MAKSIWA®

BMS.1600.IR

Sliding Panel Saw 1600

INSTRUCTION MANUAL

Attention: Read this manual before using the machine.

Greetings,

Congratulations, you just purchased the BMS.1600.IR Precision Saw, which was developed with the Maksiwa's highest standards of technology and quality. Your BMS.1600.IR Precision Saw allows you to have the highest productivity in woodworking. Besides a great finish, the BMS.1600.IR ensures that your cuts are always precise. It should be noted that to use this machine with maximum efficiency, you should read and understand the instructions in this manual. Visit our website to know about our launches and other product lines: www.maksiwa.com

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1 Safety Regulations

Read all instructions in this manual. Failure to follow all instructions listed below may result in personal injury and equipment damage. WARNING: When using electrical equipment, always follow the safety precautions to reduce risk of fire, electric shock and personal injury. The manufacturer declares that they are not liable for damages to person(s) or object(s) which may be caused by failure to comply with the safety regulations.

1.1 Workspace

- Keep the work surface clean. Disorganized surfaces and areas are an invitation for accidents in the work place.
- Do not use the saw in hazardous environments. Do not use the machine in places that are damp, wet, exposed to rain, or in the presence of flammable liquids or gases. Keep your work area well lit.
- Visitors must be kept at a safe distance from the workspace. Take the appropriate precaution by using padlocks or following the appropriate lock-out-tag procedures.

1.2 Electrical Safety

- Ensure that your power supply is in accordance with the rating of the machine. A 10% increase or decrease in voltage will cause power loss and overheating. All Maksiwa equipment is factory tested. If this Machine does not operate properly, first check the power supply.
- The BMS.1600.IR is constructed with two separate layers of electrical insulation. You do not have to ground the machine if the power supply comes built with an ground.
- NOTE: Double insulation is not a substitute for normal safety precautions when operating this machine. The insulation system is to add protection against personal accidents resulting from a possible failure of the machines electrical insulation.
- CAUTION: WHEN SERVICING OR REPAIRING THE MACHINE, ONLY USE OEM PARTS.
- The plug used for the machine must be rated for the correct voltage/Amps and compatible with the electrical outlet. Never modify the plug.
- Do not use any adapter plugs. Using the correct plug (without modifications) with the correct outlet will reduce the risk of electrical shock.

1.3 Personal Safety

- Stay alert, pay attention at what you are doing and use common sense when operating the machine. Do not use the machine when you are tired or under the influence of drugs, alcohol, or medication. If distracted, while operating the machine, it may in result in serious personal injury.

ALWAYS USE PROPER PROTECTION WHEN OPERATING THIS EQUIPMENT.

- Always wear safety glasses, face protection, safety anti-slip shoes, and ear protection to reduce personal injury.
- Do not wear loose clothing, gloves, chains, rings, bracelets or other accessories. It is also recommended to use hair protection.
- Do not over stretch to reach. Keep balanced and feet firmly planted at all times.
- Disconnect the machine from the power supply before servicing or performing repairs.
- Reduce the risk of unintended starts by making sure that the main power switch is turned off before plugging the cord into the outlet.
- Use recommended accessories. Refer to the instruction manual to check the recommended accessories. Improper use of the accessories may cause personal injury.
- Never stand on the machine. serious accidents can occur if the machine is tilted or if the blade is accidentally touched.

1.4 Machine Safety

- Turn off the saw, unplug the power cord, and wait until the blade stops, before performing any maintenance or adjustments to the machine.
- Make sure the blades are not worn, as for this will prevent the machine from cutting properly and overload the motors. Do not overload the Machine, it will perform the job better and safer if used as indicated. Do not force the machine by performing a job for which it was not intended for.
- Firmly secure your workpiece. Use clamps if necessary when you cannot secure the workpiece on to the table and against the guide by hand, or when your hand is dangerously close to the blade.
- Inspect the machine. Keep the blades sharp and clean for optimal performance. Follow the instructions on lubricating and changing accessories. Check the alignment of moving parts and for any damaged parts, before continuing to use the machine. A part that is damaged should be carefully examined to determine if it is functioning properly and if it will affect the machines

performance. A blade cover or any other part that is damaged must be repaired or replaced immediately. Do not use the machine if any the switches do not work properly.

- Never leave the machine running unattended. Turn off the main power switch when not in use to prevent any accidents.
- Protect the power supply circuit with at least a fuse or circuit breaker. Do not attempt to operate the saw at any voltage other than the designated voltage.
- Make sure all blade washers and fasteners are clean. Tighten the shaft nut securely. Keep the saw blades sharp, make sure that the blades are facing the correct directions (main blade spins clockwise) (Scoring blade spins counter-clockwise). See fig 13-4 on pg. 39.
- Keep motor vents free of splinters or saw dust.
- Always use the blade guard cover.
- Keep your hands out of the way of the blades.
- Support long pieces with a wood fastening device.
- Do not use blades larger or smaller than recommended.
- Be careful not bend or damage the cooling fan on the rear of the motors.
- Allow the motor to reach its top speed before starting the cut. Do not force a cut, partial or complete. Forcing a cut before motor is fully spinning will cause the motor to shut down, potentially causing serious damage.
- Do not cut ferrous metals (those containing iron or steel in their composition) or any other masonry material.
- Do not use abrasives. Excessive heat generated by abrasive particles will damage the saw blades.
- Do not use blades designated for less than recommend amount.
- Do not cut small pieces without the aid of a fastener. Keep hands away from blades.
- Do not perform any hands-free operation.
- Do not reach around or behind the blades.
- Do not put your hands within 6 inches of the saw blades.
- Do not place your hands under the saw unless it is off and unplugged. The saw blades are exposed in the lower portion of the saw.
- Do not move the workpiece or lift the cover until the blade has stopped.
- Do not use the saw without the support base or if the support base is not properly secured.
- Do not use lubricants or cleaning products (particularly sprays and aerosols) in the vicinity of the plastic protector. The polycarbonate material used on the cover is sensitive to certain products chemicals.
- To Avoid KICKBACK (“Kickback” - the natural tendency of the workpiece to be thrown back towards the operator) keep the blade sharp, free of rust and dry resin; keep the cutting guide parallel to the saw blade; use the saw guards for all work where possible; push the workpiece completely through the saw blade before releasing it; Do not make longitudinal cuts on a workpiece that is twisted, deformed, or that does not have a straight end that serves as a guide; use an anti-kickback device when possible; never cut workpieces that cannot be fixed; Use the

guide when making a cross-section cut; and never cut a large workpiece with loose knots or other defects.

- ATTENTION: Any powder created by sanding, cutting, grinding, drilling, and other activities contains chemicals that can cause cancer, birth and other reproductive harm. Some examples of these products are: in lead; crystal silica brick, cement and other masonry products; and arsenic and chromium from chemically treated wood.
- CAUTION: Do not connect the machine to the power outlet until this manual is read and understood.
- Always tighten the adjusting tabs before using the saw. Keep hands 15 cm (6 in) away from the saw blade. Never perform operations hands-free and never cross your arms in front of the saw blade. Think, " How can I avoid accidents?".
- Do not operate the saw without the guards being in place. Never put your hands on the saw blade. Always wear safety goggles. Turn off the power and wait for the blade to stop before starting to service or making adjustments.

NOTE: Pictures and illustrations in this manual are ILLUSTRATIVE only and may not be the actual color, contain the same labels or accessories, and are intended only to illustrate the technical part.

2 Description

The BMS.1600.IR precision saw is designed to provide excellent finishing cuts of MDF, plywood and melamine sheets. It has a slope of axis from 0º to 45º. Reinforced structure the BMS.1600.IR supports panels with a thickness of 25 mm (1 in). It also has a scoring blade to provide quality cuts. It has Independent motors, where the main saw motor has 5.0 HP for long periods of heavy work. With precision aluminum guides, the BMS.1600.IR is the right choice for anyone looking for quality and accuracy in their cuts.

2.1 Specifications

General:

- Main motor 5 HP – 24 Amps 60 HZ 3.7 KW
- Main motor – Blade Speed 4000 RPM
- Scoring motor 1 HP – 6 Amps 0.55 KW
- Scoring motor - Blade Speed 8000 RPM
- Sliding table dimension 63” x 14”
- Main table with supporting table 31.5” x 40”
- Crosscut Fence Max. Collapsed 50″
- Crosscut Fence Flip Stopper 1
- Rip Fence bar Solid Steel Micro Polished 1″
- Machine dimensions (collapsed) L 66” X W 98” X H 42”
- Emergency buttons 1

Dust collection:

- Port 1 diameter: 3”
- Port 2 diameter: 3”
- Minimum CFM needed: 600 CFM

Blade:

- Max tilt 45°
- Max depth cut 3″
- Max cutting length 62”
- Scoring blade diameter: 4 ¾”
- Scoring blade arbor size: 25/32”
- Max cutting height with blade at 90° 3.5″ / 90mm
- Max cutting height with blade at 45° 2.4″ / 62mm

2.2 Components

1. Mobile Arm
2. Mobile Table Support
3. Adjustable Table Handle
4. Blade Tilt Control Handle
5. Control Panel
6. Emergency Buttons/ Switches
7. Main Table Lock
8. Sliding Table Handle
9. Wedge Clamp
10. Rear Extention Table Guide
11. Rear Extension Table
12. Adjustable Angle Guide
13. Blade Protector Cover
14. Dust Collector Port
15. Support Table
16. Wood Panel Stopper
17. Aluminum Table Guide
18. Measuring Tape Metric & Imperial
19. Aluminum Guide Extensions
20. Blade Height Adjustment Handle
21. Scoring Blade Adjustment Handle

2.2.1 Support Arm

Enables greater cutting range and greater ergonomics for the operator.

2.2.2 Support Table

It is used to support larger workpieces and make cross cuts. Can be placed throughout the movable table.

2.2.3 Blade Tilt Control Handle

It is used to tilt both saw blades manually.
The slope of the saw ranges from 0 to 45 degrees.

2.2.4 Control Panel

At the control panel you control all the functions and cutting devices of the machine.

1. Panel: Shows the angle of the saw blades.
2. POWER button: When the STOP button is released, the POWER button lights up. The machine will be energized.
3. Green button ON: When pressed, it turns on the main blade.
4. Green button ON: When pressed, it turns on scoring blade.
5. Red button OFF: When pressed, the main saw and scoring blade are switched off.
6. STOP button: This is a safety button. It must be released to operate the main and scoring blades. When it is pressed in the machine turns off.

