INSTRUCTION MANUAL

RANKOR

ECTRIC CIRCULAR SAW

RS220001

MADE IN CHINA

READ AND FOLLOW ALL SAFETY PRECAUTIONS IN THE INSTRUCTION MANUAL.

Content

Safety Notes

General Power Tool Safety Warnings

⚠WARNING

Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire, or severe injury. Save all warnings and instructions for future reference. The power tool in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

Work area safety

- **Keep the work area clean and well-lit. Cluttered or dark areas invite accidents.**
- **Do not operate power tools in explosive atmospheres, such as in flammable liquids, gases or dust. Power tools create sparks that may ignite the dust or fumes.**
- **Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.**

Electrical safety

- **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce the risk of electric shock.**
- **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or grounded.**
- **Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.**
- **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep the cord away from heat, oil, sharp edges and moving parts. Damaged or entangled cords increase the risk of electric shock.**
- **When operating a power tool outdoors, use an extension cord suitable for outdoor use. Using a cord suitable for outdoor use reduces the risk of electric shock.**
- **If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply. The use of an RCD reduces the risk of electric shock.**

Personal safety

- **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.**
- **Use personal protective equipment. Always wear eye protection. Protective equipment such as dust masks, non-skid safety shoes, hard hats, and hearing protection for appropriate conditions will reduce personal injuries.**
- **Prevent unintentional starting. Ensure the switch is off position before connecting it to the power source or battery pack or picking up or carrying the tool. Carrying power tools with your finger on the switch or energising power tools with the switch on invites accidents.**
- **Remove any adjusting key or wrench before turning the power tool on. A wrench or a key left attached to a rotating part of the power tool may result in personal injury.**
- **Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.**
- **Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewellery or long hair can be caught in moving parts.**
- **If devices are provided for connecting dust extraction and collection facilities, ensure these are connected and properly used. The use of dust collection can reduce dust-related hazards.**

Power tool use and care

- ▶**Don't force the power tool. Use the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed.**
- ▶**Do not use the power tool if the switch does not turn on and off. Any power tool that cannot be controlled with the switch is dangerous and must be repaired.**
- ▶**Disconnect the plug from the power source or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally**
- ▶**Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. Power tools are dangerous in the hands of untrained users.**
- ▶**Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Poorly maintained power tools cause many accidents**
- ▶**Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp edges are less likely to bind and are easier to control.**
- ▶**Use the power tool, accessories, tool sets, etc., in accordance with these instructions, taking into account the working conditions and the work to be performed. Using the power tool for operations different from those intended could result in a hazardous situation.**

Service

- ▶**Have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the power tool is maintained.**

Specific Safety Rules for Electric Circular Saw

⚠WARNING

MISUSE or failure to follow the safety rules stated in this instruction manual may cause serious personal injury.

1. Use proper extension cord. Ensure your extension cord is in good condition when using it; ensure it is 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. Table 1 shows the correct size depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

Minimum gauge for cord						
Ampere Rating		Volts	Total length of cord in feet			
		220V	25ft	50ft	100ft	150ft
More Than	Not More Than	AWG				
0	6		18	16	16	14
6	10		18	16	14	12
10	12		16	16	14	12
12	16		14	12	Not Recommended	

2. Do not let comfort or familiarity with the product (gained from repeated use) replace strict adherence to circular saw safety rules. Using this tool unsafely or incorrectly can resulting in serious personal injury.

- **Keep hands away from the cutting area and blade. Keep your second hand on the auxiliary handle or motor housing. If the guard cannot protect you from the blade, both hands holding the saw cannot be cut by the blade. Do not reach underneath the work. Do not attempt to remove cut material when the blade is moving.**
- **Keep your body positioned to either side of the saw blade, but not in line with the saw blade. KICKBACK could cause the saw to jump backwards. (See "Causes and Prevention of Kickback")**

⚠ CAUTION

Blades coast after turn off. Wait until the blade stops before grasping cut material.

