



ORIGINAL INSTRUCTIONS

INTRODUCTION

This machine is professional for straight cutting and square cutting of wood material.

It can also be used to cut plywood & plastic materials.

This manual must be read and understood before operating the machine. This will provide a better working knowledge of the machine, for increased safety and to obtain the best results.

PRODUCT SPECIFICATIONS

Attention: Please choose correct power source, voltage and frequency that are shown in the label for your band saw.

Model		BS400	BS450
Voltage/Cycle		230V/50Hz	230V/50Hz
Motor Power		1500W (2HP)	2200W(3HP)
Throat Width		380mm (16")	445mm (18")
Cutting Capacity		250mm	380mm
Table size		535 x 485mm	610 x 508mm
Table tilt		Left 10° , Right 45°	Left 10° , Right 45°
Cutting Speed	50Hz	500 / 750 m/min	600 / 900 m/min
Blade Size		3050 mm(Length) x 3-25mm(Width)	3680 mm(Length) x 3-32mm(Width)
Dust port diameter		100mm x 2	100mm x 2
Product dimensions (width x depth x height)		800 x 700 x 1715mm	920 x 720 x 1900mm

NOISE LEVEL

Noise characteristic values according to EN ISO 3744.

The given values are emission values and do not also present safe working values. Although there is a correlation between emission and nuisance levels, the relationship is not dependable as an indicator as to whether additional safety measures are necessary or not. Factors specific to the workplace can influence the nuisance level, such as the length of the activity, the characteristics of the work room, other sources of noise, etc., for instance the number of machines and other nearby activities. Dependable work place values can also vary from country to country. This information should, nonetheless, allow a better estimation of possible dangers and risks.

Band saw	Noise power level	Sound pressure level at the workplace
No-load	LWA = 86 dB(A)	LpA =75dB(A)
Active work	LWA = 98 dB(A)	LpA = 86 dB(A)

The factor of measurement uncertainty is 4 dB.

SAFETY INSTRUCTIONS

SYMBOLS



Read and understand the entire instruction manual before attempting assembly or operation.



Attention, General safety notice.



Risk of electric shock! Risk of personal injury by electric shock.



Never reach into the machine while it is operating or running down.



Always wear safety goggles and ear protection.



Always wear dust protection.



Always wear the approved working outfit



Do not operate the machine under the influence of drugs, alcohol or any medication. Be aware that medication can change your behavior.



Do not wear gloves while operating this machine.



Make all machine adjustments or maintenance with the machine unplugged from the power source.

SAFETY INSTRUCTIONS

1. Read and understand the entire owner's manual before starting, using, servicing and carrying out any other operation on the machine.
2. Read and understand the warnings posted on the machine and in this manual. Failure to comply with all of these warnings may cause serious injury.
3. Replace warning labels if they become obscured or removed.
4. This bandsaw is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper and safe operation of a bandsaw, do not use until proper training and knowledge have been obtained.
5. Do not use this bandsaw for other than its intended use.
6. Always wear approved safety glasses or a face shield while using this machine. (Everyday eyeglasses only have impact resistant lenses; they are not safety glasses.)
7. Always wear hearing protection when operating or observing loud machinery.

8. Do not wear clothing, apparel or jewelry that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to reduce risk of slipping and losing control or accidentally contacting cutting tool or moving parts.
9. Keep work area clean. Cluttered areas and benches invite accidents
10. Use proper extension cord. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating.
11. Always disconnect machine from power supply BEFORE making adjustments, changing tooling, or servicing machine. This prevents an injury risk from unintended startup or contact with live electrical components.
12. Direction of feed: Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
13. Maintain proper adjustment of blade tension, blade guides, and thrust bearings.
14. Adjust upper blade guides to just clear workpiece.
15. Make sure blade tension, tracking and blade guides are all properly adjusted.
16. When feeding small work pieces into blade, always use push stick, fixture, or similar device to keep hands at a safe distance.
17. Hold stock firmly and flat against table.
18. Do not operate this machine while tired or under the influence of drugs, alcohol or any medication.
19. Make certain machine is properly grounded.
20. Remove adjusting keys and wrenches. Form a habit of checking to see that keys and adjusting wrenches are removed from the machine before turning it on.
21. Keep safety guards in place at all times when machine is in use. If removed for maintenance purposes, use extreme caution and replace the guards immediately after completion of maintenance.
22. Check damaged parts. Before further use of machine, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
23. Keep floor around machine clean and free of scrap material, oil and grease.
24. Keep visitors a safe distance from work area. Keep children away.
25. Give your work undivided attention. Looking around, carrying on a conversation, etc. are careless acts that can result in serious injury.
26. Maintain a balanced stance at all times so that you do not fall into blade or other moving parts. Do not overreach or use excessive force to perform any machine operation.
27. Use the right tool at the correct speed and feed rate. Do not force a tool or attachment to do a job for which it was not designed. The right tool will do the job better and more safely.
28. Use recommended accessories; improper accessories may be hazardous.
29. Maintain tools with care. Keep blades sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
30. Turn off machine before cleaning. Use a brush or compressed air to remove chips or debris — not your hands.
31. Do not stand on machine. Serious injury could occur if machine tips over.

32. Never leave machine running unattended. Turn power off and do not leave bandsaw until blade comes to a complete stop.
33. Remove loose items and unnecessary work pieces from area before starting machine.
34. Keep hands out of line of saw blade.
35. Don't use in dangerous environment. Do not expose machine to rain or use in wet or damp locations. Keep work area well lighted.
36. Allow blade to reach full speed before starting to cut. DO NOT start the machine while the workpiece is in contacting with the blade.
37. To avoid risk of workpiece slipping and causing operator injury, always feed stock evenly and smoothly.
38. Dull blades require more effort to perform cut, increasing risk of accidents. Do not operate with dirty, dull, cracked or badly worn blades. Inspect blades for cracks and missing teeth before each use. Always maintain proper blade tension and tracking while operating.
39. Always stop bandsaw and disconnect power before clearing scrap pieces that get stuck between blade and table insert. Use brush or push stick, not hands, to clean chips/cutoff scraps from table.
40. To avoid risk of injury due to blade contact, always allow blade to stop on its own. DO NOT try to stop or slow the blade down with your hand or the workpiece.
41. Blade guards and covers protect operator from the moving bandsaw blade. The wheel covers protect operator from getting entangled with rotating wheels or other moving parts. ONLY operate the bandsaw with the blade guard in the proper position and wheel covers completely closed.
42. To avoid mishaps that could result in operator injury, make sure blade teeth face down toward table and blade is properly tensioned and tracked before operating.
43. This machine is intended for cutting natural and man-made wood products, and laminate covered wood products. This machine is NOT designed to cut metal, glass, stone, tile, etc.
44. Connect the dust suction hoods to an adequate suction system; suction must always be activated when the machine is switched on.
45. Never open the door or other protections when the machine or the system is operating.

ELECTRICAL REQUIREMENTS

POWER SUPPLY AND MOTOR SPECIFICATIONS

WARNING: To avoid electrical hazards, fire hazards, or damage to the tool, use proper circuit protection. Use a separate electrical circuit for your tools. To avoid shock or fire, if power cord is worn or cut, or damaged in any way, have it replaced immediately.

GROUNDING INSTRUCTIONS

WARNING: This tool must be grounded while in use to protect the operator from electrical shock.

IN THE EVENT OF A MALFUNCTION OR BREAKDOWN, grounding provides a path of least resistance for electric current and reduces the risk of electric shock. This tool is equipped with an electric cord that has an equipment-grounding conductor and a grounding plug. The plug **MUST** be plugged into a matching socket that is properly installed and grounded in accordance with ALL local codes and ordinances.

DO NOT MODIFY THE PLUG PROVIDED. If it will not fit the socket, have the matching socket installed by a qualified electrician.

IMPROPER CONNECTION of the equipment-grounding conductor can result in risk of electric shock. The conductor with green insulation (with or without yellow stripes) is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, **DO NOT** connect the equipment-grounding conductor to a live terminal.

CHECK with a qualified electrician or service person if you do not completely understand the grounding instructions, or if you are not sure the tool is properly grounded.

WARNING: Improper connection of equipment grounding conductor can result in the risk of electrical shock. equipment should be grounded while in use to protect operator from electrical shock.

-Check with a qualified electrician if you do not understand grounding instructions or if you are in doubt as to whether the tool is properly grounded.

-Do not remove or alter grounding prong in any manner. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electrical shock.

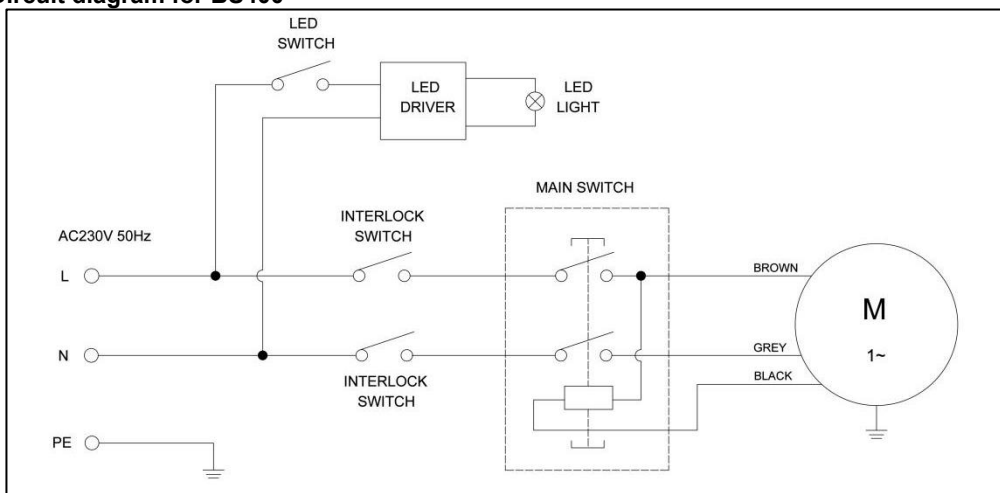
WARNING: This machine is for indoor use only. Do not expose to rain or use in damp locations.

GUIDELINES FOR EXTENSION CORDS

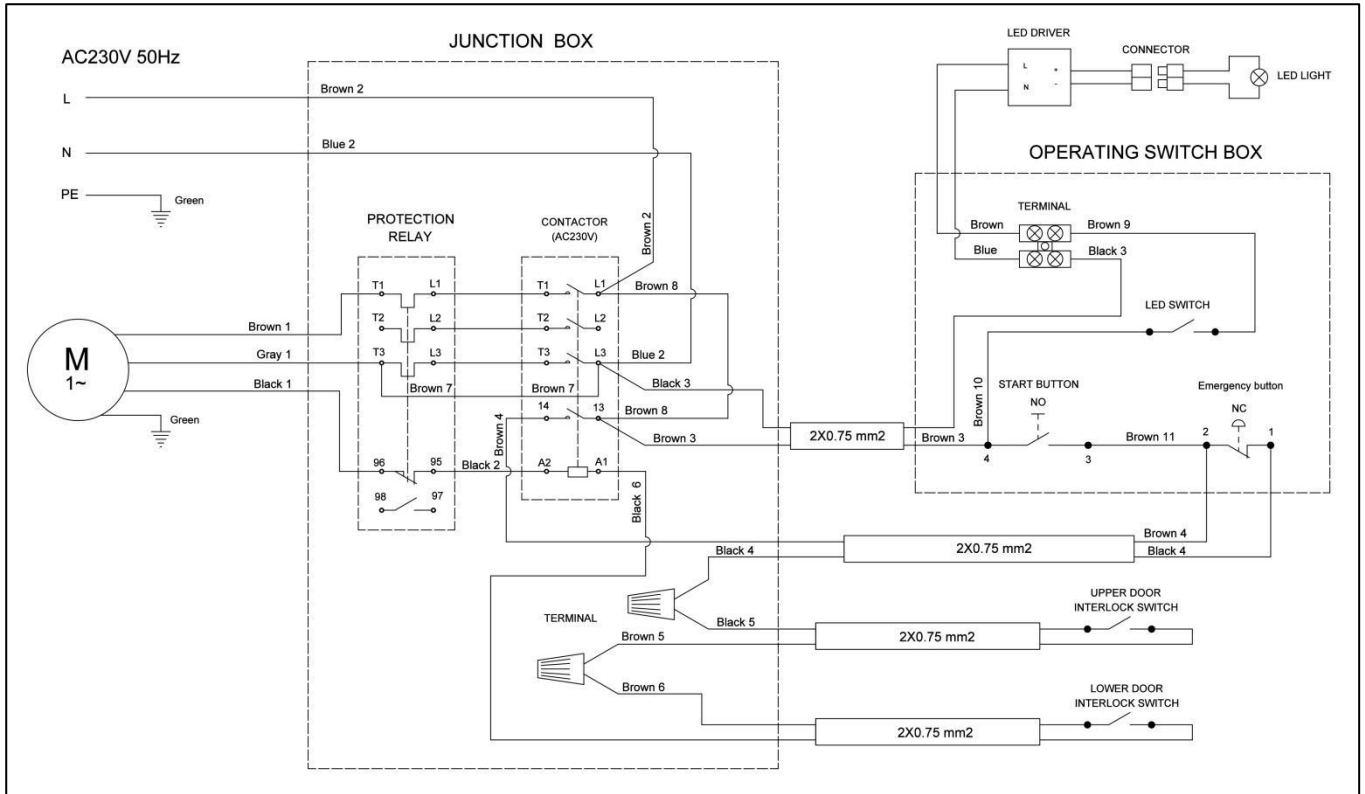
USE PROPER EXTENSION CORD. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage, resulting in loss of power and cause overheating.

Be sure your extension cord is properly wired and in good condition. Always replace a damaged extension cord or have it repaired by a qualified person before using it. Protect your extension cords from sharp objects, excessive heat and damp or wet areas.

Circuit diagram for BS400



Circuit diagram for BS450



ACCESSORIES AND ATTACHMENTS

WARNING:

To avoid injury:

- Follow instructions that accompany accessories. Use of improper accessories may cause hazards.
- Use only accessories designed for this bandsaw to avoid injury from thrown broken parts or work pieces.
- Do not use any accessory unless you have completely read the instruction or operator's manual for that accessory.

CARTON CONTENTS

UNPACKING AND CHECKING CONTENTS

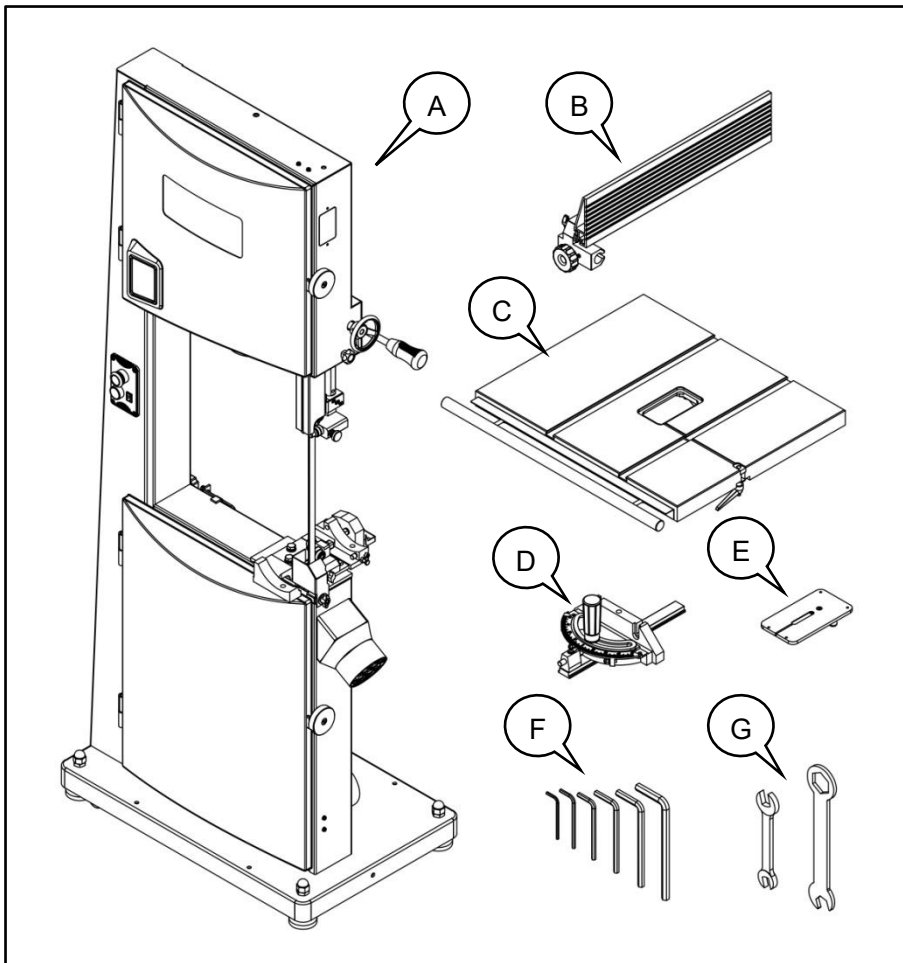
Carefully unpack the band saw and all its parts, and compare against the illustration following.

