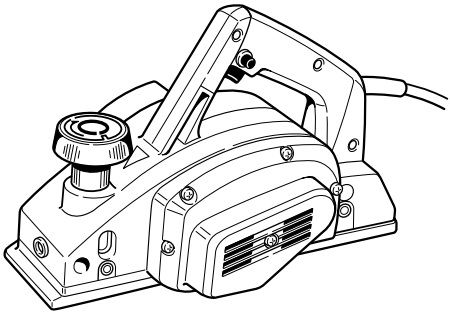
HITACHI

Planer
Model P 20SB

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.

Hitachi Koki

GENERAL SAFETY RULES

WARNING!
Read all instructions
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.

f) Recommendation for use of residual current device with a rated residual current of 30 mA or less.

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 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.

c) 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 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 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.

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 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.

Planer Safety Rules

Wait for the cutter to stop before setting the tool down.

An exposed cutter may engage the surface leading to possible loss of control and serious injury.

PRECAUTIONS ON USING PLANER

○ Do not use the Planer with the blades facing upward (as stationary type planer).
○ Use dust collection adapter if need to reduce dust related hazards.
(1) Unscrew the left side screw on bearing cover (Item no. 23 show in assembly drawing) on housing.
(2) Mount dust collection adapter on housing with screws.
Dust collection adapter (Code no. 313928)
(3) Connect the dust extraction and collection facilities with the tube of dust collection adapter firmly.
(4) Wear dust mask additionally, if available.

SPECIFICATIONS

Voltage (by areas)*	(110V, 115V, 120V, 127V, 220V, 230V, 240V) ∿
Power Input	500W*
Cutting Width	82mm
Max. Cutting Depth	1mm
Weight (without cord)	2.5kg
No-Load Speed	15000 / min

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

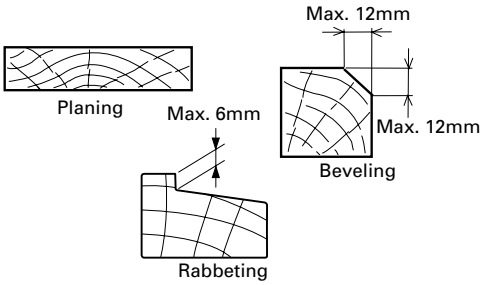
STANDARD ACCESSORIES

1. Box Wrench (for securing cutter blade) 1
2. Set Gauge (for adjusting cutter height) 1
3. Guide (with set screw) 1
4. Blade Sharpening Ass'y 1

Standard accessories are subject to change without notice.

APPLICATIONS

○ Planing various wooden planks and panels.



PRIOR TO OPERATION

1. Power source
Ensure that the power source to be utilized conforms to the power requirements 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. Prepare a stable wooden workbench suitable for planing operation. As a poorly balanced workbench creates a hazard, ensure it is securely positioned on firm, level ground.

PLANING PROCEDURES

1. Adjusting the cutter depth:
(1) Turn the knob in the direction indicated by the arrow in **Fig. 1** (clockwise), until the triangular mark is aligned with the desired cutting depth on the scale. The scale unit is graduated in millimeters.
(2) The cutting depth can be adjusted within a range of 0-1mm.

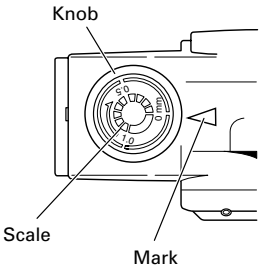


Fig. 1

2. **Surface cutting:**
   Rough cutting should be accomplished at large cutting depths and at a suitable speed so that shavings are smoothly ejected from the machine. To ensure a smoothly finished surface, finish cutting should be accomplished at small cutting depths and at low feeding speed.
3. **Beginning and ending the cutting operation:**
   As shown in **Fig. 2**, place the front base of the planer on the material and support the planer horizontally. Turn ON the power switch, and slowly operate the planer toward the leading edge of the material. Firmly depress the front half of the planer at the first stage of cutting, as shown in **Fig. 3**, depress the rear half of the planer at the end of the cutting operation. The planer must always be kept flat throughout the entire cutting operation.