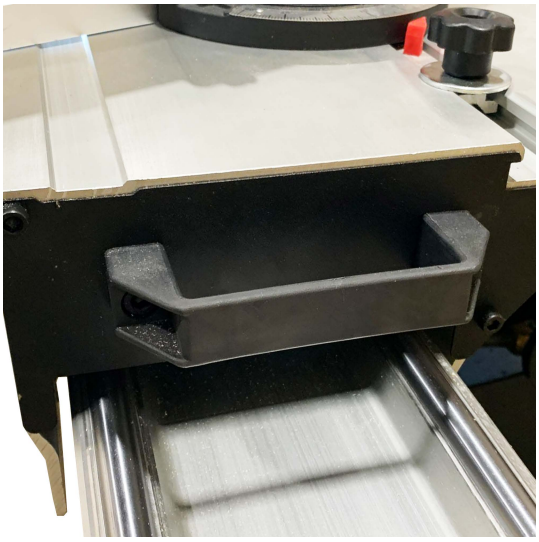
2.2.5 Emergency Buttons/Switches

The emergency switches are used to power the machine and turn it off.

2.2.6 Main Table Lock

When applied it locks the movable table structure, when released it unlocks the movable table.

2.2.7 Sliding Table Handle

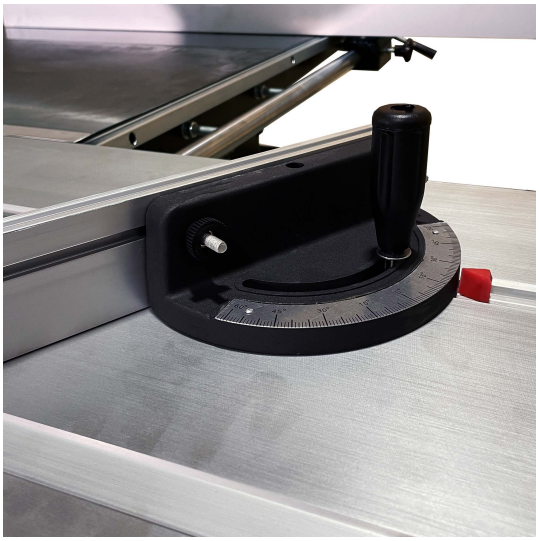


It is used to push the movable table during the cut.
Ensures greater operator ergonomics.

2.2.8 Adjustable Table Handle

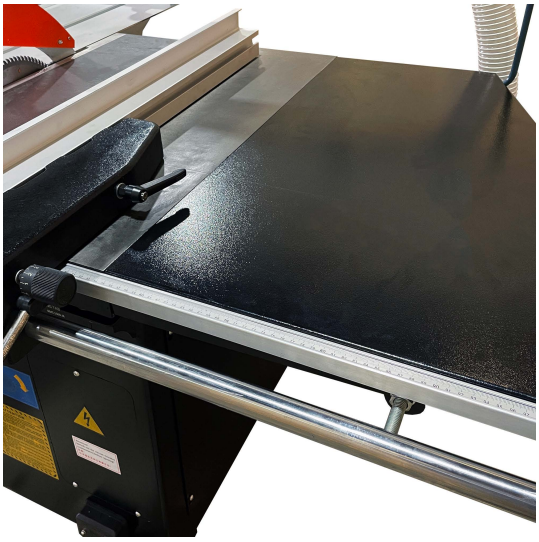
It is used to push the movable table during the cut and It can be moved through the table.

2.2.9 Adjustable Angle Guide



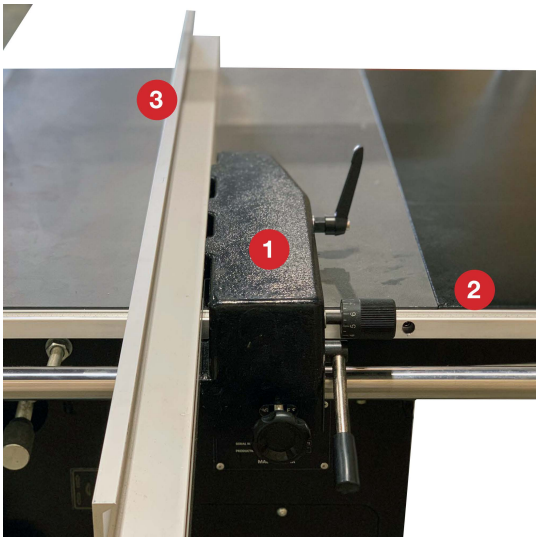
It is used to make cross cuts from 0 to 45 degrees.

2.2.10 Rear Extension Table



Provides an increase to the work area. It holds a ruler.

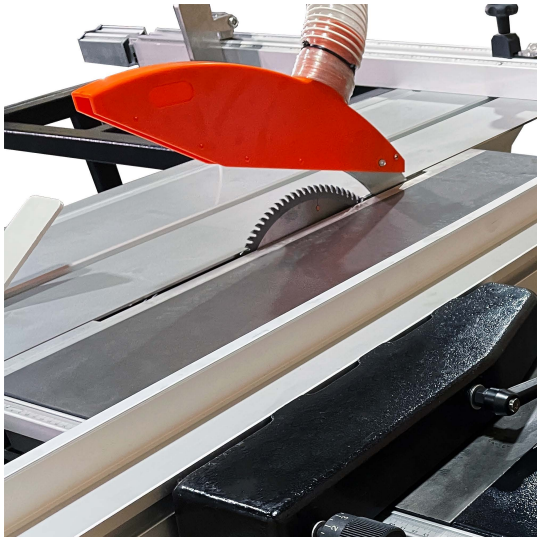
2.2.11 Rear Extension Table Guide



It is intended to be used as a reference to cut multiple pieces at the same measurement.

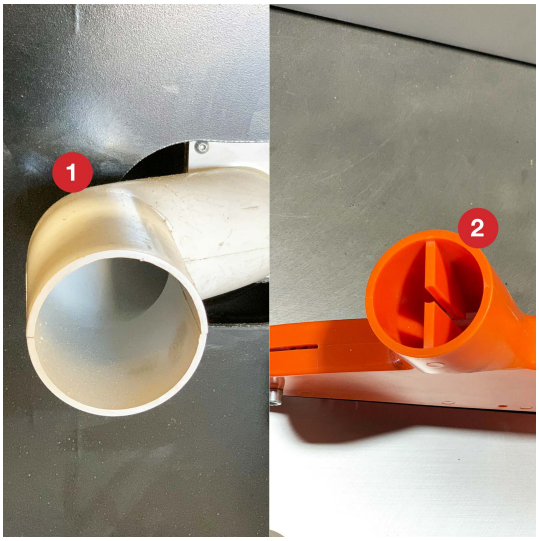
1. Guide frame: Made of cast iron.
2. Guide ruler: It is fixed throughout the table.
3. Aluminum guide: It is fixed to the guide frame and serves as a support for the workpiece.

2.2.13 Blade Protector Cover



It has the function of protecting the operator against splinters and saw dust from cuts.

2.2.14 Dust Collection Port



Its function is to collect residues and saw dust from cuts.
The two outputs have a diameter of 100 mm (3 in).

1. Outlet for upper dust collector: It is located in the saw protection cover.
2. Lower dust collector outlet: It is located on the side of the machine.

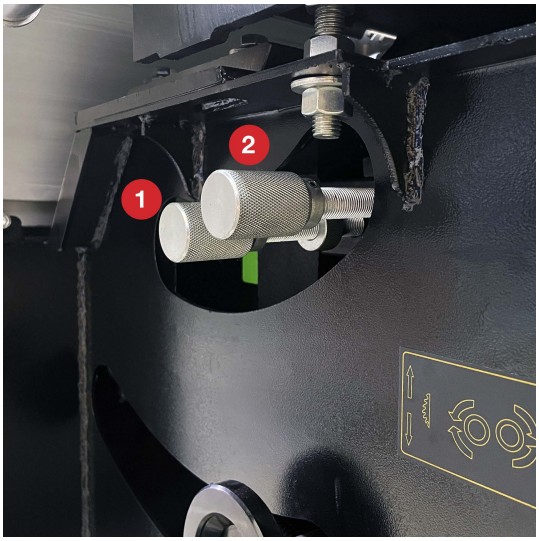
2.2.15 Support Table

Made of cast iron, it supports large pieces of plywood, melamine and MDF.

2.2.17 Aluminum Table Guide

Made of aluminum, the movable table guide has the function of adjusting the rear extension guide in the position the operator wishes and It has a ruler.

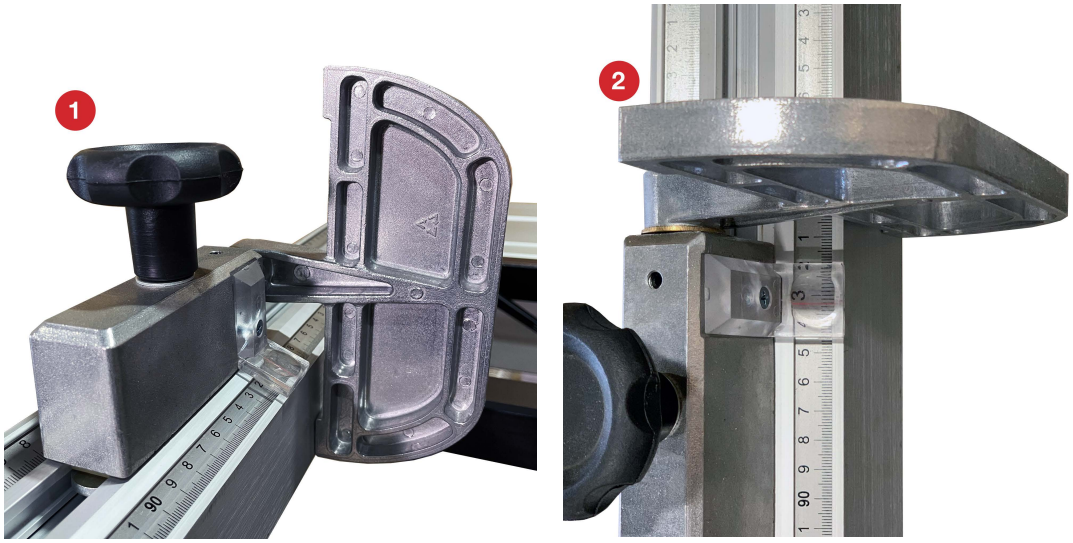
2.2.18 Scoring Blade Adjustment Handles



They have the function of regulating the scoring blade.

1. Left handle: Raises and lowers the scoring blade.
2. Right handle: Adjust the alignment of the scoring blade left and right.

