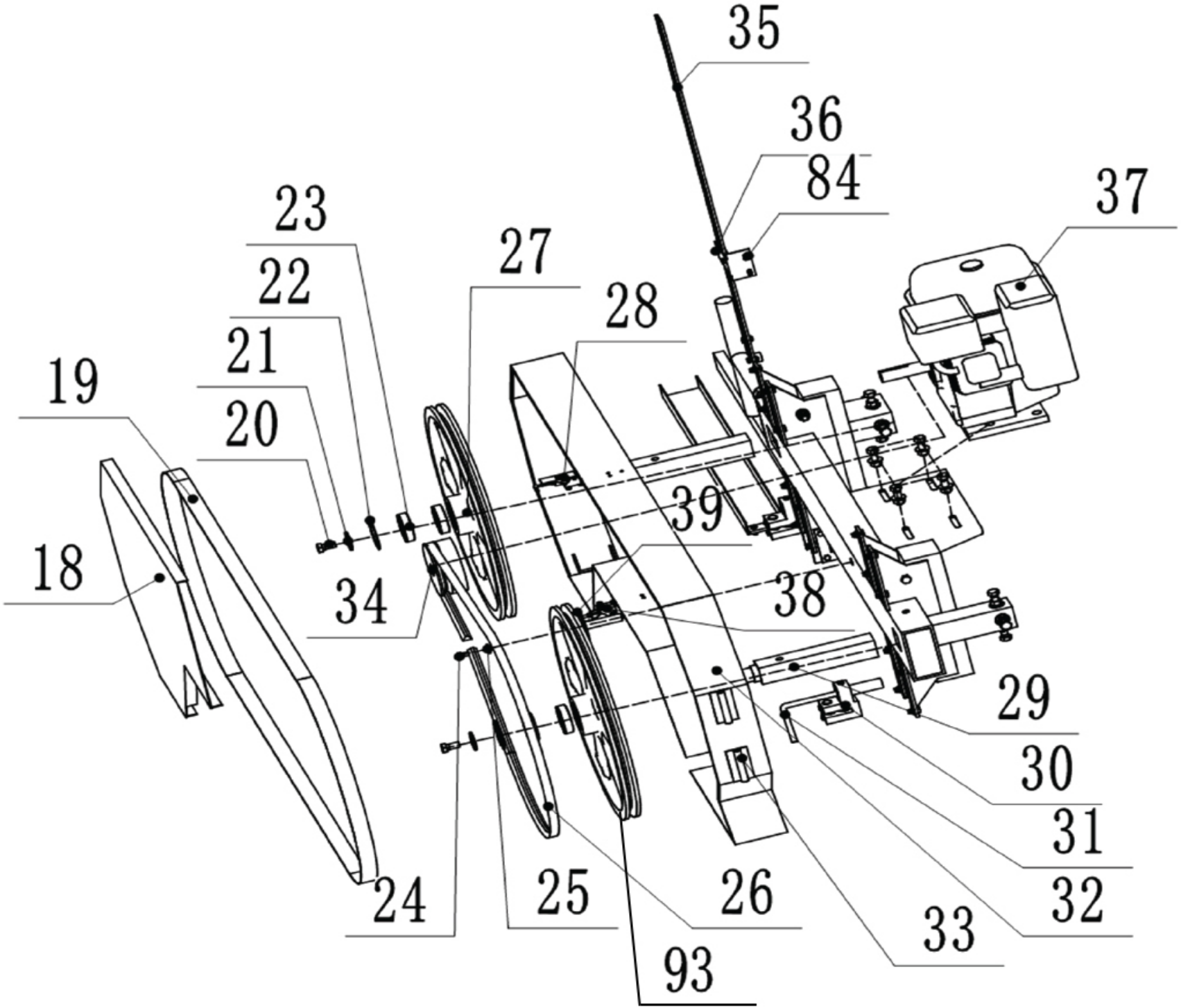
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