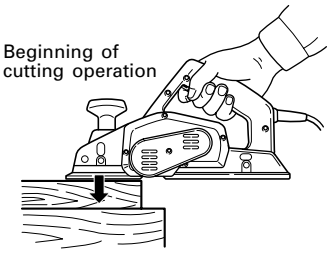


Fig. 2

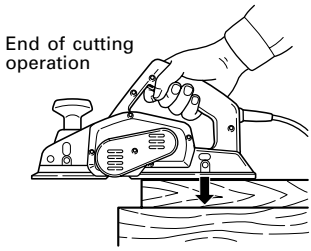


Fig. 3

4. **Precaution after finishing the planing operation:**
   When the planer is suspended with one hand after finishing the planing operation, ensure that the cutting blades (base) of the planer do not contact or come too near your body. Failure to do so could result in serious injury.

CUTTER BLADE ASSEMBLY AND DISASSEMBLY AND ADJUSTMENT OF CUTTER BLADE HEIGHT (FOR RESHARPENABLE BLADE TYPE)

1. Cutter blade disassembly:

(1) As shown in **Fig. 4**, use the accessory box wrench to withdraw the three bolts used to retain the cutter blade, and remove the cutter blade holder.

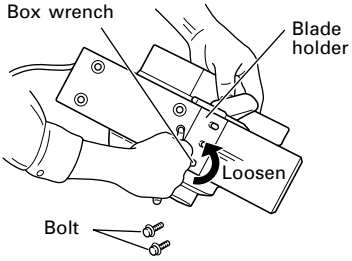


Fig. 4

(2) As shown in **Fig. 5**, slide the rear side of the cutter blade in the direction indicated by the arrow to disassemble the cutter blade.

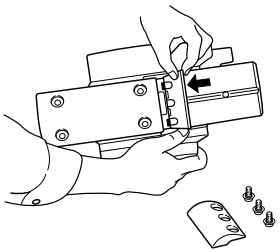


Fig. 5

CAUTIONS

- ○ Be careful not to injure your hands.
- ○ It is not necessary to disassemble the back metal from the cutter blade. (See **Fig. 6**)
- ○ Disassembling the back metal from the cutter blade is to be made only at grinding the cutter blade.

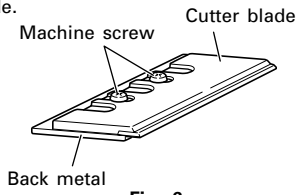


Fig. 6

2. Cutter blade assembly:

CAUTIONS

○ Prior to assembly, thoroughly wipe off all swarf accumulated on the cutter blade.

(1) Turn the flat surface of the cutter block sideways, and assemble the adjusted cutter blade as shown in **Fig. 7**. Ensuring that the leaf spring on the cutter block is correctly fitted to the hole on the rear plate, push the back of the cutter blade with a fingertip in the direction indicated by the arrow, until the edge of the back metal is properly fitted to the cutter block surface. Correct installation is illustrated in **Fig. 8**.

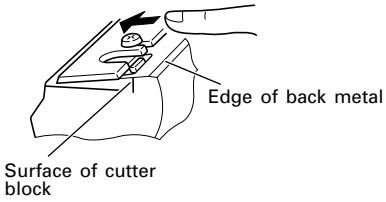


Fig. 7

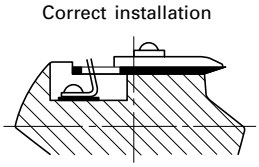


Fig. 8

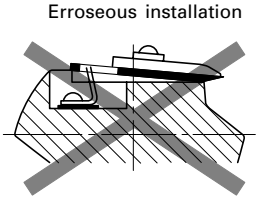


Fig. 9

(2) Place the blade holder on the completed assembly, as shown in **Fig. 10**, and fasten it with the three bolts. Ensure that the bolts are securely tightened.

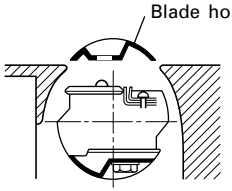


Fig. 10

(3) Turn the cutter block over, and set the other side in the same manner.

3. Adjustment of cutter blade height:

CAUTION

○ As the set gauge has been accurately factory adjusted, never attempt to loosen it.