WARNING:

- To avoid injury from unexpected starting, do not plug the power cord into a power source during unpacking and assembly. This cord must remain unplugged whenever you are assembling or adjusting the bandsaw.
- If any part is missing or damaged, do not plug the bandsaw in until the missing or damaged part is replaced, and assembly is complete.

TABLE OF LOOSE PARTS

Unpack carton; check your machine to see parts listed below:



Code	Name	Quantity
A	Bandsaw	1
B	Fence assembly	1
C	Table assembly	1
D	Mitre gauge assembly	1
E	Table insert assembly	1
F	2.5, 3, 4, 5, 6, 8mm hex wrench	6
G	Double end wrench 10-13mm, 17-24mm	2

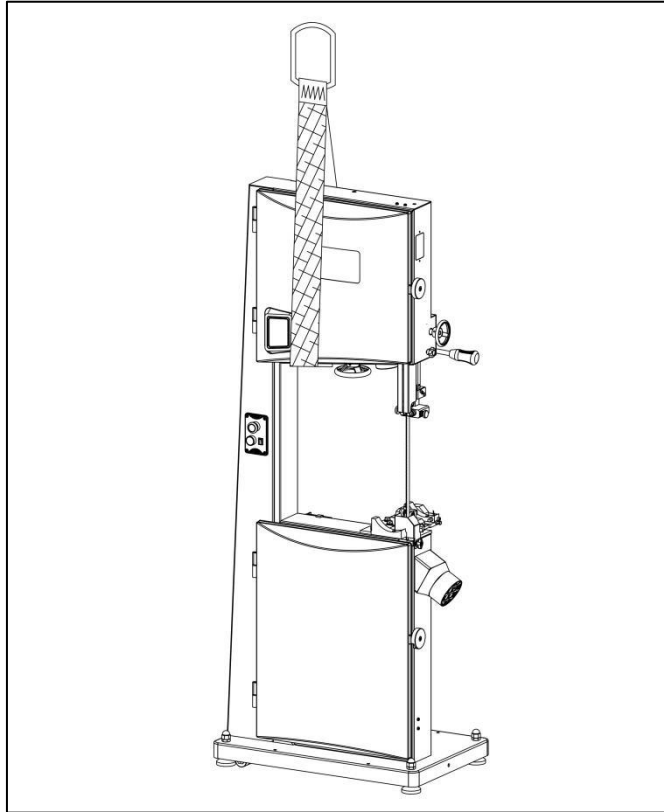
INSTALLATION

1. Moving and mounting the bandsaw

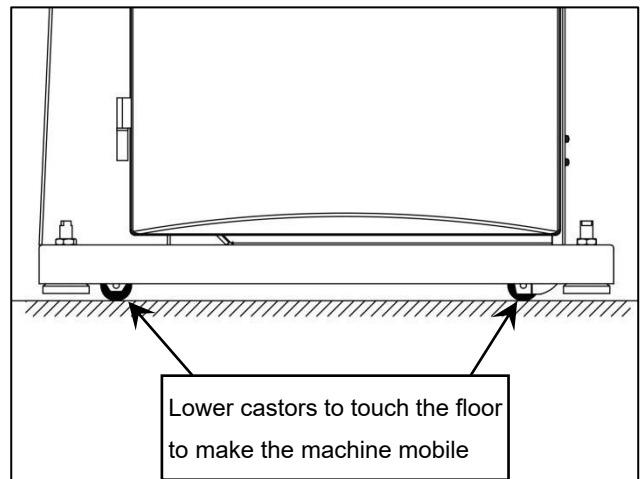
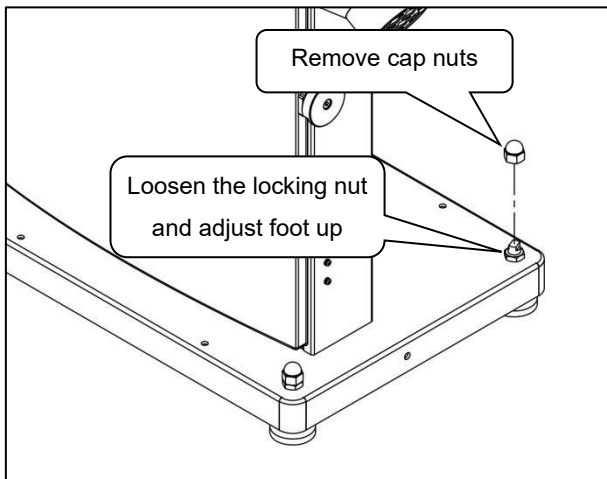
WARNING: This bandsaw is a heavy machine.

Serious personal injury may occur if safe moving methods are not used.

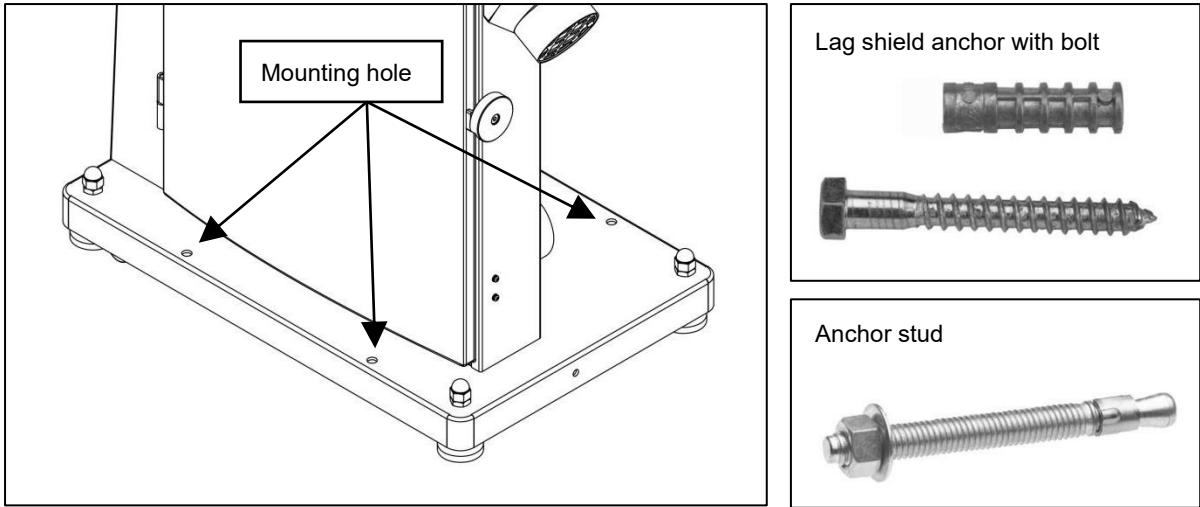
- Get assistance to remove the machine from the shipping box. Move the saw to its permanent working location. The site should be dry, well lit, and have enough room to handle long stock and servicing or adjustment of the machine from any side.
- The machine can be moved with lifting slings like the method shown in the figure below.



- For moving the machine in a small area, the machine is also equipped with casters under the base. Remove the four cap nuts and Loosen for locking nuts, adjust the four feet up to make all casters touching the floor. Then the machine can be moved using the casters. Once the machine has been placed in the desired position, adjust the four feet down to stabilize the machine and re tighten the four locking nuts and cap nuts.

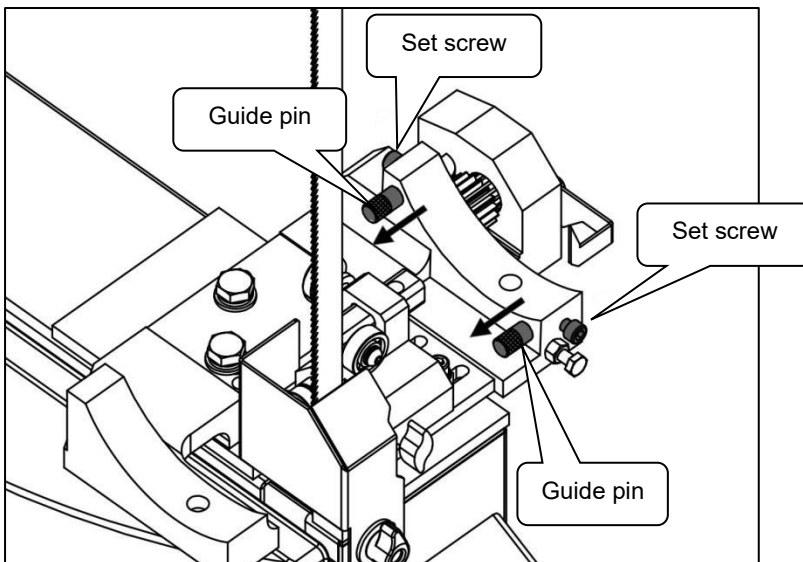


- To prevent the bandsaw from tipping over when in operation, mounting the bandsaw to the floor is recommended. There are four mounting holes on the base of machine. Through the mounting hole, using Lag shield anchors with lag bolts or anchor studs are two popular methods for anchoring an object to a concrete floor.

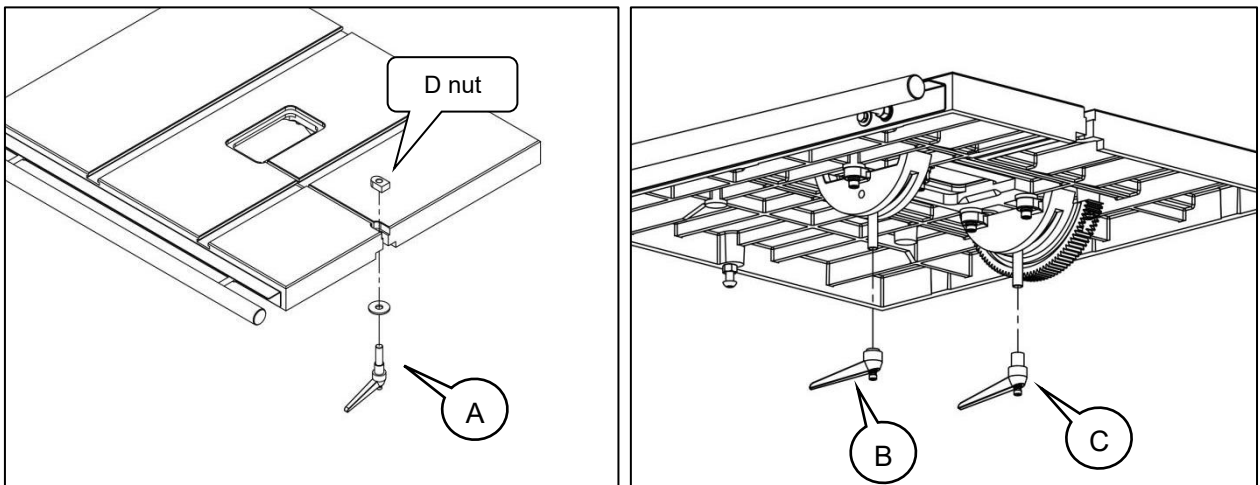


2. Install the table

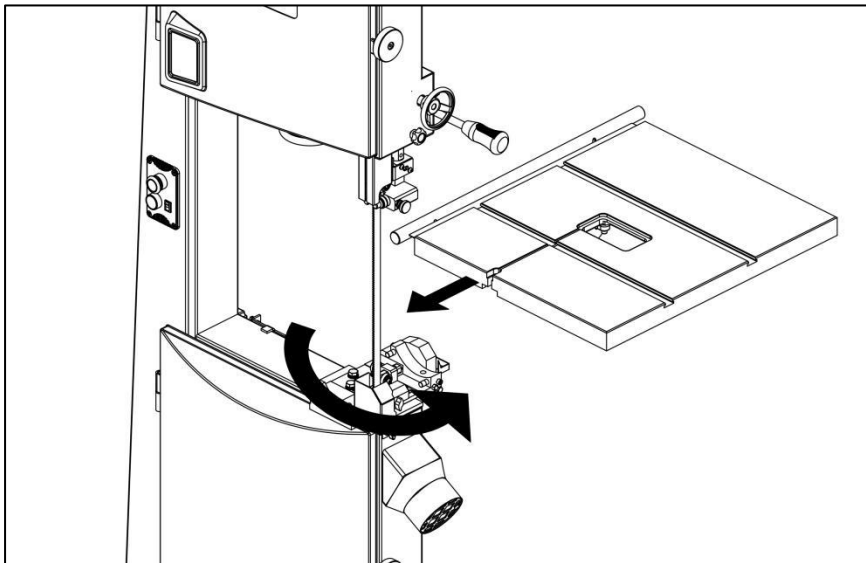
- Loosen the set screws on the table tilting base and pull the two guide pins to the outer position.



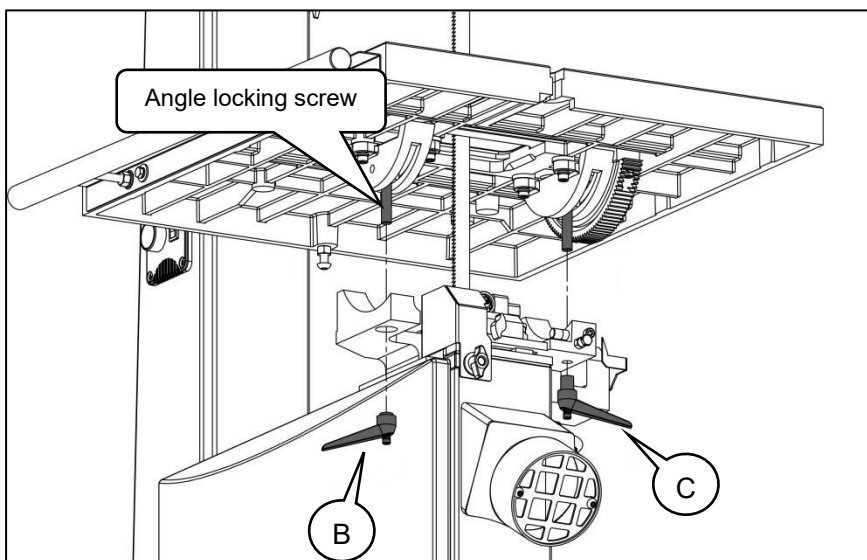
- Loosen and remove the locking handle **A**, flat washer and **D** nut from the table assembly.
- Remove the short locking handle **B** and long locking handle **C** from the bottom of the table tilting bracket.



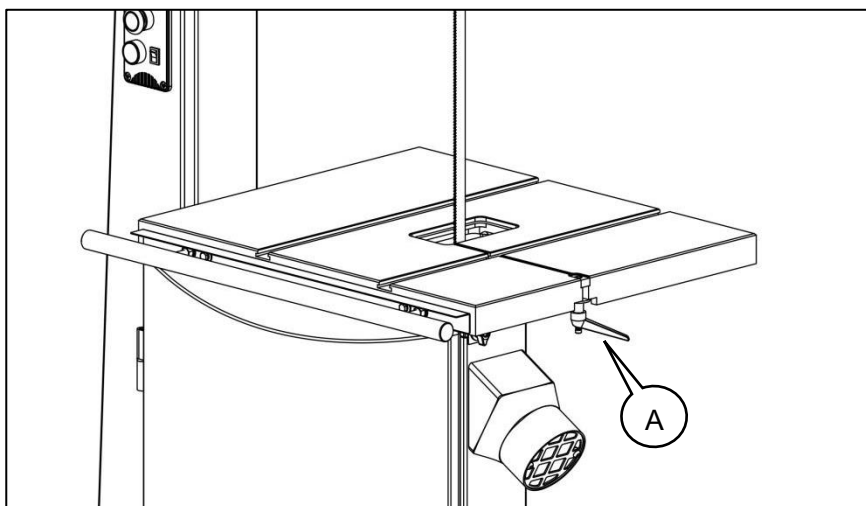
- Get assistance to slide table assembly so that the saw blade passes through the slot of table. When the saw blade reaches the rectangular hole in the center of the table, rotate the table assembly by 90 degrees according to the arrow.



