

INGCO

Lithium-Ion Circular Saw

EN Lithium-Ion Circular Saw



CSL1651



ENGLISH (Original instructions)

SPECIFICATIONS

Model		CSLI1651	
Blade diameter		165mm	
Max. Cutting depth	at 90°	55 mm	
	at 45°	38 mm	
No load speed (RPM)		4,600 /min	
Rated voltage		20V	
Standard battery cartridges		FBLI2001	FBLI2002

- Due to our continuing program of research and development, the specifications herein are subject to change without notice.
- Specifications and battery cartridge may differ from country to country.

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 and/or serious injury.

Save all warnings and instructions for future reference.

The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

Work area safety

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

Electrical Safety

4. **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 risk of electric shock.
5. **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.
6. **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.

7. **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.
8. **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.
9. **If operating a power tool in a damp location is unavoidable, use a ground fault circuit interrupter (GFCI) protected supply.** Use of an GFCI reduces the risk of electric shock.

Personal Safety

10. **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.
11. **Use personal protective equipment. Always wear eye protection.** Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
12. **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.
13. **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.

14. **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
15. **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.
16. **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.

Power tool use and care

17. **Do not 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.
18. **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
19. **Disconnect the plug from the power source and/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.
20. **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.
21. **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.** Many accidents are caused by poorly maintained power tools.
22. **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
23. **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.

Battery tool use and care

24. **Recharge only with the charger specified by the manufacturer.** A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.

25. **Use power tools only with specifically designated battery packs.** Use of any other battery packs may create a risk of injury and fire.
26. **When battery pack is not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects, that can make a connection from one terminal to another.** Shorting the battery terminals together may cause burns or a fire.
27. **Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help.** Liquid ejected from the battery may cause irritation or burns.

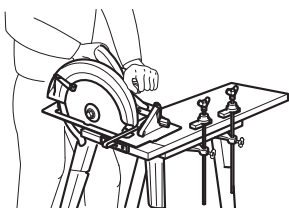
Service

28. **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.
29. **Follow instruction for lubricating and changing accessories.**
30. **Keep handles dry, clean and free from oil and grease.**

CORDLESS CIRCULAR SAW SAFETY WARNINGS

Cutting procedures

1.  **DANGER: Keep hands away from cutting area and the blade. Keep your second hand on auxiliary handle, or motor housing.** If both hands are holding the saw, they cannot be cut by the blade.
2. **Do not reach underneath the workpiece.** The guard cannot protect you from the blade below the workpiece.
3. **Adjust the cutting depth to the thickness of the workpiece.** Less than a full tooth of the blade teeth should be visible below the workpiece.
4. **Never hold piece being cut in your hands or across your leg. Secure the workpiece to a stable platform.** It is important to support the work properly to minimize body exposure, blade binding, or loss of control.



A typical illustration of proper hand support and workpiece support.

5. **Hold the power tool by insulated gripping surfaces only, when performing an operation where the cutting tool may contact hidden wiring.** Contact with a "live" wire will also make exposed metal parts of the power tool "live" and could give the operator an electric shock.
6. **When ripping, always use a rip fence or straight edge guide.** This improves the accuracy of cut and reduces the chance of blade binding.
7. **Always use blades with correct size and shape (diamond versus round) of arbour holes.** Blades that do not match the mounting hardware of the saw will run eccentrically, causing loss of control.
8. **Never use damaged or incorrect blade washers or bolt.** The blade washers and bolt were specially designed for your saw, for optimum performance and safety of operation.

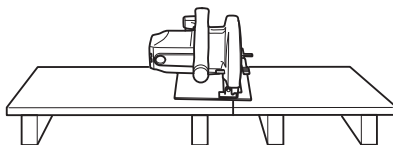
Kickback causes and related warnings

- 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.

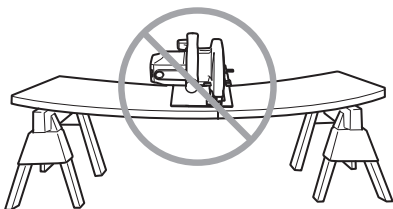
Kickback is the result of saw misuse and/or incorrect operating procedures or conditions and can be avoided by taking proper precautions as given below.

