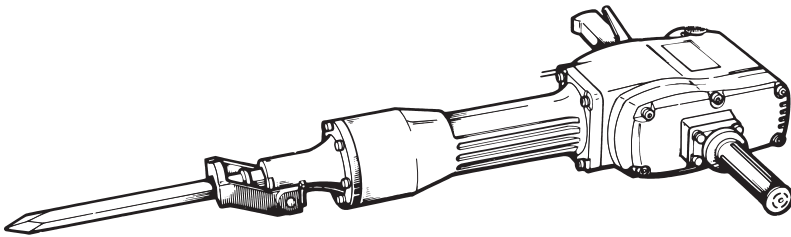


HITACHI

DEMOLITION HAMMER MODEL H 85

INSTRUCTION MANUAL



Note:

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

We sincerely thank you for selecting a HITACHI ELECTRIC POWER TOOL. To operate this electric power tool safely and efficiently, please read this INSTRUCTION MANUAL carefully to get a good understanding of the precautions in operation, capacity of the electric power tool, use and the like.

IMPORTANT INFORMATION: SAFETY RULES FOR POWER TOOLS

WARNING: When using electric tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and personal injury, including the following:

READ ALL INSTRUCTIONS

- 1. KEEP WORK AREA CLEAN.** Cluttered areas and benches invite injuries.
- 2. CONSIDER WORK AREA ENVIRONMENT.**
 - Don't expose power tools to rain.
 - Don't use power tools in damp or wet locations.
 - Keep work area well lit.
 - Don't use tool in presence of flammable liquids or gases.
 - Power tools produce sparks during operation. They also spark when switching ON/OFF. Never use power tools in dangerous sites containing lacquer, paint, benzene, thinner, gasoline, gases, adhesive agents, and other materials which are combustible or explosive.
- 3. GUARD AGAINST ELECTRIC SHOCK.** Prevent body contact with grounded surfaces. For example: pipes, radiators, ranges, refrigerator enclosures.
- 4. KEEP CHILDREN AWAY.** Do not let visitors contact tool or extension cord.
 - All visitors should be kept away from work area.
- 5. STORE IDLE TOOLS.** When not in use, tools should be stored in dry, and high or locked-up place — out of reach of children.
- 6. DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was intended.
- 7. USE RIGHT TOOL.** Don't force small tool or attachment to do the job of a heavy-duty tool.
 - Don't use tool for purpose not intended – for example – don't use circular saw for cutting tree limbs or logs.
- 8. DRESS PROPERLY.** Do not wear loose clothing or jewelry. They can be caught in moving parts.
 - Rubber gloves and non-skid footwear are recommended when working outdoors.
 - Wear protective hair covering to contain long hair.
- 9. USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty.
 - All persons in the area where power tools are being operated should also wear safety eye protectors and face or dust masks.
- 10. DON'T ABUSE CORD.** Never carry tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil, and sharp edges.

11. **SECURE WORK.** Use clamps or a vise to hold work. It's safer than using your hand and it frees both hands to operate tool.
12. **DON'T OVERREACH.** Keep proper footing and balance at all times.
13. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for better and safer performance.
Follow instructions for lubricating and changing accessories.
Inspect tool cords periodically and if damaged, have repaired by authorized service facility.
Inspect extension cords periodically and replace if damaged.
Keep handles dry, clean, and free from oil and grease.
14. **DISCONNECT TOOLS.** When not in use, before servicing, and when changing accessories, such as blades, bits, cutters.
15. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
16. **AVOID UNINTENTIONAL STARTING.** Don't carry plugged-in tool with finger on switch. Be sure switch is off when plugging in.
17. **OUTDOOR USE EXTENSION CORDS.** When tool is used outdoors, use only extension cords intended for use outdoors and so marked.
18. **STAY ALERT.** Watch what you are doing. Use common sense. Do not operate tool when you are tired.
19. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated elsewhere in this instruction manual.
Have defective switches replaced by authorized service center.
Do not use tool if switch does not turn it on and off.
20. **AVOID USING A POWER TOOL FOR APPLICATIONS OTHER THAN THOSE SPECIFIED.** Never use a power tool for applications other than those specified in the instruction manual.
21. **ENSURE SAFE OPERATION THROUGH CORRECT HANDLING.** Secure safe operation through correct handling by observing the instructions described herein.
Do not employ accessories other than those specified herein; otherwise, a hazardous condition may be created.
Never allow a power tool to be used by persons not familiar with correct handling (such as children) or by those who cannot handle the tool correctly.
22. **CONFIRM THAT NO ITEMS SUCH AS AN ELECTRIC CABLE OR CONDUIT ARE BURIED INSIDE.** In places where live wiring may be hidden behind a wall, floor, ceiling, etc. do not hold or contact any metal parts of the tool. In such cases, metal parts could become electrically live and present a serious shock hazard.

