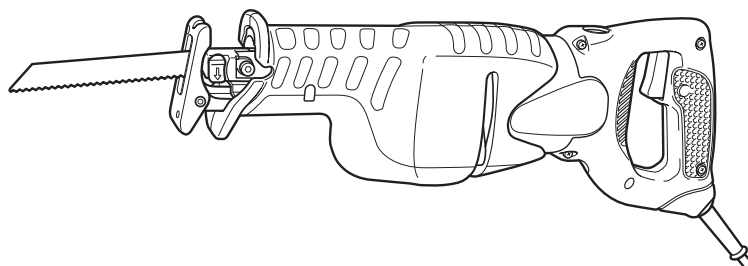


HIKOKI

Reciprocating Saw Model CR 13V

Handling instructions



NOTE:

Before using this Electric Power Tool, carefully read through these HANDLING INSTRUCTIONS to ensure efficient, safe operation. It is recommended that these INSTRUCTIONS be kept readily available as an important reference when using this power tool.



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.

1) Work area safety

- a) **Keep work area clean and well lit.**
Cluttered or 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 or 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.
- f) **If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply.**
Use of an RCD 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.
- b) **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.
- c) **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.

- d) **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.
- e) **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 dust collection 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 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.
- 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 tool's operation.**
If damaged, have the power tool repaired before use.
Many accidents are caused by poorly maintained power tools.
- f) **Keep cutting tools sharp and clean.**
Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- g) **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.

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.

RECIPROCATING SAW SAFETY WARNING

Hold power tool by insulated gripping surfaces, when performing an operation where the cutting accessory may contact hidden wiring or its own cord.

Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.

SPECIFICATIONS

Voltage (by areas)*	(110 V, 115 V, 120 V, 127 V, 220 V, 230 V, 240 V) ~
Power Input	1010 W*
Capacity	Mild Steel Pipe: O.D. 130 mm Vinyl Chloride Pipe: O.D. 130 mm Wood: Depth 300 mm Mild Steel Plate: Thickness 19 mm
No-Load Speed	0 – 2800 min ⁻¹
Stroke	29 mm
Weight (without cord)	3.3 kg

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

STANDARD ACCESSORIES

- (1) Blade (No. 103) 1
 - (2) Case 1
 - (3) Hexagonal bar wrench 1
- Standard accessories are subject to change without notice.

OPTIONAL ACCESSORIES (sold separately)

- (1) No. 1 Blade
- (2) No. 2 Blade
- (3) No. 3 Blade
- (4) No. 4 Blade
- (5) No. 5 Blade
- (6) No. 8 Blade
- (7) No. 9 Blade
- (8) No. 95 Blade
- (9) No. 96 Blade
- (10) No. 101 Blade
- (11) No. 102 Blade
- (12) No. 103 Blade
- (13) No. 104 Blade
- (14) No. 105 Blade
- (15) No. 106 Blade
- (16) No. 107 Blade
- (17) No. 108 Blade
- (18) No. 121 Blade
- (19) No. 131 Blade
- (20) No. 132 Blade
- (21) Cut-off guide for pipe

- (1) – (9) : HCS Blades (HCS : High speed Carbon Steel)
 - (10) – (20) : BI-METAL Blades
- Refer to **Table 1, 2 and 3** for use of the blades.
Optional accessories are subject to change without notice.

APPLICATIONS

- Cutting pipe and angle steel.
- Cutting various lumbers.
- Cutting mild steel plates, aluminum plates, and copper plates.
- Cutting synthetic resins, such as phenol resin and vinyl chloride.

For details refer to the section entitled "SELECTION OF BLADES".

PRIOR TO OPERATION

1. Power source

Ensure that the power source to be utilized conforms to the power requirement specified on the product nameplate.

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. Dust produced in operation

The dust produced in normal operation may affect the operator's health. To wear a dust mask is recommended.

5. RCD

The use of a residual current device with a rated residual current of 30mA or less at all times is recommended.

6. Mounting the blade

This unit employs a detachable mechanism that enables mounting and removal of saw blades without the use of a wrench or other tools.

- (1) Turn on and off the switching trigger several times so that the lever can jump out of the front cover completely. Thereafter, turn off the switch and unplug the power cord. (**Fig. 1**)

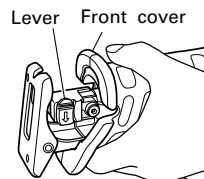


Fig. 1

CAUTION

Be absolutely sure to keep the switch turned off and the power cord unplugged to prevent any accident.