9. **Maintain a firm grip with both hands on the saw and position your arms to resist kickback forces. Position your body to either side of the blade, but not in line with the blade.** Kickback could cause the saw to jump backwards, but kickback forces can be controlled by the operator, if proper precautions are taken.

10. **When 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.
11. **When restarting a saw in the workpiece, centre the saw blade in the kerf and check that saw teeth are not engaged into the material.** If saw blade is binding, it may walk up or kickback from the workpiece as the saw is restarted.
12. **Support large panels to minimise the risk of blade pinching and kickback.** Large panels tend to sag under their own weight. Supports must be placed under the panel on both sides, near the line of cut and near the edge of the panel.



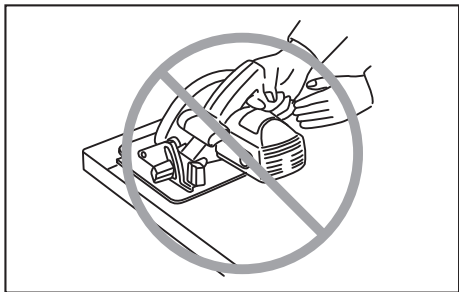
To avoid kickback, do support board or panel near the cut.



Do not support board or panel away from the cut.

13. **Do not use dull or damaged blades.** Unsharpened or improperly set blades produce narrow kerf causing excessive friction, blade binding and kickback.
14. **Blade depth and bevel adjusting locking levers must be tight and secure before making cut.** If blade adjustment shifts while cutting, it may cause binding and kickback.

15. **Use extra caution when sawing into existing walls or other blind areas.** The protruding blade may cut objects that can cause kickback.
16. **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.



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

Lower guard function

18. **Check lower guard for proper closing before each use. Do not operate the saw if lower guard does not move freely and close instantly. Never clamp or tie the lower guard into the open position.** If saw is accidentally dropped, lower guard may be bent. Raise the lower guard with the retracting handle and make sure it moves freely and does not touch the blade or any other part, in all angles and depths of cut.
19. **Check the operation of the lower guard spring. If the guard and the spring are not operating properly, they must be serviced before use.** Lower guard may operate sluggishly due to damaged parts, gummy deposits, or a build-up of debris.
20. **Lower guard should be retracted manually only for special cuts such as "plunge cuts" and "compound cuts".** Raise lower guard by retracting handle and as soon as blade enters the material, the lower guard must be released. For all other sawing, the lower guard should operate automatically.
21. **Always observe that the lower guard is covering the blade before placing saw down on 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 switch is released.
22. **To check lower guard, open lower guard by hand, then release and watch guard closure. Also check to see that retracting handle does not touch tool housing.** Leaving blade exposed is VERY DANGEROUS and can lead to serious personal injury.

Additional safety warnings

23. **Intended use**
This tool is intended to cut wood products only. Accumulated sawdust on the lower guard and hub from other materials may effect the proper closure of the lower guard which could lead to serious personal injury.
24. **Use extra caution when cutting damp wood, pressure treated lumber, or wood containing knots.** Maintain smooth advancement of tool without decrease in blade speed to avoid overheating the blade tips.
25. **Do not attempt to remove cut material when blade is moving. Wait until blade stops before grasping cut material.** Blades coast after turn off.
26. **Avoid Cutting Nails. Inspect for and remove all nails from lumber before cutting.**
27. **Place the wider portion of the saw base on that part of the workpiece which is solidly supported, not on the section that will fall off when the cut is made. As examples, Fig. 1 illustrates the RIGHT way to cut off the end of a board, and Fig. 2 the WRONG way. If the workpiece is short or small, clamp it down. DO NOT TRY TO HOLD SHORT PIECES BY HAND!**

Fig.1

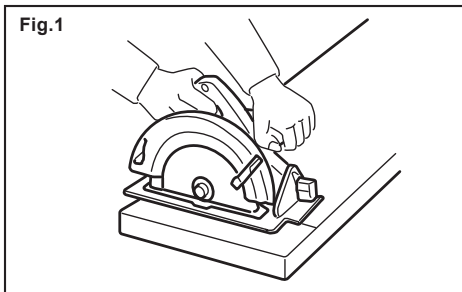
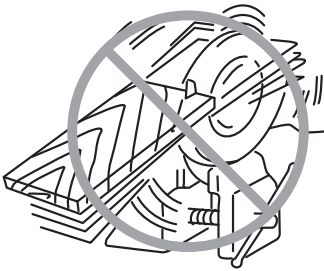