(1) After attaching the back metal to the cutter blade, temporarily fasten them together with machine screws, as shown in **Fig. 11**

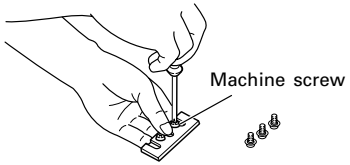


Fig. 11

(2) Insert the set gauge plate spring into the hole on the back metal and heavily push the plate spring in the direction indicated by the arrow in **Fig. 12** until it snaps into the correct position.

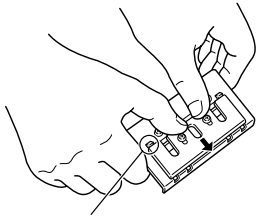


Fig. 12

(3) Holding the set gauge with the blade edge facing downward as shown in **Fig. 13**, loosen the temporarily fastened machine screws and lightly push the cutter blade with a thumb until the cutter blade gently touches the plate.

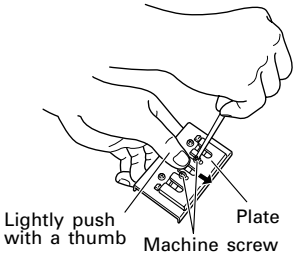


Fig. 13

CAUTION

○ Do not push the blade with excessive pressure. Excessive pressure could cause maladjustment of the blade height.

(4) Finally, retighten the machine screw to securely fasten the cutter blade and the back metal, thereby completing the blade height adjustment procedure.
(5) Holding the set gauge as shown in **Fig. 14**, push upward on the back metal and remove it from the set gauge.

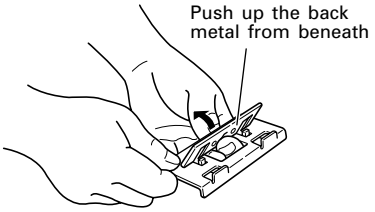


Fig. 14

(6) The cutter blade is now ready to be mounted on the planer as described in the section on cutter blade assembly.

CARBIDE BLADE ASSEMBLY AND DISASSEMBLY AND ADJUSTMENT OF CUTTER BLADE HEIGHT (FOR DOUBLE EDGED BLADE TYPE)

1. Carbide blade disassembly:
(1) As shown in **Fig. 15**, loosen the blade holder with the attached box wrench.

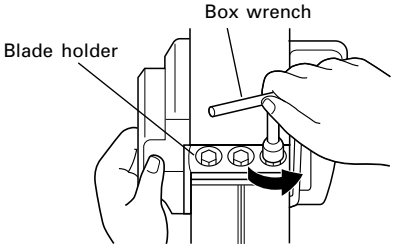


Fig. 15

(2) As shown in **Fig. 16**, remove the carbide blade by sliding it with the attached box wrench.

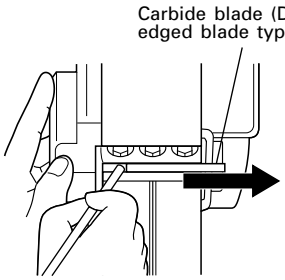


Fig. 16

CAUTION
○ Be careful not to injure your hands.
2. Carbide blade assembly:
CAUTION
○ Prior to assembly, thoroughly wipe off all swarf accumulated on the carbide blade.
(1) As shown in **Fig. 17**, lift set plate (B) and insert the new carbide blade between cutter block and set plate (B).

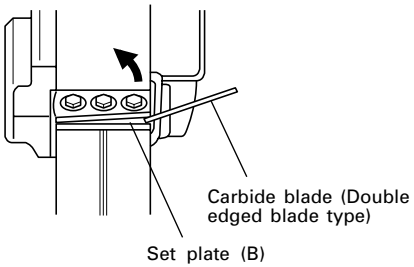


Fig. 17

(2) As shown in **Fig. 18**, mount the new carbide blade by sliding it on the set plate (B) so that the blade tip projects by 1mm from the end of the cutter block.

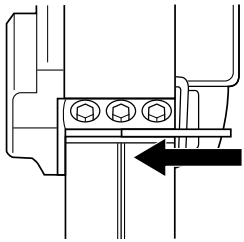


Fig. 18

(3) As shown in **Fig. 19**, fix the bolts at the blade holder after blade replacement has been completed.

