

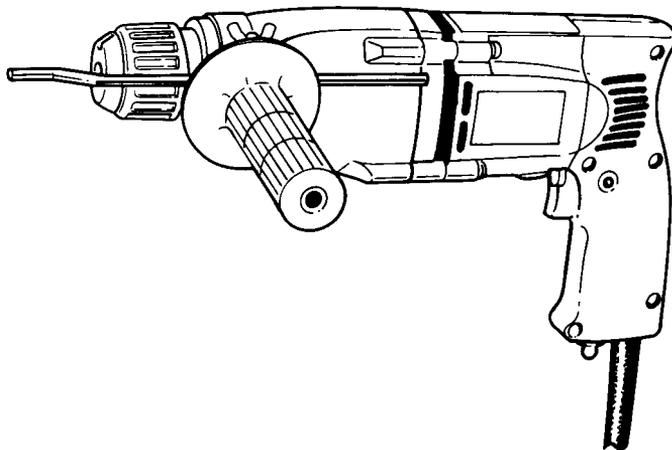
Makita

アメリカ

Rotary Hammer

20 mm (3/4") MODEL HR2000
Variable Speed

INSTRUCTION MANUAL



 **DOUBLE INSULATION**

SPECIFICATIONS

Capacities			No load speed (RPM)	Blows per minute	Overall length	Net weight
In wood	In steel	In concrete				
18 mm (11/16")	13 mm (1/2")	20 mm (3/4")	0 - 1,200	0 - 4,200	330 mm (13")	2.7 kg (6 lbs)

- * Manufacturer reserves the right to change specifications without notice.
- * Note: Specifications may differ from country to country.

IMPORTANT SAFETY INSTRUCTIONS

(For All 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 use power tools in damp or wet locations. Keep work area well lit. Don't expose power tools to rain. Don't use tool in presence of flammable liquids or gases.
3. **KEEP CHILDREN AWAY.** All visitors should be kept away from work area. Don't let visitors contact tool or extension cord.
4. **STORE IDLE TOOLS.** When not in use, tools should be stored in dry, and high or locked-up place — out of reach of children.
5. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was intended.
6. **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.
7. **DRESS PROPERLY.** Don't 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.
8. **USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty.
9. **DON'T ABUSE CORD.** Never carry tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil, and sharp edges.
10. **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.
11. **DON'T OVERREACH.** Keep proper footing and balance at all times.
12. **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.
13. **DISCONNECT 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 tool before turning it on.
- 15. **AVOID UNINTENTIONAL STARTING.** Don't carry tool with finger on switch. Be sure switch is OFF when plugging in.
- 16. **EXTENSION CORDS.** 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 1 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.

TABLE 1 MINIMUM GAGE FOR CORD SETS

			Total Length of Cord in Feet			
			0 – 25	26 – 50	51 – 100	101 – 150
Ampere Rating More Than	–	Not More Than	A W G			
0	–	6	18	16	16	14
6	–	10	18	16	14	12
10	–	12	16	16	14	12
12	–	16	14	12	Not Recommended	

- 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. Don't 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. Don't use tool if switch does not turn it on and off.
- 20. **GUARD AGAINST ELECTRIC SHOCK.** Prevent body contact with grounded surfaces. For example; pipes, radiators, ranges, refrigerator enclosures.
- 21. **REPLACEMENT PARTS.** When servicing, use only identical replacement parts.
- 22. **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.

VOLTAGE WARNING: Before connecting the tool to a power source (receptacle, outlet, etc.) be sure the voltage supplied is the same as that specified on the nameplate of the tool. A power source with voltage greater than that specified for the tool can result in **SERIOUS INJURY** to the user — as well as damage to the tool. If in doubt, **DO NOT PLUG IN THE TOOL**. Using a power source with voltage less than the nameplate rating is harmful to the motor.

ADDITIONAL SAFETY RULES

1. Wear a hard hat (safety helmet), safety glasses and/or face shield. It is also highly recommended that you wear a dust mask, ear protectors and thickly padded gloves.
2. Be sure the bit is secured in place before operation.
3. Under normal operation, the tool is designed to produce vibration. The screws can come loose easily, causing a breakdown or accident. Check tightness of screws carefully before operation.
4. In cold weather or when the tool has not been used for a long time, let the tool warm up for several minutes by operating it under no load. This will loosen up the lubrication. Without proper warm-up, hammering operation is difficult.
5. Always be sure you have a firm footing.
Be sure no one is below when using the tool in high locations.
6. Hold the tool firmly with both hands.
7. Keep hands away from moving parts.
8. Do not leave the tool running. Operate the tool only when hand-held.
9. Do not point the tool at any one in the area when operating. The bit could fly out and injure someone seriously.
10. When drilling or chipping into walls, floors or wherever "live" electrical wires may be encountered, **DO NOT TOUCH ANY METAL PARTS OF THE TOOL!** Hold the tool by the insulated grasping surfaces to prevent electric shock if you drill or chip into a "live" wire.
11. Do not touch the bit or parts close to the bit immediately after operation; they may be extremely hot and could burn your skin.