- (2) Push the lever in the direction of the arrow mark shown in Fig. 2 marked on the lever. (Fig. 2)

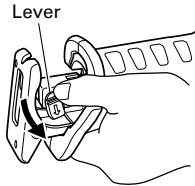


Fig. 2

- (3) Insert the saw blade all the way into the small slit of the plunger tip with the lever pushing. You can mount this blade either in the upward or downward direction. (Fig. 3, Fig. 4)

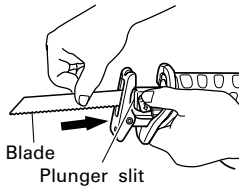


Fig. 3

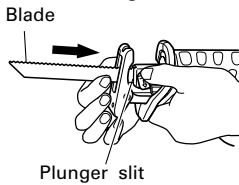


Fig. 4

- (4) When you release the lever, the spring force will return the lever to the correct position automatically. (Fig. 5)

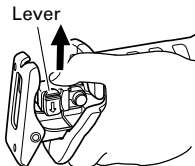


Fig. 5

- (5) Pull the back of the saw blade two or three times by hand and check that the blade is securely mounted. When pulling the blade, you will know it is properly mounted if it clicks and the lever moves slightly. (Fig. 6)

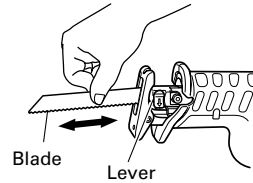


Fig. 6

CAUTION

When pulling the saw blade, be absolutely sure to pull it from the back. Pulling other parts of the blade will result in an injury.

7. Dismounting the blade

- (1) Turn on and off the switching trigger several times so that the lever can jump out of the front cover completely. Thereafter, turn off the switch and unplug the power cord. (Fig. 1)

CAUTION

Be absolutely sure to keep the switch turned off and the power cord unplugged to prevent any accident.

- (2) After you have pushed the lever in the direction of the arrow mark shown in Fig. 2, turn the blade so it faces downward. The blade should fall out by itself. If the blade doesn't fall out, pull it out by hand.

CAUTION

Never touch the saw blade immediately after use. The metal is hot and can easily burn your skin.

WHEN THE BLADE IS BROKEN

Even when the saw blade is broken and remains inside the small slit of the plunger, it should fall out if you push the lever in the direction of the arrow mark, and face the blade downward. If it doesn't fall out itself, take it out using the procedures explained below.

- (1) If a part of the broken saw blade is sticking out of the small slit of the plunger, pull out the protruding part and take the blade out.
- (2) If the broken saw blade is hidden inside the small slit, hook the broken blade using a tip of another saw blade and take it out. (Fig. 7)

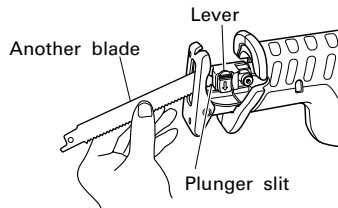


Fig. 7

MAINTENANCE AND INSPECTION OF SAW BLADE MOUNT

- (1) After use, blow away sawdust, earth, sand, moisture, etc., with air or brush them away with a brush, etc., to ensure that the blade mount can function smoothly.

- (2) As shown in **Fig. 8**, carry out lubrication around the blade holder on a periodic basis by use of cutting fluid, etc.

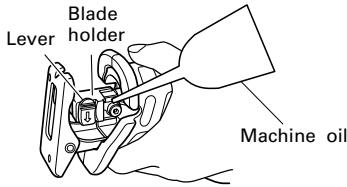


Fig. 8

NOTE:

Continued use of the tool without cleaning and lubricating the area where the saw blade is installed can result in some slack movement of the lever due to accumulated sawdust and chips. Under the circumstances, pull a rubber cap provided on the lever in the direction of an arrow mark as shown in **Fig. 9** and remove the rubber cap from the lever. Then, clean up the inside of the blade holder with air and the like and carry out sufficient lubrication. The rubber cap can be fitted on if it is pressed firmly onto the lever. At this time, make certain that there exists no clearance between the blade holder and the rubber cap, and furthermore ensure that the saw-blade-installed area can function smoothly.