- Pass the angle locking screws to the holes on the table tilting base, attach the table assembly to the tilting base, and secure the table by replacing the short locking handle **B** and long locking handle **C**.

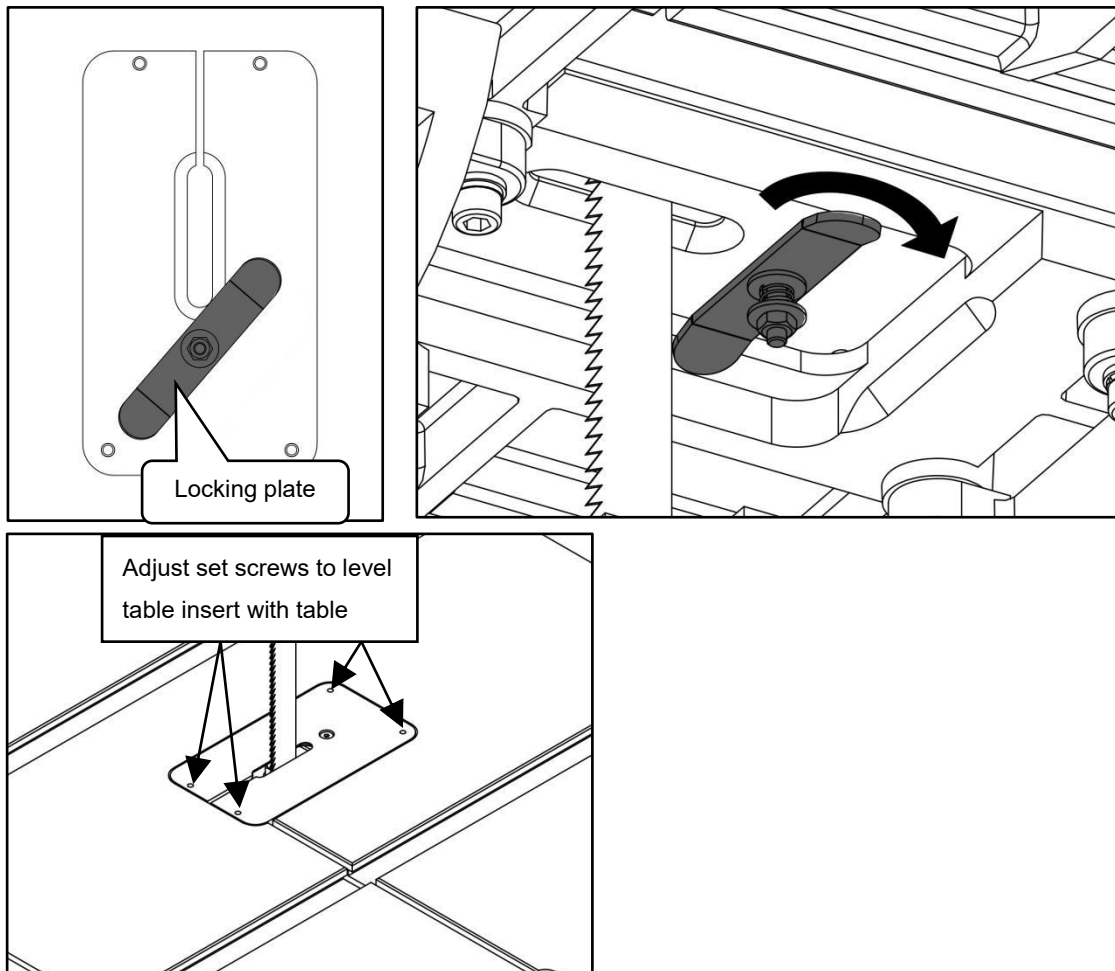


- Push the two guide pins to the inner position and secure them by retighten the set screws.
- Replace the locking handle **A**, flat washer and **D** nut to the table.



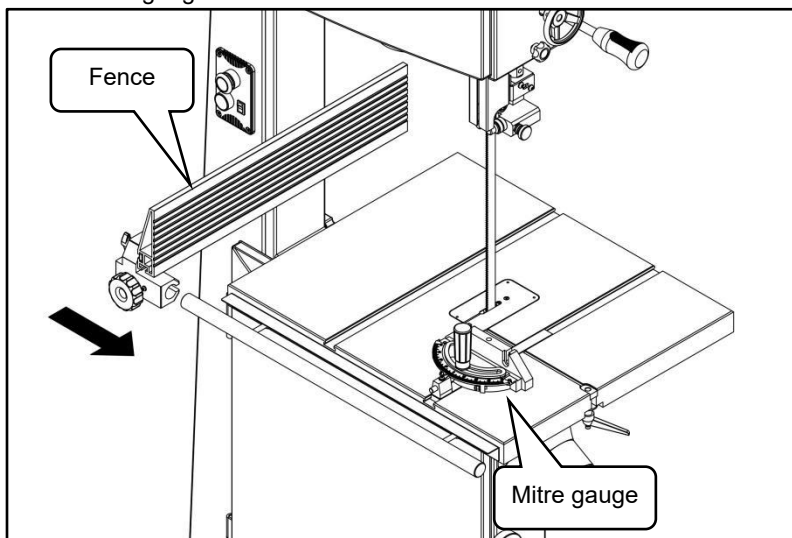
3. Attach the table insert

- Rotate the locking plate under the table insert to the angle shown in the following figure, and then install the table insert into the square hole in the center of the table.
- Pull down and rotate the locking plate to make it hook the table.
- Adjust the set screws at the four corners of the table insert to level the table insert with the table.



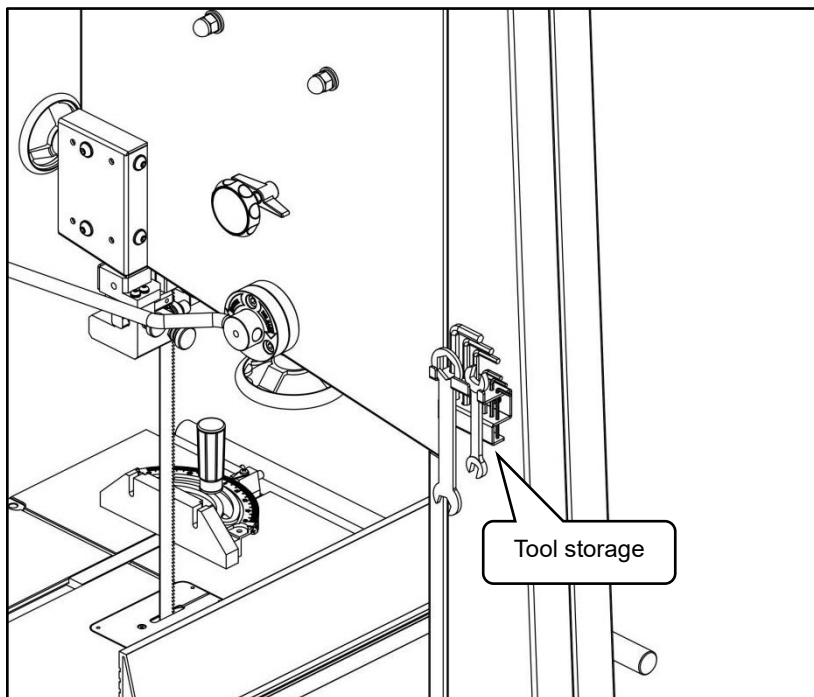
4. Attach the fence assembly and mitre gauge

- Slide the fence support bracket onto the guide, attach the fence assembly onto the table and secure it by tightening the lock knob.
- Slide the mitre gauge into table slot.



5. Attach tools onto the tool storage

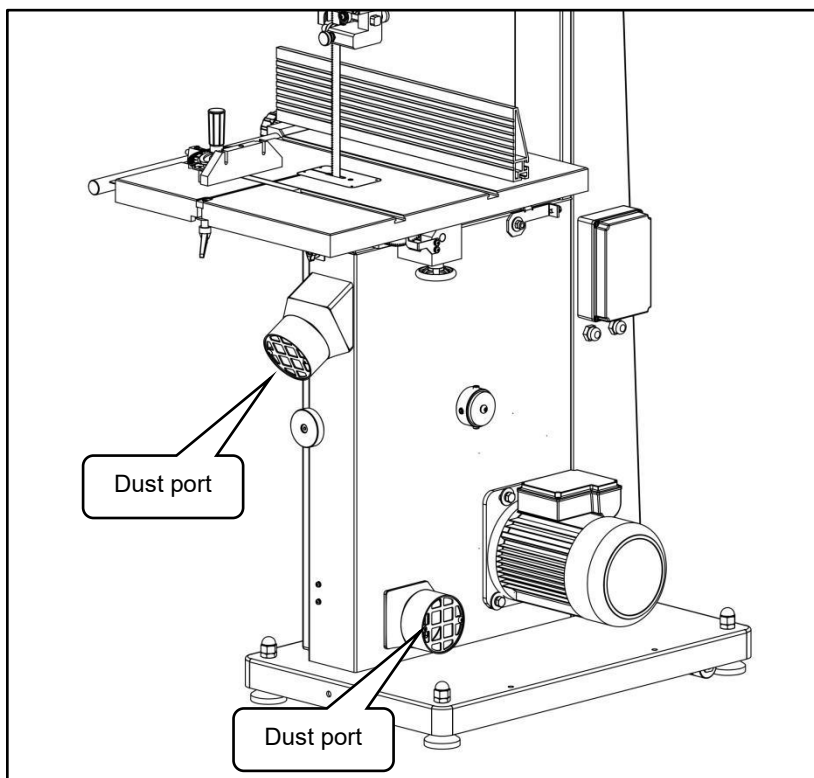
- The machine is equipped with six hex wrenches and two double-ended wrenches. They can be stored in the storage on the rear side of the machine.



6. Connecting to dust collection system

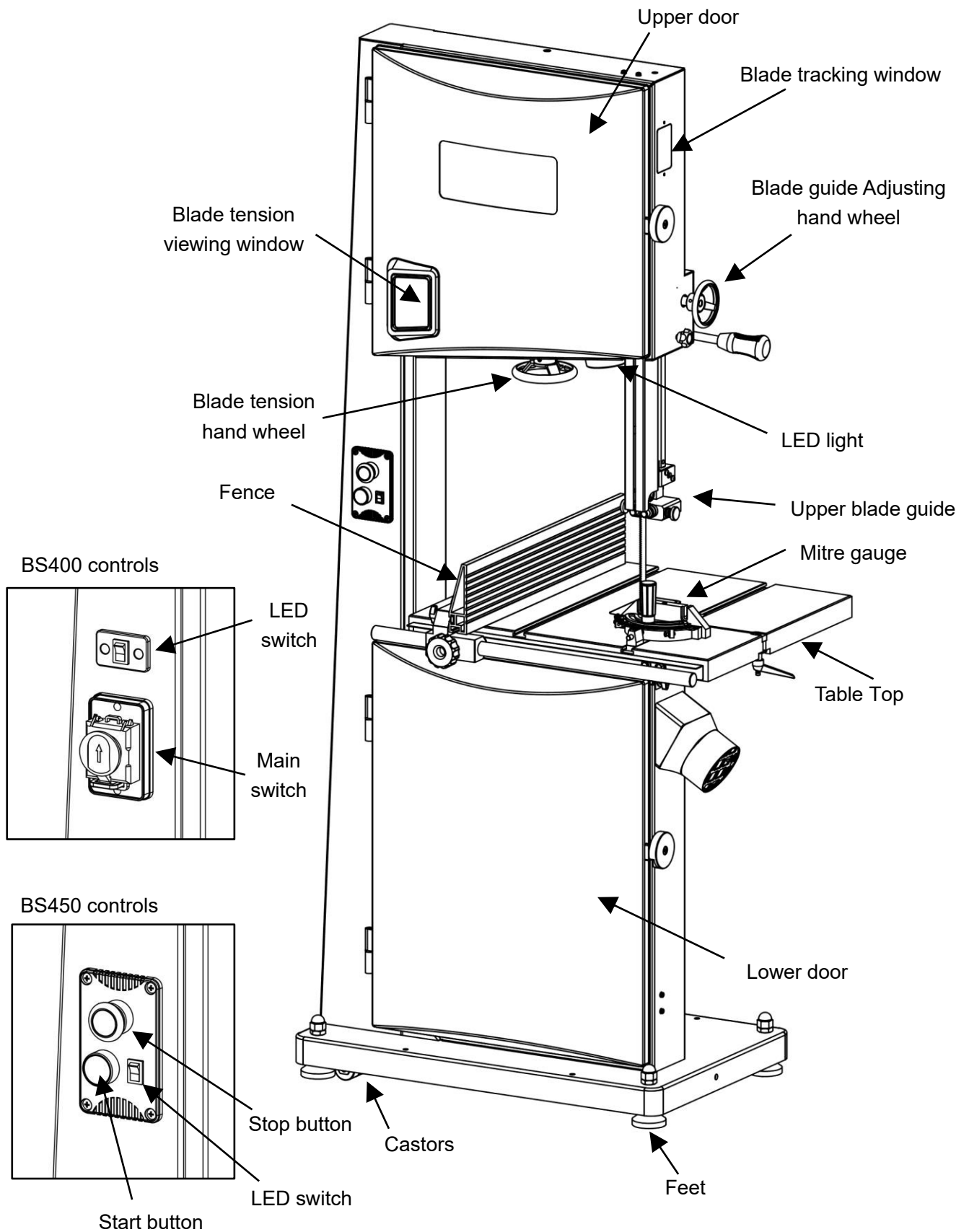
Warning: DO NOT operate this bandsaw without an adequate dust collection system.