SAVE THESE INSTRUCTIONS.

Bit grease

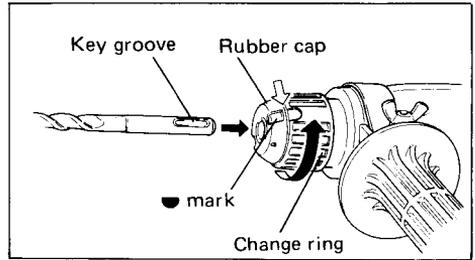
Coat the bit shank head beforehand with a small amount (about 0.5–1 g; 0.02–0.04 oz.) of bit grease. This chuck lubrication assures smooth action and longer service life.

Installing or removing drill bit

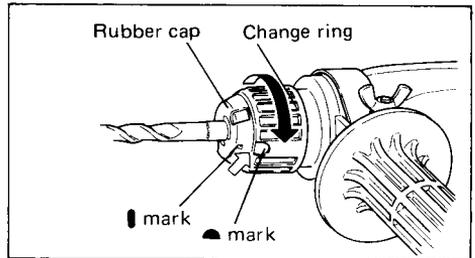
CAUTION:

Always be sure that the tool is switched off and unplugged before installing or removing the bit.

To install the bit, turn the change ring in the direction of the arrow until the  mark on the change ring is aligned with the  mark on the rubber cap. Align the key groove on the bit shank with the  mark on the rubber cap and insert the bit.

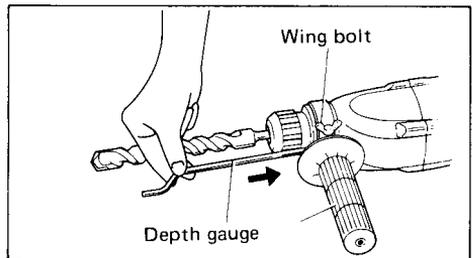


Turn the change ring in the direction of the arrow until the  mark on the change ring is aligned with the  mark on the rubber cap to secure the bit.



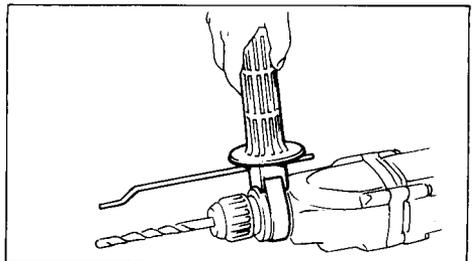
Adjusting depth of drilling

Loosen the wing bolt and adjust the depth gauge to the desired depth. After adjusting, tighten the wing bolt.



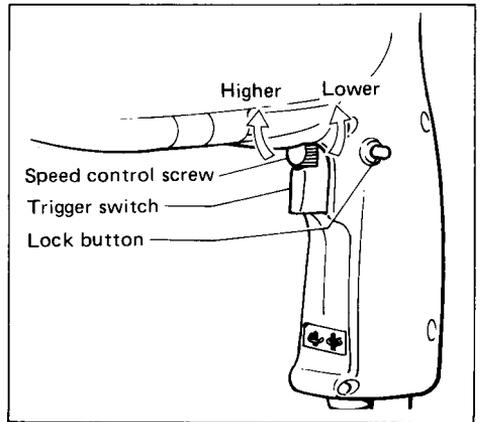
Side grip (auxiliary handle)

The side grip swings around to either side, allowing easy handling of the tool in any position. Loosen the side grip by turning it counterclockwise, swing it to the desired position and then tighten it by turning clockwise.



Switch action

Tool speed is increased by increasing pressure on the trigger. To start the tool, simply pull the trigger. Release the trigger to stop. For continuous operation, pull the trigger and then push in the lock button. To stop the tool from the locked position, pull the trigger fully, then release it. A speed control screw is provided so that maximum tool speed can be limited (variable). Turn the speed control screw clockwise for higher speed, and counterclockwise for lower speed.



CAUTION:

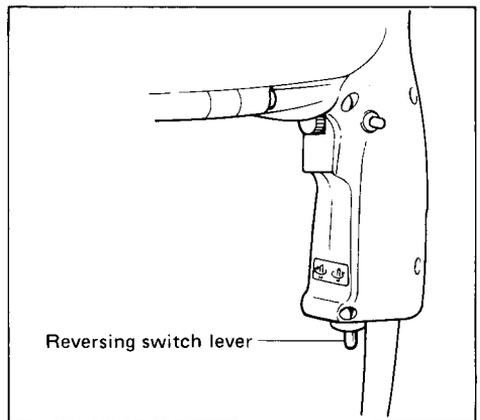
Before plugging in the tool, always check to see that the trigger switch actuates properly and returns to the "OFF" position when released.

