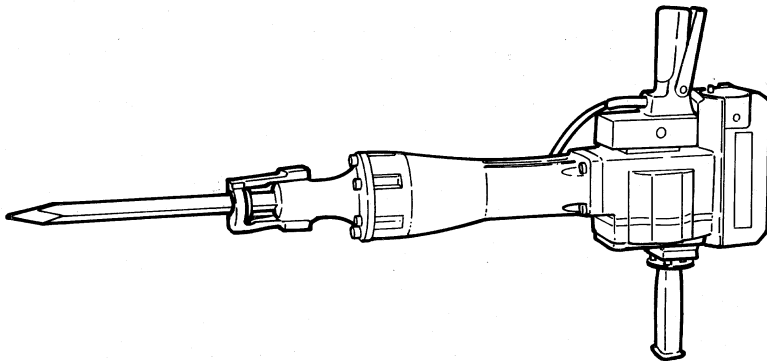


HITACHI

Demolition Hammer Model H 90SB

Instruction manual



Note:

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



Double insulation

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

IMPORTANT INFORMATION: SAFETY RULES FOR THE POWER TOOL

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

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 the power 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, benzine, 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 VISITORS OR CHILDREN AWAY.** Do not let visitors or children contact the power tool or extension cord. All visitors or children should be kept away from work area.
- 5. STORE IDLE POWER TOOLS.** When not in use, power tools should be stored in dry, and high or locked-up place-out of reach of children.
- 6. DON'T FORCE THE POWER TOOL.** It will do the job better and safer at the rate for which it was intended.
- 7. USE RIGHT POWER TOOLS.** Don't force a small power tool or attachment to do the job of a heavy-duty tool. Don't use the power 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 clothes or accessories. 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.** All persons in the area where power tools are being operated should also wear safety eye protectors, and face or dust masks if cutting operation is dusty.
- 10. DON'T ABUSE CORD.** Never carry power tools by cord or yank the cord to disconnect the power tool from receptacle. Keep the cord from heat, oil and sharp edges.
- 11. DON'T OVERREACH.** Keep proper footing and balance at all times.
- 12. MAINTAIN POWER TOOLS WITH CARE.** Keep power 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 the authorized service center.
 - Inspect extension cords periodically and replace them if damaged.
 - Keep handles dry, clean, and free from oil and grease.

13. **DISCONNECT POWER TOOLS.** When not in use, before servicing, and when changing accessories, such as blades, bits, cutters.
14. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from the power tool before turning it on.
15. **AVOID UNINTENTIONAL STARTING.** Don't carry a plugged-in the power tool with finger on switch. Be sure switch is off when plugging in.
16. **OUTDOOR USE EXTENSION CORDS.** When the power tool is used outdoors, use only extension cords intended for use outdoors and so marked.
17. **STAY ALERT.** Watch what you are doing. Use common sense. Do not operate the power tool when you are tired.
18. **CHECK DAMAGED PARTS.** Before use of the power tool, a guard or other part should be carefully checked to determine that it will operate properly and perform its intended function. Check the 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 an authorized service center.
Do not use the power tool if switch does not turn it on and off.
19. **AVOID USING A POWER TOOL FOR APPLICATIONS OTHER THAN THOSE SPECIFIED.** Never use the power tool for applications other than those specified in this instruction manual.
20. **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 the power tool to be used by persons not familiar with correct handling (such as children) or by those who are not familiar with the power tool.
21. **CONFIRM THAT NO ITEMS SUCH AS AN ELECTRIC CABLE OR CONDUIT ARE BURIED INSIDE.** In places where electric wiring may be hidden behind a wall, floor, ceiling, etc. do not hold or contact any metal parts of the power tool. In such cases, metal parts could become electrically live and present a serious shock hazard.
22. **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 original positions.
23. **SHOULD THE PLASTIC HOUSING OR HANDLE OF THE 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.
24. **SECURELY MOUNT ACCESSORIES AND BLADES TO THE POWER TOOL MAIN BODY.** Extra care must be taken when using the power tool on elevated location (such as a roof ladder, scaffold, or the like) to prevent injury to someone underneath in the event the power tool and/or accessory should drop.
25. **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.
26. **OPERATE THE POWER TOOL AT THE RATED VOLTAGE.** Operate the power tool at voltages specified on its nameplate.
27. **NEVER TOUCH THE MOVING PARTS.** Never touch the moving parts such as blades, bits, cutters and others.