3. Check the lower guard for proper closing before each use. Do not operate the saw if the lower guard does not move freely and close instantly. Never clamp or tie the lower guard in the open position. If the saw is accidentally dropped, the lower guard may be bent. Raise the lower guard with the retracting lever and make sure it moves freely and does not touch the blade or any other part at all angles and depths of the cut. To check the lower guard, open the lower guard by hand, then release and watch the guard close. Also, check that the Retracting Lever does not touch the tool housing. Leaving the blade exposed is VERY DANGEROUS and can lead to serious personal injury.

4. Check the operation and condition of the lower guard spring. If the guard and the spring are not operating properly, they must be serviced before use. The lower guard may operate sluggishly due to damaged parts, gummy deposits, or debris buildup.

5. The lower guard should be retracted manually only for special cuts such as "Pocket Cuts" and "Compound Cuts." Raise the lower guard with the Retracting Lever. The lower guard must be released as soon as the blade enters the material. For all other sawing, the lower guard should operate automatically.

6. Always observe whether the lower guard covers the blade before placing the saw on a bench or floor. An unprotected, coasting blade will cause the saw to walk backwards, cutting whatever is in its path. Be aware of the time it takes for the blade to stop after the switch is released.

7. NEVER hold the piece being cut in your hands or across your leg. It is important to support the work properly to minimize body exposure, blade binding, or loss of control.

8. Hold the tool by insulating gripping surfaces when operating where the cutting tool may contact hidden wiring or its own cord. Contact with a "live" wire will also make exposed metal parts of the tool "live" and shock the operator.

9. When ripping, always use a rip fence or straight-edge guide. This improves the accuracy of the cut and reduces the chance of blade binding.

10. Always use blades with the correct size and shape (diamond or round) arbor holes. Blades that do not match the mounting hardware of the saw will run eccentrically, causing a loss of control.

11. Never use damaged or incorrect blade washers or bolts. The blade washers and bolts are specially designed for the saw to reach the optimum performance and safety of operation.

12. Causes and Operator Prevention of Kickback:

- **Kickback is a sudden reaction to a pinched, bound, or misaligned saw blade, causing an uncontrolled saw to lift up and out of the workpiece toward the operator. When the blade is pinched or bound tightly by the kerf closing down, the blade stalls and the motor reaction drives the unit rapidly back toward the operator. If the blade becomes twisted or misaligned in the cut, the teeth at the back edge of the blade can dig into the top surface of the wood, causing the blade to climb out of the kerf and jump back toward the operator.**

Kickback is the result of tool misuse and incorrect operating procedures or conditions and can be avoided by taking proper precautions as given below:

- **Maintain a firm grip with both hands on the saw and position your body and arm to resist kickback forces. The operator can control kickback forces if proper precautions are taken.**
- **When the blade is binding, or when interrupting a cut for any reason, release the trigger and hold the saw motionless in the material until the blade comes to a complete stop. Never attempt to remove the saw from the work or pull the saw backward while the blade is in motion or kickback may occur. Investigate and take corrective actions to eliminate the cause of blade binding.**

- **When restarting a saw in the workpiece, centre the saw blade in the kerf and check that saw teeth are not engaged in the material. If the saw blade is binding, it may walk up or kick back from the workpiece as the saw restarts.**
- **Support large panels to minimize the risk of blade pinching and kickback. Large panels tend to sag under their weight. Supports must be placed under the panel on both sides, near the line of cut and the edge of the panel, as shown in Fig. 1.**
- **To minimize the risk of blade pinching and kickback, when the cutting operation requires resting the saw on the workpiece, the saw should be rested on the larger portion, and the smaller piece should be cut off.**