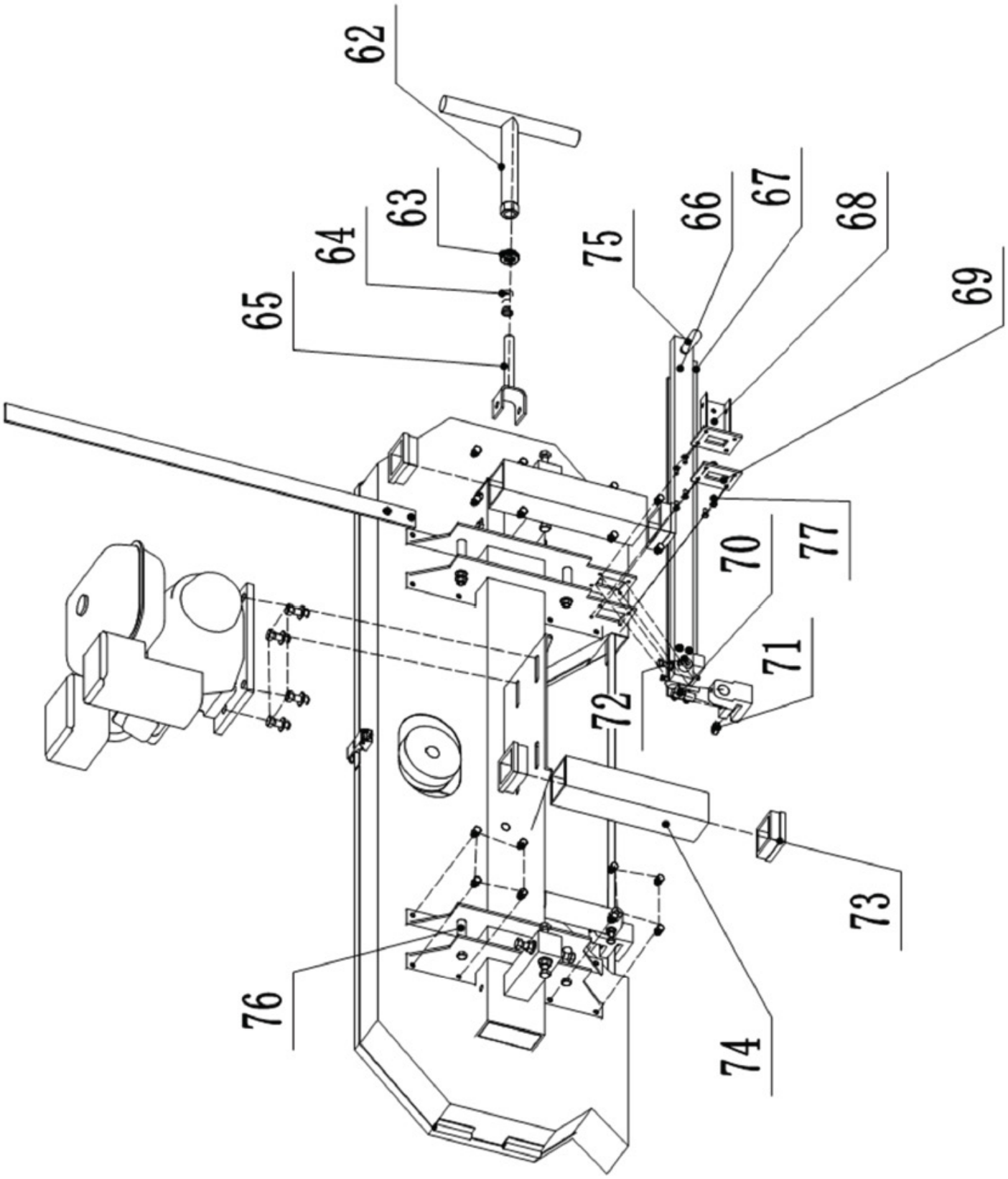
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