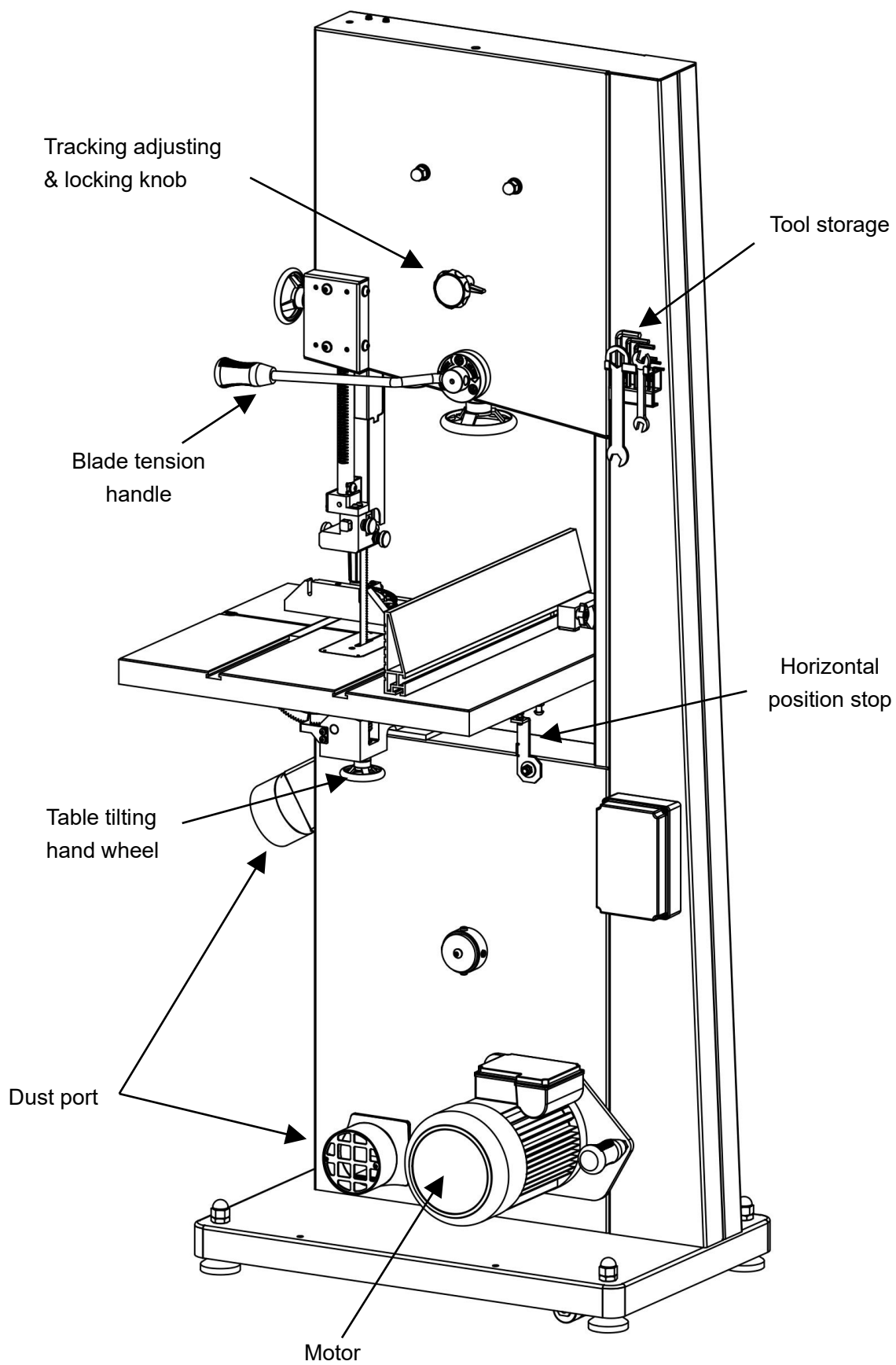
- The bandsaw provides two dust ports. It should be connected with dust collection system when operating the bandsaw.
- The recommended air suction capacity of dust collection system is 600 m³/h at least.



IDENTIFICATION

Become familiar with the names and locations of the controls and features shown below for better understand of this manual



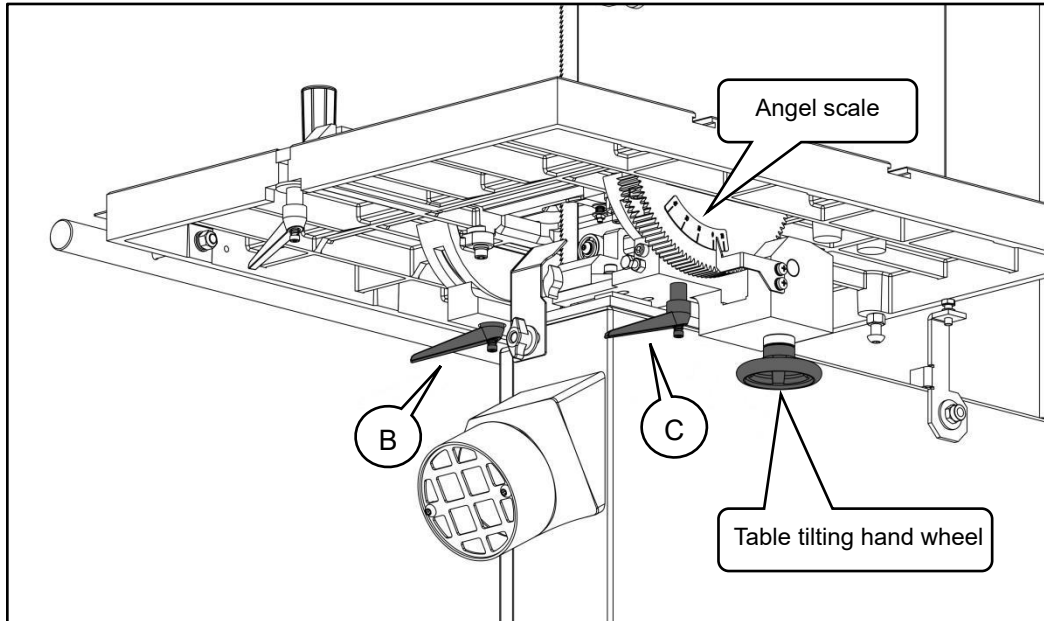


ADJUSTING

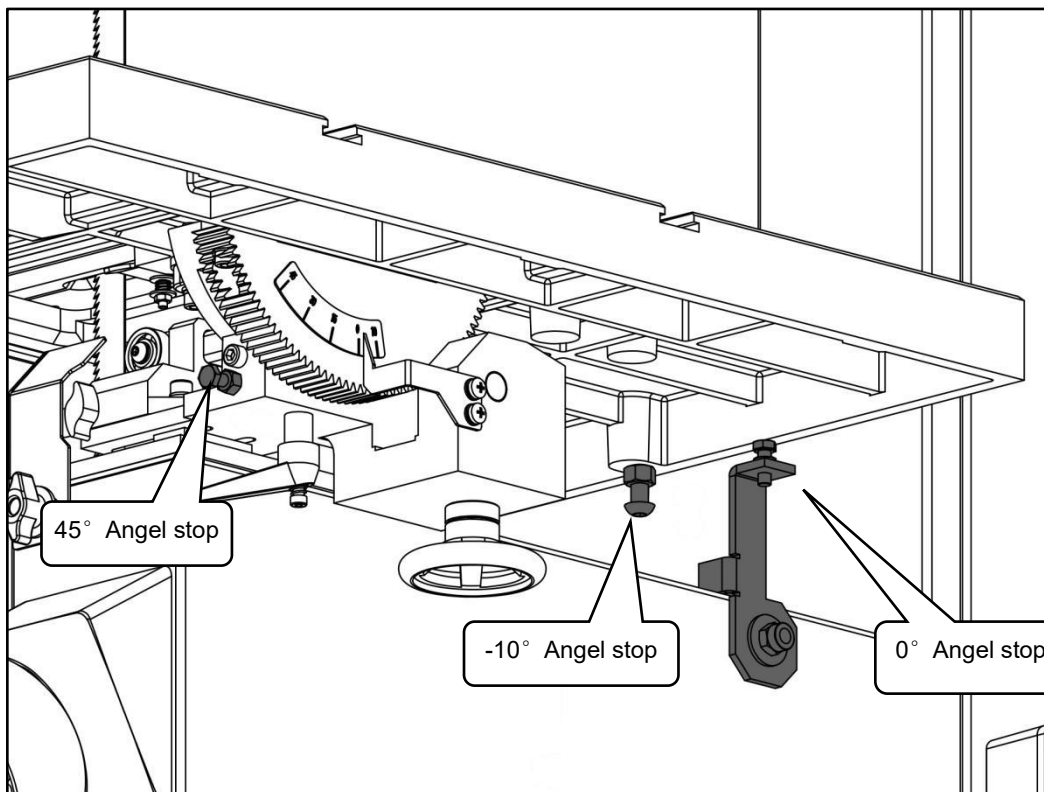
WARNING: Always be sure that the machine is switched off and unplugged before any adjustments.

1. Tilting table

- Loosen the short locking handle **B** and long locking handle **C**; rotate the table tilting hand wheel to adjust the table to the desired angle. Tighten the two locking handles to secure the table.



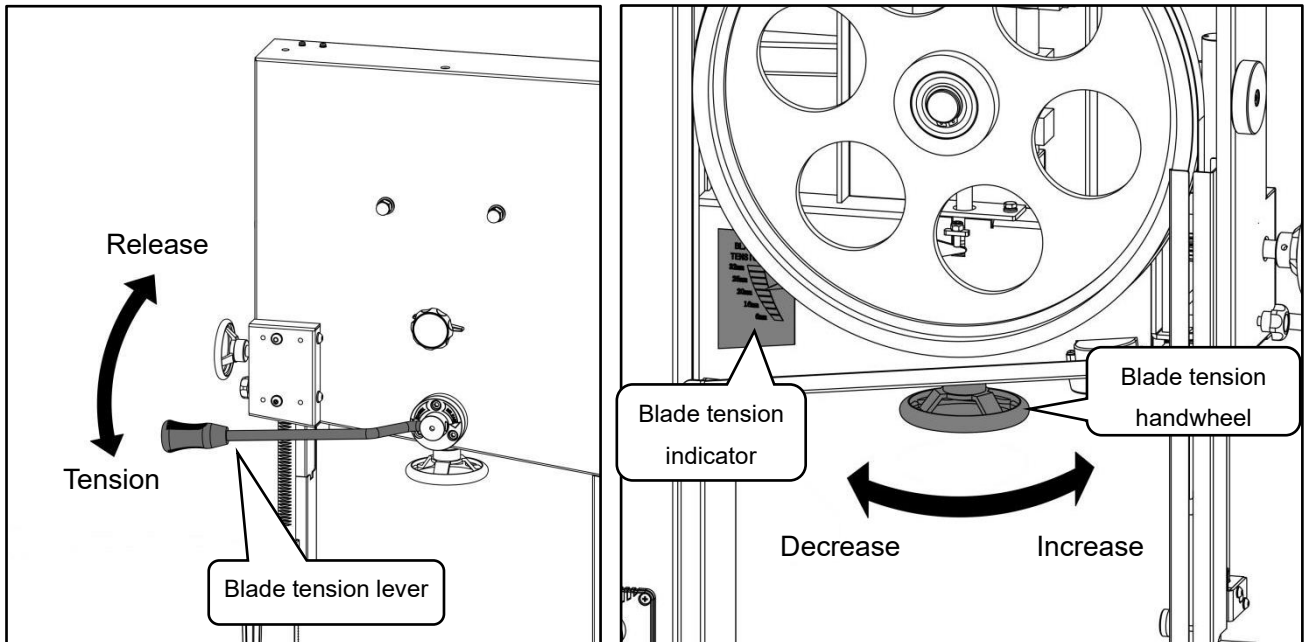
- The table has three preset angle positions, Use an angle gauge to check the accuracy of the preset angle positions and adjust the angle stop if necessary.



2. Adjusting the blade tension

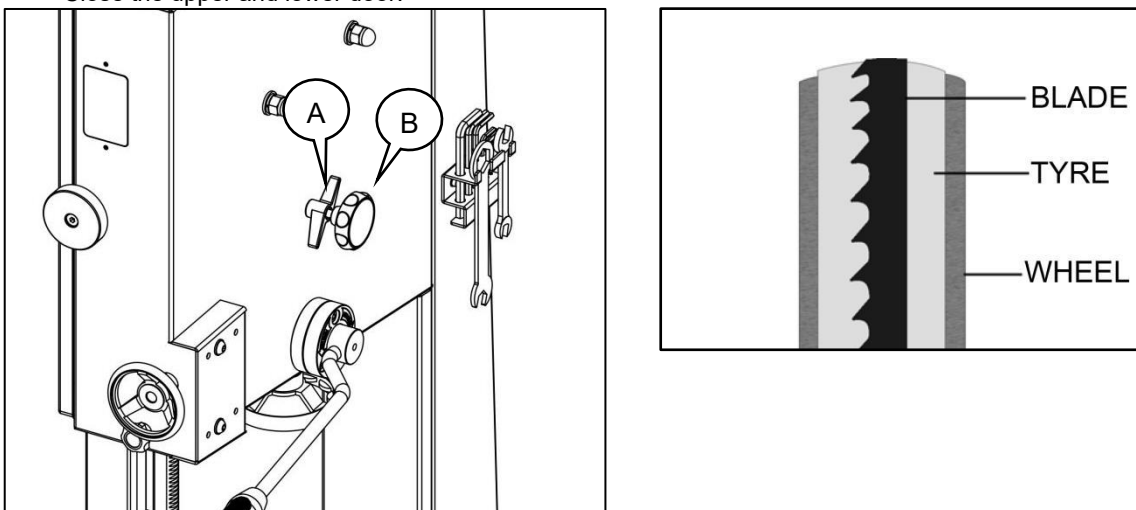
Warning: Too much tension can cause the bandsaw blade to break. Too little tension can cause the driven bandsaw wheel to slip and the saw blade to stop.

- Raise the upper blade guide fully, adjust the upper and lower guide bearings as far away from the blade as possible.
- Place tension lever in Full Tension position.
- The gauge indicates approximate tension according to the width of the blade. Initially, set the blade tension to correspond to the width of your blade.
- Turning the blade tension hand wheel will increase or decrease the blade tension.
- When the bandsaw is not being used, release the tension lever – this will prolong the blade's life.



3. Aligning the saw blade tracking

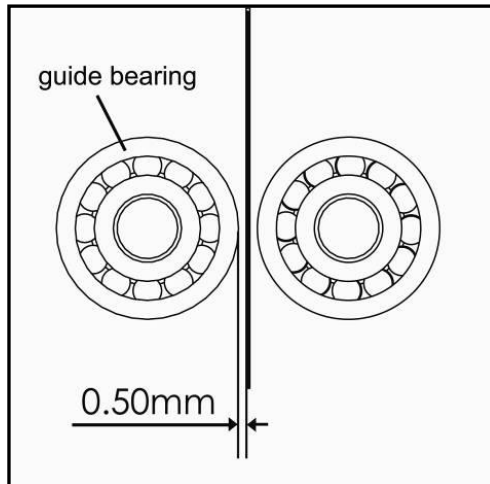
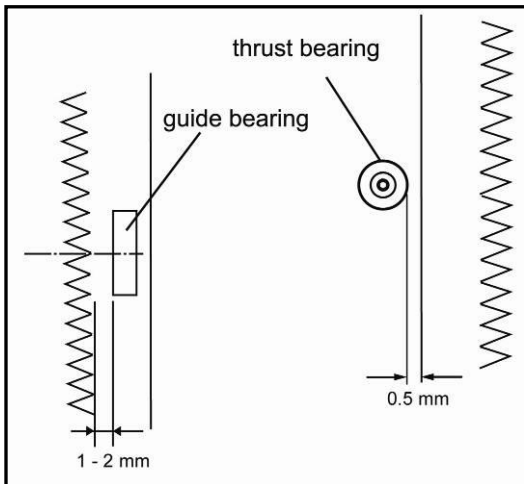
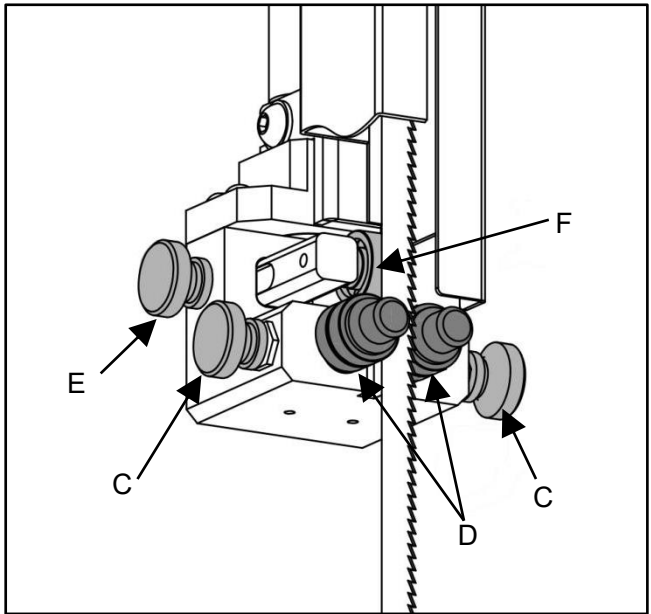
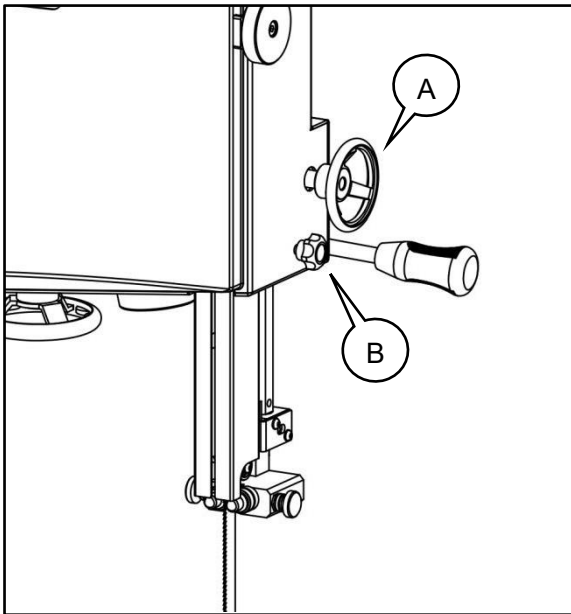
- If the saw blade does not run in the center of the rubber tyre, the tracking needs to be corrected by adjusting the tilt of the upper bandsaw wheel.
- Turn the lock knobs and open the upper and lower door.
- Turn idler wheel by hand and observe how the blade rides on the wheels.
- Loosen the locking knob **A** and Turn tracking knob **B** clockwise or anticlockwise until the saw blade tracks centered on the rubber tyre.
- After adjusting, re tighten locking knob **A**.
- Close the upper and lower door.