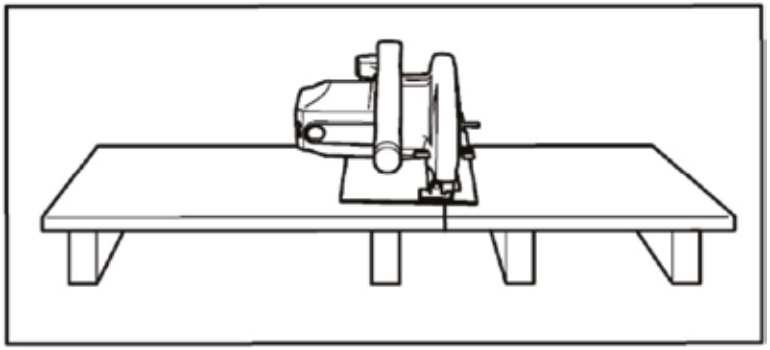


Fig. 1: To avoid kickback, support the board or panel near the cut.

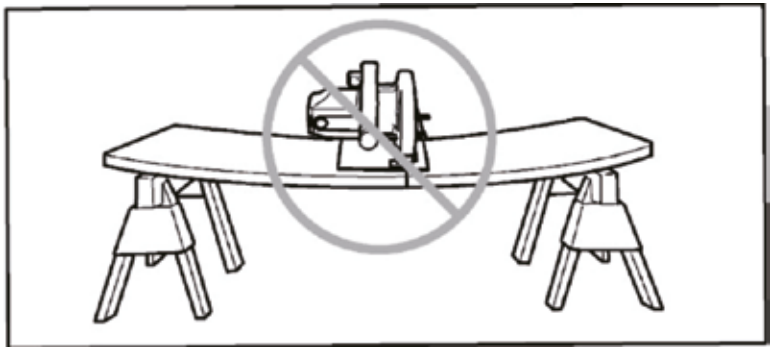


Fig. 2: Do not support the board or panel away from the cut.

- **Do not use dull or damaged blades. Unsharpened or improperly set blades produce a narrow kerf, causing excessive friction, blade binding, and kickback. Keep the blade sharp and clean. Gum and wood pitch hardened on blades slows the saw and increases the potential for kickback. Keep the blade clean by removing it from the tool, then cleaning it with gum and pitch remover, hot water, or kerosene. Never use gasoline.**
- **Blade depth and bevel-adjusting locking levers must be tight and secure before cutting. If blade adjustment shifts while cutting, it may cause binding and kickback. Use extra caution when making a "pocket cut" into existing walls or other blind areas. The protruding blade may cut objects that can cause kickback. For pocket cuts, retract the lower guard using the retracting lever.**
- **Always hold the tool firmly with both hands. Never place your hand or fingers behind the saw. If kickback occurs, the saw could easily jump backwards over your hand, leading to serious personal injury.**

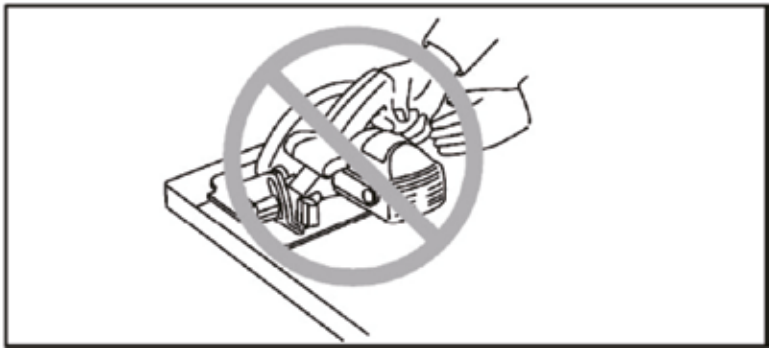


Fig. 3

▶**Never force the saw. Forcing the saw can cause uneven cuts, loss of accuracy, and possible kickback. Push the saw forward at a speed so the blade cuts without slowing.**

13. Use extra caution when cutting damp wood, pressure-treated lumber, or wood containing knots. Adjust the cut speed to maintain a smooth advancement of the tool without a decrease in blade speed.
14. Before cutting, be sure depth and bevel adjustments are tight.
15. Avoid Cutting Nails. Inspect for and remove all nails from lumber before cutting.
16. When operating the saw, keep the cord away from the cutting area and position it so it will not be caught on the workpiece during the cutting operation. The tool has a front grip and rear handle for two-handed operation. Operate with proper hand support, workpiece support, and supply cord routing away from the work area.