28. **STOP OPERATION IMMEDIATELY IF ANY ABNORMALITY IS DETECTED.** Should the power tool be detected as out of order or should other abnormalities be observed during operation, stop using the power tool immediately.
29. **NEVER LEAVE THE POWER TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave the power tool until it comes to a complete stop.
30. **CAREFULLY HANDLE THE POWER TOOL.** Should the power tool be dropped or struck against hard materials inadvertently, it may be deformed, cracked, or damaged.
31. **DO NOT WIPE PLASTIC PARTS WITH SOLVENT.** Solvents such as gasoline, thinner, benzene, carbon tetrachloride, and alcohol damage and crack plastic parts. Do not wipe them with such solvents. Wipe plastic parts with a soft cloth lightly dampened with soapy water.
32. **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 the power tool yourself. Bring it to an authorized service center for repair.

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 SERVICE CENTER.

REPLACEMENT PARTS

When servicing use only identical replacement parts.

POLARIZED PLUGS

To reduce the risk of electric shock, this equipment has a polarized plug (one blade is wider than the other).

This plug will fit in a polarized outlet only one way.

If the plug does not fit fully in the outlet, reverse the plug.

If it still does not fit, contact a qualified electrician to install the proper outlet.

Do not change the plug in any way.

EXTENSION 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 the power tool will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table below 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	

DOUBLE INSULATION SYSTEM ENHANCES SAFE OPERATION

To enhance safe operation of this power tool, HITACHI has adopted a double insulation system. The term “double insulation” used here denotes an insulation system with two insulations physically separated and arranged between the electrically conductive material connected to the power supply and the outer frame subject to contact by the operator.

Thus, the power tool is termed double insulated and both the “” mark and “Double insulation”, or either one is indicated on the name plate.



DOUBLE INSULATION

While no external grounding is required with this system, normal safety precautions as outlined in this manual must still be followed.

To maintain the effectiveness of the double insulation system, follow the precautions described below:

1. Always contact your dealer or an authorized service center when assembling, disassembling or replacing parts other than accessories or carbon brushes. Improper assembly and/or replacement with wrong parts may result in eliminating the double insulation-feature.
2. Clean the exterior of the power tool with a soft cloth moistened with soapy water, and dry thoroughly. Chloric solvent, gasoline, and thinner will cause plastic components to dissolve.

PARTICULAR PRECAUTIONS ON DEMOLITION HAMMER

In addition to the precautions mentioned above, following particular precautions for this demolition hammer should be followed.

1. Use earplugs to keep your ears noise-free while working.
2. Wear protective shoes to protect your feet.
3. Properly set the bit holder.
4. Always hold the body handle and side handle of the power tool firmly. Otherwise the counterforce produced may result in inaccurate and even dangerous operation.
5. Since the bit becomes very hot during operation, do not touch it because you are burnt.
6. At the start of work, confirm screw tightening.
7. When working at a highly elevated location, pay attention to articles and persons below.

**SAVE THESE INSTRUCTIONS
AND
MAKE THEM AVAILABLE TO
OTHER USERS OF THIS POWER
TOOL!**

NAME OF PARTS

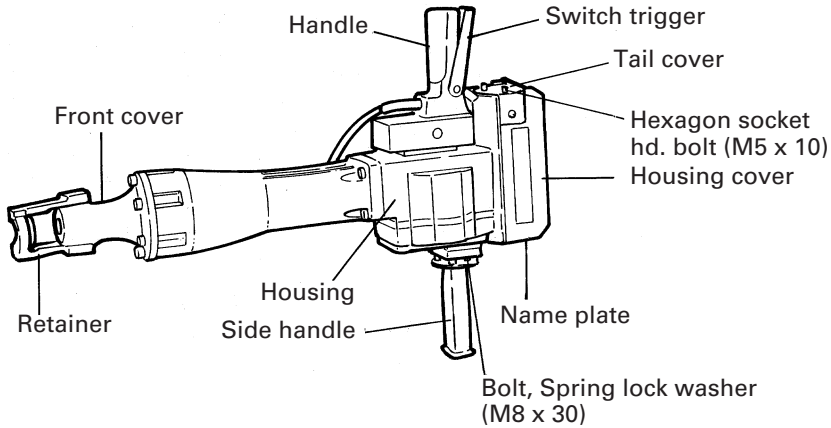


Fig. 1

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:	850/min
Weight	68.4 lbs (31.0 kg)

ACCESSORIES

CAUTION:

Only following genuine accessories for this power tool should be used.