- 23. KEEP THE RIGHT PARTS IN THE RIGHT POSITIONS.** Do not remove covers and screws which have been factory-mounted. They perform important respective roles. Keep them in the right positions.
- 24. SHOULD THE PLASTIC HOUSING OR HANDLE OF A POWER TOOL BE CRACKED OR DEFORMED, DO NOT USE IT.** Since cracked or deformed parts may lead to an operator receiving an electric shock, do not use such a power tool. Immediately have it repaired.
- 25. SECURELY MOUNT ACCESSORIES AND BLADES TO THE TOOL MAIN BODY.** Extra care must be taken when using tools on elevated location (such as a roof ladder, scaffold, or the like) to prevent injury to someone on a lower level in the event the tool and/or accessory should drop.
- 26. ALWAYS KEEP THE MOTOR AIR VENT FULLY OPENED.** A constantly open motor air vent is necessary to allow air to come in and out for cooling the motor. Do not allow it to become clogged up, even if dust is blown through it.
- 27. OPERATE POWER TOOLS AT THE RATED VOLTAGE.** Operate power tools at voltages specified on their nameplates.
- 28. NEVER TOUCH THE MOVING PARTS.** Never touch the moving parts such as blades, bits, cutters and others.
- 29. STOP OPERATION IMMEDIATELY IF ANY ABNORMALITY IS DETECTED.** Should a power tool be detected as out of order or should other abnormalities be observed during operation, stop using the tool immediately.
- 30. NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.
- 31. CAREFULLY HANDLE POWER TOOLS.** Should a power tool be dropped or struck against hard materials inadvertently, it may be deformed, cracked, or damaged.
- 32. DO NOT WIPE PLASTIC PARTS WITH SOLVENT.** Solvents such as gasoline, thinner, benzene, carbon tetrachloride, and alcohol may damage and crack plastic parts. Do not wipe them with such solvents. Wipe plastic parts with a soft cloth lightly dampened with soapy water.
- 33. WHEN REPLACING A COMPONENT PART, ADOPT THE SAME TYPE.** When replacing a component part with a new one, adopt the same type of new part. Also, never attempt to repair a power tool yourself.

WARNING:

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints,
- Crystalline silica from bricks and cement and other masonry products, and
- Arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

SERVICE AND REPAIRS

All quality tools will eventually require servicing or replacement of parts due to wear from normal use. These operations should **ONLY** be performed by an **AUTHORIZED HITACHI POWER TOOL REPAIR SHOP**.

REPLACEMENT PARTS

When servicing use only identical replacement parts.

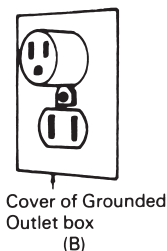
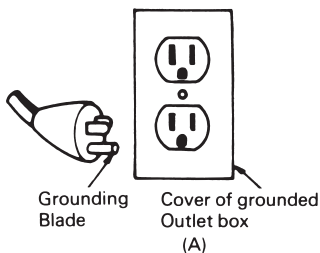
GROUNDING INSTRUCTIONS

This tool should be grounded while in use to protect the operator from electric shock. The tool is equipped with a three-conductor cord and three-prong grounding type plug to fit the proper grounding type receptacle. The green (or green and yellow) conductor in the cord is the grounding wire. Never connect the green (or green and yellow) wire to a live terminal. If your unit is for use on less than 150 volts, it has a plug that looks like that shown in sketch (A) in Figure on the right. An adapter, see sketches (B) and (C), is available for connecting sketch (A) type plugs to two-prong receptacles. The green-colored rigid ear, lug, or the like, extending from the adapter must be connected to a permanent ground, such as a properly grounded outlet box.

Note: The grounding adaptor, sketch (C), is prohibited in Canada by Canadian Electrical Code Part 1. Therefore, the instructions for its use are not applicable in Canada.