⚠WARNING

It is important to support the workpiece properly and hold the saw firmly to prevent loss of control, which could cause personal injury. Fig. 4 illustrates typical hand support for the saw.

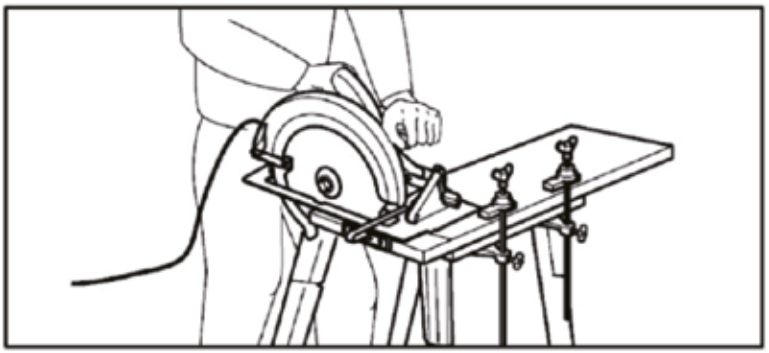


Fig. 4: A typical illustration of proper hand support, workpiece support, and supply cord routing.

17. Place the wider portion of the saw base on the part of the workpiece that is solidly supported, not on the section that will fall off when cutting. For example, Fig. 5 illustrates the correct way to cut off the end of a board, while Fig. 6 shows the incorrect way. If the workpiece is short or small, clamp it down. Do not try to hold short pieces by hand.

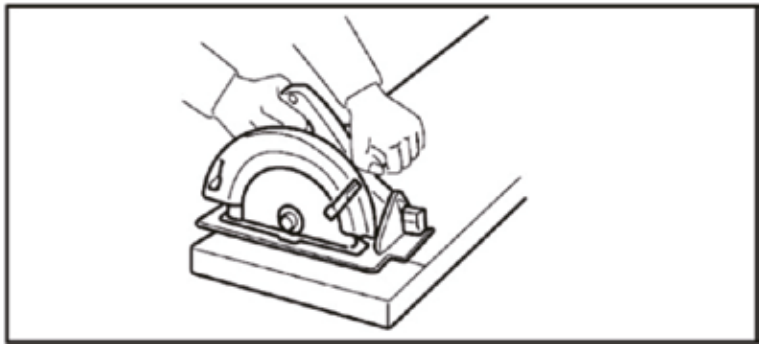


Fig. 5

Fig. 6

18. Never attempt to saw with the circular saw held upside down in a vise. This is extremely dangerous and can lead to serious accidents.

Fig. 7

⚠WARNING

The blade coasts to a stop after the switch is released. Contact with a coasting blade can cause serious injury. Before setting the tool down after completing a cut, ensure that the lower (telescoping) guard has closed and the blade has completely stopped.

19. Some materials contain chemicals that may be toxic. Exercise caution to prevent dust inhalation and skin contact. Follow the material supplier's safety data.

Specification

Symbols

The followings show the symbols used for tool.

V.....volts

A.....amperes

Hz.....hertz

.....alternating current

.....no load speed

.....Class II Construction

.../min.....revolutions or reciprocation per minute

Technical Data

Model No.	RS220001
No Load Speed	4000r/min
Max. Disc Diameter	235mm
Max. Cutting Depth	82mm
Rated Power	2200W
Frequency	50/60Hz
Voltage	220-240V~

*** Manufacturer reserves the right to change specifications without notice.**

*** Specifications may vary between different countries.**

Functional description

⚠CAUTION

Always be sure that the tool is switched off and unplugged before adjusting or checking the function of the tool.