Fig.2



28. **Before setting the tool down after completing a cut, be sure that the lower guard has closed and the blade has come to a complete stop.**
29. **Never attempt to saw with the circular saw held upside down in a vise. This is extremely dangerous and can lead to serious accidents.**



30. **Some material contains chemicals which may be toxic. Take caution to prevent dust inhalation and skin contact. Follow material supplier safety data.**
31. **Do not stop the blades by lateral pressure on the saw blade.**
32. **Do not use any abrasive wheels.**
33. **Only use the saw blade with the diameter that is marked on the tool or specified in the manual.** Use of an incorrectly sized blade may affect the proper guarding of the blade or guard operation which could result in serious personal injury.
34. **Keep blade sharp and clean.** Gum and wood pitch hardened on blades slows saw and increases potential for kickback. Keep blade clean by first removing it from tool, then cleaning it with gum and pitch remover, hot water or kerosene. Never use gasoline.
35. **Wear a dust mask and hearing protection when use the tool.**

⚠WARNING:

DO NOT let comfort or familiarity with product (gained from repeated use) replace strict adherence to safety rules for the subject product. **MISUSE** or failure to follow the safety rules stated in this instruction manual may cause serious personal injury.

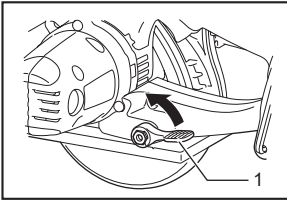
Symbols

The followings show the symbols used for tool.

v	· volts
—	· direct current
---	· no load speed
n ₀	· revolutions or reciprocation per minute
... /min	
r /min	

SAVE THESE INSTRUCTIONS.

Adjusting depth of cut



1. Lever

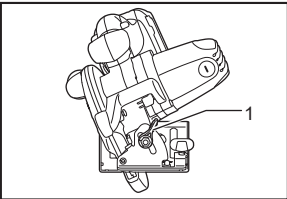
⚠CAUTION:

- After adjusting the depth of cut, always tighten the lever securely.

Loosen the lever on the side of the rear handle and move the base up or down. At the desired depth of cut, secure the base by tightening the lever.

For cleaner, safer cuts, set cut depth so that no more than one blade tooth projects below workpiece. Using proper cut depth helps to reduce potential for dangerous KICKBACKS which can cause personal injury.

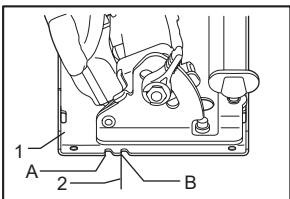
Bevel cutting



1. Lever

Loosen the lever on the bevel scale plate on the front base. Set for the desired angle (0° - 50°) by tilting accordingly, then tighten the lever securely.

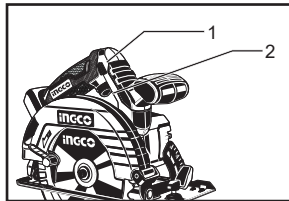
Sighting



1. Base
2. Cutting line

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.

Switch action



1. Lock-off lever
2. Switch trigger

⚠CAUTION:

- Before inserting the battery cartridge into the tool, always check to see that the switch trigger actuates properly and returns to the "OFF" position when released.
- Do not pull the switch trigger hard without pressing the lock-off lever. This can cause switch breakage.

To prevent the switch trigger from being accidentally pulled, a lock-off lever is provided. To start the tool, press the lock-off lever and pull the switch trigger. Release the switch trigger to stop.

⚠WARNING:

- For your safety, this tool is equipped with lock-off lever which prevents the tool from unintended

starting. NEVER use the tool if it runs when you simply pull the switch trigger without pressing the lock-off lever. Return tool a INCO service center for proper repairs BEFORE further usage.

- NEVER tape down or defeat purpose and function of lock-off lever.

Electric brake

This tool is equipped with an electric blade brake. If the tool consistently fails to quickly stop blade after switch trigger release, have tool serviced at a INCO service center.