4. Upper blade guide adjustment

The height of blade guide needs to be adjusted: prior to every cutting/operation, to accommodate the height of work piece (the upper blade guide should be set approx. 3mm above the workpiece).

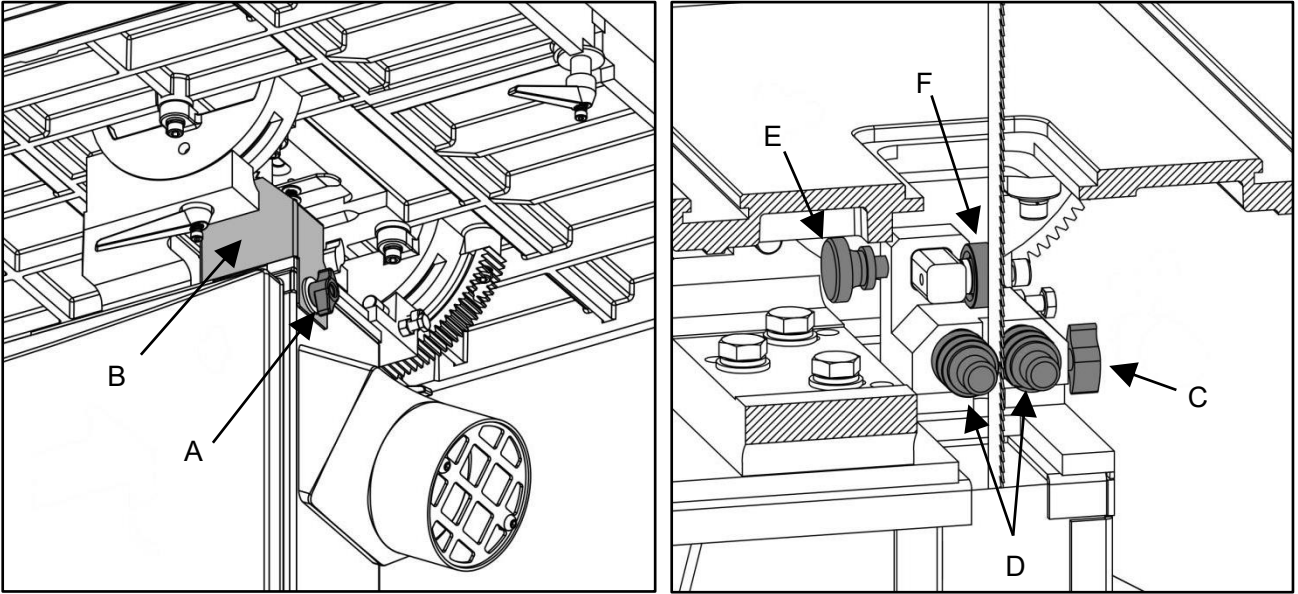
- Loosen the locking knob **B** and turn the hand wheel **A**, set upper blade guide to the desired height. After adjustment, be sure to tighten the lock knob **B**.
- Loosen the knurled head screws **C**, and adjust guide bearings **D**, so that guide bearings **D** are positioned 1 or 2mm from the bottom of the blade teeth and the distance from blade to guide bearings **D** is 0.5mm. Re tighten the knurled head screws **C**.
- Loosen the knurled head screw **E**, and adjust thrust bearing **F** to a position of 0.5mm from rear of blade. Re tighten the knurled head screw **E**.



5. Lower blade guide adjustment

The lower blade guide needs to be readjusted after every bandsaw blade change or tracking adjustment.

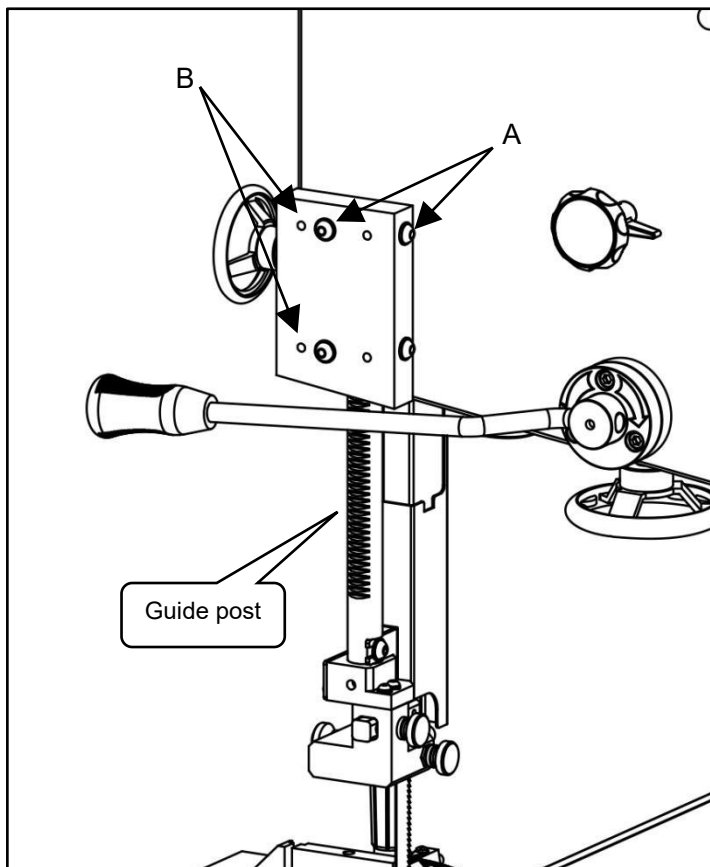
- Loosen and remove the knob screw **A**, shown the lower blade guide by remove the guard **B**.
- Remove the table insert assembly to view the lower blade guide adjustment.
- Loosen the handle screw **C**, and adjust guide bearings **D**, so that guide bearings **D** are positioned 1 or 2mm from the bottom of the blade teeth and the distance from blade to guide bearing **D** is 0.5mm. Re tighten the handle screw **C**.
- Loosen the knurled head screw **E**, and adjust trust bearing **F** to a position of 0.5mm from rear of blade. Retighten knurled head screw **E**.



6. Guide post parallelism

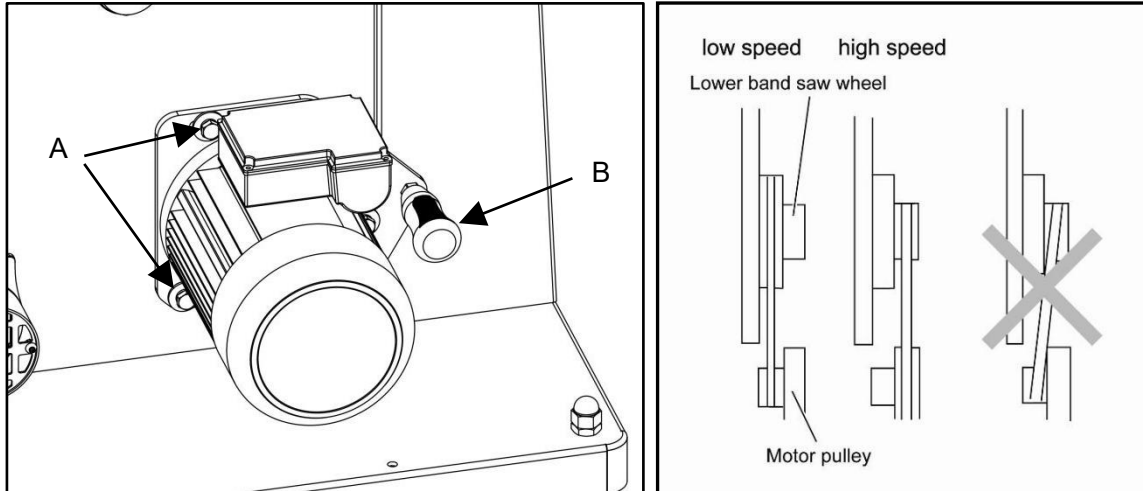
The guide post should be parallel to blade throughout vertical travel of the guide post. This setting has been accurately made by the manufacturer and should not require immediate attention, but may be checked in future as follows:

- Tension the blade.
- Confirm that guide post travels straight up and down, and guide bearings maintain their relationship to blade.
- If guide post does not go straight up and down, slightly loosen the four socket pan head screws **A** and adjust any of the four set screws **B** as needed to bring guide post into line.
- When finished adjusting, securely tighten the four socket pan head screws **A**.



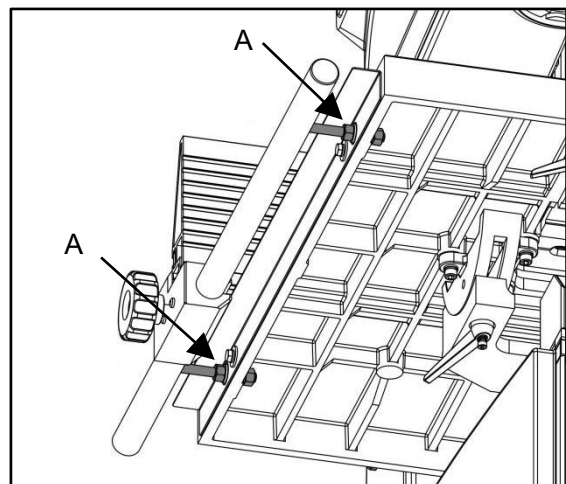
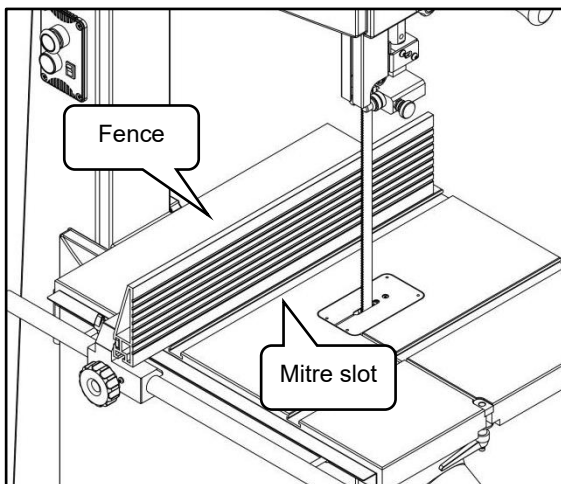
7. Cutting speed adjustment

- Open the lower door.
- Loosen three hex bolts **A** and lift up motor using handle **B** on rear side of the bandsaw.
- Reposition V-belt. Push down on handle to apply tension. Belt is properly tensioned when light pressure applied to midpoint of the belt produces about 10mm deflection.
- Tighten hex bolts to secure motor in position

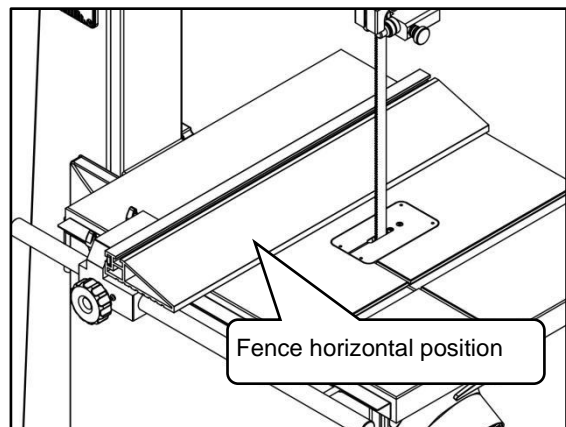


8. Fence adjustment

- Slide the fence against edge of mitre slot and tighten knob to lock position. The fence should align parallel to mitre slot along entire length of fence.
- If adjustment is needed, Loosen and rotate hex nuts **A** on guide rail studs as needed, until the fence is parallel to mitre slot. Tighten nuts on guide rail studs.



- The aluminum fence plate can be installed in one of two positions; vertically or horizontally as shown in the following figure. Horizontal position is useful for smaller workpieces.



OPERATIONS

Warning: to reduce the risk of personal injury, the following safety recommendations should be observed when operating the saw.

1. A complete operation generally consists of the following steps:

- Examine the workpiece to make sure it is suitable for cutting.
- Adjust the fence away from the blade the same width of the desired cut and then locks it in place.
- Adjust the table tilt, if necessary, to the correct angle of the desired cut.
- Adjust the upper blade guide assembly to the correct height.
- Check to make sure the workpiece can safely pass all the way through the blade without interference from other objects.
- Put on safety glasses.
- Start the dust collector and bandsaw.
- Hold the workpiece firmly and flatly against both the table and fence, and then pushes the workpiece into the blade at a steady and controlled rate until the workpiece moves completely beyond the blade.
The operator should be very careful to keep fingers away from the blade and uses a push stick to feed narrow workpieces.
- Stop the bandsaw.

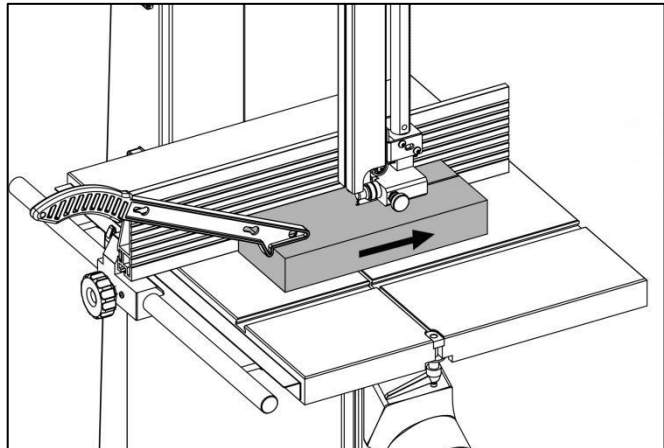
2. Ripping

Ripping is cutting lengthwise through the workpiece.

To make a rip cut:

- Adjust the fence to match the width of the cut on your workpiece and lock the fence in place.
- Adjust the blade guide assembly to the correct height.
- Turn the bandsaw **ON**, Slowly feed the workpiece into the blade and continue the cut until the blade is completely through the workpiece.

If you are cutting narrow pieces, use a push stick to protect your fingers.



3. Crosscutting

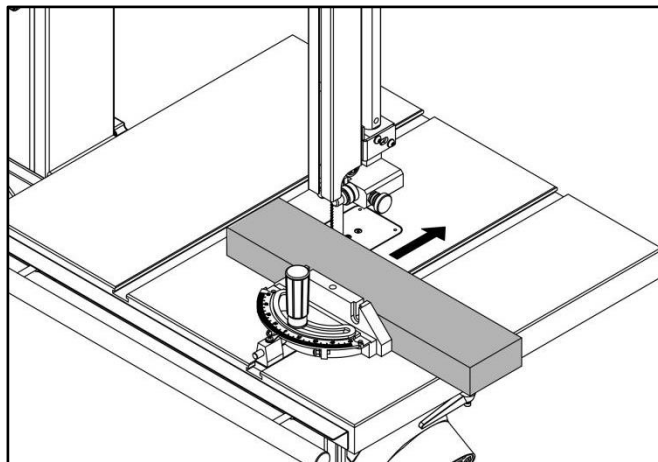
Crosscutting is cutting across the grain of the workpiece, while using the mitre gauge to feed the workpiece into the blade.