2.2.19 Wood Panel Stopper



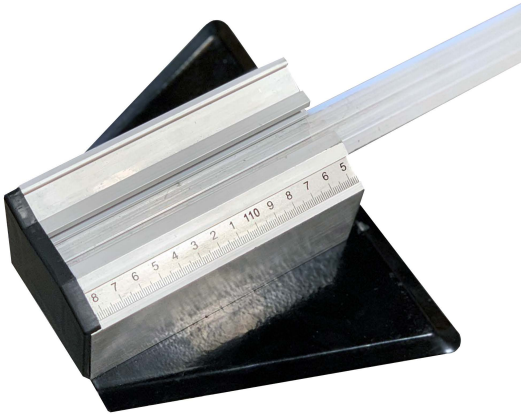
It is located on the aluminum guide of the movable table.
It has the function of locking the workpiece in the position desired by the operator.
Contain 1 unit.

1. Workpiece lock: When lowered, it locks the position of the workpiece.
2. Magnifier: Increases the view of the measurement chosen by the operator.

2.2.20 Blade Height Adjustment Handle

It is used to raise and lower both the main saw.

2.2.21 Aluminium Guide Extensions



It has the function of extending the work area.

3 Installation

The following sections will deal with the adjustments necessary for the smooth operation of the machine and shall refer to the term that accompanies the illustrations. For this, you must know the components and know where they are.

3.1 Electrical Installation

- The electrical installation should be carried out by qualified and trained personnel.
- The main connections must be made at the terminal box.
- Installation of the power cord in the machine should only be done by a electrician.
- Connect the machine's power wires to an electrical outlet: 380 V, 220 V, 110 V this varies depending on the model of the BMS.1600.IR.
- We recommend the installation of circuit breaker be according to the model you have purchased.

Electrical:

Single phase

- 1 phase model 220 V

Main motor:
- 17 Amps
- 5 HP
- Non-loaded blade speed: 4,000 RPM

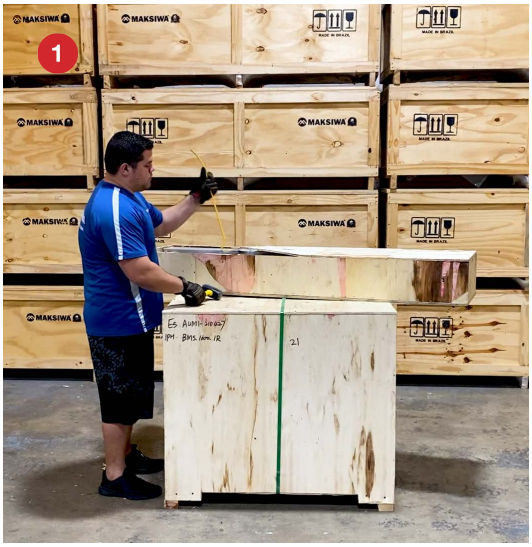
Scoring motor:
- 3/4 HP
- 2.5 Amps
- Non-loaded scoring blade speed: 8,000 RPM

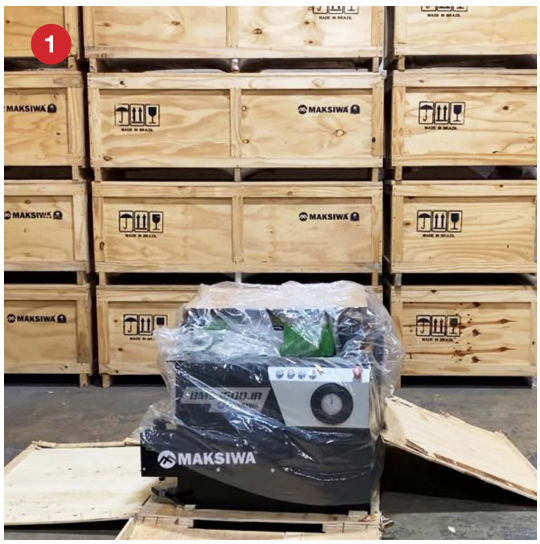
CAUTION: To prevent electrical shock or fire, any maintenance or repair to the electrical system should be done only by trained electricians using genuine parts for the machine.
CAUTION: Do not connect the unit to the power outlet until this manual is read and understood.

3.2 Assembly

- For packaging reasons, the machine is not completely assembled.
- If you notice any damage caused by shipping, while opening the package, notify your supplier immediately. Do not operate the machine.
- Estimated assembly time: 6 to 7 hours.

1. Carefully removing the machine from the crate, loose components are in the interior of the machine. Remove plastic coverings from all components.





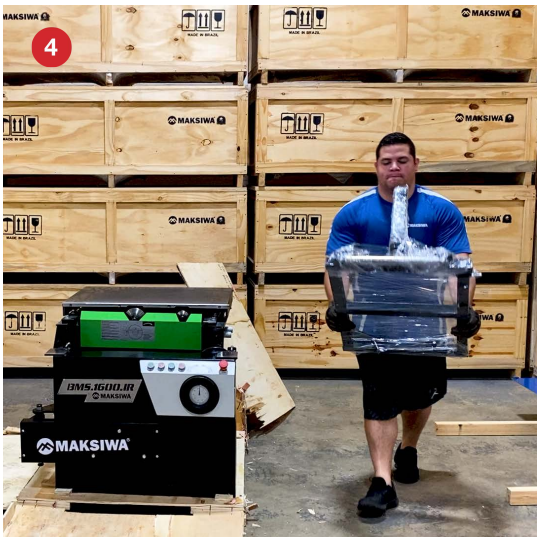


Fig. 1 and 2: Unpacking the machine.
Fig. 3 and 4: Removing the components.

2. Remove all the Allen bolts from the Support table. After that, install the cylindrical bar of the fixed table.

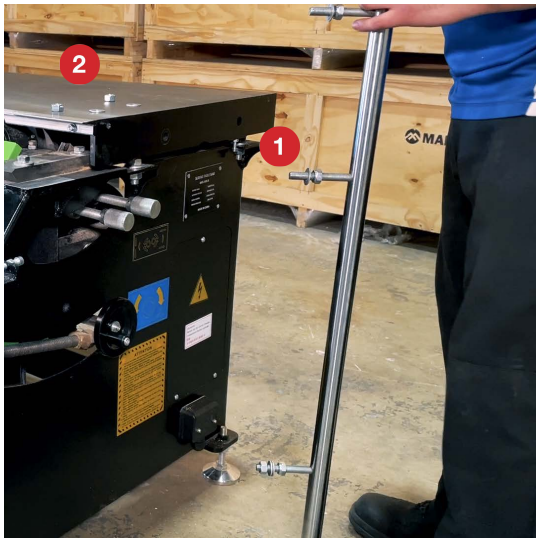


Fig. 1, 2: Removing the bolts from the Support table. Fig. 3: Bolts removed.

3. Install the fixed table guide cylindrical bar.

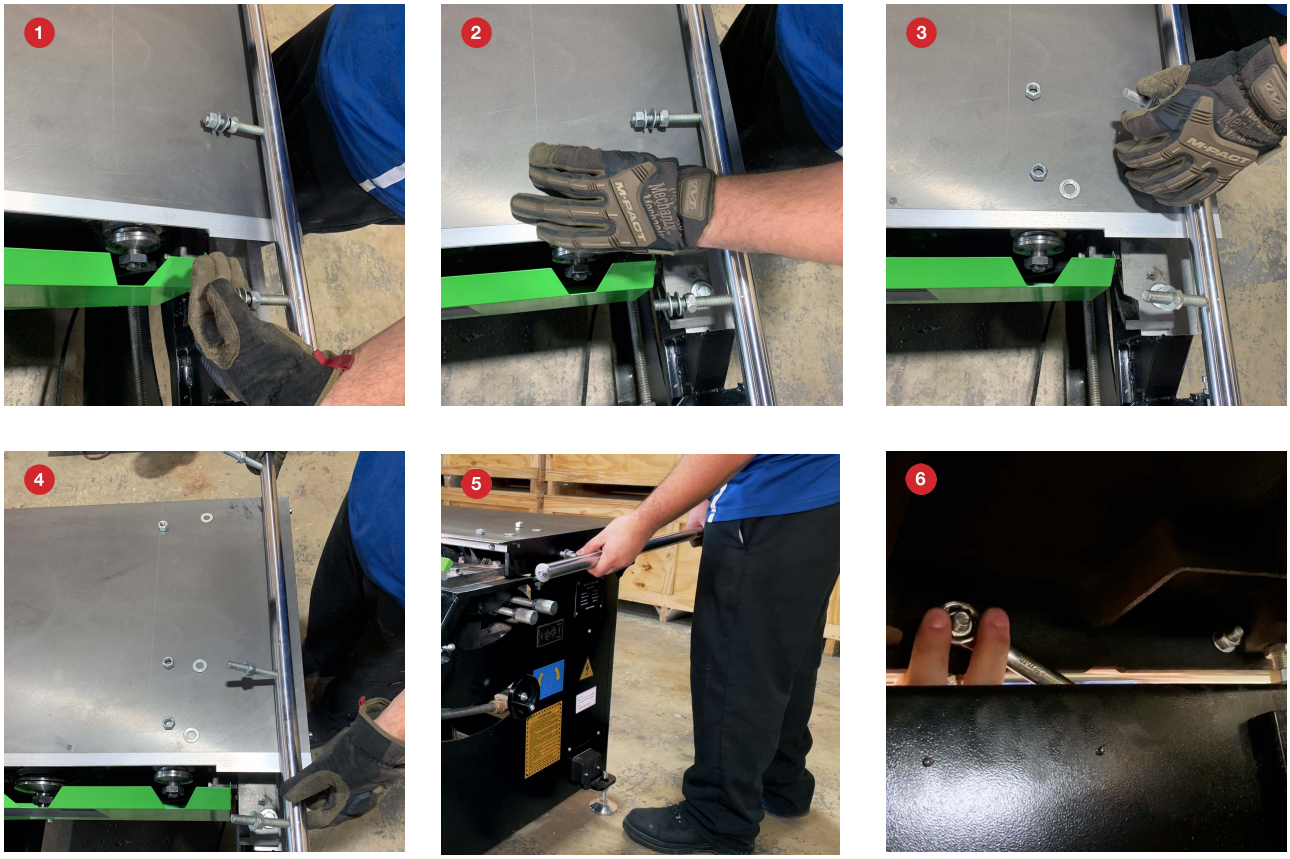
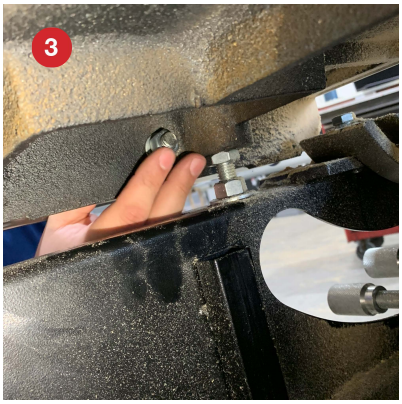
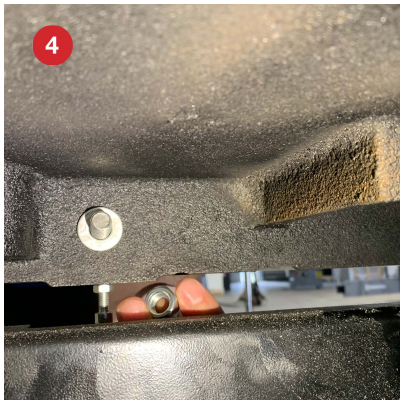


Fig. 1: Bar positioned.
Fig. 2 and 3: Remove the nuts from the base.
Fig. 4, 5 and 6: Position the bar on the fixed table and tighten the nuts.