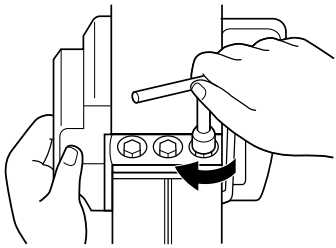


Fig. 19

(4) Turn the cutter block over, and set the other side in the same manner.

3. Adjustment of carbide blade height:
CAUTION

○ If the carbide blade's heights are inaccurate after above procedures have been completed, carry out the procedures described below.

(1) As shown in **Fig. 4**, use the box wrench to loosen the three bolts used to retain the carbide blade, and remove the blade holder.

(2) As shown in **Fig. 20**, after removing the carbide blade, slide set plate (B) in the direction indicated by the arrow to disassemble set plate (B).

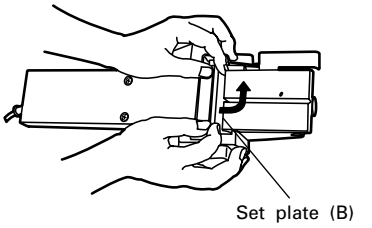


Fig. 20

(3) Loosen the 2 screws holding on the carbide blade and set plate (A), set plate (B).

(4) As shown in **Fig. 21, 22**, press the turned surface of set plate (A) to the wall surface (B) while adjusting the carbide blade edge to the wall surface a of the set gauge. Then, tighten them with the 2 screws.

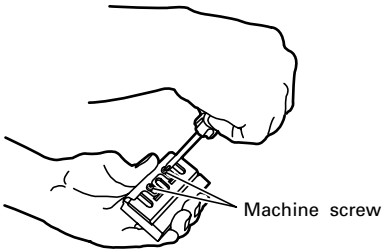


Fig. 21

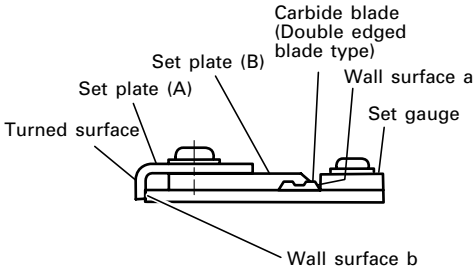


Fig. 22

(5) As shown in **Fig. 23, 24**, insert a turned portion of set plate (A) attached to set plate (B) into a groove on the flat portion of the cutter block.

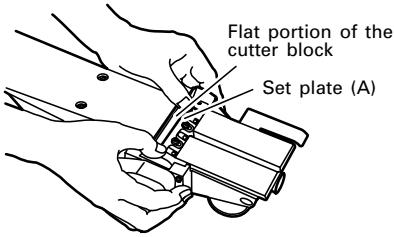


Fig. 23

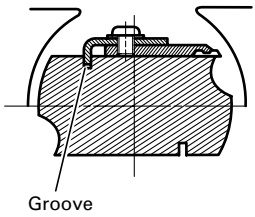


Fig. 24

(6) As shown in **Fig. 25**, place the blade holder on the completed assembly and fasten it with the three bolts. Ensure that the bolts are securely tightened. Follow the same procedures for the opposite side carbide blade.

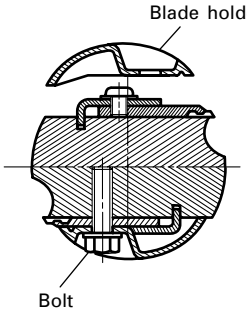


Fig. 25

SHARPENIG THE CUTTER BLADES

Use of the optional accessory Blade Sharpening Ass'y is recommended for convenience.

(1) Use of Blade Sharpening Ass'y
As shown in **Fig. 26**, two blades can be mounted on the blade sharpening ass'y to ensure that the blade tips are ground at equal angles. During grinding, adjust the position of the cutter blades so that their edges simultaneously contact the grinding stone as shown in **Fig. 27**.

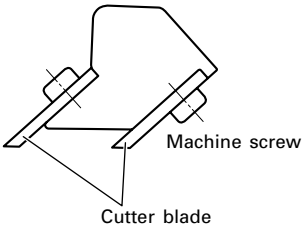


Fig. 26

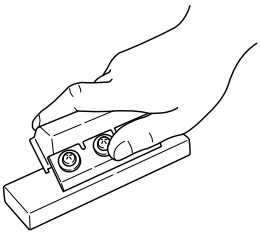


Fig. 27

(2) Cutter blade sharpening intervals:
Cutter blade sharpening intervals depend on the type of wood being machined and the cutting depth. However, sharpening should generally be effected after each 500 meters of cutting operation.

