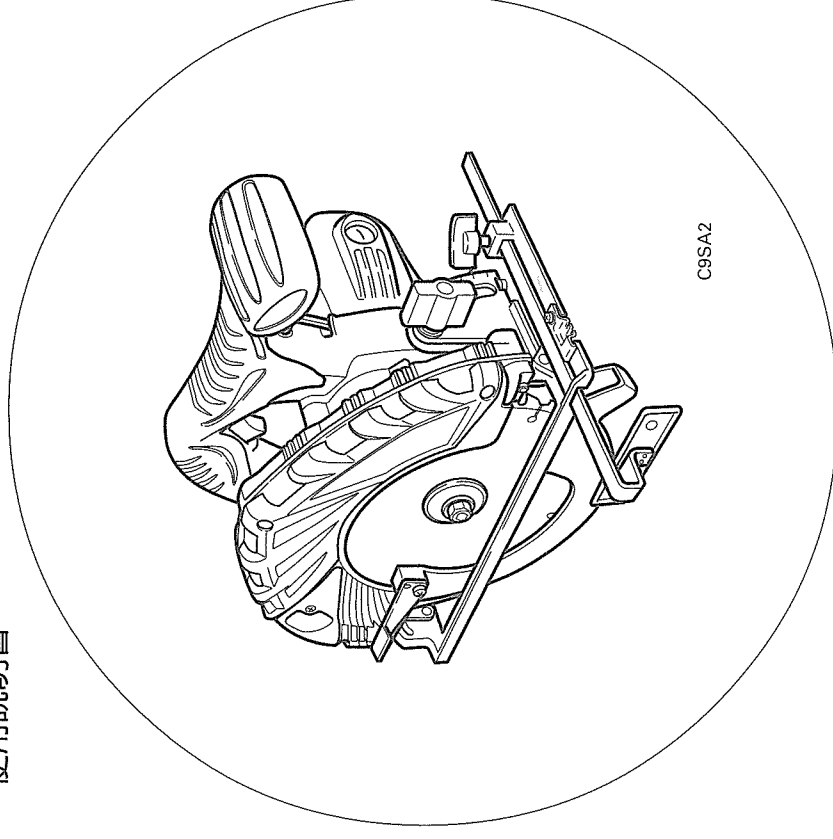


HITACHI

Circular Saw
日立牌手提電動圓鋸

C 9SA2 • C 9BA2

HANDLING INSTRUCTIONS
使用說明書



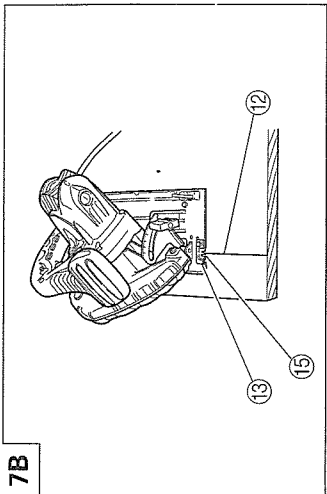
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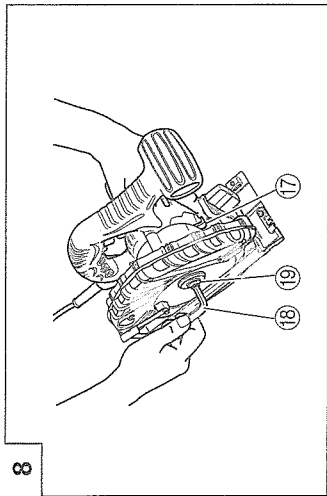