Adjusting the cut depth

⚠CAUTION

After adjusting the cut depth, always tighten the clamping screw securely.

▶**Loosen the clamping screw on the depth guide and move the base up or down. At the desired depth of cut, secure the base by tightening the clamping screw.**

▶**Set cut depth for cleaner, safer cuts so that no more than one blade tooth projects below the workpiece. Using the proper cut depth helps to reduce the potential for dangerous kickbacks, which can cause personal injury.**

1. Clamping screw
2. Depth guide

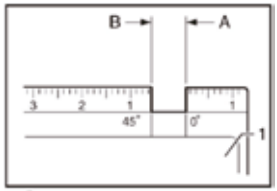
Bevel cutting

▶ **Loosen the clamping screw on the bevel scale plate on the front of the base. Set for the desired angle (0°-45°) by tilting accordingly, then tighten the clamping screw securely.**

1. Clamping screw
2. Bevel scale plate

Sighting

▶ **For straight cuts, align the A position on the front of the base with your cutting line. For 45° bevel cuts, align the B position with it.**



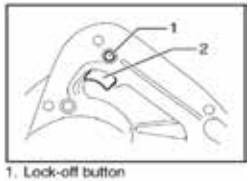
1. Base

Switch Action

⚠CAUTION

Before plugging in the tool, always check that the switch trigger actuates properly and returns to the "OFF" position when released.

▶**A lock-off button is provided to prevent the switch trigger from being accidentally pulled. To start the tool, push the lock-off button in and pull the switch trigger. Release the switch trigger to stop.**



1. Lock-off button
2. Switch trigger

Assembly

⚠CAUTION

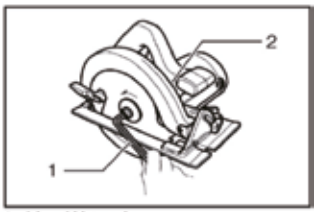
Always ensure the tool is switched off and unplugged before carrying out any work on the tool.

Removing or installing saw blade

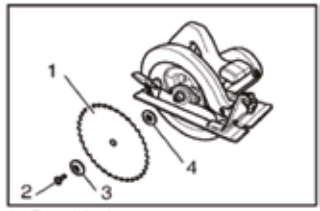
⚠CAUTION

Be sure the blade is installed with teeth pointing up at the front of the tool. Use only the Makita wrench to install or remove the blade.

- **▶To remove the blade, press the shaft lock so that the blade cannot revolve and use the wrench to loosen the hex bolt counterclockwise. Then, remove the hex bolt, outer flange, and blade.**
- **▶To install the blade, follow the reverse removal procedure. Be sure to tighten the hex bolt clockwise securely.**
- **▶When changing the blade, make sure also to clean the upper and lower blade guards of accumulated sawdust. Such efforts do not, however, replace the need to check lower guard operation before each use.**



1. Hex Wrench
2. Shaft lock



1. Saw blade
2. Hex bolt
3. Outer flange
4. Inner flange

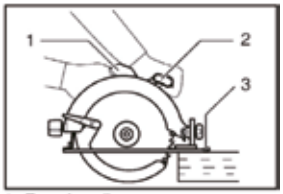
Operation

⚠CAUTION

Be sure to gently move the tool forward in a straight line. Forcing or twisting the tool will result in overheating the motor and a dangerous kickback, possibly causing severe injury.

- **▶Hold the tool firmly. The tool is provided with both a front grip and a rear handle. Use both to grasp the tool best. Set the base on the workpiece to be cut without the blade making contact. Then, turn the tool on and wait until the blade attains full speed. Move the tool over the workpiece surface, keeping it flat and advancing smoothly until the cutting is completed.**

▶**To get clean cuts, keep your sawing line straight and your speed of advance uniform. If the cut fails to follow the intended cut line properly, do not attempt to turn or force the tool back to the cut line. Doing so may bind the blade, leading to dangerous kickback and possible serious injury. Release the switch, wait for the blade to stop, and then withdraw the tool. Realign the tool on the new cut line and start the cut again. Attempt to avoid positioning, which exposes the operator to chips and wood dust being ejected from the saw. Use eye protection to help avoid injury.**



1. Rear handle
2. Front grip
3. Base

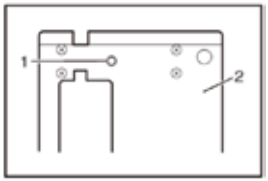
Maintenance

⚠CAUTION

Always ensure the tool is switched off and unplugged before attempting to perform inspection or maintenance.