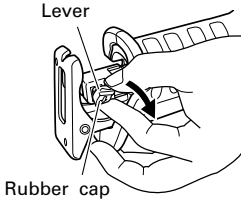


Fig. 9

CAUTION:

Do not use any saw blade with a worn-out blade hole. Otherwise, the saw blade can come off, resulting in personal injury. (**Fig. 10**)

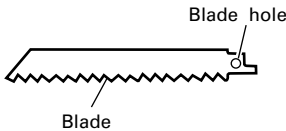


Fig. 10

8. Adjusting the base

- (1) Lift the front cover up as illustrated in **Fig. 11**.

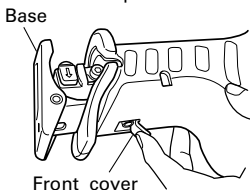


Fig. 11

- (2) If a base setting screw is loosened with an attached hexagonal bar wrench, you can adjust a base installing position. (**Fig. 12, Fig. 13**)

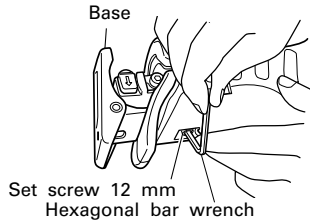


Fig. 12

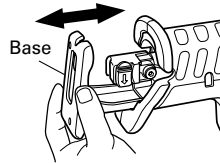


Fig. 13

- (3) After adjusting the base installing position, tighten the base setting screw with the attached hexagonal bar wrench completely.

9. Adjusting the blade reciprocating speed

This unit has a built-in electronic control circuit that makes it possible to adjust the variable speed of the saw blade by pulling a switching trigger. (**Fig. 14**)

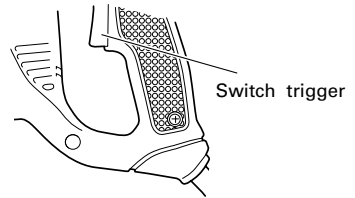


Fig. 14

If you pull the trigger further in, the speed of the blade accelerates. Begin cutting at a low speed to ensure the accuracy of your target cut position. Once you've obtained a sufficient cutting depth, increase the cutting speed.

CAUTION

Although this unit employs a powerful motor, prolonged use at a low speed will increase the load unduly and may lead to overheating. Properly adjust the saw blade to allow steady, smooth cutting operation, avoiding any unreasonable use such as sudden stops during cutting operation.

HOW TO USE

CAUTION

- Avoid carrying it plugged to the outlet with your finger on the switch. A sudden startup can result in an unexpected injury.

- Be careful not to let sawdust, earth, moisture, etc., enter the inside of the machine through the plunger section during operation. If sawdust and the like accumulate in the plunger section, always clean it before use.
- Do not remove the front cover (refer to **Fig. 1**). Be sure to hold the body from the top of the front cover.
- During use, press the base against the material while cutting.

Vibration can damage the saw blade if the base is not pressed firmly against the workpiece. Furthermore, a tip of the saw blade can sometimes contact the inner wall of the pipe, damaging the saw blade.
- Select a saw blade of the most appropriate length. Ideally, the length protruding from the base of the saw blade after subtracting the stroke quantity should be larger than the material (see **Fig. 15** and **Fig. 17**).

If you cut a large pipe, large block of wood, etc., that exceeds the cutting capacity of a blade; there is a risk that the blade may contact with the inner wall of the pipe, wood, etc., resulting in damage. (**Fig. 16**, **Fig. 18**)

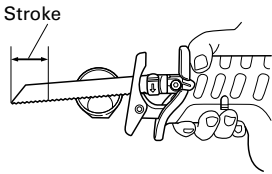


Fig. 15

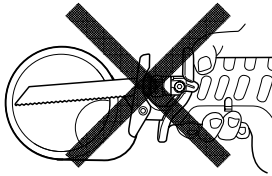


Fig. 16

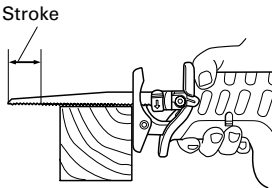


Fig. 17

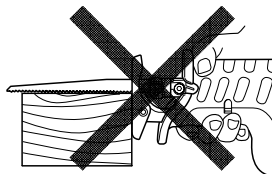


Fig. 18

1. Cutting metallic materials

CAUTION

- Press the base firmly against the workpiece.
 - Never apply any unreasonable force to the saw blade when cutting. Doing so can easily break the blade.
- (1) Fasten a workpiece firmly before operation. (**Fig. 19**)

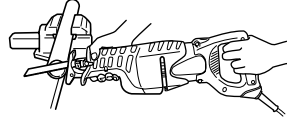


Fig. 19

- (2) When cutting metallic materials, use proper machine oil (turbine oil, etc.). When not using liquid machine oil, apply grease over the workpiece.