Read through carefully and understand these instructions before use.
使用前務請詳加閱讀

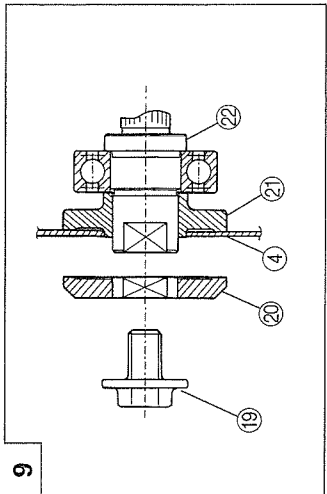
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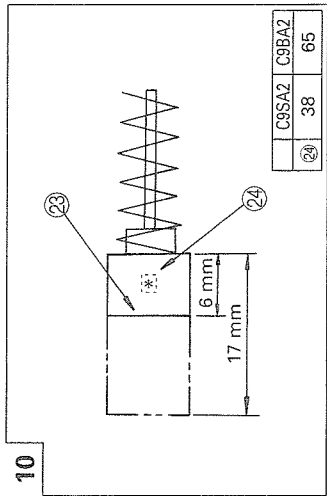
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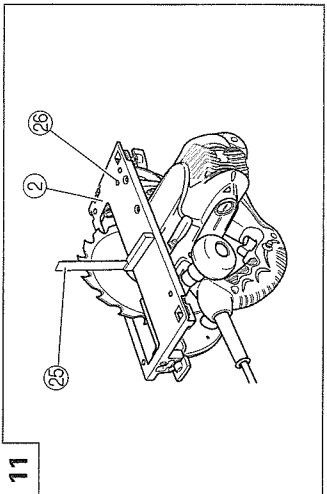
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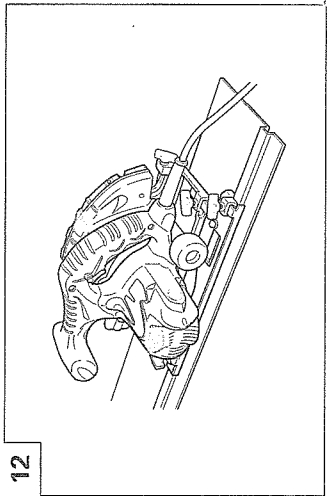
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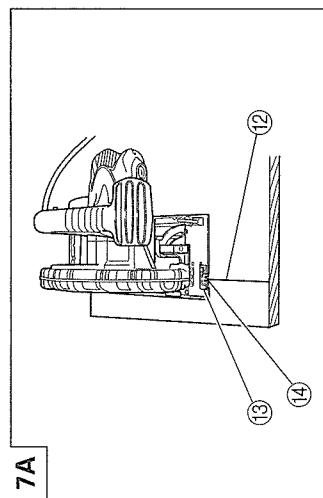
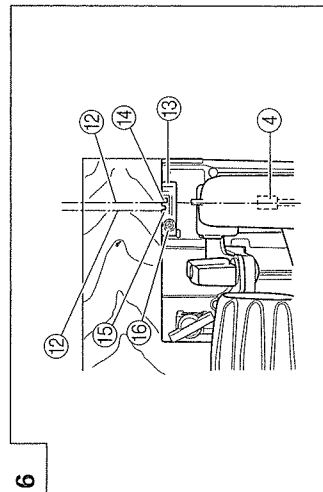
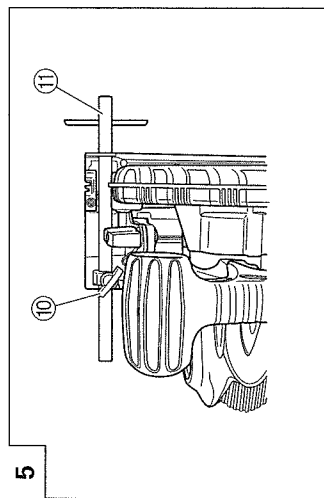
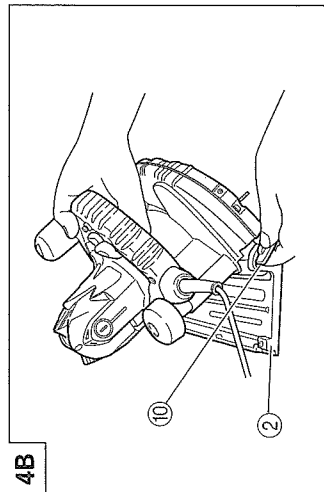
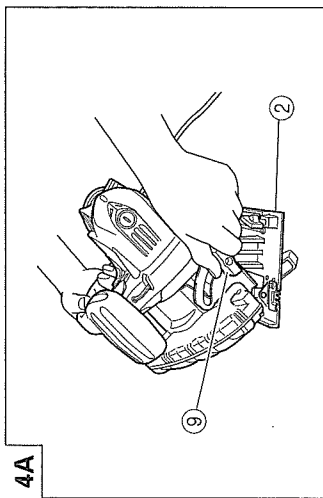
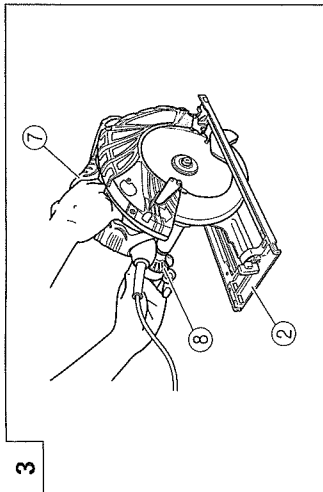
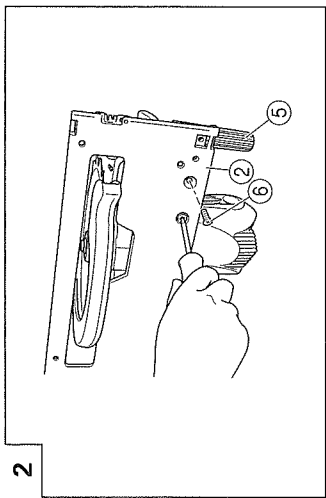
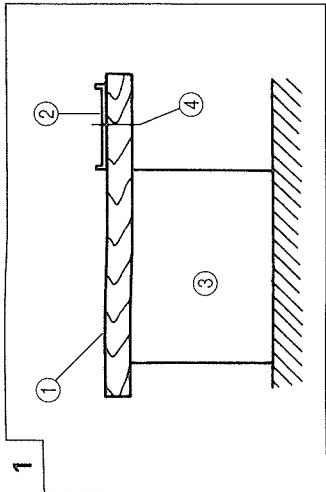