We recommend that you never disassemble the tool or try to do any rewiring in the electrical system. Any repairs should be performed only by HITACHI Service Centers or other qualified service organizations. Should you be determined to make a repair yourself, remember that the green colored wire is the "grounding" wire. Never connect this green wire to a "live" terminal. If you replace the plug on the power cord, be sure to connect the green wire only to the grounding (longest) prong on a 3-prong plug.

If in doubt call a qualified electrician and have the receptacle checked for ground.



EXTENSION CORD

Use only three-wire extension cords that have three-prong grounding-type plugs and three-pole receptacles that accept the tool's plug. Replace or repair damaged cord.

Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.

		MINIMUM GAGE FOR CORD SETS			
		Total Length of Cord in Feet (Meter)			
		0 – 25 (0 – 7.6)	26 – 50 (7.9 – 15.2)	51 – 100 (15.5 – 30.5)	101 – 150 (30.8 – 45.7)
Ampere More Than	Rating Not More Than	AWG			
	0 – 6	18	16	16	14
	6 – 10	18	16	14	12
	10 – 12	16	16	14	12
	12 – 16	14	12	Not Recommended	

PRECAUTIONS ON DEMOLITION HAMMER

1. Wear a mask when turning your head upward.
2. Use earplugs to keep your ears noise-free while working.
3. Properly set the bit holder.
4. Since the bit becomes very hot during operation, exercise extremes very hot.
5. At the start of work, confirm the oil supply and screw tightening.
6. When working at a highly elevated location, pay attention to articles and persons below.
7. Wear protective shoes to protect your feet.

SAVE THESE INSTRUCTIONS

NAME OF PARTS

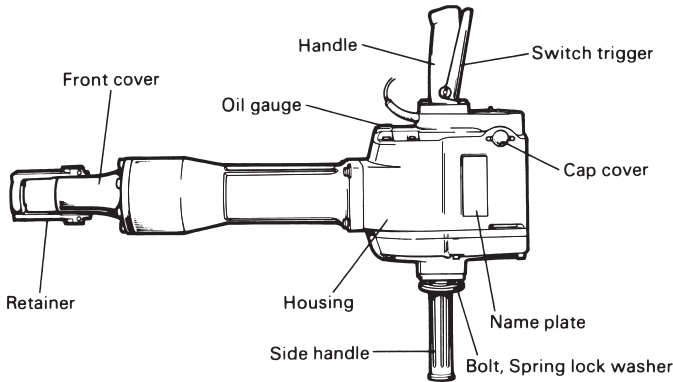


Fig. 1

NOTE:

Install the side handle with the supplied 4 bolts and 4 spring lock washers. Tighten the bolts securely with the supplied wrench.

SPECIFICATIONS

Motor	: Single-Phase Series Commutator Motor
Power Source	: Single-phase 115V AC 60 Hz
Current	: 12.2A
Full-Load Impact Rate	: 950/min
Weight	: 73 lbs (33 kg)

ACCESSORIES

CAUTION:

Recommended accessories for this Electric Power Tool are mentioned in this manual. The use of any other attachment or accessory might be hazardous.

STANDARD ACCESSORIES

1. Oil Feeder (Code No. 931848)	1
2. Hexagon Bar Wrench for M10 (Code No. 967328)	1
3. Hexagon Bar Wrench for M8 (Code No. 872422)	1
4. Hexagon Bar Wrench for M4 (Code No. 943277)	1
5. Wrench (Code No. 971109).....	1
6. Side Handle (Code No. 956527).....	1
7. Bolt (Code No. 949759Z).....	4
8. Spring Lock Washer (Code No. 949457Z).....	4

OPTIONAL ACCESSORIES (sold separately)

1. Bull point



Overall length: 20-15/32" (520 mm)

Code No.: 985230

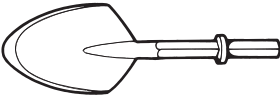
2. Cold chisel



Overall length: 20-15/32" (520 mm)

Code No.: 985231

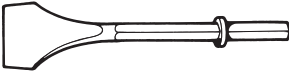
3. Scoop



Overall length: 21-1/2" (546 mm)

Code No.: 985233

4. Cutter



Overall length: 20-15/32" (520 mm)

Width: 2-15/16" (75mm)

Code No.: 985232

5. Electric Hammer Oil

Capacity: 1 liter

Code No: 955009

APPLICATIONS

- Breaking concrete, chipping off concrete, grooving, bar cutting, and driving piles.
(Application examples)
Installation of piping and wiring, sanitary facility installation, machinery installation, water supply and drainage work, interior jobs, harbor facilities and other civil engineering work.