CAUTION

The service life of the saw blade will be drastically shortened if you don't use machine oil.

2. Cutting lumber

When cutting lumber, make sure that the workpiece is fastened firmly before beginning. (**Fig. 20**)

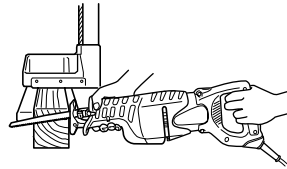


Fig. 20

CAUTION

- Never apply any unreasonable force to the saw blade when cutting. Also remember to press the base against the lumber firmly.

3. Sawing curved lines

We recommend that you use the BI-METAL blade mentioned in **Table 2** for the saw blade since it is tough and hardly breaks.

CAUTION

Delay the feed speed when cutting the material into small circular arcs. An unreasonably fast feed may break the blade.

4. Plunge cutting

With this tool, you can perform plunge cutting on plywood panels and thin board materials. You can carry out pocket cutting quite easily with the saw blade installed in reverse as illustrated in **Fig. 22**, **Fig. 24**, and **Fig. 26**. Use the saw blade that is as short and thick as possible. We recommend for this purpose that you use BI-METAL Blade No. 132 mentioned in **Table 2**. Be sure to use caution during the cutting operation and observe the following procedures.

- (1) Press the lower part (or the upper part) of the base against the material. Pull the switch trigger while keeping the tip of the saw blade apart from the material. (**Fig. 21**, **Fig. 22**)
- (2) Raise the handle slowly and cut in with the saw blade little by little. (**Fig. 23**, **Fig. 24**)
- (3) Hold the body firmly until the saw blade completely cuts into the material. (**Fig. 25**, **Fig. 26**)

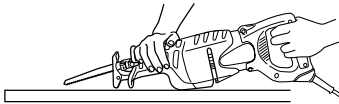


Fig. 21

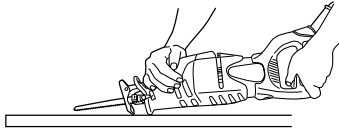


Fig. 22

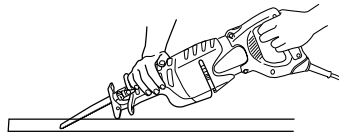


Fig. 23

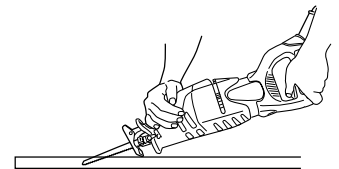


Fig. 24

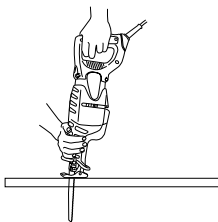


Fig. 25

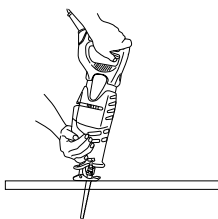


Fig. 26

CAUTION

- Avoid plunge cutting for metallic materials. This can easily damage the blade.
- Never pull the switch trigger while the tip of the saw blade tip is pressed against the material. If you do so, the blade can easily be damaged when it collides with the material.
- Make absolutely sure that you cut slowly while holding the body firmly. If you apply any unreasonable force to the saw blade during the cutting operation, the blade can easily be damaged.

5. Cut off guide for cutting pipe (optional accessory)

Product	Cutting application	Blade used	Code No.
Cut-off guide (L)	Outer diameter 75mm – 165mm	No. 9 No. 131	321113

NOTE

Please refer to the cut off guide user's manual for details on how to use it correctly.

SELECTION OF BLADES

To ensure maximum operating efficiency and results, it is very important to select the appropriate blade best suited to the type and thickness of the material to be cut.

NOTE:

- Dimensions of the workpiece mentioned in the table represent the dimensions when the mounting position of the base is set nearest to the body of the reciprocating saw. Caution must be exercised since dimensions of the workpiece will become smaller if the base is mounted far away from the body of the reciprocating saw.

1. Selection of HCS blades

The blade number of HCS blades in **Table 1** is engraved in the vicinity of the mounting position of each blade. Select appropriate blades by referring to **Tables 1** and **3** below.