4. Install the Support table extensions.





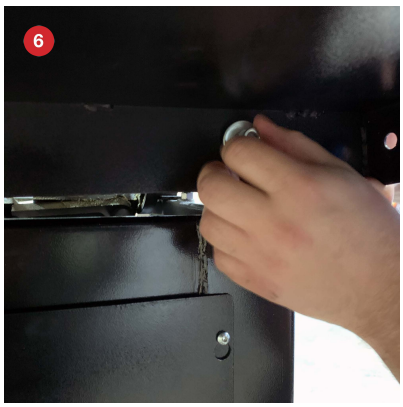


Fig. 1, 2 and 3: Position the rear extension on the Support table.
Fig. 4, 5 and 6: Fasten the bolts and tighten them.
Fig. 7, 8, 9 and 10: Do the same procedure for extension of the front guide.
Fig. 11: Extensions properly mounted.

5. Install the saw guard frame on the support table.

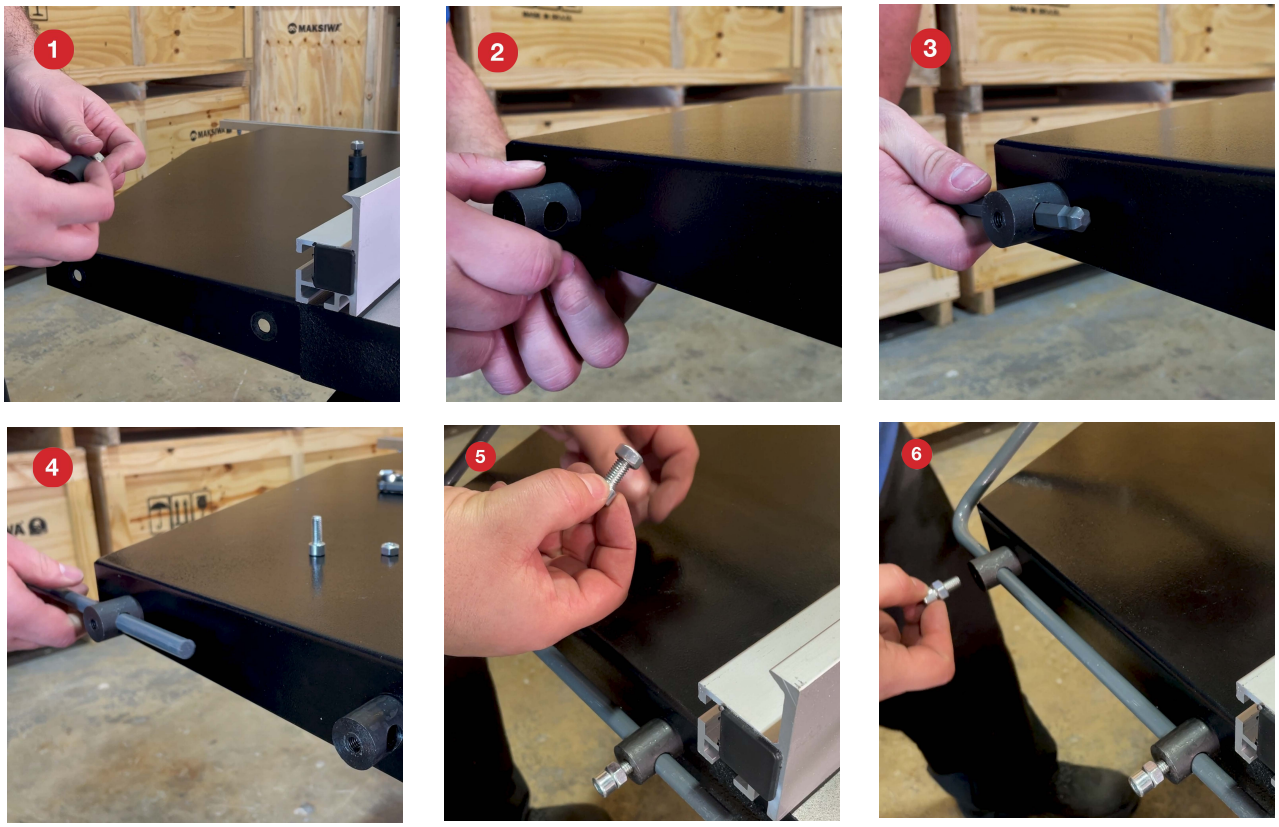


Fig. 1 and 2: Position the frame on the support table.
Fig. 3, 4, 5 and 6: Tighten all bolts.

6. Install the Support table ruler.

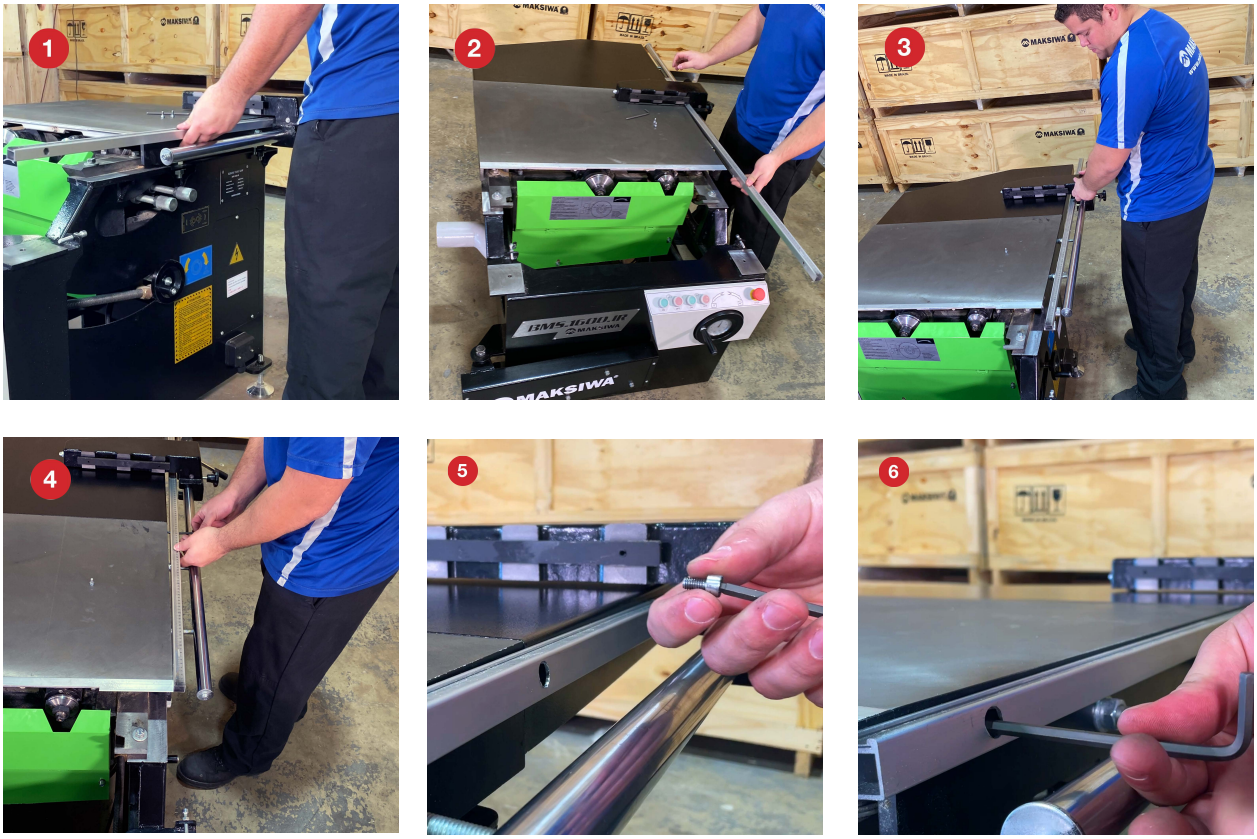


Fig. 1 and 2: Position the ruler guide on the support table.
Fig. 3, 4 and 5: Tighten the bolts.
Fig. 6: Installed guide.