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 power receptacle while the power switch is in the ON position, the power tool will start operating immediately, inviting 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. Confirm the power receptacle

If the power receptacle only loosely accepts the plug, the receptacle must be repaired. Contact the nearest electric store for repair service.

If such a faulty receptacle is used, it may cause overheating, resulting in a serious hazard.

5. Confirming condition of the environment

Confirm that the work site is placed under appropriate conditions conforming to prescribed precautions.

6. Feeding oil (refer to the paragraph on oil feeding)

Prior to using the power tool, remove the oil gauge and do not fill the oil tank with the provided oil. (Although the oil tank is built in, it contains only a small volume of oil when shipped from the HITACHI Works.)

7. Mounting a tool

- (1) With the retainer directed backward, insert the tool shank into the hole on the front cover. (Fig. 2)
- (2) Swing the retainer back into place so that it engages the tool shank and prevents tool from coming all the way out of front cover. (Fig. 3)

NOTE:

Use a manual hammer to open/close the retainer.

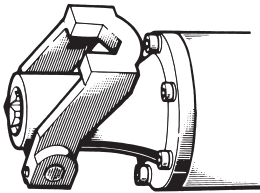


Fig. 2

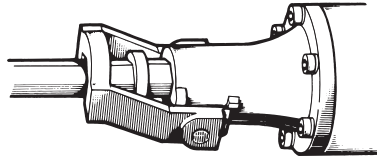


Fig. 3

NOTE:

When removing the tool, follow the above procedure in reverse order.

OPERATION

1. Pull the trigger switch after applying the tip of the bit to the crushing position.
In some cases, it is necessary to punch the tip of the bit against the crushing position forcibly in order to begin the striking stroke.
This is not due to malfunction of the tool. It means that the safe guard mechanism against no-load striking is working.
2. Operate the tool by utilizing its own weight. The performance will not be better even if the tool is pressed or thrust forcibly against the work surface.
Hold the tool with a force just sufficient to counteract the reaction.

CAUTION:

Sometimes the tool does not begin the striking stroke even when the motor rotates because the oil has become thick.

If the tool is used at low temperatures or if it is used after a long time idle, the tool should be used running in for five minutes in order to warm it up.

OIL FEEDING

CAUTION:

Prior to oil feeding, always disconnect the plug from the power supply receptacle. Since an oil chamber is built in this HITACHI Demolition Hammer, it can be used for approximately 20 days without supplying lubricating oil, assuming that the machine is used continuously 3 ~ 4 hours daily. Feed oil into the oil tank as described below before using this Hammer. (See Figs. 4 and 5)

1. Just before no oil is visible in the oil gauge window when the device is held upright, feed oil without fail.
2. Before feeding oil, use the provided wrench to remove the oil gauge. Be careful not to lose the rubber packing attached below the oil gauge.
3. Check the oil level once daily, confirming that oil is filled.
4. After feeding oil, securely clamp the oil gauge.

NOTE:

As an optional accessory, oil for the HITACHI Demolition Hammer (on liter) is sold separately. Use this oil when oil in the tank is depleted.

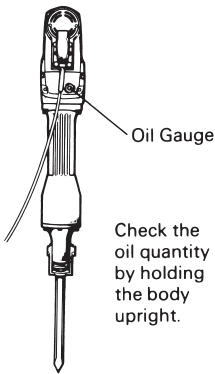


Fig. 4

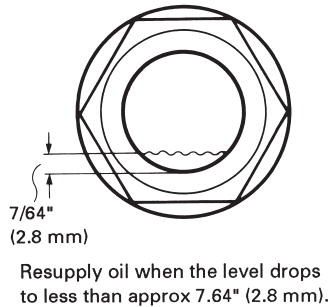


Fig. 5

MAINTENANCE AND INSPECTION

CAUTION:

Be sure to disconnect the plug during maintenance and inspection.