Switch Action

▶**This adjustment has been made at the factory. But if it is off, adjust the adjusting screw with a screwdriver while squaring the blade with the base using a triangular rule, try square, etc.**



1. Adjusting screw
2. Base

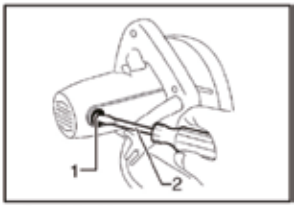
1. Triangular rule

Replacing Carbon Brushes

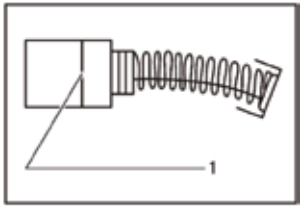
▶**Regularly remove and inspect the carbon brushes. Replace them when they wear down to the limit mark. Ensure the carbon brushes are clean and can move freely within the holders. Both carbon brushes should be replaced simultaneously, and only identical brushes should be used.**

▶**Use a screwdriver to remove the brush holder caps. Remove the worn carbon brushes, insert the new ones, and secure the brush holder caps back in place.**

▶**To ensure product safety and reliability, all repairs, maintenance, or adjustments should be performed by BAW Authorized or Factory Service Centers, using only BAW replacement parts.**



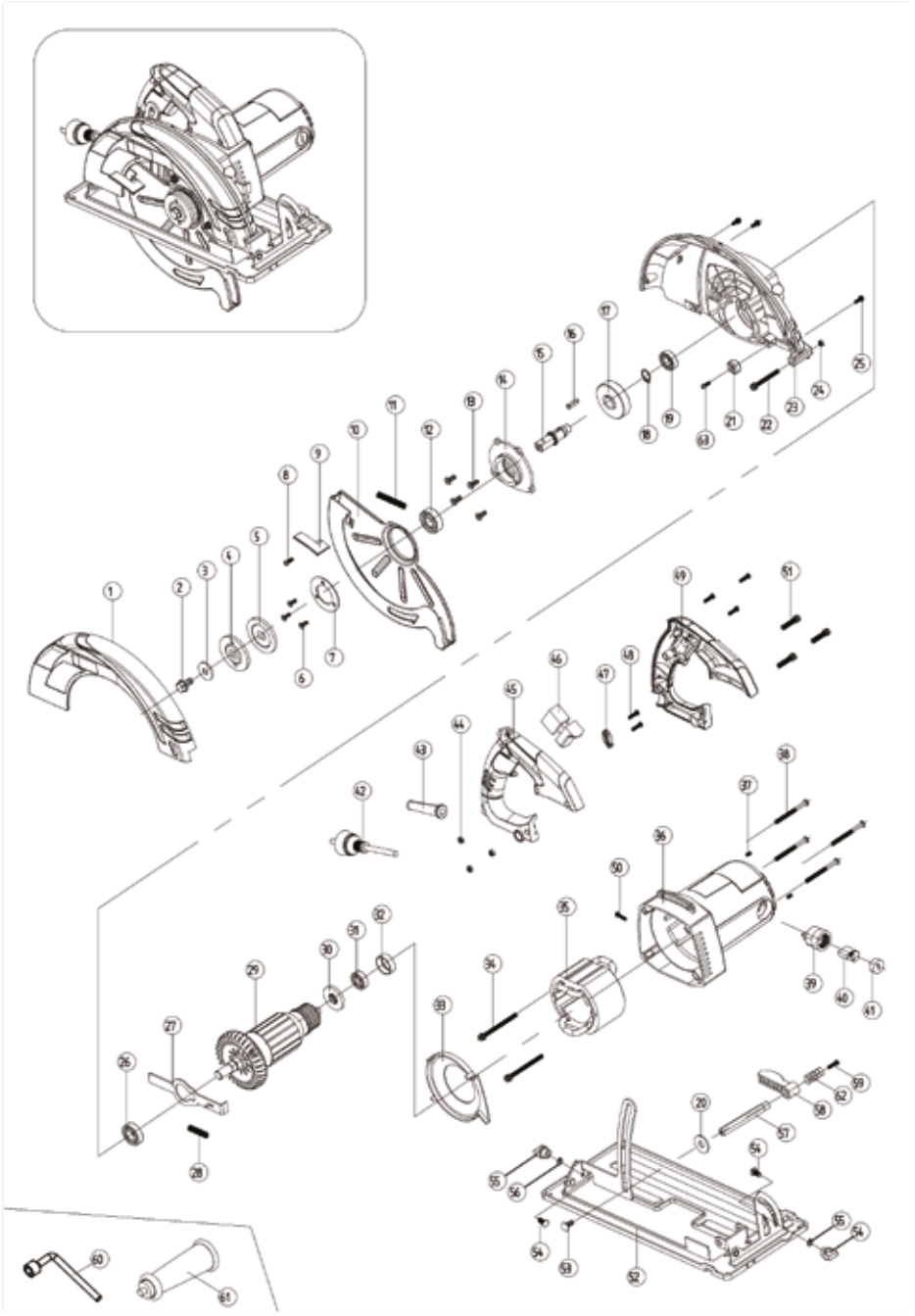
1. Brush holder cap
2. Screwdriver



1. Limit mark

ELECTRIC CIRCULAR SAW SPARE PARTS LIST

Exploded view No.	Part name	Qty	Exploded view No.	Part name	Qty
1	cover of gear housing	1	33	windshield	1
2	hex bolt M8×20	1	34	cross screw M5×65	2