7. Install the fixed table guide.

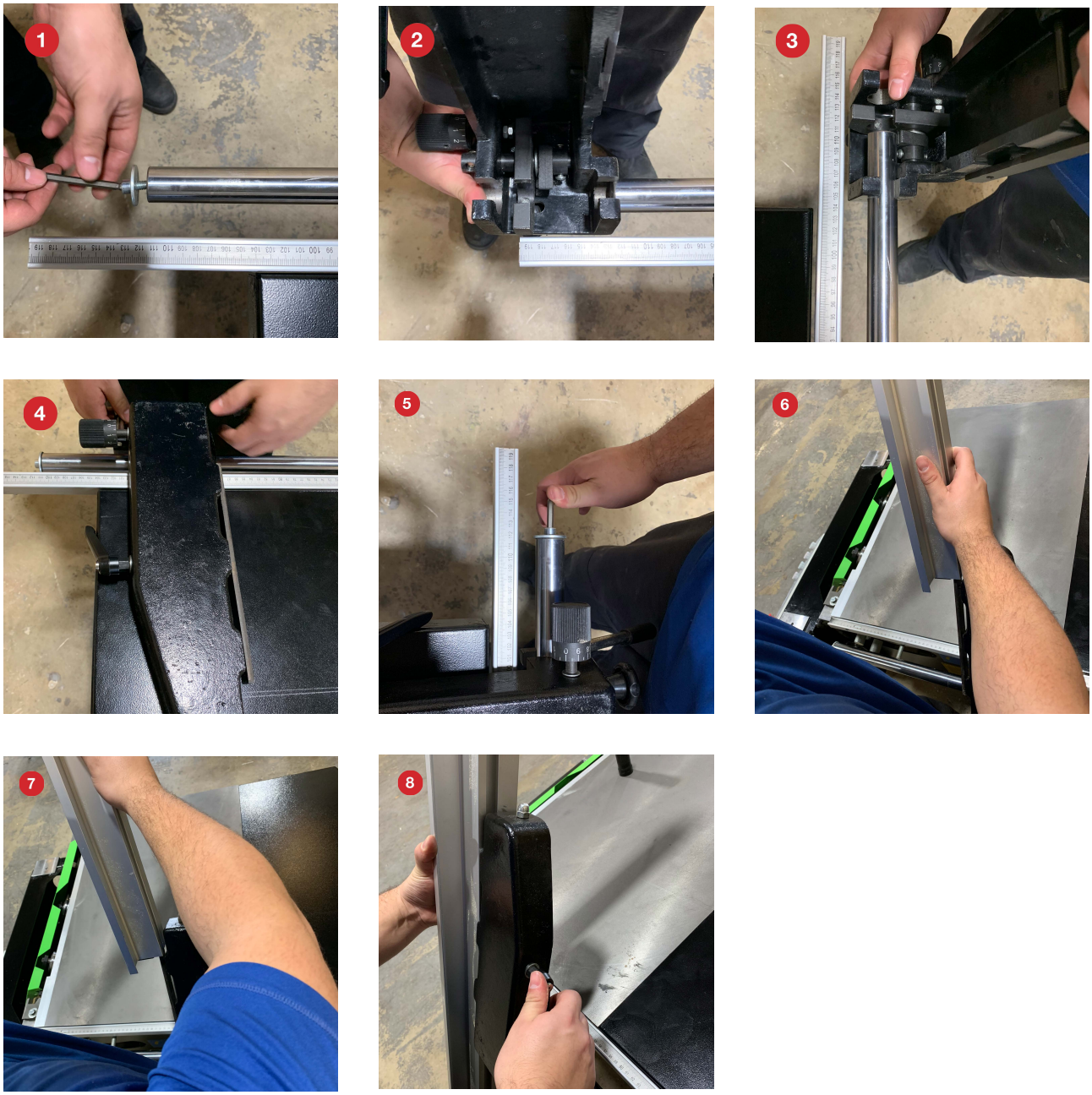


Fig. 1, 2, 3 and 4: Position the guide on the support table.
Fig. 5 and 6: Fit the aluminum tab into the guide frame.

8. Install the movable table into the fixed table frame.

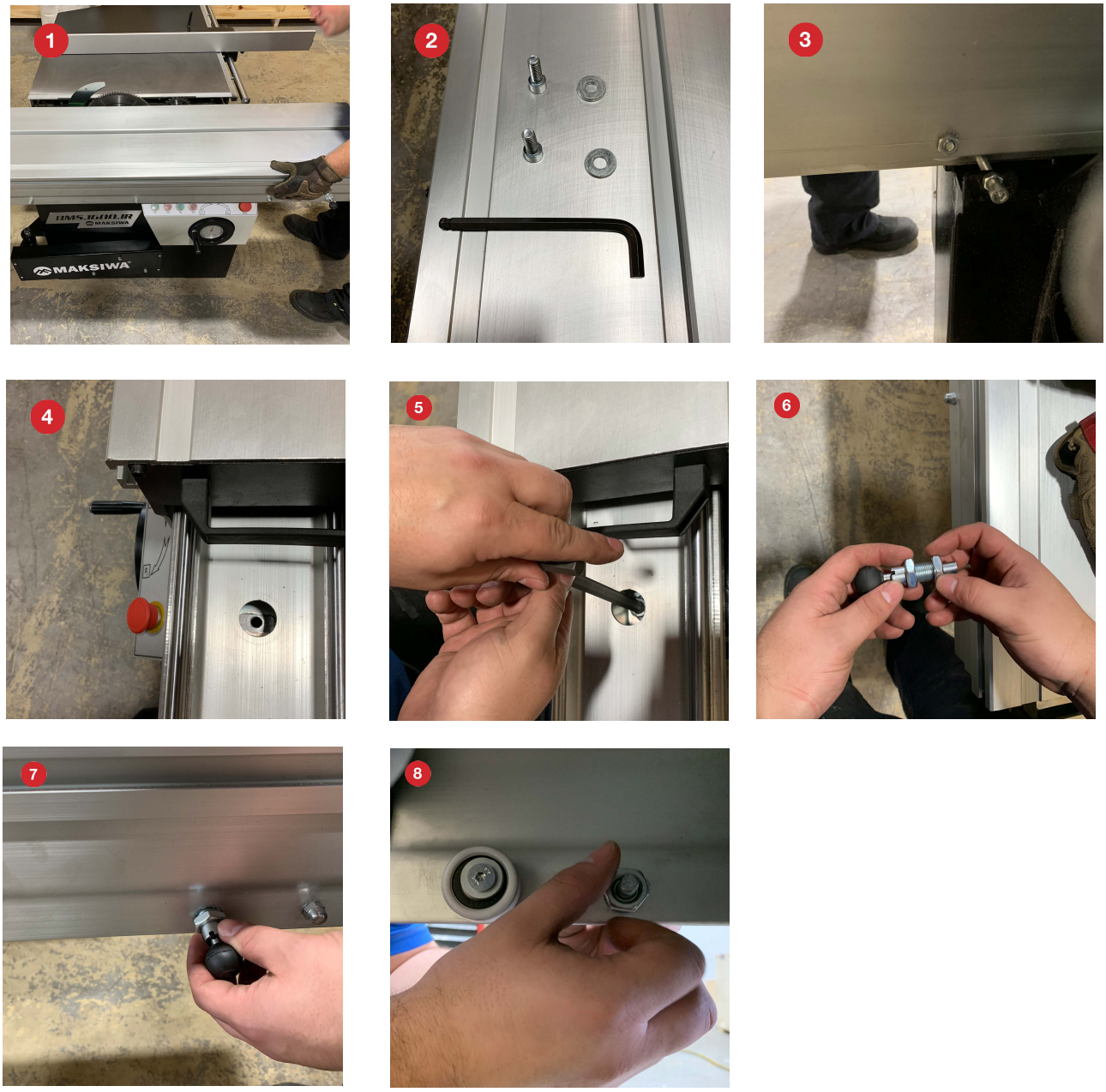


Fig. 1: Place the movable table on top of the fixed table structure, always aligning the holes with the screws.

Fig. 2, 3, 4, 5 and 6: Tighten all screws.

9. Install the saw guard into the frame.

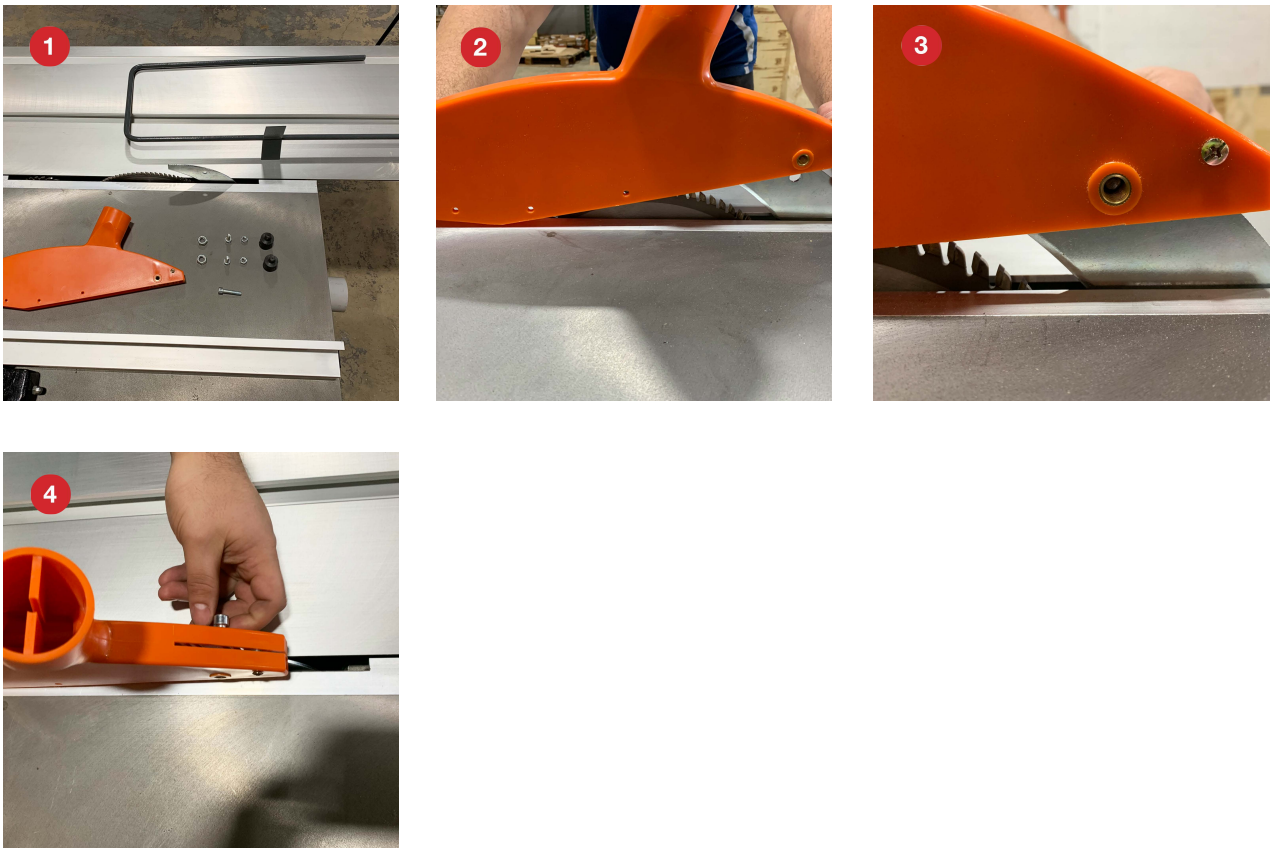


Fig. 1: Attach the saw guard to the frame.
Fig. 2 and 3: Tighten the bolt in the socket.
Fig. 4: Installed protector.

10. Install the movable table guide.

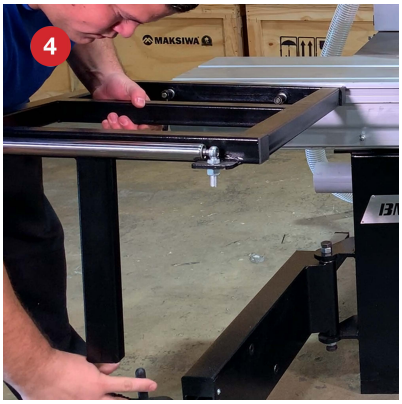


Fig. 1: Fit the movable table guide and tighten the handles.
Fig. 2 and 3: Place the adjustment bracket on the movable guide and tighten the handle.
Fig. 4, 5 and 6: Fit the sheet support guide on the movable guide.