To make a crosscut:

- Move the fence out of the way.
- Place the workpiece evenly against the mitre gauge. Hold the workpiece against the mitre gauge.
- Turn the bandsaw **ON**, Slowly feed the workpiece into the blade and continue the cut until the blade is all the way through the workpiece.

Do not use the fence in conjunction with the mitre gauge.

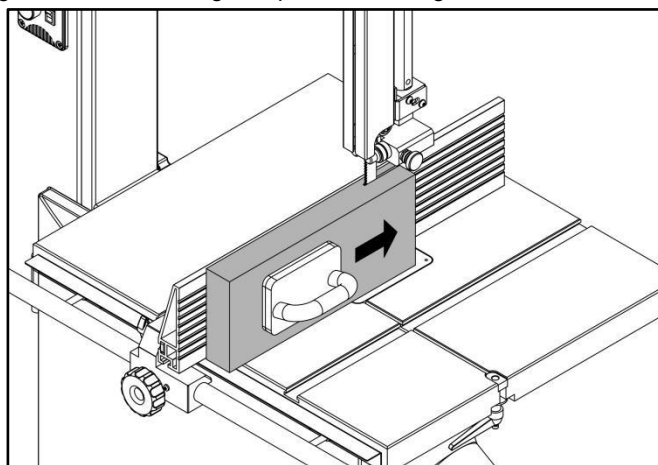
Using the fence in conjunction with the mitre gauge can cause binding and possible damage to the blade.



4. Resawing

Resawing is the process of slicing stock to reduce its thickness, or to produce boards that are thinner than the original workpiece.

The ideal blade for resawing is the widest one the machine can handle, as the wider the blade the better it can hold a straight line. When resawing thin stock, use a push block, push stick, or similar device to keep your hands away from the blade.



5. Cutting Curves

When cutting curves, simultaneously feed and urn the stock carefully so that the blade follows the layout line without twisting. If a curve is so abrupt that it is necessary to repeatedly back up and cut a new kerf, use either a narrower blade or a blade with more TPI (teeth per inch).

The following list shows the recommended blade widths and the minimum radius corresponding to those blade widths.

Blade width	Cutting radius
1/8" (3mm)	1/8" (3mm)
3/16" (5mm)	3/8" (5mm)
1/4" (6.5mm)	5/8" (16mm)
3/8" (9.5mm)	1-1/4" (32mm)
1/2" (13mm)	2-1/2" (63.5mm)
5/8" (16mm)	3-3/4" (95mm)
3/4" (19mm)	5-1/2" (140mm)

6. Saw blade selection

Using the correct blade for the job will increase the operating efficiency of your bandsaw, help reduce necessary saw maintenance, and improve your productivity. It is important to follow certain guidelines when selecting a saw blade.

Here are factors to consider when selecting a blade:

- The type of material you will be cutting.
- The thickness of the workpiece .
- The features of the workpiece, such as bends or curves with small radius.

Blade Features

1. Width

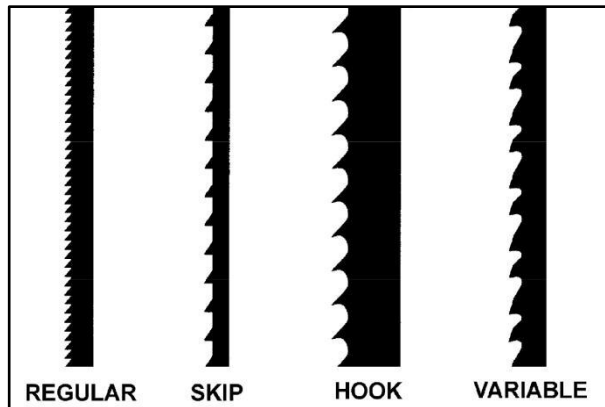
Bandsaw blades come in different standard widths, measured from the back of the blade to the tip of the tooth. Generally, wider blades are used for ripping or making straight cuts; narrower blades are often used when the part being cut has curves with small radii. When cutting straight lines with a narrow blade, the blade may have a tendency to wander, causing blade lead.

2. Pitch (number of teeth per inch)

Pitch is measured in "teeth per inch" (TPI). A fine pitch (more teeth per inch) will cut more slowly but smoother. A coarse pitch (fewer teeth per inch) will cut rougher but faster. As a rule of thumb, the thicker the workpiece, the coarser will be the blade pitch. If you have to cut a hard or very brittle material, you will probably want to use a blade with a finer pitch in order to get good clean cuts.

3. Tooth form (or shape)

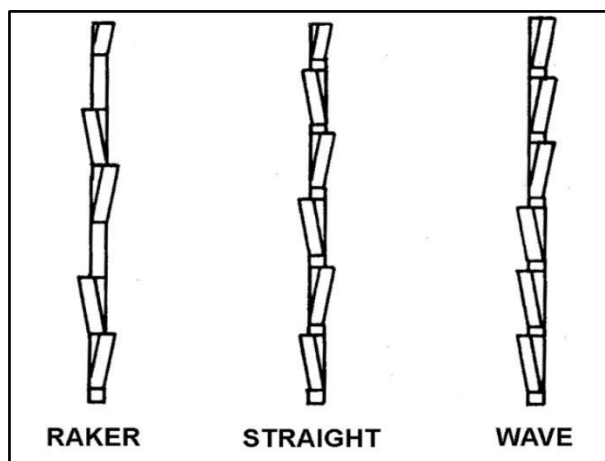
Tooth shape has an effect on cutting rate, and with few exceptions, the Skip and Hook types are used to obtain higher feed rates when cutting thick workpieces. Variable-tooth blades are also available, which combine features of the other styles.



4. The "set" of the teeth

The term "set" refers to the way in which the saw teeth are bent or positioned. Set patterns are usually selected depending on the type of material that needs to be cut.

Generally, The Straight set is most often preferred when cutting wood or plastics.



5. The blade material itself.

Bandsaw blades can be made from different types of materials. Some of the most common include spring steel, carbon steel, carbon steel equipped with a high speed or welded edge (bi-metal), or carbide tips. Follow the saw manufacturer's instructions on which material to choose for your saw blade.

TROUBLESHOOTING

Trouble	Possible Cause	Solution
Saw stops or will not start	Saw unplugged	Check plug connections
	Door safety switch disengaged/at fault.	Close door or adjust/replace switch.
	Thermal overload relay tripped.	Allow relay/motor to cool.
	Break or short in wiring; or loose or corroded connections.	Trace/replace broken or corroded wires; fix loose connections.
	Power supply switched off/has incorrect voltage.	Switch power supply on/verify voltage.
	Contactor has poor contacts or is at fault.	Test all legs for power, test field coil, and fix contacts or replace if at fault.
	Blown fuse/tripped circuit breaker.	Replace/reset fuse or circuit breaker.
	Switch at fault	Replace switch
	Start capacitor has blown.	Test/replace if at fault.
	Motor at fault.	Repair or replace.
Machine has excessive vibration or noise	V-belt tension incorrect	Tighten V-belt
	Bent / dull / damaged blade	Replace blade
	Loose blade	Tighten
	Blade weld contacting support bearing or blade guides	Use file or stone to smooth and round the back of the blade
	Machine incorrectly mounted on floor	Level the machine base; adjust mounting feet.
	Motor fan rubbing on fan cover	Replace fan cover; replace loose or damaged fan.
	V-belt worn or damaged	Replace the V-belt
	Pulley loose or not in alignment	Replace worn pulley key and realign
	Worn wheel bearing	Check/replace wheel bearing.
	Wheels out of balance.	Replace wheels
Motor bearings worn or damaged.	Replace motor bearings or replace motor.	
Machine stalls or slows when operating.	Too much pressure when feeding workpiece.	Reduce pressure when feeding workpiece.
	Workpiece is warped	Straighten workpiece
	Fence incorrectly adjusted.	Adjust/calibrate fence.
	Belt slipping.	Tension/replace belt(s); ensure pulleys are aligned.
	Motor overheated.	Let cool, clean motor, and reduce workload.
	Contactor has poor contacts or is at fault.	Test all legs for power, test field coil, and fix contacts or replace if at fault.
	Motor at fault.	Repair or replace.

Trouble	Possible Cause	Solution
The cuts are rough, or show scoring.	Blade is overloaded and twists.	Decrease the feed rate.
	The blade TPI is too coarse.	Use the correct blade for material and speed of cut.
	The blade is loose and slipping on wheels.	Adjust bade tension as required.
	Blade tracking is incorrect.	Adjust the blade tracking back to normal.
	The blade has missing or bent teeth.	Replace the blade.
	The blade has a faulty weld.	Replace the blade.
Blade or teeth break.	Blade tension is incorrect.	Adjust blade tension.
	Incorrect blade for application.	Use correct blade for application.
	The feed is too heavy or blade speed is wrong.	Reduce feed rate or increase blade speed.
	Blade tracking is wrong.	Adjust the blade tracking back to normal.
	Blade guide adjustment at fault.	Adjust blade guide bearings for correct blade support.
	Blade weld at fault.	Replace the blade.
	Fence or mitre slot out of alignment with blade.	Align table mitre slot and fence with blade.
Blade tracks incorrectly or comes off wheels.	Tracking is not adjusted properly.	Adjust tracking.
	Blade tension is too loose.	Increase blade tension.
	Blade guides need adjustment.	Adjust blade guides.
	Feeding workpiece too fast.	Feed workpiece slower.
	Blade is bell-mouthed, worn or dull.	Replace the blade.
The cut is crooked or the blade wanders (blade lead).	The feed pressure is too high or the blade speed is wrong.	Adjust feed rate and cutting speed as required.
	Blade tension is too loose.	Increase blade tension.
	Inadequate blade support.	Adjust upper blade guide so it is as close as possible to workpiece.
	Incorrect blade for application.	Use wider blade.
	Tracking is not adjusted properly.	Adjust tracking.
	Table is loose.	Tighten table locking handle.
	Fence or mitre slot out of alignment with blade.	Align table mitre slot and fence with blade.
	Blade guides need adjustment.	Adjust blade guides bearings for correct blade support.

MAINTENANCE

Warning! Always be sure the machine is switched off and disconnected the plug from the power supply before inspection and maintenance

- **BLADE CHANGES**

All saw blades are dangerous and may cause personal injury. To reduce the risk of being injured, wear leather gloves when handling saw blades.

Open the upper and lower door.

Loose the locking handle **A**, remove the locking hand **A**, flat washer and D nut from the table.

Loose the knob **B**, remove the knob **B**, flat washer and the guard **C**.

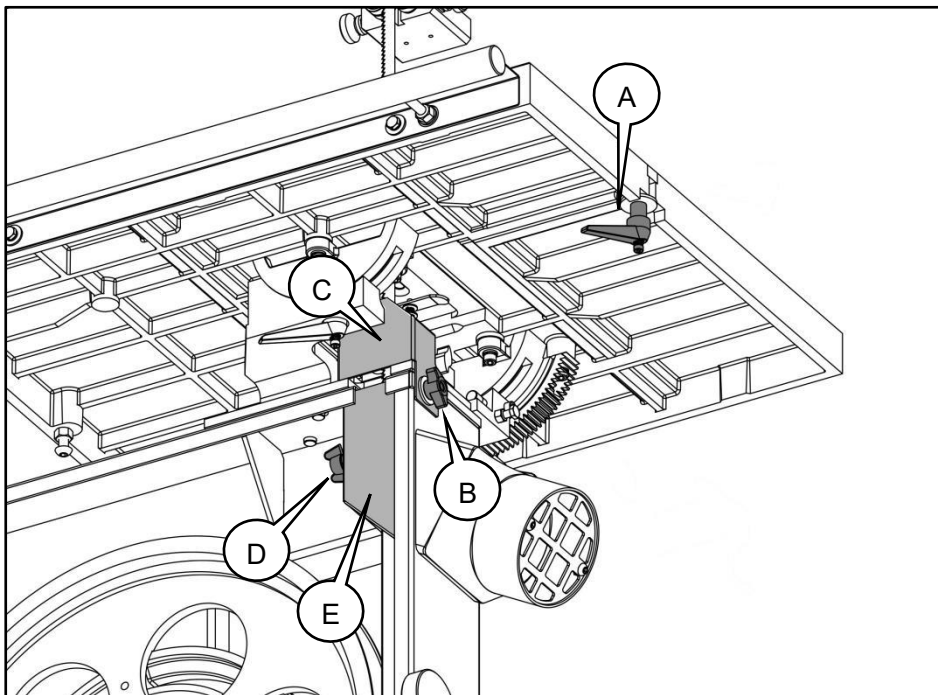
Loose the knob **D**, remove the knob **D** and cover **E**.

Release the blade tension handle.

Remove the table insert and adjust the upper and lower guide bearings as far away as possible from the blade.

Slide the blade off of both wheels, rotate the blade 90° and slide it through the table slot out.

Install a new blade in reverse steps, adjust blade tension, blade tracking and blade guiding.



- **FREQUENT INSPECTION**

The bandsaw should be inspected frequently.

The cord, in-lead, plug and switch should be inspected whether be in good condition.

Whether there is any damage on the drive part.

- **CLEANING**

Clean out sawdust and chips from time to time. Carefully clean the blade guard and moving parts inside the bandsaw.

- **LUBRICATION**

To keep the bandsaw in tip-top running condition, and to assure maximum service life, oil or grease the moving parts sand rotating parts from time to time.

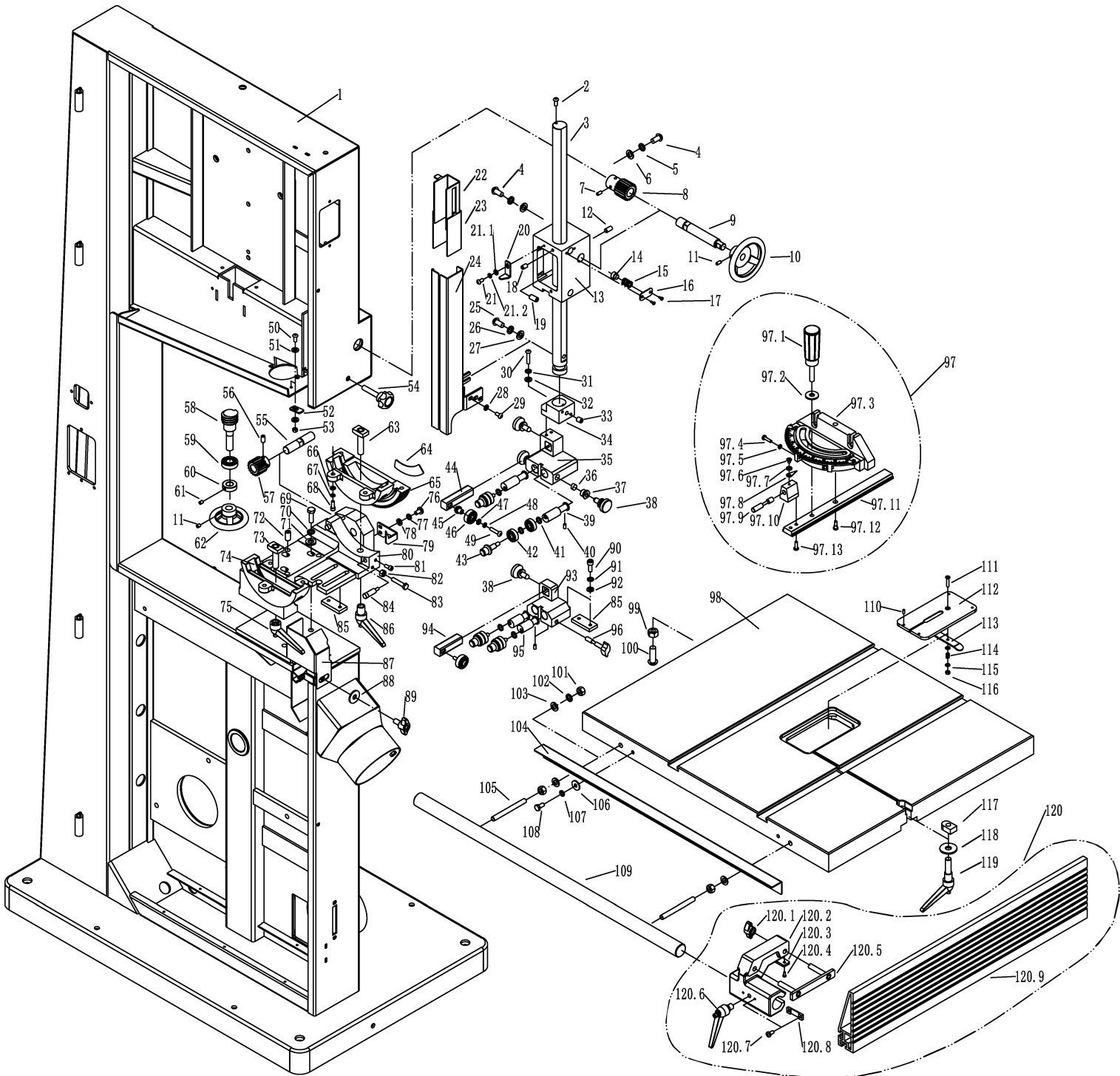
To reduce the emitted noise, always be sure that the blade is sharp and clean.