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12

①	Lumber	鋸木
②	Base	底座
③	Workbench	工作臺
④	Saw blade	鋸片
⑤	Side Handle	側邊把手
⑥	Flat hd. screw M6 x 16	平頭螺絲 M6 x 16
⑦	Handle	把手
⑧	Knob	旋鈕
⑨	Wing-nut	蝶形螺帽
⑩	Wing-bolt	蝶形螺栓
⑪	Guide	引導器
⑫	Premarked line	記號線
⑬	Guide piece	導向器
⑭	Front scale when not inclined	不傾斜時的前刻度盤
⑮	Front scale at 45° incline	傾斜 45 度時的前刻度盤
⑯	M4 Screw	M4 螺絲
⑰	Lock lever	鎖緊桿
⑱	Hex. bar wrench	六角頭棒形扳手
⑲	Hexagonal-socket bolt	六角承座螺栓
⑳	Washer (B)	襯墊 (B)
㉑	Washer (A)	襯墊 (A)
㉒	Spindle	心軸
㉓	Wear limit	磨損極限
㉔	No. of carbon brush	碳刷數
㉕	Square	直角尺
㉖	Slotted set screw	槽頭螺絲



GENERAL SAFETY RULES

WARNING!

Read all instructions before using the power tool. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury. The term "power tool" in all of the warnings listed below refers to your mains operated (corded) power tool or battery operated (cordless) power tool.

SAVE THESE INSTRUCTIONS

- 1) Work area
 - a) Keep work area clean and well lit. Cluttered and dark areas invite accidents.
 - b) 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 of fumes.
 - c) Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.
- 2) Electrical safety
 - a) 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.
 - b) 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.
 - c) Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
 - d) 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.
 - e) 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.

3) Personal safety

- a) 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 safety equipment. Always wear eye protection. Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- b) Avoid accidental starting. Ensure the switch is in the off position before plugging in. Carrying power tools with your finger on the switch or plugging in power tools that have the turning the power tool on.