11. Install the aluminum tab on the movable table guide.

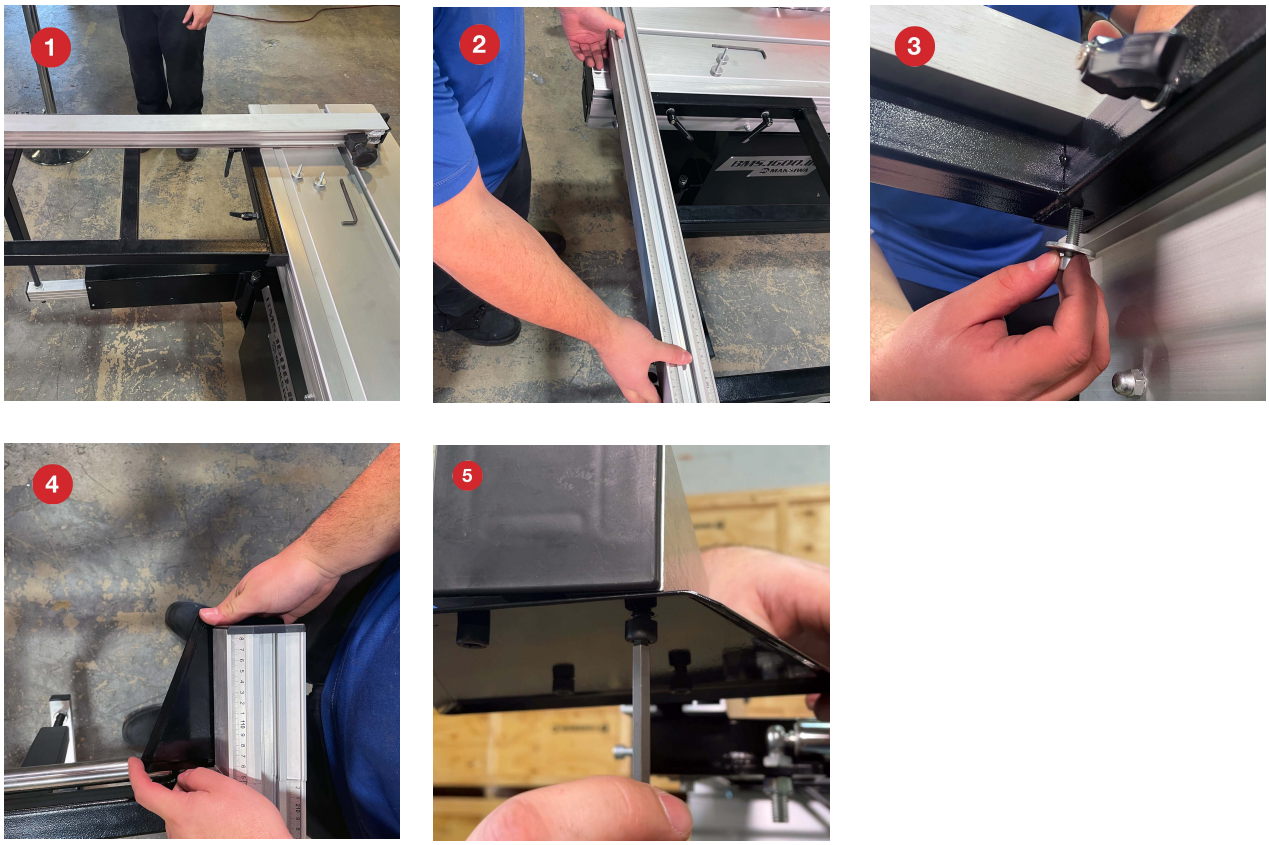


Fig. 1 and 2: Attach the aluminum tab to the movable table guide.
Fig. 3, 4, 5 and 6: Tighten all handles.

12. Wood Panel Stopper.

Fig. 1 and 2: Fit the wood panel stopper on the aluminum tab and tighten the handles.

13. Install the saw blades.

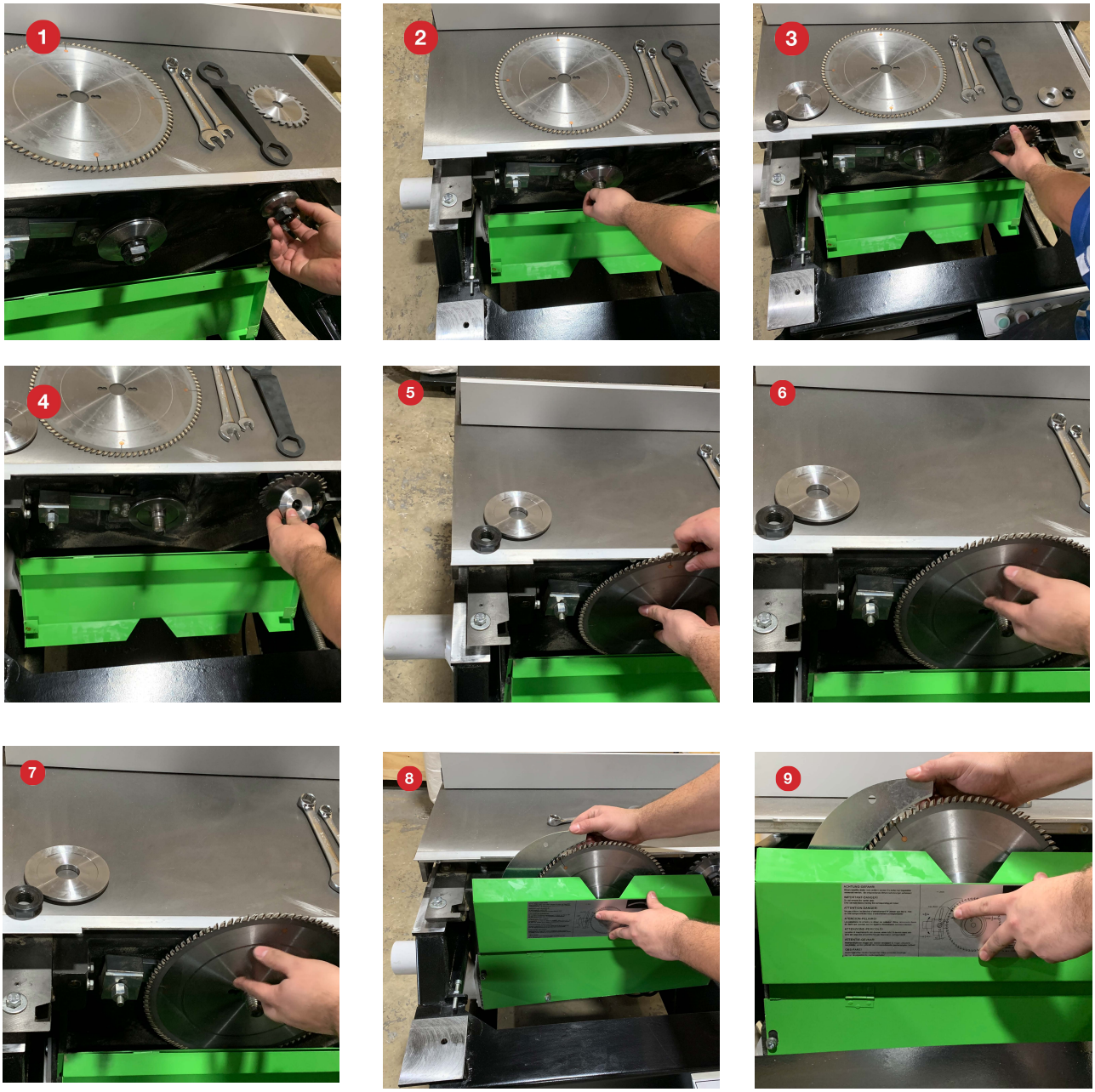


Fig. 1 and 2: Remove the nut.

Fig. 3: Fit the saw.

Fig. 4: After fitting the saw, place the washer and nut then tighten.

14. Ready! Your BMS.1600.IR Precision saw is properly installed.

4 Operation

- Before operating the machine, make sure that the electrical installation was properly installed.
- The electrical installation should be done by a trained electrician.
- NOTE: Although your saw cuts wood and many other non-ferrous materials, we will limit ourselves to discussing only the cutting of wood. The same guidelines apply to other materials.
- DO NOT USE ABRASIVE BLADES.
- The smoothness of any cut depends on a number of variables. Factors such as the type of material being cut, blade type, blade sharpness and cutting rate contribute to the cutting quality.
- When you want smoother cuts for frames, install a sharper blade (80 or more carbonated teeth). A slower and steady cut rate will produce the desired results. Make sure that the material does not vibrate during the cut.
- The BMS.1600.IR cuts internal MDF sheets.
- Proper positioning of the body and hands during operation will make cutting easier, accurate and more secure. Never place your hands close to the cutting area. Put your hands in position no closer than 6 inches from the blade. Hold the piece firmly against the table and the guide during cutting.

4.1 Cutting Setup

In the next section you will see how to make cuts with BMS.1600.IR.

4.1.1 Main Blade Adjustments

Lift the main blade by turning the handle clockwise. The saw has to be approximately 20 mm (3/4 in) from the height of the sheet to be cut.

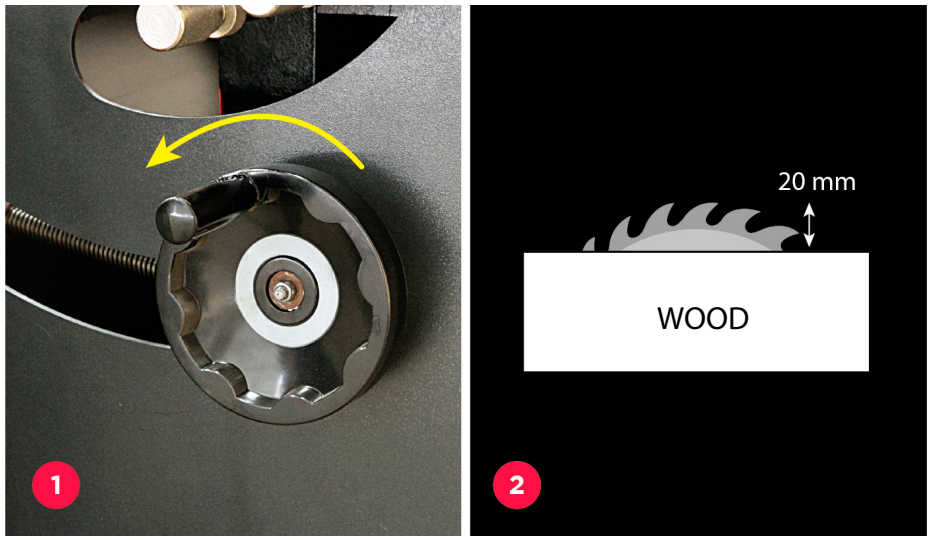


Fig. 1: Saw blade raise handle.
Fig. 2: Illustration of the height of the saw blade in relation to the workpiece.