Table 1: HCS blades

Blade No.	Uses	Thickness (mm)
No. 1	For cutting steel pipe less than 105 mm in diameter	2.5 – 6
No. 2	For cutting steel pipe less than 30 mm in diameter	2.5 – 6
No. 3	For cutting steel pipe less than 30 mm in diameter	Below 3.5
No. 4	For cutting and roughing lumber	50 – 70
No. 5	For cutting and roughing lumber	Below 30
No. 8	For cutting vinyl chloride pipe less than 105 mm in diameter	2.5 – 15
	For cutting and roughing lumber	Below 105
No. 9	For cutting mild steel pipe less than 165 mm in diameter when used with cut off guide	2.5 – 6
No. 95	For cutting stainless steel pipe less than 105 mm in diameter	Below 2.5
No. 96	For cutting stainless steel pipe less than 30 mm in diameter	Below 2.5

NOTE

No. 1 – No. 96 HCS blades are sold separately as optional accessories.

2. Selection of BI-METAL blades

The BI-METAL blade numbers in **Table 2** are described on the packages of special accessories. Select appropriate blades by referring to **Table 2** and **3** below.

Table 2: BI-METAL blades

Blade No.	Uses	Thickness (mm)
No. 101	For cutting steel and stainless pipes less than 60 mm in outer diameter	2.5 – 6
No. 102	For cutting steel and stainless pipes less than 130 mm in outer diameter	2.5 – 6
No. 103	For cutting steel and stainless pipes less than 60 mm in outer diameter	2.5 – 6
No. 104	For cutting steel and stainless pipes less than 130 mm in outer diameter	2.5 – 6
No. 105	For cutting steel and stainless pipes less than 60 mm in outer diameter	2.5 – 6
No. 106	For cutting steel and stainless pipes less than 130 mm in outer diameter	2.5 – 6
No. 107	For cutting steel and stainless pipes less than 60 mm in outer diameter	Below 3.5
No. 108	For cutting steel and stainless pipes less than 130 mm in outer diameter	Below 3.5
No. 121	For cutting and roughing lumber	300
No. 131	All purposes	—
No. 132	All purposes	—

NOTE

Nos. 101 – No. 132 BI-METAL blades are sold separately as optional accessories.

3. Selection of blades for other materials**Table 3**

Material to be cut	Material quality	Thickness (mm)	Blade No.
Iron plate	Mild steel plate	2.5 – 19	No. 1, 2, 101, 102, 103, 104, 105, 106, 131, 132
		Below 3.5	No. 3, 107, 108
Nonferrous metal	Aluminium, Copper and Brass	5 – 20	No. 1, 2, 101, 102, 103, 104, 105, 106, 131, 132
		Below 5	No. 3, 107, 108
Synthetic resin	Phenol resin, Melamine resin, etc.	10 – 50	No. 1, 2, 4, 101, 102, 103, 104, 131, 132
		5 – 30	No. 3, 5, 8, 105, 106, 107, 108
	Vinyl chloride, Acrylic resin, etc.	10 – 60	No. 1, 2, 4, 101, 102, 103, 104, 131, 132
		5 – 30	No. 3, 5, 8, 105, 106, 107, 108

MAINTENANCE AND INSPECTION**1. Inspecting the blade**

Continued use of a dull or damaged blade will result in reduced cutting efficiency and may cause overloading of the motor. Replace the blade with a new one as soon as excessive abrasion is noted.

2. 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. 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.

4. Inspecting the carbon brushes (Fig. 27)

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.

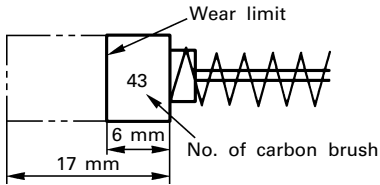


Fig. 27

5. Replacing carbon brushes:

Disassemble the brush caps with a slotted-head screwdriver. The carbon brushes can then be easily removed.

6. Service parts list

- A: Item No.
- B: Code No.
- C: No. Used
- D: Remarks

CAUTION

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

This Parts List will be helpful if presented with the tool to the HiKOKI 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.