- e) 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.
- f) 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.
- g) If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of these devices can reduce dust related hazards.

4) Power tool use and care

- a) 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.
- b) 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.
- c) Disconnect the plug from the power source before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally.
- d) 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.
- e) Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tools operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools. Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- f) Use the power tool, accessories and tool bits etc., in accordance with these instructions and in the manner intended for the particular type of power tool, taking into account the working conditions and the work to be performed. Use of the power tool for operations different from intended could result in a hazardous situation.

5) Service

- a) 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.

PRECAUTION

Keep children and infirm persons away. When not in use, tools should be stored out of reach of children and infirm persons.

SAFETY INSTRUCTIONS FOR ALL SAWS

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.
- Do not reach underneath the workpiece. The guard cannot protect you from the blade below the workpiece.
- 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.
- 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.
- Hold power tool by insulated gripping surfaces when performing an operation 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 power tool "live" and shock the operator.
- When ripping always use a rip fence or straight edge guide. This improves the accuracy of cut and reduces the chance of blade binding.
- 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.
- Never use damaged or incorrect blade washers or bolts. The blade washers and bolt were specially designed for your saw, for optimum performance and safety of operation.
 - Never use any abrasive wheels
 - Burst of abrasive wheel cause serious injury of operator or persons around the working area.

FURTHER SAFETY INSTRUCTIONS FOR ALL SAWS

- 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 saw misuse and/or 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 arms to resist kickback forces.

Position your body 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.
- 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.
 - 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.
 - Support large panels to minimize 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.
 - Unsharpened or improperly set blades produce narrow kerf causing excessive friction, blade binding and kickback.
 - 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.
 - Use extra caution when making a "plunge cut" into existing walls or other blind areas. The protruding blade may cut objects that can cause kickback.

SAFETY INSTRUCTIONS FOR SAWS WITH INNER PENDULUM GUARD

- 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 depth of cut.
- 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 build-up of debris.
- 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.
- 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.

PRECAUTIONS ON USING CIRCULAR SAW

- Do not use saw blades which are deformed or cracked.
- Do not use saw blades made of high speed steel. Do not use saw blades which do not comply with the characteristics specified in these instructions.
- Do not stop the saw blades by lateral pressure on the disc.
- Always keep the saw blades sharp.
- Ensure that the lower guard moves smoothly and freely.
- Never use the circular saw with its lower guard fixed in the open position.
- Ensure that the retraction mechanism of the guard system operates correctly.
- Never operate the circular saw with the saw blade turned upward or to the side.
- Ensure that the material is free of foreign matters such as nails.
- For models C9SA2 and C9BA2, the saw blades should be 235 mm.

SPECIFICATIONS

Model	C9SA2	C9BA2
Voltage (by areas)*	(110V, 220V, 230V, 240V) ~	~
Cutting Depth	86 mm	86 mm
	90°	65 mm
	45°	1570 W / 2000 W
Power Input*		5000 / min
No-Load Speed		6.8 kg
Weight (without cord)		

*Be sure to check the nameplate on product as it is subject to change by areas.

STANDARD ACCESSORIES

- Saw Blade (Dia. 235 mm) 1
 - Hex. bar wrench 1
 - Guide 1
 - Wing-bolt 1
- Standard accessories are subject to change without notice.

OPTIONAL ACCESSORIES (sold separately)

- Washer (A) ... for 16 mm (Hole dia. of saw blade)
 - Guide Rail Adapter (See Fig. 12) ... for 30 mm (Hole dia. of saw blade)
- Optional accessories are subject to change without notice.

APPLICATION

Cutting various types of wood.

PRIOR TO OPERATION

- Power source
Ensure that the power source to be utilized conforms to the power requirements specified on the product nameplate.