3	flat washer ϕ8×ϕ22×2		35	stator	1
4	outer flange	1	36	aluminum motor housing	1
5	inner flange	1	37	spring washer ϕ5	4
6	cross screw M4×8	3	38	cross screw M5×55	4
7	bearing retainer	1	39	brush holder	2
8	cross screw M5×10	2	40	carbon brush 18×17×7	2
9	plasstic wrench of blade guard	1	41	brush holder cap	2
10	blade guard	1	42	cord 3x1^{2}x2.3	1
11	spring of blade guard	1	43	cord guard	1
12	ball bearing 6202	1	44	hex nut M5	3
13	cross screw M5×14	4	45	right handle	1
14	front cover	1	46	switch	1
15	spindle	1	47	cable clamp	1
16	flat screw 5×16	1	48	tapping screw ST4×14A	2
17	gear	1	49	left handle	1
18	ring-shield ϕ15	1	50	tapping screw ST4×12	2
19	ball bearing 6001	1	51	cross serew M5×20	3
20	flat washer ϕ5	1	52	base assembly	1
21	limit rubber pad	1	53	small diameter nut M8×20	1
22	spring rubber column ϕ8×45	1	54	small diameter nut M6×12	2
23	gear housing	1	55	plastic wing nut M6	2
24	ϕ4 spring pad	3	56	plastic srew M5×10	1
25	cross screw M4×14	3	57	non-standard nut M8×95(s12×90)	1
26	ball bearing 6000	1	58	plastic loclnut	1
27	shaft lock	1	59	hex screw M4×15	1
28	shaft-lock spring	1	60	wrench	1
29	rotor	1	61	auxiliary handle	1
30	insulating	1	62	ϕ21×ϕ30×1 paper pad	2
31	ball bearing6002	1	63	capacitance	1
32	bearing holder	1			

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