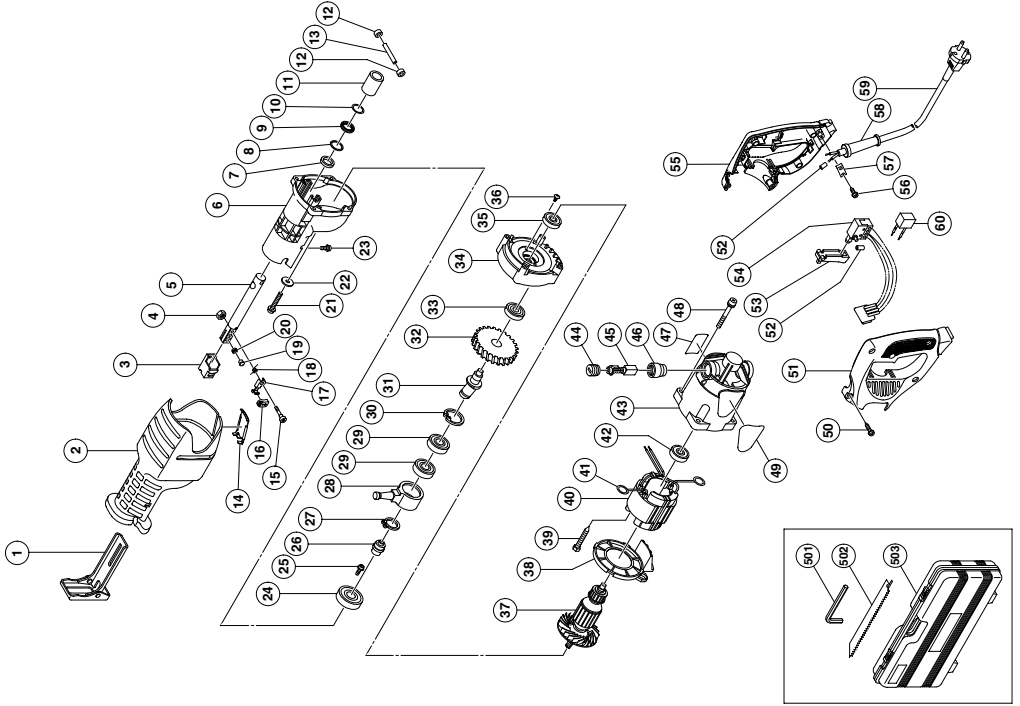
MODIFICATIONS

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

Accordingly, some parts (i.e. code numbers and/or design) may be changed without prior notice.

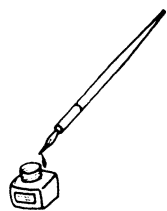
NOTE

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



A	B	C	D
40	1	340-563H	1 110V-115V
40	2	340-563J	1 220V-230V
41		930-703	2
42		608-VVM	1 608VVC2PS2L
43		322-120	1
44		945-161	2
45		999-043	2
46		958-900	2
47			1
48		307-224	4 M5×60
49			1
50		307-028	5 D4×25
51		322-122	1
52		981-373	4
53		322-133	1
54	1	322-499	1
54	2	322-500	1 "TPE, GBR(110V)"
55		322-121	1
56		984-750	2 D4×16
57		937-631	1
58		953-327	1
59			1
60		930-039	1
501		944-458	1 4MM
502		318-613	1 NO.103 150L P14
503		321-142	1

A	B	C	D
1	321-116	1	
2	321-125	1	
3	321-132	1	
4	949-554	1 M4	
5	321-120	1	
6	321-123	1	
7	318-458	1	
8	321-117	1	
9	318-459	1	
10	321-118	1	
11	321-214	1	
12	321-136	2	
13	318-491	1 D6	
14	321-126	1	
15	322-134	1 M4	
16	321-130	1	
17	321-131	1	
18	321-135	1	
19	321-134	1	
20	318-483	1	
21	318-451	1 M6×35	
22	318-452	1	
23	322-142	1 M5×12	
24	600-2DD	1 6002DDC MPS2L	
25	317-196	3 M4×12	
26	322-119	1	
27	967-261	1	
28	322-118	1	
29	600-3VV	2 6003VVC MPS2L	
30	939-556	1	
31	321-128	1	
32	318-473	1	
33	608-VVM	1 608VVC2PS2L	
34	321-124	1	
35	600-1VV	1 6001VVC MPS2L	
36	314-430	2 M4×10	
37	360-616C	1 110V	
37	2	360-616E	1 220V-230V
38	321-122	1	
39	953-174	2 D5×55	



Koki Holdings Co., Ltd.

Shinagawa Intercity Tower A, 15-1, Konan 2-chome,
Minato-ku, Tokyo, Japan

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