Reversing switch action

This tool has a reversing switch to change the direction of rotation. Move the reversing switch lever to the  position for clockwise rotation or the  position for counterclockwise.

CAUTION:

- Always check the direction of rotation before drilling.
- Use the reversing switch only when the tool comes to a complete stop. Changing the direction of rotation before the tool stops may ruin the tool.



Torque limiter

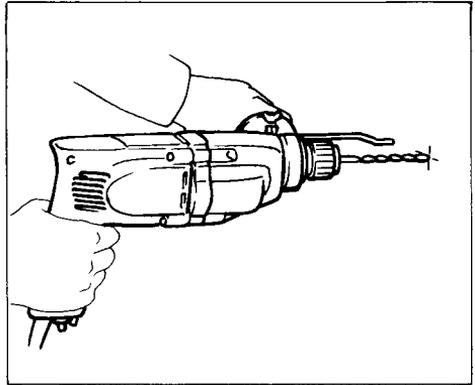
The torque limiter will actuate when a certain torque level is reached. The motor will disengage from the output shaft. When this happens, the bit will stop turning.

CAUTION:

- As soon as the torque limiter actuates, switch off the tool immediately. This will help prevent premature wear of the tool.
- Hole saws, core bits, diamond core bits, etc. cannot be used with this tool. They tend to pinch or catch easily in the hole. This will cause the torque limiter to actuate too frequently.

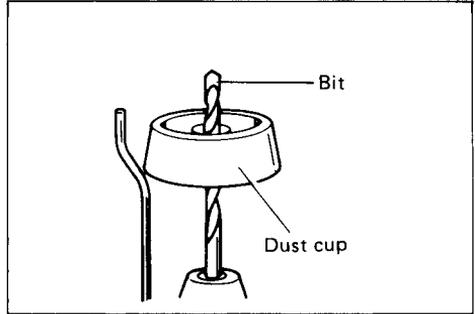
Hammer drilling operation

- Position the bit at the location for the hole, then pull the trigger. Do not force the tool. Light pressure gives best results. Keep the tool in position and prevent it from slipping away from the hole.
- Do not apply more pressure when the hole becomes clogged with chips or particles. Instead, run the tool at an idle, then remove from the hole. By repeating this several times, the hole will be cleaned out.



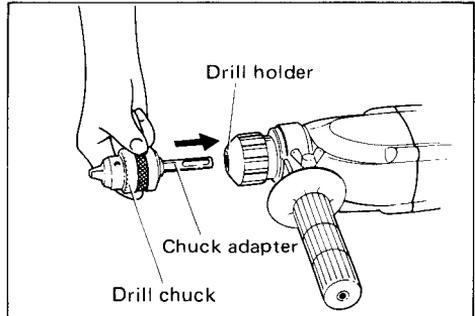
Dust cup

Use the dust cup to prevent dust from falling over the tool and on yourself when performing overhead drilling operations. Attach the dust cup to the bit as shown in the figure. The dust cup can be attached to the bit up to 14.5 mm (9/16") in diameter.



Drilling in wood or metal

Use the optional drill chuck assembly (consisting of drill chuck, chuck adapter and screw) for drilling up to 13 mm (1/2") in metal and up to 18 mm (11/16") in wood. To install it, refer to "installing or removing drill bit".



CAUTION:

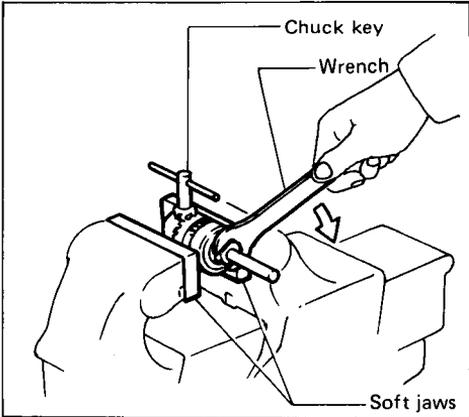
Be sure to use only the drill chuck assembly or chuck adapter assembly specified in this manual (See "accessories").

The use of any other drill chuck assembly or chuck adapter assembly may cause damage to the drill chuck or chuck adapter. Also, the screw holding the drill chuck and chuck adapter together will come loose when reversing the tool.