- For model C9BA2, be careful of brake kickback. C9BA2 model features an electric brake that functions when the switch is released. As there is some kickback when the brake functions, be sure to hold the main body securely. Sparks can sometimes appear caused by braking operation when the switch is turned off since C9BA2 model employ electric brakes. Be informed, however, that this phenomenon is not a machine trouble.
- For model C9BA2, when the brake becomes ineffective, replace the carbon brushes with new ones.
- Disconnect the plug from the receptacle before carrying out any adjustment, servicing or maintenance.

2. Power switch

Ensure that the power switch is in the OFF position. If the plug is connected to a receptacle while the power switch is in the ON position, the power tool will start operating immediately, which could cause a serious accident.

3. Extension cord

When the work area is removed from the power source, use an extension cord of sufficient thickness and rated capacity. The extension cord should be kept as short as practicable.

4. Prepare a wooden workbench (Fig. 1)

Since the saw blade will extend beyond the lower surface of the lumber, place the lumber on a workbench when cutting. If a square block is utilized as a workbench, select level ground to ensure it is properly stabilized. An unstable workbench will result in hazardous operation.

5. When using the side handle (Fig. 2)

Securely attach the side handle to the base with the two flat head screws (M6 x 16) when using the side handle.

CAUTION

To avoid possible accident, always ensure that the portion of lumber remaining after cutting is securely anchored or held in position.

ADJUSTING THE SAW PRIOR TO USE

- Adjusting the cutting depth**
As shown in Fig. 3, hold the handle with one hand while loosening the knob with the other. The cutting depth can be adjusted by moving the base to the desired position. In such manner adjust the cutting depth and then securely retighten the knob.
- Adjusting the angle of inclination**
As shown in Fig. 4 (A), Fig. 4 (B) by loosening the wing-nut on the incline gauge and the wing-bolt on the base, the saw blade may be inclined to a maximum angle of 45° in relation to the base. After having completed the adjustment, reconfirm that the wing-nut and the wing-bolt are firmly tightened.
- Regulating the guide (Fig. 5)**
The cutting position can be regulated by moving the guide to the left or right after loosening its wingbolt. The guide may be mounted on either the right or left side of the tool.
- Adjusting the guide piece**
On the circular saw, it is possible to make fine adjustment of the fixing position of the guide piece, where the saw blade and the premarked line are to be aligned.
When the saw is shipped from the factory, the linear portion of a front scale on the guide piece is aligned with the central position of the saw blade (Fig. 6).
Loosen the fixed M4 screw on the guide piece, should the fixing position be wrong, and make necessary adjustment of the position.

CUTTING PROCEDURES

- Place the base on the material, then align the premarked line and the sawblade with the guide piece front scale section at the front of the base (Fig. 6).
When the base is not slanted, use the large cutout as the guide (Fig. 6, Fig. 7 (A)).
If the base is slanted (45 degrees), use the small front scale as the guide (Fig. 6, Fig. 7 (B)).
 - Ensure that the switch is turned to the ON position before the saw blade comes in contact with the lumber. The switch is turned ON when the trigger is squeezed; and OFF when the trigger is released.
Moving the saw straight at a constant speed will produce optimum cutting.
- CAUTIONS**
Prior to cutting operation, make sure the material you are going to cut. If the material to be cut is expected to generate harmful/toxic dusts, make sure the dust bag or appropriate dust extraction system is connected with dust outlet tightly.
Wear the dust mask additionally, if available.
A coating of PFTE is applied to the bases of the C9BA2 type. Be careful not to press too hard on the unit body since this tends to place a heavy load on the motor. Using a gentle pressure will make the piece slide easier and allow cutting with less force. Trying to cut wood that is covered with hard particle material such as sand or metal chips tends to easily scratch damage the surface coating so use caution.

- Before starting to saw, ensure that the saw blade has reached full speed revolution.
- Should the saw blade be stopped or made an abnormal noise during operation, turn off the switch immediately.
- Always take care in preventing the power cord from coming near the revolving saw blade.
- Using the circular saw with the saw blade facing upwards or sideways is very hazardous. Such uncommon applications should be avoided.
- When cutting materials, always wear protective glasses.
- When finished with a job, pull out the plug from the receptacle.