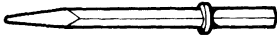
The use of any other attachment or accessory is not recommended because it may cause hazard including bodily injury.

STANDARD ACCESSORIES

1. Hexagon Bar Wrench 10 mm (for M12) (Code No. 993740).....	1
2. Hexagon Bar Wrench 6 mm (for M8) (Code No. 872422).....	1
3. Hexagon Bar Wrench 4 mm (for M5) (Code No. 944458).....	1
4. Side Handle (Code No. 956527).....	1
5. Bolt (Code No. 949759 Z).....	4
6. Spring Lock Washer (Code No. 949457 Z).....	4

OPTIONAL ACCESSORIES...sold separately

1. Bull point



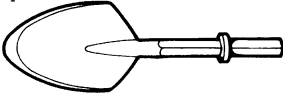
Overall length: 20-15/32" (520 mm)
Code No.: 985230

2. Cold chisel



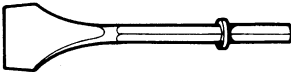
Overall length: 20-15/32" (520 mm)
Code No.: 985231

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" (75 mm)
Code No.: 985232

APPLICATION

This demolition hammer should be applied to breaking concrete, chipping off concrete, grooving, bar cutting, and driving piles in installation of piping and wiring, sanitary facility installation, machinery installation, water supply and drainage work, interior jobs, harbor facilities and other civil engineering work, etc.

PRIOR TO OPERATION

1. Power source

Ensure that the power source to be utilized conforms to the power requirements specified on the name plate of this demolition hammer.

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, this demolition hammer will start operating immediately, inviting serious accident.

3. Extension cord

When the work area is remote 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 loosely accepts the plug, the receptacle must be repaired. Contact the nearest authorized service center 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 neat, clean conditions conforming to prescribed precautions.

6. Mounting an accessory, such as a bull point, a cutter, etc..

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

NOTE:

Use a manual hammer to open/close the retainer as it is too heavy to move by hand.

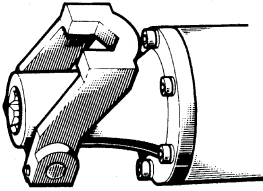


Fig. 2

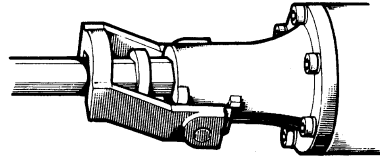


Fig. 3

NOTE:

When removing the accessory, such as a bull point, a cutter etc., 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 power tool. It means that the safe guard mechanism against no-load striking is working.
2. Operate this demolition hammer by utilizing its own weight. The performance will not be better even if it is pressed or thrust forcibly against the work surface.
Hold this demolition hammer with a force just sufficient to counteract the reaction.

CAUTION:

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

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

HOW TO REPLACE GREASE

This Demolition Hammer is full air-tight construction to protect against dust and to prevent lubricant leakage. Therefore, this Demolition Hammer can be used without lubrication for long periods. Replace the grease as described below.

Grease Replacement Period:

After purchase, replace grease after every 6 months of usage.

Ask for grease replacement at the nearest authorized service center.

MAINTENANCE AND INSPECTION

CAUTION:

Be sure to disconnect the plug before and during maintenance and inspection.

1. Inspecting this demolition hammer

Use of a dull accessory, such as a bull point, a cutter, etc., will cause motor malfunctioning and efficiency degraded. Replace with a new one without delay when abrasion is noted.

2. Inspecting the mounting screws:

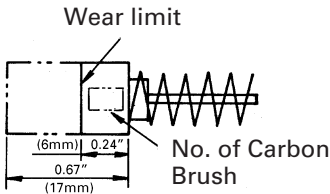
Regularly inspect all mounting screws and ensure that they are properly tightened. Should any of the screws be loose, retighten them immediately. Failure to do so could result in serious hazard.