1. Inspecting the tool

Use of a dull tool will cause motor malfunctioning and degraded efficiency. Replace with a new one without delay when 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. Inspecting the carbon brushes (Fig. 6)

The motor employs carbon brushes which are consumable parts. When they become worn to or near "wear limit", it could result in motor trouble. When an auto-stop carbon brush is equipped, the motor will stop automatically. At that time, replace both carbon brushes with new ones which have the same carbon brush Nos. shown in the figure.

In addition, always keep carbon brushes clean and ensure that they slide freely within the brush holders.

4. Replacing a carbon brush

The carbon brush can be removed by removing the cap cover, cap rubber and brush cap in that order at the interior.

NOTE:

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

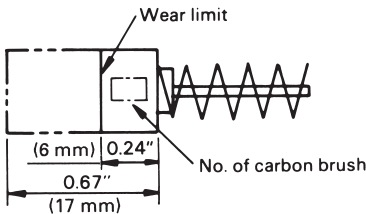
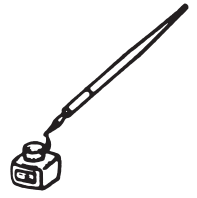
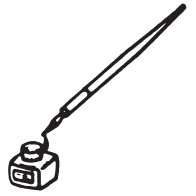
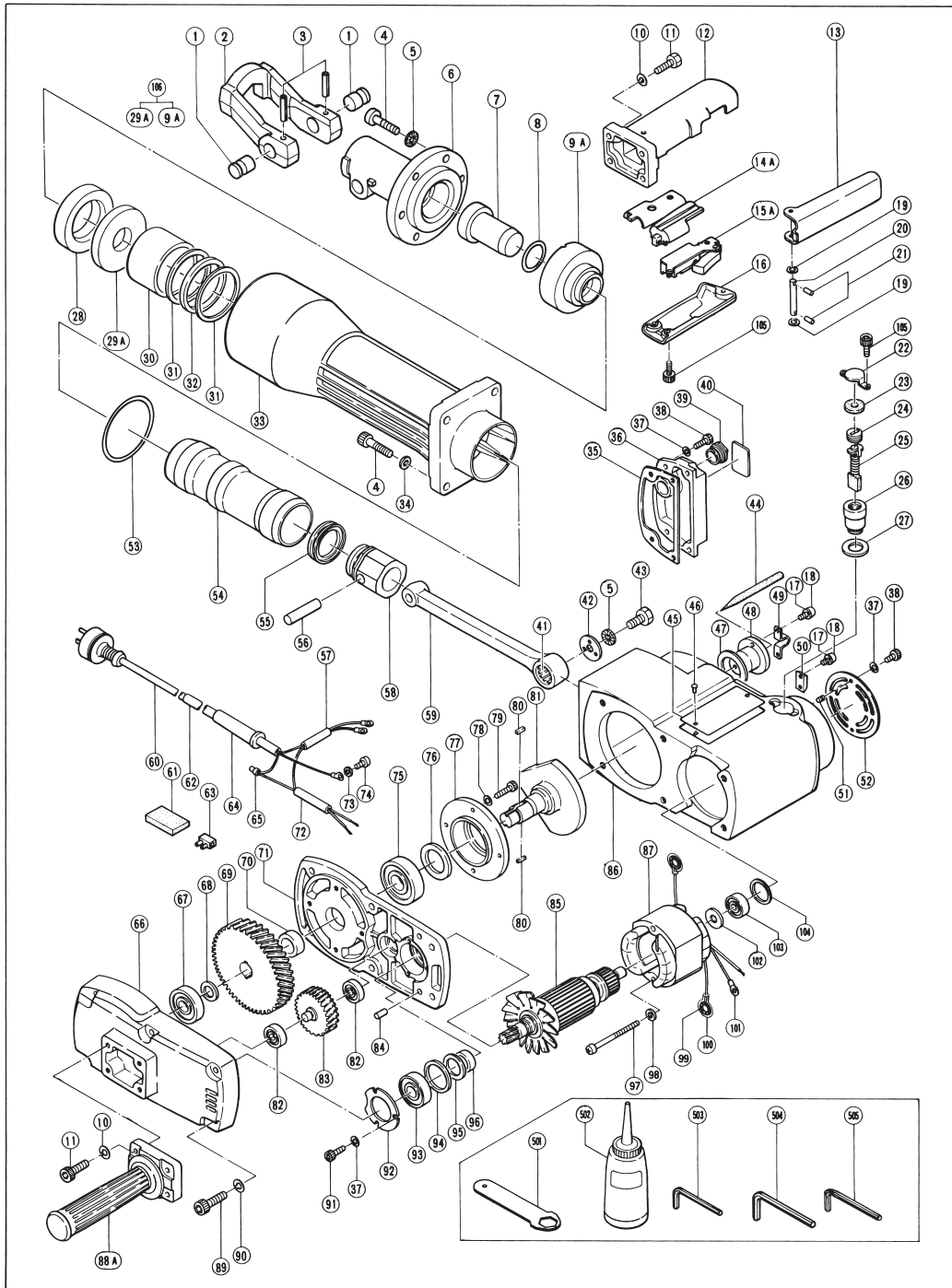