MOUNTING AND DISMOUNTING THE SAW BLADE

CAUTION

To avoid serious accident, ensure the switch is in the OFF position, and the power source is disconnected.

- Dismounting the saw blade**
(1) Set the cutting volume at maximum, and place the Circular Saw as shown in Fig. 8.
(2) Depress the lock lever, lock the spindle, and remove the hexagonal-socket bolt with the Hex. bar wrench.
(3) While holding the lower guard lever to keep the lower guard fully retracted into the saw cover, remove the saw blade.
- Mounting the Saw Blade**
(1) Thoroughly remove any sawdust which has accumulated on the spindle, bolt and washers.
(2) As shown in Fig. 9, the side of Washer (A) with a projected center the same diameter as the inner diameter of the saw blade and the concave side of Washer (B) must be fitted to the saw blade sides.
* Washer (A) is supplied for 2 types of saw blades with the hole diameters of 16 mm and 30 mm. (When buying the Circular Saw, one type of washer (A) is supplied.)

In case the hole diameter of your saw blade does not correspond to that of washer (A), please contact the shop where you purchased the Circular Saw.

- (3) To assure proper rotation direction of the saw blade, the arrow direction on the saw blade must coincide with the arrow direction on the saw cover.
- (4) Using the fingers, tighten the hexagonal-socket bolt retaining the saw blade as much as possible. Then depress the lock lever, lock the spindle, and thoroughly tighten the bolt.

CAUTION

After having attached the saw blade, reconfirm that the lock lever is firmly secured in the prescribed position.

MAINTENANCE AND INSPECTION

- Inspecting the saw blade**
Since use of a dull saw blade will degrade efficiency and cause possible motor malfunction, sharpen or replace the saw blade as soon as abrasion is noted.
- Inspecting the mounting screws**
Regularly inspect all mounting screws and ensure that they are properly tightened. Should any of the screws be loose, retighten them immediately. Failure to do so could result in serious hazard.

3. Inspecting the carbon brushes (Fig. 10)

The motor employs carbon brushes which are consumable parts. Since an excessively worn carbon brush can result in motor trouble, replace the carbon brushes with new ones having the same carbon brush No. shown in the figure when it becomes worn to or near the "wear limit". In addition, always keep carbon brushes clean and ensure that they slide freely within the brush holders.

CAUTION

- When replacing the new carbon brushes, always use genuine Hitachi carbon brushes with the number specified in the drawing.
 - For model C9BA2, the brake may not work if other than the specified carbon brushes are used. When the brake becomes ineffective, replace the carbon brushes with new ones.
- Replacing carbon brushes**
Disassemble the brush caps with a slotted-head screwdriver. The carbon brushes can then be easily removed.
 - Replacing supply cord**
If the replacement of the supply cord is necessary, this has to be done by Hitachi Authorized Service Center in order to avoid safety hazard.

6. Maintenance of the motor

The motor unit winding is the very "heart" of the power tool.

Exercise due care to ensure the winding does not become damaged and/or wet with oil or water.

7. Adjusting the base and saw blade to maintain perpendicularity

The angle between the base and the saw blade has been adjusted to 90°, however should this perpendicularity be lost for some reason, adjust in the following manner:

- (1) Turn the base face up (Fig. 11) and loosen the wing-nut and wing-bolt (Fig. 4 (A), Fig. 4 (B)).
- (2) Apply a square to the base and the saw blade and turning the slotted set screw with a slotted-head screwdriver, shift the position of the base to produce the desired right angle.

8. Service parts list

CAUTION

Repair, modification and inspection of Hitachi Power Tools must be carried out by an Hitachi Authorized Service Center.

This Parts List will be helpful if presented with the tool to the Hitachi Authorized Service Center when requesting repair or other maintenance.

In the operation and maintenance of power tools, the safety regulations and standards prescribed in each country must be observed.

MODIFICATIONS

Hitachi Power Tools are constantly being improved and modified to incorporate the latest technological advancements.

Accordingly, some parts may be changed without prior notice.

NOTE

Due to HITACHI's continuing program of research and development, the specifications herein are subject to change without prior notice.