4.1.2 Scoring Blade Adjustments

The function of the scoring system is to perform a surface cut, such as a “scratch” on the workpiece before the main blade cuts. This allows the cut to come out clean, with no chips on the workpiece. It is an optional system; the operator can choose to work with it or without it. To use it first, lift the cutter by turning the left knob counterclockwise. The height should approximately be 5 mm (3/16in) above the table.

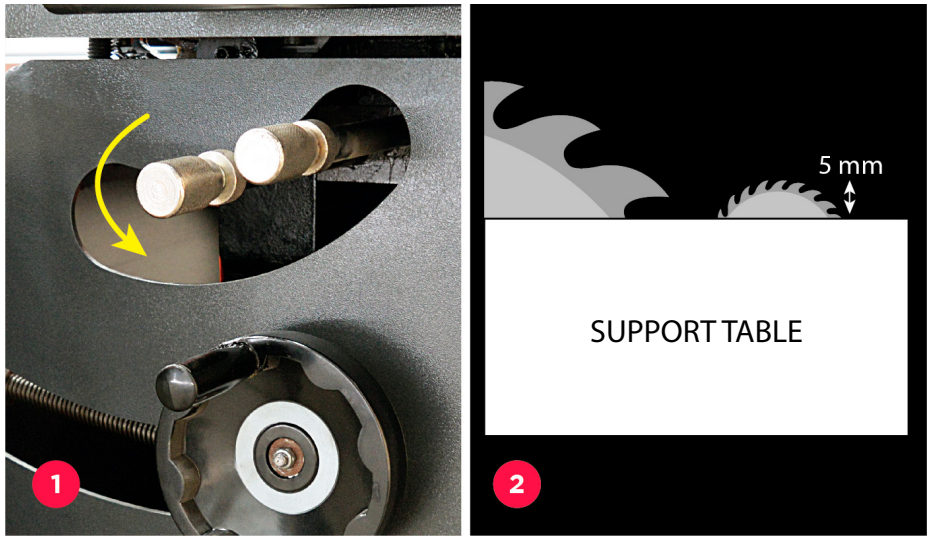


Fig. 1: Handle that lifts the scoring blade.
Fig. 2: Illustration of the height of the scoring blade in relation to the fixed table.

After that, align the scoring blade with the main blade. Turn the right knob clockwise the scoring blade moves to the Right, rotating counterclockwise moves the scoring blade Left.

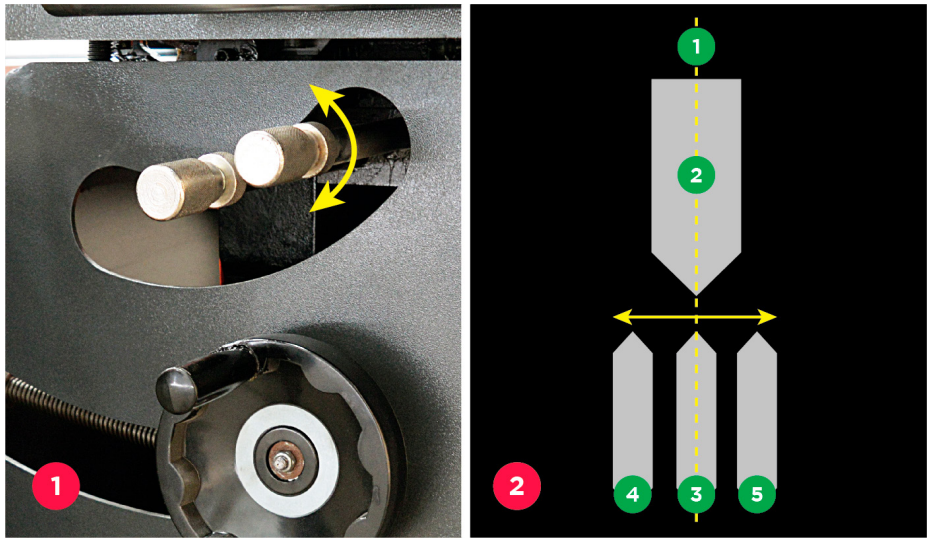


Fig. 1: Handle that move scoring blade left or right.
Fig. 2: Illustration of the alignment of the scoring blade in relation to the support table:

1. Direction line.
2. Main blade.
3. Correct scoring blade alignment.
4. Scoring blade misaligned to the left.
5. Scoring blade misaligned to the right.

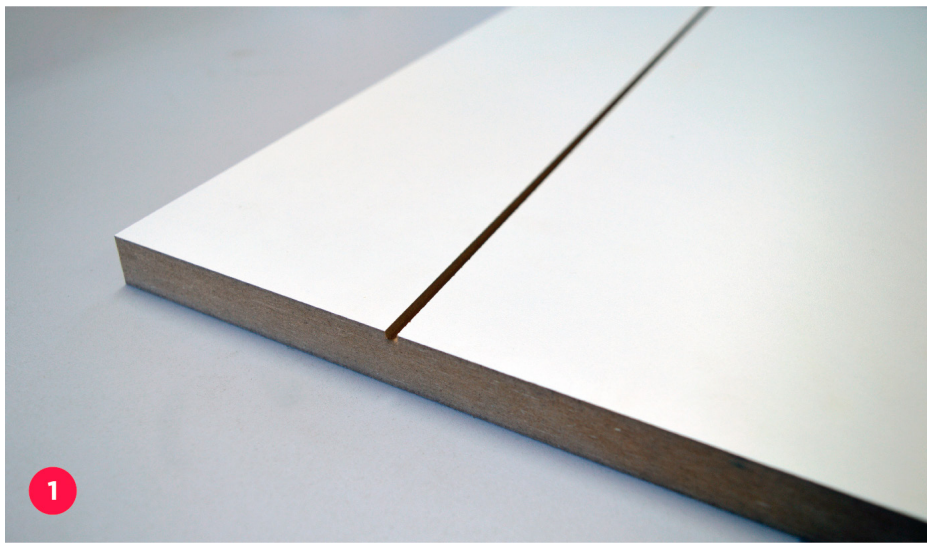
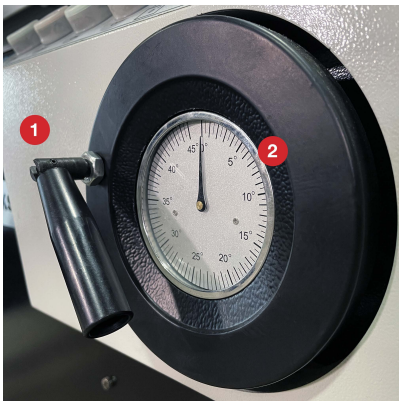


Fig. 1: Cut made by the scoring blade.

4.1.3 How to Cut at Different Angles

The BMS.1600.IR can cut up to 45 degrees. To do this, turn the handle located on the front of the machine to the desired angle and check the angle on the display.



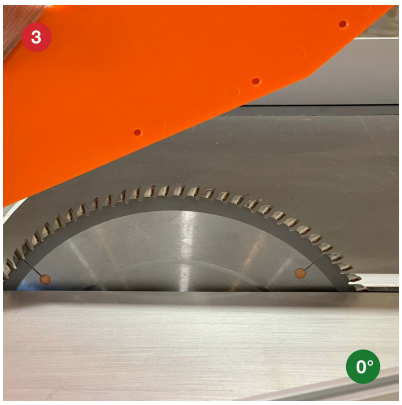


Fig. 1: Tilt blades: Turn clockwise to tilt the saw blades.
Fig. 2: Digital: Marks the angle of the saw blades.
Fig. 3: Saw blades at 0 degrees: Performs straight cuts.
Fig. 4: Tilted saw blades at 45 degrees: Performs angled cuts.

4.1.4 How to Setup for Recurrent Cuts

Choose the measurement of the workpiece that you want to cut.
Lock the table knob. Then push the piece against the table guide, If the operator wishes, he can secure the workpiece using the wood panel clamp.

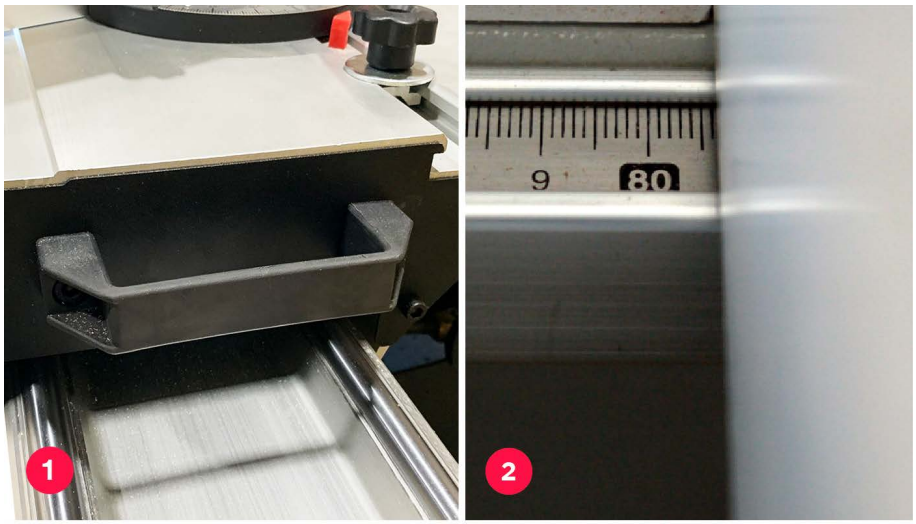
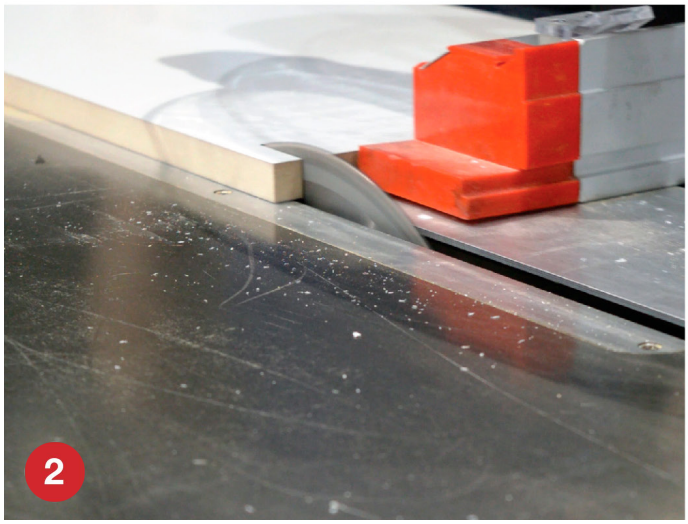


Fig. 1: Workpiece against the fixed table guide.
Fig. 2: Detail of the part on the ruler guide.

4.1.5 Running a Piece

Turn on the saw and unlock the table, slowly push it until the workpiece meets the saw blades.