- **KEEP IN STORAGE**

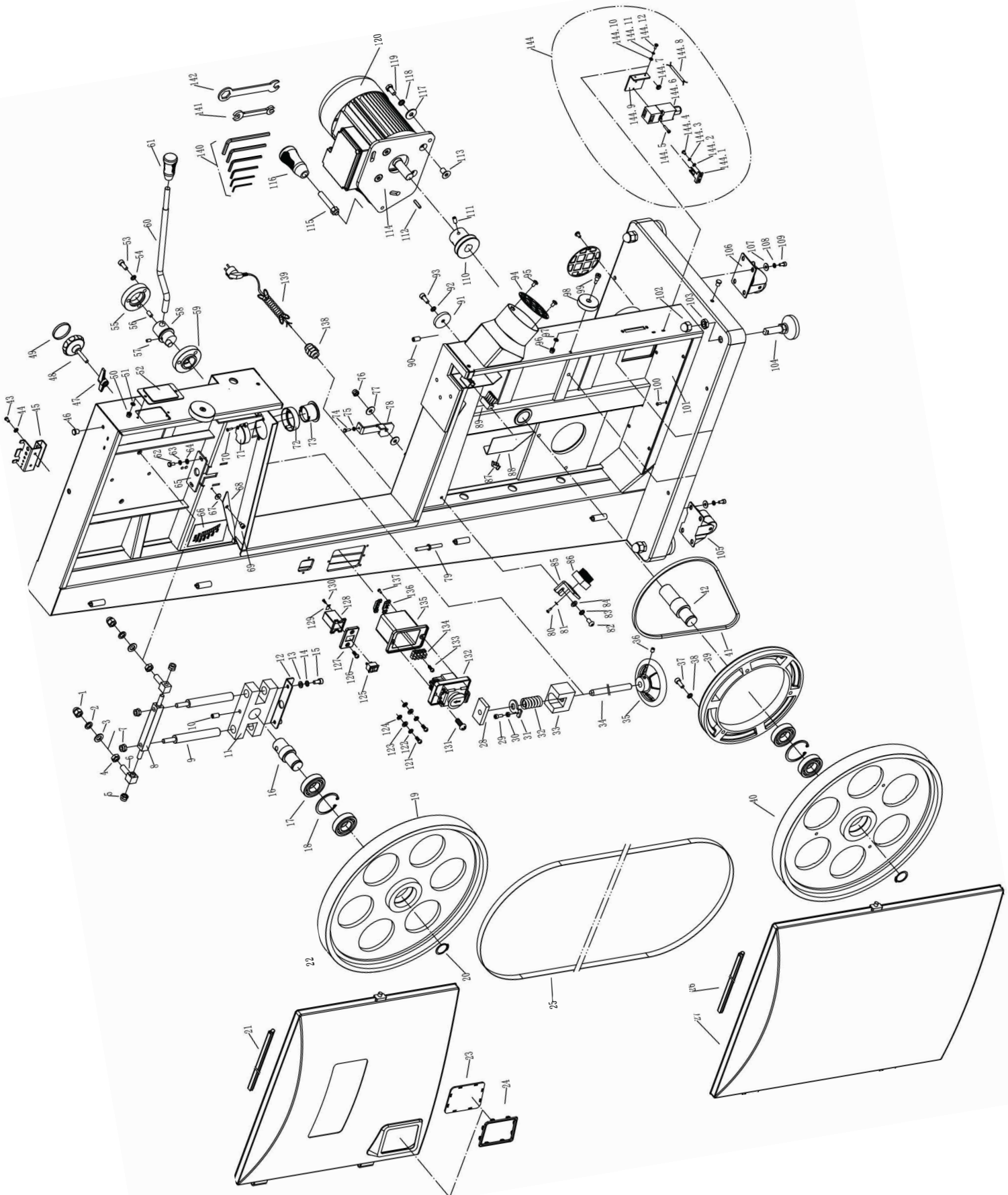
The bandsaw should be kept at dry clean and non-corrosive environment.

Assembly Diagram

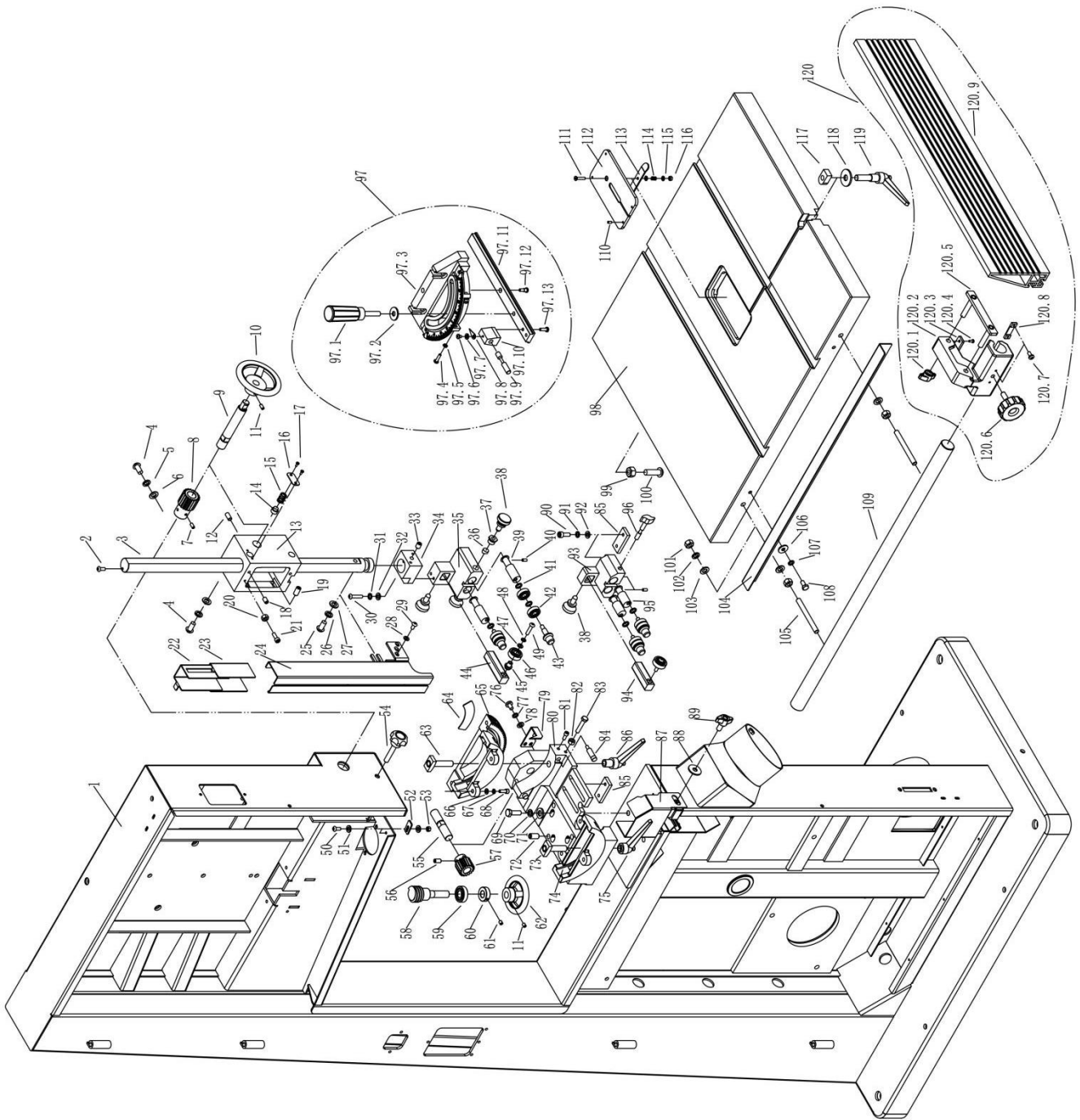
BS400 A



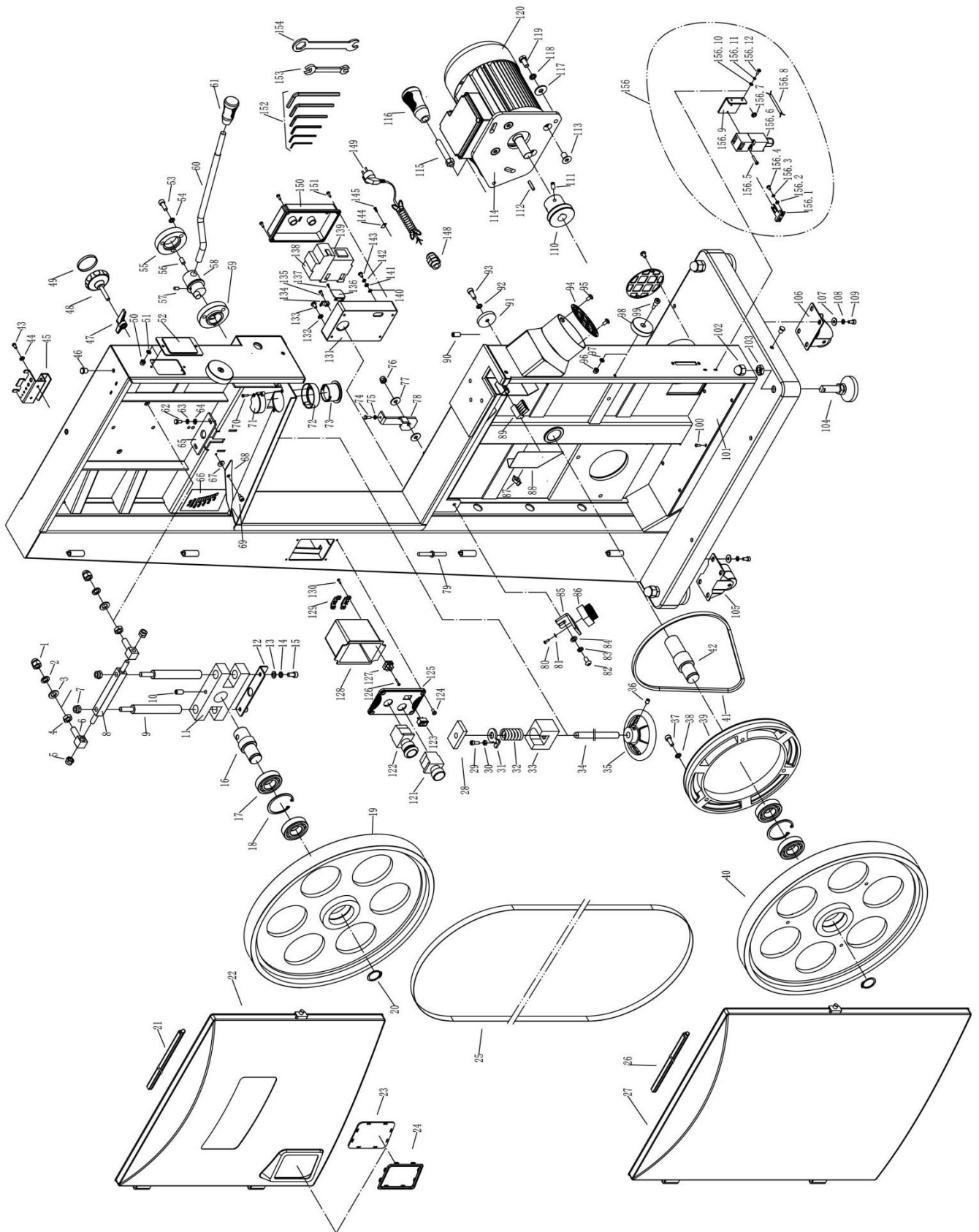
BS400 PART B



BS450 PART A



BS450 PART B



BS400 PARTS LIST A

NO	Description	Q' TY
1	Frame	1
2	Socket head screw M5X10	1
3	Rack	1
4	Socket pan head screw M8X25	4
5	Lock washer 8mm	4
6	Flat washer 8mm	4
7	Set screw M5X6	2
8	Pinion	1
9	Shaft	1
10	Upper guide adjusting handwheel	1
11	Set screw M6X10	2
12	Set screw M6X10	4
13	Rack mounting bracket	1
14	Press rod	1
15	Spring	1
16	Cover plate	1
17	Flat head screw M4X10	2
18	Nylon set screw M8X10	2
19	Set screw M8X16	2
20	limit plate	1
21	Socket head screw M5X12	1
21.1	Flat washer 5mm	1
21.2	Lock washer 5mm	1
22	Inner extension guard	1
23	Middle extension guard	1
24	Upper blade guard	1
25	Socket pan head screw M8X16	1
26	Lock washer 8mm	1
27	Flat washer 8mm	1
28	Flat washer 5mm	2
29	Socket pan head screw M5X12	2
30	Socket pan head screw M5X20	2
31	Lock washer 5mm	2
32	Flat washer 5mm	2
33	Set screw M8X10	2
34	Connection block	1
35	Upper guide bracket	1
36	Mini press block	2
37	Threaded bushing	2
38	Locking knob	4
39	Eccentric shaft	2
40	Set screw M4X6	4
41	Flat washer	8
42	Ball bearing 608-2RS	8
43	Adjusting knob	4
44	Sliding bar	1
45	Bearing mounting rod	2
46	Ball bearing 628-2RS	2
47	Flat washer 5mm	2
48	Lock washer 5mm	2
49	Socket pan head screw M5X25	2
50	Socket pan head screw M5X12	1
51	Flat washer 5mm	2
52	Limit plate	1
53	Lock nut M5	1
54	Locking knob	1
55	Gear shaft	1
56	Set screw M5X6	2
57	Gear	1
58	Worm shaft	1
59	Ball bearing 6001-2RS	1
60	Bushing	1
61	Set screw M5X6	1
62	Blade tension handwheel	1
63	Angle locking screw	1
64	Angle scale	1
65	Rear tilting bracket	1
66	Flat washer 6mm	7

67	Lock washer 6mm	7
68	Socket head screw M6X20	7
69	Hex head bolt M10X40	3
70	Lock washer 10mm	3
71	Flat washer 10mm	3
72	Set screw M10X16	3
73	Angle locking screw	1
74	Front tilting bracket	1
75	Front locking handle	1
76	Pan head screw M5X10	2
77	Lock washer 5mm	2
78	Flat washer 5mm	2
79	Angle pointer	1
80	Table tilting base	1
81	Socket head screw M6X12	2
82	Hex nut M6	1
83	Hex head bolt M6X20	1
84	Limit pin	2
85	Locking plate	1
86	Rear locking handle	1
87	Lower blade guard	1
88	Flat washer 8mm	1
89	Wing screw	1
90	Socket head screw M6X25	2
91	Lock washer 6mm	2
92	Flat washer 6mm	2
93	Lower guide bracket	1
94	Sliding bar	1
95	Eccentric shaft	2
96	Locking shaft	1
97	Mitre gauge assembly	1
97.1	Knob	1
97.2	Flat washer 8mm	1
97.3	Mitre gauge	1
97.4	Pan head screw M4X16	3
97.5	Hex nut M4	3
97.6	Pan head screw M4X10	1
97.7	Flat washer 4mm	1
97.8	Pointer	1
97.9	Pin	1
97.10	Pin mounting bracket	1
97.11	T slider	1
97.12	Center pin	1
97.13	Pan head screw M4X12	2
98	Table	1
99	Hex nut M8	1
100	Socket pan head screw M8X25	1
101	Hex nut M8	4
102	Lock washer 8mm	2
103	Flat washer 8mm	4
104	Scale mounting plate	1
105	Screw	2
106	Flat washer 6mm	2
107	Lock washer 6mm	2
108	Hex head bolt M6X12	2
109	Cylindrical guide	1
110	Set screw M4X4	4
111	Flat head screw M4X25	1
112	Table insert	1
113	Locking plate	1
114	Spring	1
115	Flat washer 4mm	2
116	Lock nut M4	1
117	Nut	1
118	Flat washer 10mm	1
119	Locking handle	1
120	Fence assembly	1
120.1	Wing nut	2
120.2	Fence mounting base	1
120.3	Spacer	1
120.4	Flat head screw M4X10	2
120.5	Fence locking plate	1
120.6	Locking knob	1
120.7	Pan head screw M4X10	2
120.8	Copper press plate	1
120.9	Fence	1