(3) Grinding allowance of the cutter blades:
As illustrated in **Fig. 28**, a grinding allowance of 3.5 mm is provided for on the cutter blade. That is, the cutter blade can be repeatedly sharpened until its total height is reduced to 24.5 mm.

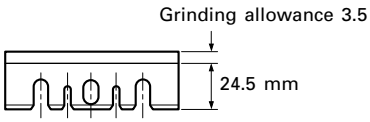


Fig. 28

(4) Grinding Stone
When a water grinding stone is available, use it after dipping it sufficiently in water since such a grinding stone may be worn during grinding procedure, flatten the upper surface of the grinding stone as frequently as possible.

MAINTENANCE AND INSPECTION

1. **Inspecting the cutter blades**
Continued use of dull or damaged cutter blades will result in reduced cutting efficiency and may cause overloading of the motor. Sharpen or replace the cutter blades as often as necessary.
2. **Handling:**

CAUTION

○ The front base, rear base, and cutting depth control knob are precisely machined to obtain specifically high precision. If these parts are roughly handled or subjected to heavy mechanical impact, it may cause deteriorated precision and reduced cutting performance. These parts must be handled with particular care.

3. **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.
4. **Inspecting the carbon brushes: (Fig. 29)**
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.

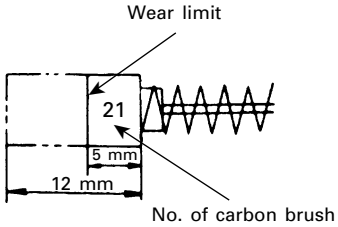


Fig. 29

5. **Replacing carbon brushes:**
Disassemble the brush caps with a slotted-head screwdriver. The carbon brushes can then be easily removed.
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. **Replacing supply cord**
If the supply cord of Tool is damaged, the Tool must be returned to Hitachi Authorized Service Center for the cord to be replaced.

8. Service parts list

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

CAUTION

Repair, modification and inspection of Hitachi Power Tools must be carried out by a 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.