Fig. 6

	No. of carbon brush
Usual carbon brush	44
Auto-stop carbon brush	74







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Item No.	Parts Name
1	Lever Pin
2	Retainer
3	Roll Pin D6 × 36
4	Bolt M10 × 40
5	Belleville Spring
6	Front Cover
7	Second Hammer
8	O-ring(A)
9A	Hammer Holder
10	Spring Lock Washer
11	Hexagon Socket Hd. Bolt M8 × 30
12	Handle
13	Switch Lever
14A	Support
15A	Switch
16	Handle Cover
17	Spring Lock Washer
18	Machine Screw M4 × 14
19	Washer
20	Pin
21	Roll Pin D2 × 12
22	Cap Cover
23	Cap Rubber
24	Brush Cap
25	Carbon Brush
26	Brush Holder
27	Stop Plate
28	Damper
29A	Damper Plate
30	Mouth
31	Mouth Washer
32	Urethan Ring
33	Cylinder Case
34	Washer
35	Packing (H)
36	Housing Cover
37	Spring Lock Washer
38	Hexagon Socket Hd. Bolt M5 × 16
39	Oil Gauge
40	Caution Plate
41	Needle Bearing

Item No.	Parts Name
42	Crank Washer
43	Bolt M10 × 16
44	Oil Felt
45	Name Plate
46	Rivet D2.5 × 4.8
47	Packing (F)
48	Felt Holder
49	Felt Holder (B)
50	Cord Clip
51	Hexagon Socket Hd. Set Screw M5 × 8
52	Cover
53	O-ring (S85)
54	Striker
55	L-Ring
56	Piston Pin
57	Vinyl Tube (C) (I.D. 7 × T0.5 × 50)
58	Piston
59	Connecting Rod Ass'y
60	Cord
61	Support
62	Tube (D)
63	Pillar Terminal
64	Cord Armor
65	Connector
66	Gear Cover
67	Ball Bearing (6204ZZCM)
68	Distance Washer
69	Final Gear
70	Distance Ring (B)
71	Inner Cover
72	Vinyl Tube (B) (I.D. 7 × T0.5 × 80)
73	Spring Lock Washer
74	⊕ Hd. Machine Screw M4 × 6
75	Ball Bearing (6305DDCM)
76	Felt Packing
77	Bearing Boss
78	Spring Lock Washer
79	Hexagon Socket Hd. Bolt M6 × 20
80	Feather Key 4 × 4 × 15
81	Crank Shaft
82	Ball Bearing (6201ZZCM)

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Item No.	Parts Name
83	Counter Gear
84	Pin M8 × 14
85	Armature
86	Housing Ass'y
87	Stator Ass'y
88A	Side Handle
89	Hexagon Socket Hd. Bolt M10 × 60
90	Spring Lock Washer
91	Hexagon Socket Hd. Bolt M5 × 20
92	Bearing Cover (A)
93	Ball Bearing (6303VVCM)
94	Urethan Washer (A)
95	Felt Packing
96	Distance Ring (A)
97	Machine Screw M5 × 80

Item No.	Parts Name
98	Toothed Lock Washer
99	Brush Terminal Ass'y
100	Internal Wrie Holder
101	Terminal
102	Bearing Washer
103	Ball Bearing (6301VVCM)
104	Urethan Washer (A)
105	Hexagon Socket Hd. Bolt M4 × 16
106	Hammer Holder Ass'y
501	Wrench
502	Oil Feeder
503	Hexagon Bar Wrench 3mm
504	Hexagon Bar Wrench 8mm
505	Hexagon Bar Wrench 6mm

Parts are subject to possible modification without notice due to improvements.

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