3. Inspecting the retainer (Fig.2 and 3)

The retainer may become loose due to excessive use. Always, pay attention to its proper functioning to securely hold the accessory shank portion. If any wear and tear is found, bring this demolition hammer to an authorized service center for maintenance service.

4. Inspecting the carbon brushes: (Fig. 4)

The motor employs carbon brushes which are consumable parts. When they become worn to or near "wear limit", it results 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 No. shown in the Fig. 4. In addition, always keep carbon brushes clean and ensure that they slide freely within the brush holders.



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

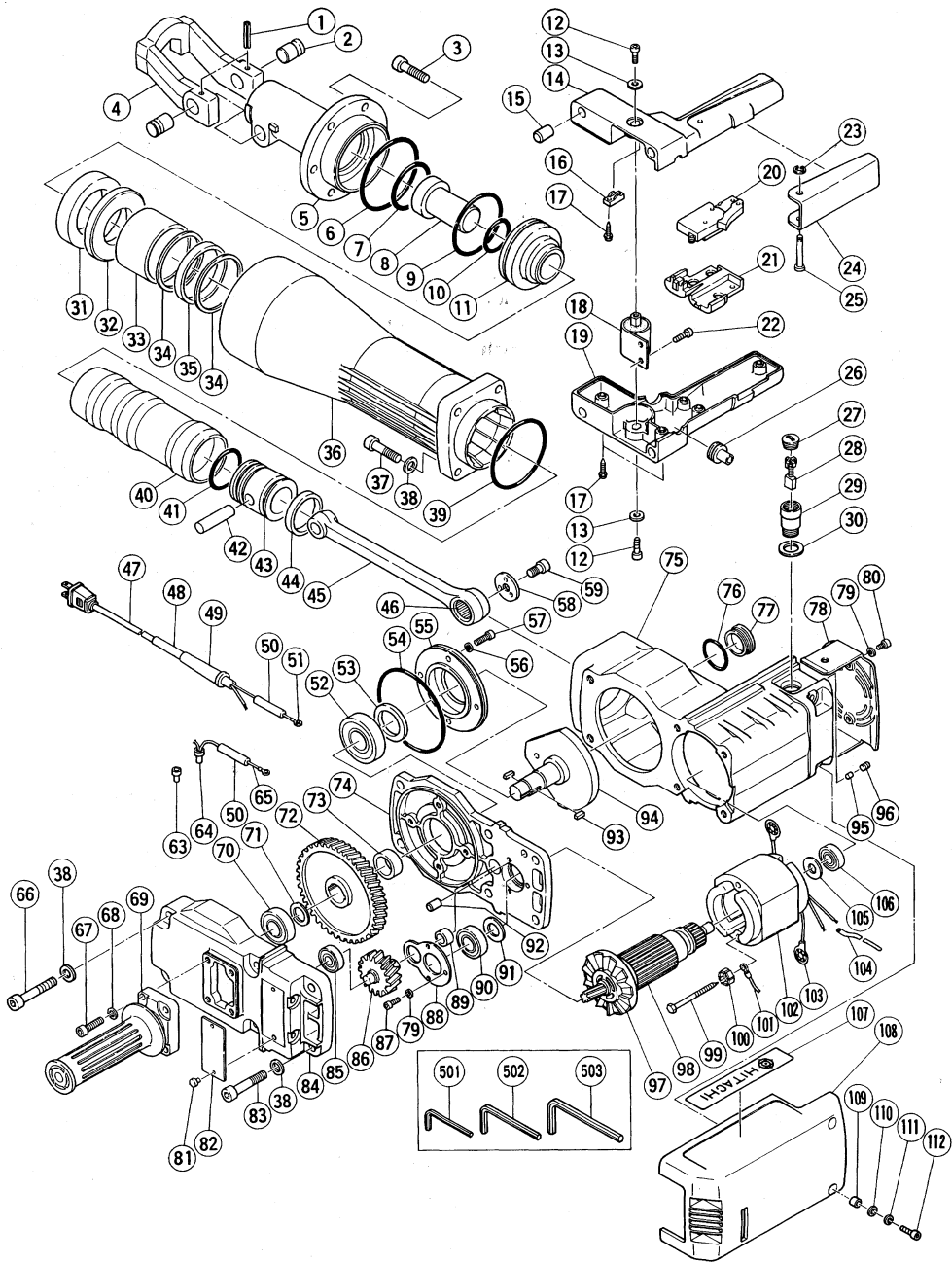
Fig. 4

5. Replacing a carbon brush

Loose the screw (Hexagon socket hd. bolt M5 x 10) of the tail cover, then remove the tail cover. (Fig. 1) After removing the brush cap, the carbon brush can be removed. After replacing the carbon brush, tighten the brush cap, then mount the tail cover securely.