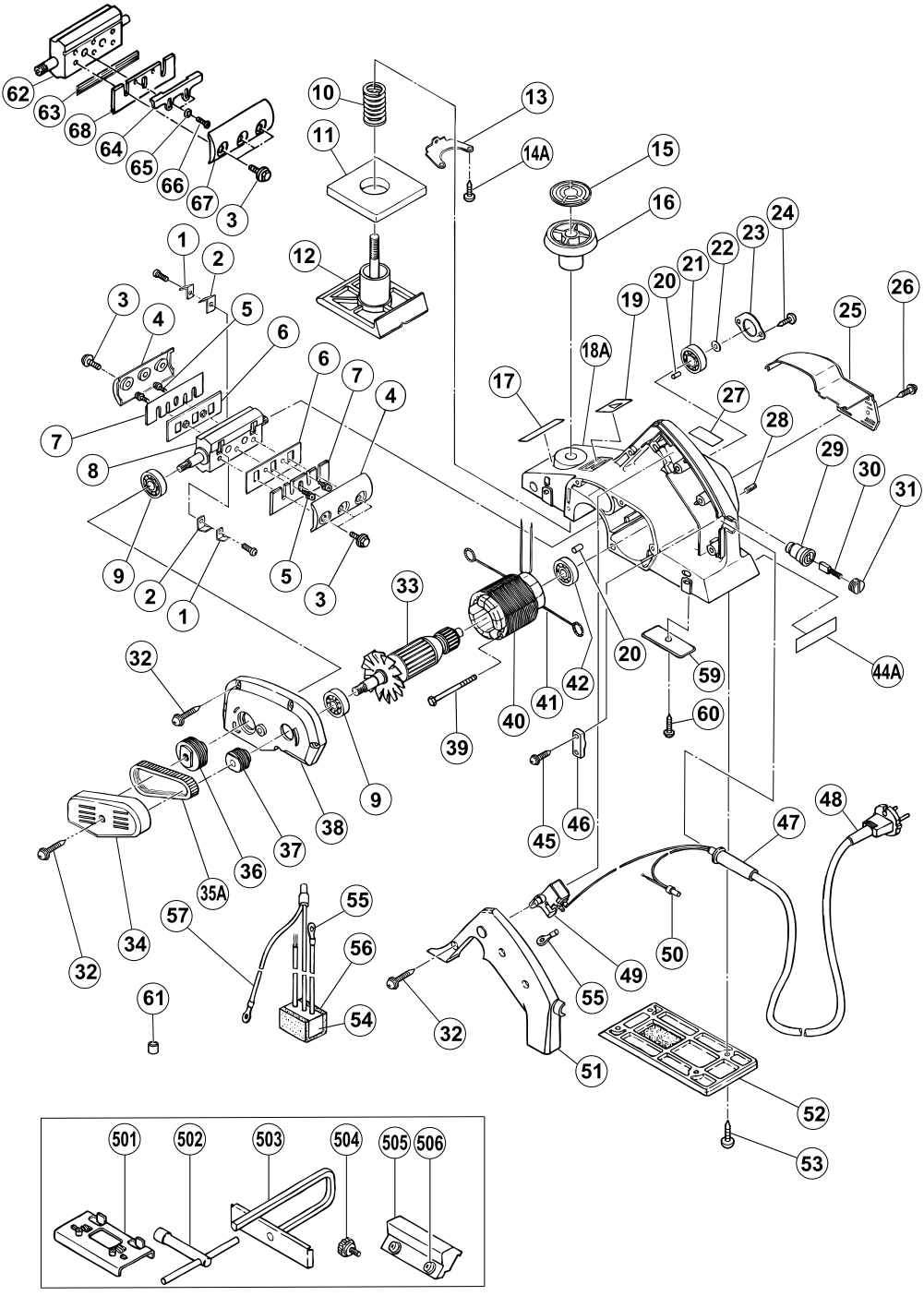
MODIFICATION

Hitachi 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 HITACHI's continuing program of research and development, the specifications herein are subject to change without prior notice.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A	B	C	D
1	958731Z	4	
2	958732Z	4	
3	990669	6	M8×18
4	958734Z	2	
5	986723	4	M4×8
6	958733Z	2	
7	958728	2	
8	958730Z	1	“1, 2, 9, 21”
9	6200VV	2	6200VVCMPS2L
10	958709	1	
11	958708	1	
12	958707	1	
13	958945	1	
14A	954004	1	D4×16
15	958710	1	
16	958729	1	“15”
17	957561	1	
18A	962642Z	1	“13, 14, 28, 29, 32, 39, 51”
19	———	1	
20	931701	2	
21	6000VV	1	6000VVCMPS2L
22	945153	1	
23	313671	1	
24	954017	2	D4×12
25	958714	1	
26	930446	2	D4×16
27	———	1	
28	938477	2	M5×8
29	957571	2	
30	999021	2	
31	931266	2	
32	956636	9	D4×25
33-1	958697U	1	110V-115V “9, 42”
33-2	958697E	1	220V-230V
33-3	958697F	1	240V
34	958719Z	1	
35A	958718	1	
36	958717	1	
37	958716	1	
38	958704	1	
39	960108	2	D4×60
40-1	958693P	1	110V-115V “41”
40-2	954215E	1	220V-230V “41”
40-3	958693H	1	240V “41”
41	930630	2	
42	608VVM	1	608VVC2PS2L
43	949510	2	D2.5×4.8
44	———	1	
45	984750	2	D4×16
46	937631	1	
47-1	930487	1	D8.2
47-2	930026	1	D10.2
48	———	1	
49	957747	1	
50	959140	1	
51	958944	1	
52	940633	1	
53	954004	4	D4×16
54	994273	1	
55	980063	2	
56	930153	1	
57	985191	1	
59	306819	1	
60	982034	1	D4×12
61	981373	2	
62	316397	1	
63	879418	2	
64	314754	2	
65	949423	4	
66	949213	4	
67	316398	2	
68	314740	2	
501	958736	1	
502	940543	1	10MM
503	958842Z	1	
504	940650	1	M5×14
505	314767	1	“506”
506	940654	4	M6×12

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