The blade brake system is not a substitute for lower guard. NEVER USE TOOL WITHOUT A FUNCTIONING LOWER GUARD. SERIOUS PERSONAL INJURY CAN RESULT.

Lighting the lamp

⚠CAUTION:

- Do not look in the light or see the source of light directly.

Only to turn on the light, pull the switch trigger without pressing the lock-off lever. To turn on the light and run the tool, press the lock-off lever and pull the switch trigger with the lock-off lever being pressed.

NOTE:

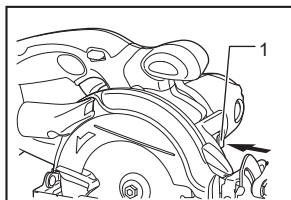
- Use a cotton stick to wipe the dirt off the lens of lamp. Be careful not to scratch the lens of lamp, or it may lower the illumination.
- Do not use gasoline, thinner or the like to clean the lens of lamp. Using such substances will damage the lens.

ASSEMBLY

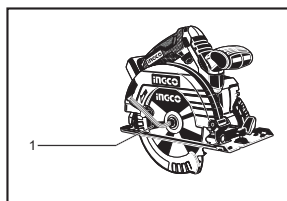
⚠CAUTION:

- Always be sure that the tool is switched off and the battery cartridge is removed before carrying out any work on the tool.

Removing or installing blade



1. Shaft lock



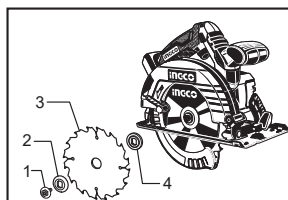
1. Hex wrench

⚠CAUTION:

- Be sure the blade is installed with teeth pointing up at the front of the tool.
- Use only the INCO 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.

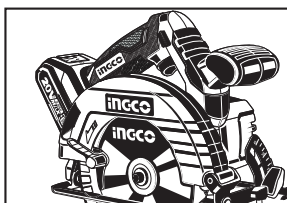
To install the blade, follow the removal procedure in reverse. BE SURE TO TIGHTEN THE HEX BOLT CLOCKWISE SECURELY.



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

When changing blade, make sure to also clean upper and lower blade guards of accumulated chips and particles. Such efforts do not, however, replace the need to check lower guard operation before each use.

Hex wrench storage



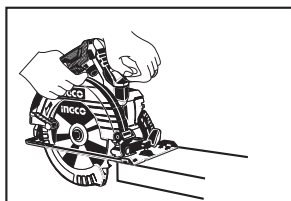
1. Hex wrench

When not in use, store the hex wrench as shown in the figure to keep it from being lost.

OPERATION

⚠ CAUTION:

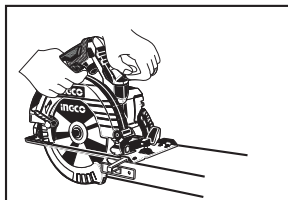
- Always insert the battery cartridge all the way until it locks in place. If you can see the red part on the upper side of the button, it is not locked completely. Insert it fully until the red part cannot be seen. If not, it may accidentally fall out of the tool, causing injury to you or someone around you.
- Be sure to move the tool forward in a straight line gently. Forcing or twisting the tool will result in overheating the motor and dangerous kickback, possibly causing severe injury.
- If the tool is operated continuously until the battery cartridge has discharged, allow the tool to rest for 15 minutes before proceeding with a fresh battery.



Hold the tool firmly. The tool is provided with both a front grip and rear handle. Use both to best grasp the tool. If both hands are holding saw, they cannot be cut by the blade. Set the base on the workpiece to be cut without the blade making any contact. Then turn the tool on and wait until the blade attains full speed. Now simply move the tool forward over the workpiece surface, keeping it flat and advancing smoothly until the sawing is completed.