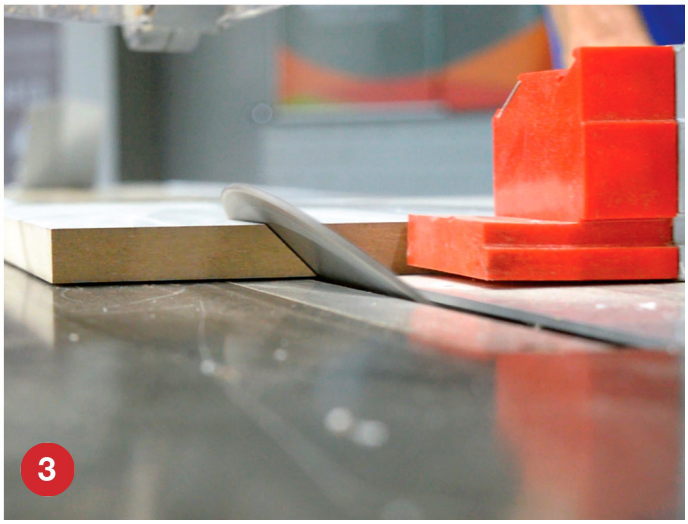


Fig. 1: Unlocking of the movable table.
Fig 2: Straight cut.
Fig. 3: Cutting at 45 degrees.

4.1.6 Cross Cutting

- Multi-piece cutting is not recommended, but can be done safely by making sure that each workpiece is securely attached to the table or the guide. A cross-section is made cutting the wood in the opposite direction to the fibers at any angle. A straight cross-section is done with the blade at 0º. Put the adjustable angle guide at zero, hold the wood firmly on the table against the guide. Turn on the saw. When the saw starts to gain speed (after approximately 1 second), move the piece gently through to cut the wood.
- Transverse cuts are made with the adjustable angle guide attachment at any angle other than 0°. This angle is often 45° to make corners but can be adjusted from 0° to 45°. After the desired angle is selected, be sure to tighten adjustable angle guide.

4.1.7 Cutting Frames, Boxes and Other Four-Sided Pieces

- To better understand how to cut these items listed below, we suggest you do simple projects using smaller piece until you develop enough experience with your saw.

Number of sides	Angle of bevel or Square
4	45°
5	36°
6	30°
7	25,7°
8	22,5°
9	20°
10	18°

- Adjusting the bracket to bevel the ends of two boards at an angle of 45° each produces a 90° angle. For this joint the arm of the bracket should be locked at 45°. The wood should be positioned having the flat on the table and the thin side against the guide.
- The following table provides the proper angles for a variety of shapes. The table assumes that all sides have the same length. For a format that is not in the table, use the following formula: 180° divided by the number of sides, is equal to the angle of the bevel or square.

4.1.8 Bevel Cuts

- A bevel cut is a cross section made with the cutting blade not perpendicular to the wood. To adjust the bevel, move adjustable angle guide and move the adjusting blade height as desired. Once the notch is at a desired angle lock the handle firmly.
- Beveled angles can be adjusted up to 45° to the left.

4.1.9 Support for Long Parts

- Turn off and unplug the saw. ALWAYS SUPPORT FRAGILE PIECES. Support long pieces using any convenient supports such as trestles or similar structures to prevent damage.
- SEE THE MAKSIWA CATALOG AND FIND PRODUCTS FOR THIS FUNCTION.

5 Maintenance

Make sure that your machine is disconnected from the power source before performing any maintenance, cleaning, lubrication, adjustments or changing accessories, blades, etc.

5.1 General Cleanliness

- Please DO NOT attempt to remove the wood chips while the saw is turned on.
- Clean all saw dust and periodically remove lumps of wood even if you use a dust collector, there may be parts that remain in the machine.
- After each work cycle, clean all parts, vacuum the chips, dust and any resin.
- Periodically use compressed air to blow electrical contacts and moving mechanical parts due to the accumulation of dust in the saw.
- Use a vacuum cleaner to clean inside the motor case.
- Apply oil (SAE10) or equivalent lubricant to the moving parts only after equipment has been completely cleaned.
- Clean and lubricate the moving parts of the machine weekly with a thin film of oil and grease.
- Protect all belts and pulleys from contamination with oil.
- Always use a dust collector with a minimum of 2 HP.

5.2 Electrical Maintenance

- Apply a multi-purpose or electrical cleaner to the electrical components periodically (on average every 3 months).
- We recommend that you use a surge protection circuit breaker, installed in the power supply workshop to prevent short circuits of any electrical component of the machine.

5.3 Mechanical Maintenance

- Maintain tension on the belts, if you start noticing any changes in the way the saw blade spins.
- Parts used are durable, they should not break easily and should last for several years.
- Check for bolts or nuts that need to be retightened.
- Always replace broken parts with OEM spare parts.
- Only use blades that are sharpened correctly, according to EN 847 1: 2005 used. Do not use blades that have a maximum speed less than, the maximum speed of the saw's motors. Always leave a space between the riving knife and the saw blade of at minimum 3 mm (1/8 in) and at most 8 mm (3/8 in).

5.4 Saw Blade Lubrication Chart

	Machine		Saw				
Table of grease and lubrican	Model		BMS.1600.IR				
	Where to apply?		Sliding table track	Height adjustment guide	Threaded rod	Handle base	Tilt system
	Grease/Oil suggested	MOBIL	-	MOBILUX EP2	MOBILGREASE HP 222 MOBILGREASE MP		
		ESSO	-	LITHTAN EP2	BEACON 2		
		SHELL	-	EPRO	ALVANIA R2		
		CASTROL	-	SPHEEROL EP2	LM 2		
		BARDAHL	-	-	MAX LUB APG2		
		IPIRANGA	-	-	IPIFLEX 2		
		PETROBRAS	-	-	GMA-2		
		TEXACO	-	-	MARFAK MP2		
		CARBOGRAFITE	-	Silicone	-		
	Lubrication period		40 hours				

5.5 Part Replacement and Disposal

- If replacement should become necessary, only OEM parts should be used to ensure the same efficiency. The parts should be discarded according to the laws of each country. The substitutions of parts require training and technical skills; for this reason, the following instructions should be followed by qualified personnel to prevent damage to the machine and risks to the safety of people.
- CAUTION: In the event of mechanical or functional defects in the machine, including tools, please contact your service representative for service. Any repairs must be made only when the machine is disconnected from any power supply.

6 Troubleshooting Guide

- All necessary interventions should be made by our technical specialists. For any maintenance or repairs, please turn off the machine, remove the machine from the power supply and wait until the blade stops completely and then proceed with the service.
- For any problem, information or abnormality with the machine, contact the distributor in your area or directly with our service center after sale of MAKSIWA INTERNATIONAL INC., through 844-319-6594

Problem	Possible Cause	Solution
Saw stopped, no longer spins.	Excessive load on the motor.	Wait for motor to cool off, then flip off/on circuit breaker.
	Saw has fallen off of shaft.	Check washer and lock nut.
	Triggered circuit breaker.	Flip circuit breaker off/on.
	Damaged or loose wire.	Locate and replace wire.
Does not make exact cuts at 45° or 90°.	Misaligned blade stopper.	Adjust the stop.
	Wood is warped.	Replace wood for a good piece.
	Loose blade nut/ Warped saw blade.	Tighten nut or replace Blade.
	Riving knife not aligned.	Riving knife with the saw blade.
Saw makes unsatisfactory cuts.	Worn Blade.	Sharpen or replace blade.
	Mounted in the wrong direction.	Flip the blade.
	Glue on the blade.	Remove and clean blade.
	Worn blade for the material being cut.	Use correct blade.
	Glue on the table.	Clean the table.
Blade does not keep constant speed.	Incorrect wire gauge/size.	Use correct gauge/size wire.
	Low voltage.	Call electric service provider.
	Motor wiring is setup is incorrect.	Check and adjust wiring in motor.
Saw blade vibrates	Machine is not level.	Put the machine at level.
	Blade is damage.	Replace blades.
	Damage belt.	Replace belt.
	Pulled is tilted.	Replace pulley.
	Improper engine mounting.	Check and adjust the engine.
	Motor was assembled in the wrong position	Verify and adjust the motor.
	Hight guide is loose.	Tighten or adjust guide.
Wood kicks back when it comes in contact with the blade.	Aluminum guide is misaligned.	Align the guide.
	Riving knife misaligned.	Align the riving knife.
	Cut was made without guide support.	Install and use the guide.
	Worn blade.	Replace the blade.
	Piece was not held correctly.	Hold piece all the way through.
Blade has no height adjustment and slope.	The elevation system is too tight.	Adjust the elevation system.
	Dust and chips of wood are in the elevation system.	Clean and lube the components.

7 Terms of Warranty

MAKSIWA assures the owner that their equipment, identified by the Serial number issued on the Warranty Terms.

The equipment under warranty, for two (2) years, is as followed:

1. The warranty period begins on the date of the Warranty Terms below.
2. Within the warranty period, the manual labor and the components replaced by manufacturing defect will be provided for free if duly proved by Maksiwa Service.
3. Third-party manufacturing equipment that makes up the MAKSIWA equipment (such as motors, electrical equipment, belts etc.) are subject to the terms and conditions of warranty of their respective manufacturers.
4. In case an exchange of machine is needed, please return the defective part or machine to MAKSIWA.
5. All workplace adaptations for the equipment are under the responsibility of the machine owner.
6. If you notice any defect or malfunction when receiving the equipment, get in touch immediately with the manufacturer or Dealer. Do not turn it on.
7. Not included in this warranty is any technical visits aimed at cleaning or adjustments caused by wear, resulting from normal use of the equipment.
8. The warranty does not cover problems caused by mistreatment, carelessness, misuse or inappropriate use of the functions designed for this equipment in this manual, as well as poorly executed operations by untrained operators to operate it.
9. MAKSIWA is not responsible for lost productivity, direct or indirect damages caused to the owner of the equipment or to third parties, or any other expense, including lost profits.
10. This equipment requires the use of a dust collection system with a minimum of 2 hp.
11. Even under warranty, you may lose its validity as follows:
    a) Application of non-original components;
    b) Alteration of its original features;
    c) Lack of proper maintenance;
    d) Improper use of the equipment;
    e) Change in equipment or electronic connections;
    f) Damage caused by mechanical shock or exposure to unsuitable conditions (humidity, salt spray, corrosive agents, etc.);
    g) Damage caused by bad weather (floods, flooding, lightning, power outages etc.);
    h) Maksiwa is not responsible for damages to electrical components cause by power variation in your area.

h) Removable of safety equipment will void your warranty. (Riving Blade, Blade Cover, etc.).

For your safety, trust the repairs, maintenance and adjustments (including inspection and replacement) for technical assistance recommended by MAKSIWA, always use genuine spare parts and accessories, reassembling to its original machine the same way.

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