BS400 PARTS LIST B

NO	Description	Q' TY
1	Acorn nut M12	2
2	Lock washer 12mm	2
3	Flat washer 12mm	2
4	Hex nut M12	2
5	Lock nut M10	2
6	Bevel support rod	2
7	Lock nut M10	2
8	Bevel shaft	1
9	Guide rod	2
10	Set screw M10X16	1
11	Wheel mounting bracket	1
12	Connection plate	1
13	Flat washer 8mm	2
14	Lock washer 8mm	2
15	Socket head screw M8X16	2
16	Upper wheel shaft	1
17	Ball bearing 6206-2RS	4
18	Internal retaining ring 62mm	2
19	Upper wheel	1
20	External retaining ring 30mm	2
21	Sealing strip	1.9m
22	Upper wheel cover	1
23	Viewing window	1
24	Window case	1
25	Blade	1
26	Sealing strip	2.4m
27	Lower wheel cover	1
28	Support plate	1
29	Socket head screw M6X20	1
30	Hex nut M6	1
31	Pointer link plate	1
32	Spring	1
33	Spring support bracket	1
34	Tension screw	1
35	Blade tension handwheel	1
36	Set screw M8X10	1
37	Socket head screw M8X25	3
38	Lock washer 8mm	3
39A	Wheel pulley	1
40	Lower wheel	1
41	V belt	1
42	Lower wheel shaft	1
43	Socket head screw M5X10	2
44	Flat washer 5mm	2
45	Tool storage	1
46	Plug	1
47	Tracking lock knob	1
48	Tracking adjusting knob	1
49	Knob cover	1
50	Lock nut M5	2
51	Flat washer 5mm	2
52	Viewing window	1
53	Socket head screw M8X30	3
54	Lock washer 8mm	3
55	Cam out cover	1
56	Set screw M8X6	1
57	Pin	1
58	Cam	1
59	Cam mounting case	1
60	Handle	1

61	Handle cap	1
62	Hex head bolt M6X12	2
63	Lock washer 6mm	2
64	Flat washer 6mm	2
65	Cover plate	1
66	Blade tension scale	1
67	Flat washer	1
68	Blade tension indicator	1
69	Shoulder screw	1
70	Self-tapping screw	2
71	Light back cover	1
72	Light mounting bracket	1
73	Led light	1
74	Hex head bolt M6X16	1
75	Hex nut M6	1
76	Lock nut M8	1
77	Flat washer 8mm	2
78	Angle stop plate	1
79	Hinge shaft	4
80	Self-tapping screw	2
81	Flat washer 4mm	2
82	Socket pan head screw M8X16	1
83	Lock washer 8mm	1
84	Flat washer 8mm	1
85	Brush mounting plate	1
86	Brush	1
87	Knob	1
88	Cover	1
89	Brush	1
90	Set screw M10X16	4
91	Washer	1
92	Lock washer 8mm	1
93	Socket pan head screw M8X20	1
94	Dust export cover	2
95	Socket pan head screw M6X10	4
96	Lock nut M6	2
97	Flat washer 6mm	2
98	Door locking knob	2
99	Shoulder screw	2
100	Socket pan head screw M4X8	5
101	Cord cover plate	1
102	Acorn nut M16	4
103	Hex nut M16	4
104	Foot	4
105	Directional caster	2
106	Swivel caster	1
107	Flat washer 6mm	12
108	Lock washer 6mm	12
109	Socket head screw M6X12	12
110A	Motor pulley	1
111	Set screw M8X10	2
112	Key 6X6X35mm	1
113	Flat head screw M10X20	4
114	Motor mounting plate	1
115	Handle	1
116	Handle cap	1
117	Flat washer 10mm	3
118	Lock washer 10mm	3
119	Hex head bolt M10X25	3
120	Motor	1

121	Strain relief	2
121	Pan head screw M4X12	2
122	Lock washer	2
123	Flat washer	2
124	Serrated washer	2
125	Light switch	1
126	Pan head screw M4X12	2
127	Switch mounting plate	1
128	Switch mounting box	1
129	Cord clamp	1
130	Self-tapping screw	1
131	Pan head screw M4X12	2
132	Switch	1
133	Self-tapping screw	1
134	Terminal block	1
135	Switch box	1
136	Cord clamp	2
137	Self-tapping screw	4
138	Strain relief	2
139	Power cord	1
140	Hex wrench	1
141	Open-end wrench 10-13mm	1
142	Combination wrench 17-24mm	1
144	Interlock switch assembly	1
144.1	Switch key	2
144.2	Flat washer 4mm	4
144.3	Lock washer 4mm	4
144.4	Pan head screw M4X10	4
144.5	Socket head screw M4X27	4
144.6	Interlock switch	2
144.7	Rubber bushing	2
144.8	Inner wire	2
144.9	Switch mounting plate	2
144.10	Flat washer 4mm	4
144.11	Lock washer 4mm	4
144.12	Pan head screw M4X10	4

BS450 PARTS LIST A

NO	Description	Q' TY	61	Description	1	111	Description	1
1	Frame	1	62	Blade tension handwheel	1	112	Table insert	1
2	Socket head screw M5X10	1	63	Angle locking screw	1	113	Locking plate	1
3	Rack	1	64	Angle scale	1	114	Spring	1
4	Socket pan head screw M8X25	4	65	Rear tilting bracket	1	115	Flat washer 4mm	2
5	Lock washer 8mm	4	66	Flat washer 6mm	7	116	Lock nut M4	1
6	Flat washer 8mm	4	67	Lock washer 6mm	7	117	Nut	1
7	Set screw M5X6	2	68	Socket head screw M6X20	7	118	Flat washer 10mm	1
8	Pinion	1	69	Hex head bolt M10X40	3	119	Locking handle	1
9	Shaft	1	70	Lock washer 10mm	3	120	Fence assembly	1
10	Upper guide adjusting handwheel	1	71	Flat washer 10mm	3	120.1	Wing nut	2
11	Set screw M6X8	2	72	Set screw M10X16	3	120.2	Fence mounting base	1
12	Set screw M6X10	4	73	Angle locking screw	1	120.3	Spacer	1
13	Rack mounting bracket	1	74	Front tilting bracket	1	120.4	Flat head screw M4X10	2
14	Press rod	1	75	Front locking handle	1	120.5	Fence locking plate	1
15	Spring	1	76	Pan head screw M5X10	2	120.6	Locking knob	1
16	Cover plate	1	77	Lock washer 5mm	2	120.7	Pan head screw M4X10	2
17	Flat head screw M4X10	2	78	Flat washer 5mm	2	120.8	Copper press plate	1
18	Nylon set screw M8X10	2	79	Angle pointer	1	120.9	Fence	1
19	Set screw M8X16	2	80	Table tilting base	1			
20	Hex nut M5	1	81	Socket head screw M6X12	2			
21	Socket head screw M5X20	1	82	Hex nut M6	1			
22	Inner extension guard	1	83	Hex head bolt M6X20	1			
23	Middle extension guard	1	84	Limit pin	2			
24	Upper blade guard	1	85	Locking plate	1			
25	Socket pan head screw M8X16	1	86	Rear locking handle	1			
26	Lock washer 8mm	1	87	Lower blade guard	1			
27	Flat washer 8mm	1	88	Flat washer 8mm	1			
28	Flat washer 8mm	2	89	Wing screw	1			
29	Socket pan head screw M5X12	2	90	Socket head screw M6X25	2			
30	Socket pan head screw M5X20	2	91	Lock washer 6mm	2			
31	Lock washer 5mm	2	92	Flat washer 6mm	2			
32	Flat washer 5mm	2	93	Lower guide bracket	1			
33	Set screw M8X10	2	94	Sliding bar	1			
34	Connection block	1	95	Eccentric shaft	2			
35	Upper guide bracket	1	96	Locking shaft	1			
36	Mini press block	2	97	Mitre gauge assembly	1			
37	Threaded bushing	2	97.1	Knob	1			
38	Locking knob	4	97.2	Flat washer 8mm	1			
39	Eccentric shaft	2	97.3	Mitre gauge	1			
40	Set screw M4X6	4	97.4	Pan head screw M4X16	3			
41	Flat washer	8	97.5	Hex nut M4	3			
42	Ball bearing 608-2RS	8	97.6	Pan head screw M4X10	1			
43	Adjusting knob	4	97.7	Flat washer 4mm	1			
44	Sliding bar	1	97.8	Pointer	1			
45	Bearing mounting rod	2	97.9	Pin	1			
46	Ball bearing 628-2RS	2	97.10	Pin mounting bracket	1			
47	Flat washer 5mm	2	97.11	T slider	1			
48	Lock washer 5mm	2	97.12	Center pin	1			
49	Socket pan head screw M5X25	2	97.13	Pan head screw M4X12	2			
50	Socket pan head screw M5X12	1	98	Table	1			
51	Flat washer 5mm	2	99	Hex nut M8	1			
52	Limit plate	1	100	Socket pan head screw M8X25	1			
53	Lock nut M5	1	101	Hex nut M8	4			
54	Locking knob	1	102	Lock washer 8mm	2			
55	Gear shaft	1	103	Flat washer 8mm	4			
56	Set screw M5X6	2	104	Scale mounting plate	1			
57	Gear	1	105	Screw	2			
58	Worm shaft	1	106	Flat washer 6mm	2			
59	Ball bearing 6001-2RS	1	107	Lock washer 6mm	2			
60	Bushing	1	108	Hex head bolt M6X12	2			
			109	Cylindrical guide	1			
			110	Set screw M4X4	4			

BS450 PARTS LIST B

NO	Description	Q' TY	62	Hex head bolt M6X12	2	111	Set screw M8X10	2
1	Acorn nut M12	2	63	Lock washer 6mm	2	112	Key 6X6X35mm	1
2	Lock washer 12mm	2	64	Flat washer 6mm	2	113	Flat head screw M10X20	4
3	Flat washer 12mm	2	65	Cover plate	1	114	Motor mounting plate	1
4	Hex nut M12	2	66	Blade tension scale	1	115	Handle	1
5	Lock nut M10	2	67	Flat washer	1	116	Handle cap	1
6	Bevel support rod	2	68	Blade tension indicator	1	117	Flat washer 10mm	3
7	Lock nut M10	2	69	Shoulder screw	1	118	Lock washer 10mm	3
8	Bevel shaft	1	70	Self-tapping screw	2	119	Hex head bolt M10X25	3
9	Guide rod	2	71	Light back cover	1	120	Motor	1
10	Set screw M10X16	1	72	Light mounting bracket	1	121	Start button	1
11	Wheel mounting bracket	1	73	Led light	1	122	Stop button	1
12	Connection plate	1	74	Hex head bolt M6X16	1	123	Light switch	1
13	Flat washer 8mm	2	75	Hex nut M6	1	124	Pan head screw M5X10	4
14	Lock washer 8mm	2	76	Lock nut M8	1	125	Switch mounting plate	1
15	Socket head screw M8X10	2	77	Flat washer 8mm	2	126	Self-tapping screw	1
16	Upper wheel shaft	1	78	Angle stop plate	1	127	Terminal block	1
17	Ball bearing 6206-2RS	4	79	Hinge shaft	4	128	Switch box	1
18	Internal retaining ring 62mm	2	80	Self-tapping screw	2	129	Cord clamp	2
19	Upper wheel	1	81	Flat washer 4mm	2	130	Self-tapping screw	4
20	External retaining ring 30mm	2	82	Socket pan head screw M8X16	1	131	Electrical box	1
21	Sealing strip	2.2m	83	Lock washer 8mm	1	132	Flat washer 5mm	4
22	Upper wheel cover	1	84	Flat washer 8mm	1	133	Pan head screw M5X10	4
23	Viewing window	1	85	Brush mounting plate	1	134	Cord clamp	2
24	Window case	1	86	Brush	1	135	Self-tapping screw	2
25	Blade	1	87	Knob	1	136	Support plate	1
26	Sealing strip	2.5m	88	Cover	1	137	Self-tapping screw	2
27	Lower wheel cover	1	89	Brush	1	138	Overload relay	1
28	Support plate	1	90	Set screw M10X16	4	139	Contactors	1
29	Socket head screw M6X20	1	91	Washer	1	140	Serrated washer	2
30	Hex nut M6	1	92	Lock washer 8mm	1	141	Flat washer	2
31	Pointer link plate	1	93	Socket pan head screw M8X20	1	142	Lock washer	2
32	Spring	1	94	Dust export cover	2	143	Pan head screw M5X10	2
33	Spring support bracket	1	95	Socket pan head screw M6X10	4	144	Cord clamp	1
34	Tension screw	1	96	Lock nut M6	2	145	Self-tapping screw	1
35	Blade tension handwheel	1	97	Flat washer 6mm	2	148	Strain relief	2
36	Set screw M8X16	1	98	Door locking knob	2	149	Power cord	1
37	Socket head screw M8X25	3	99	Shoulder screw	2	150	Electrical box cover	1
38	Lock washer 8mm	3	100	Socket pan head screw M4X8	5	151	Self-tapping screw	4
39	Wheel pulley	1	101	Cord cover plate	1	152	Hex wrench	1
40	Lower wheel	1	102	Acorn nut M16	4	153	Open-end wrench 10-13mm	1
41	V belt	1	103	Hex nut M16	4	154	Combination wrench 17-24mm	1
42	Lower wheel shaft	1	104	Foot	4	156	Interlock switch assembly	1
43	Socket head screw M5X10	2	105	Directional caster	2	156.1	Switch key	2
44	Flat washer 5mm	2	106	Swivel caster	1	156.2	Flat washer 4mm	4
45	Tool storage	1	107	Flat washer 6mm	12	156.3	Lock washer 4mm	4
46	Plug	1	108	Lock washer 6mm	12	156.4	Pan head screw M4X10	4
47	Tracking lock knob	1	109	Socket head screw M6X12	12	156.5	Socket head screw M4X27	4
48	Tracking adjusting knob	1	110	Motor pulley	1	156.6	Interlock switch	2
49	Knob cover	1				156.7	Rubber bushing	2
50	Lock nut M5	2				156.8	Inner wire	2
51	Flat washer 5mm	2				156.9	Switch mounting plate	2
52	Viewing window	1				156.10	Flat washer 4mm	4
53	Socket head screw M8X30	3				156.11	Lock washer 4mm	4
54	Lock washer 8mm	3				156.12	Pan head screw M4X10	4
55	Cam out cover	1						
56	Set screw M8X6	1						
57	Pin	1						
58	Cam	1						
59	Cam mounting case	1						
60	Handle	1						
61	Handle cap	1						

The Importer:
TOOLSAVE LTD

Unit C, Manders Ind. Est.,
Old Heath Road, Wolverhampton,
WV1 2RP.

Declare that the product:

**Designation: 16" & 18" Bandsaw
Model: BS400 / BS450**

Complies with the following Directives:
Machine Directive - **2006/42/EC**

Standards & technical specifications referred to:
Report No: **4840323608300**

EN ISO 19085-1:2021

EN ISO 19085-16:2021

**Authorised Technical File Holder:
Bill Evans**

24/09/2024

The Director