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

Rip fence (guide rule) (Accessory)

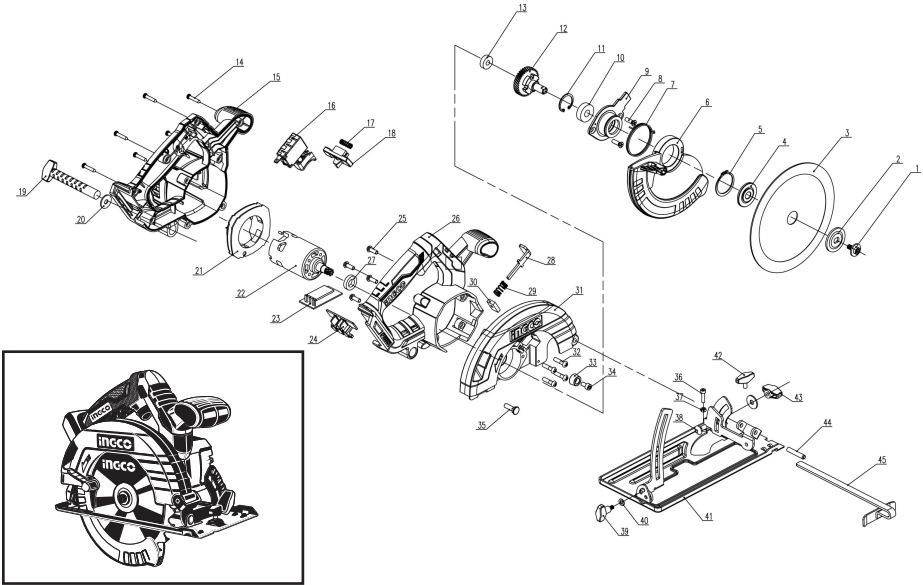


The handy rip fence allows you to do extra-accurate straight cuts. Simply slide the rip fence up snugly against the side of the workpiece and secure it in position with the screw on the front of the base. It also makes repeated cuts of uniform width possible.

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EXPLODED VIEW

CSLI1651



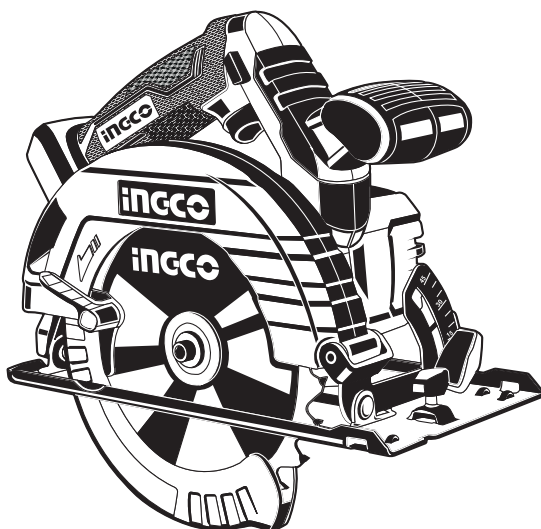


SPARE PART LIST

CSLI1651

NO.	Part Description	Qty	NO.	Part Description	Qty
1	Bolt M6X16	1	24	Dc Inlet	1
2	Outter Flange	1	25	Bolt M5X14	4
3	Saw Blade Ø165	1	26	Right Housing	1
4	Inner Flange	1	27	Bearing 6801-2Rs(Φ12Xφ21X5)	1
5	Circlip 32	1	28	Spindle Lock	1
6	Movable Guard	1	29	Spring	1
7	Movable Guard Spring	1	30	Wool Felt	1
8	Bolt M5X14	2	31	Fixed Guard	1
9	Gear Box Cover	1	32	Bolt M5X20	4
10	Bearing 6000-2Rs(Φ10Xφ26X8)	2	33	Movable Guard Stopper	1
11	Circlip 26	1	34	Bolt M5X10	1
12	Shaft Assy.	1	35	Bolt M6X20	1
13	Bearing 607-2Rs(Φ7Xφ19X6)	1	36	Bolt M4×16	1
14	Screw St4.2X16	9	37	Bolt M4	1
15	Left Housing	1	38	Bolt M6X14	1
16	Switch	1	39	Knob	1
17	Spring	1	40	Washer 5	1
18	Safety Button For Switch	1	41	Base Assy.	1
19	Knob	1	42	Parallel Guide Konb	1
20	Washer 6	2	43	Knob	1
21	Baffle	1	44	Spring Pin Φ6X32	1
22	Motor Assy.	1	45	Parallel Guide	1
23	Pcb	1			

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MADE IN CHINA

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CSLI1651