NOTE:

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



Item No.	Part Name	
1	Roll Pin	D6 × 36
2	Lever Pin	
3	Bolt	M12 × 40
4	Retainer	
5	Front Cover	
6	O-Ring (S-90)	
7	O-Ring	
8	Second Hammer	
9	O-Ring (D)	
10	O-Ring (A)	
11	Hammer Holder	
12	Hexagon Socket Hd. Bolt	M6 × 16
13	Stopper Washer	
14	Handle (A)	
15	Rubber Leg	
16	Cord Clip	
17	Tapping Screw	D4 × 20
18	Handle Rubber	
19	Handle (B)	
20	Switch	
21	Support	
22	Hexagon Socket Hd. Bolt	M6 × 16
23	E-Type Retaining Ring	
24	Switch Lever	
25	Pin	
26	Internal Wire Holder	
27	Brush Cap	
28	Carbon Brush	
29	Brush Holder	
30	Stop Plate	
31	Damper	
32	Damper Plate	
33	Mouth	
34	Mouth Washer	
35	Urethane Ring	
36	Cylinder Case	
37	Bolt	M10 × 45
38	Washer	
39	O-Ring	
40	Striker	
41	O-Ring (B)	
42	Piston Pin	
43	Piston	
44	Oil Seal (A)	
45	Connecting Rod Ass'y	
46	Needle Bearing	
47	Cord	
48	Tube (D)	
49	Cor d Armor	
50	Vinyl Tube (A) (I.D.7 × T 0.5 × 50)	
51	Terminal	
52	Ball Bearing (6305ZZCM)	
53	Oil Seal	
54	O-Ring	
55	Bearing Boss	
56	Spring Lock Washer	
57	Hexagon Socket Hd. Bolt	M6 × 20

Item No.	Part Name	
58	Crank Washer	
59	Hexagon Socket Hd. Bolt	M10 × 16
63	Connector	
64	Connector	
65	Internal Wire	
66	Hexagon Socket Hd. Bolt	M10 × 60
67	Hexagon Socket Hd. Bolt	M8 × 30
68	Spring Lock Washer	
69	Side Handle	
70	Ball Bearing (6204VVCMM)	
71	Distance Washer	
72	Final Gear	
73	Distance Ring (B)	
74	Inner Cover	
75	Housing Ass'y	
76	O-Ring (S-38)	
77	Oil Cap	
78	Tail Cover	
79	Spring Lock Washer	
80	Hexagon Socket Hd. Bolt	M5 × 10
81	Rivet	D2.5 × 4.8
82	Name Plate	
83	Hexagon Socket Hd. Bolt	M10 × 55
84	Gear Cover	
85	Ball Bearing (6201VVCMM)	
86	Counter Gear	
87	Hexagon Socket Hd. Bolt	M5 × 14
88	Bearing Cover (A)	
89	Needle Bearing (BK1312)	
90	Ball Bearing (6203VVCMM)	
91	Bearing Washer	
92	Pin	B8 × 14
93	Feather Key	4 × 4 × 15
94	Crank Shaft	
95	Friction Piece	
96	Hexagon Socket Hd. Sect Screw	M5 × 8
97	Fan	
98	Armature	
99	Hexagon Hd. Tapping Screw	D5 × 85
100	Special Washer	
101	Internal Wire	
102	Stator	
103	Brush Terminal	
104	Vinyl tube (B)(I.D.4 × T0.4 × 80)	
105	Bearing Washer	
106	Ball Bearing (6201VVCMM)	
107	HITACHI Label	
108	Housing Cover	
109	Collar	
110	Bolt Washer	
111	Spring Lock Washer	
112	Hexagon Socket Hd. Bolt	M6 × 20
501	Hexagon Bar Wrench	4 mm
502	Hexagon Bar Wrench	6 mm
503	Hexagon Bar Wrench	10 mm

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

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.

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