NOTE:

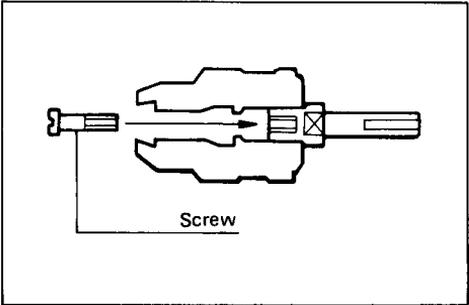
If you need assemble the drill chuck and chuck adapter assembly, proceed as follows.

Secure the drill chuck in a vise or similar securing device. Place the chuck key in one of the three holes so that the chuck body will not turn.



Remove the screw from the chuck adapter assembly and screw the chuck adapter into the drill chuck. Use a wrench to tighten the chuck adapter securely, applying about 300-400 kgf · cm (21.6-28.9 lb · ft) torque. [Note: you can obtain 300-400 kgf · cm (21.6-28.9 lb · ft) torque by applying pressure of 30-40 kg (66-88 lbs) to the wrench while holding the portion 10 cm (4") from the wrench head.]

Open the chuck jaws fully and insert the screw through the chuck opening. Tighten the screw counterclockwise with a screwdriver.



MAINTENANCE

CAUTION:

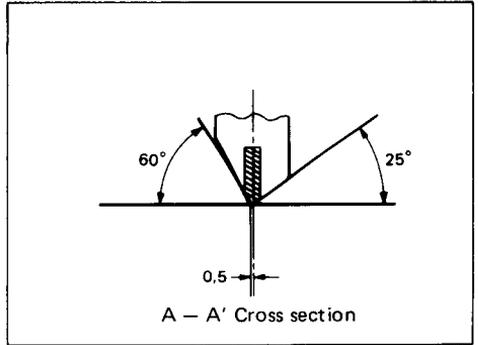
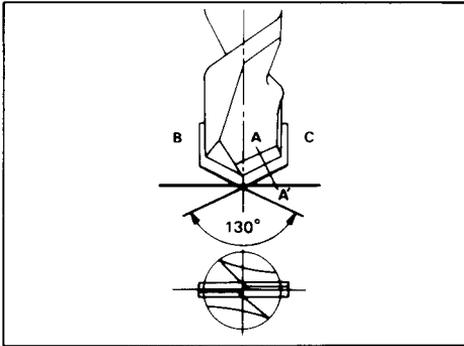
Always be sure that the tool is switched off and unplugged before attempting to perform inspection or maintenance.

Sharpening tungsten-carbide tip bit

When your bit becomes dull, use an ordinary bench grinder with a wheel made of silicon carbide to sharpen it.

CAUTION:

- Be sure to maintain the original angles of the tip. Especially without 60° chamfering, the tungsten-carbide tip may be damaged.
- Do not quench the bit in water or oil.
- Do not grind the sides B and C.



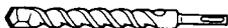
To maintain product SAFETY and RELIABILITY, repairs, carbon brush inspection and replacement, any other maintenance or adjustment should be performed by Makita Authorized or Factory Service Centers, always using Makita replacement parts.

ACCESSORIES

CAUTION:

These accessories or attachments are recommended for use with your Makita tool specified in this manual. The use of any other accessories or attachments might present a risk of injury to persons. The accessories or attachments should be used only in the proper and intended manner.

• Tungsten-carbide tip bits



Part No.	Diameter	Overall length
791180-A	3/16"	4-1/2"
791182-A	1/16"	6"
791181-A	1/4"	4-1/2"
791183-A	1/4"	6-1/4"
791184-A	5/16"	6-1/4"
791185-A	3/8"	6-1/4"
791194-A	3/8"	12-1/2"
791186-A	7/16"	6-1/4"
791187-A	1/2"	6-1/2"
791195-A	1/2"	12-1/2"
791188-A	9/16"	10-1/2"
791189-A	5/8"	9-1/4"
791196-A	5/8"	12-1/2"
791190-A	11/16"	9-1/2"
791191-A	3/4"	9-1/2"
791197-A	3/4"	12-1/2"

• Chuck key S13

Part No. 763411-7



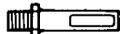
• Drill chuck S13

Part No. 763047-2



• Chuck adapter

Part No. 122331-8



• Hammer grease 30 g; 1 oz.

Part No. 181490-7



• Depth gauge

Part No. 321144-6



• Bit grease 100 g; 3.5 oz.

Part No. 181573-3



• Dust cup

Part No. 421342-3



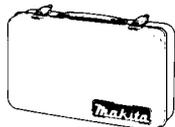
• Hex wrench5

Part No. 783203-8



• Steel carrying case

Part No. 181872-3



• Grip 37

Part No. 273496-0

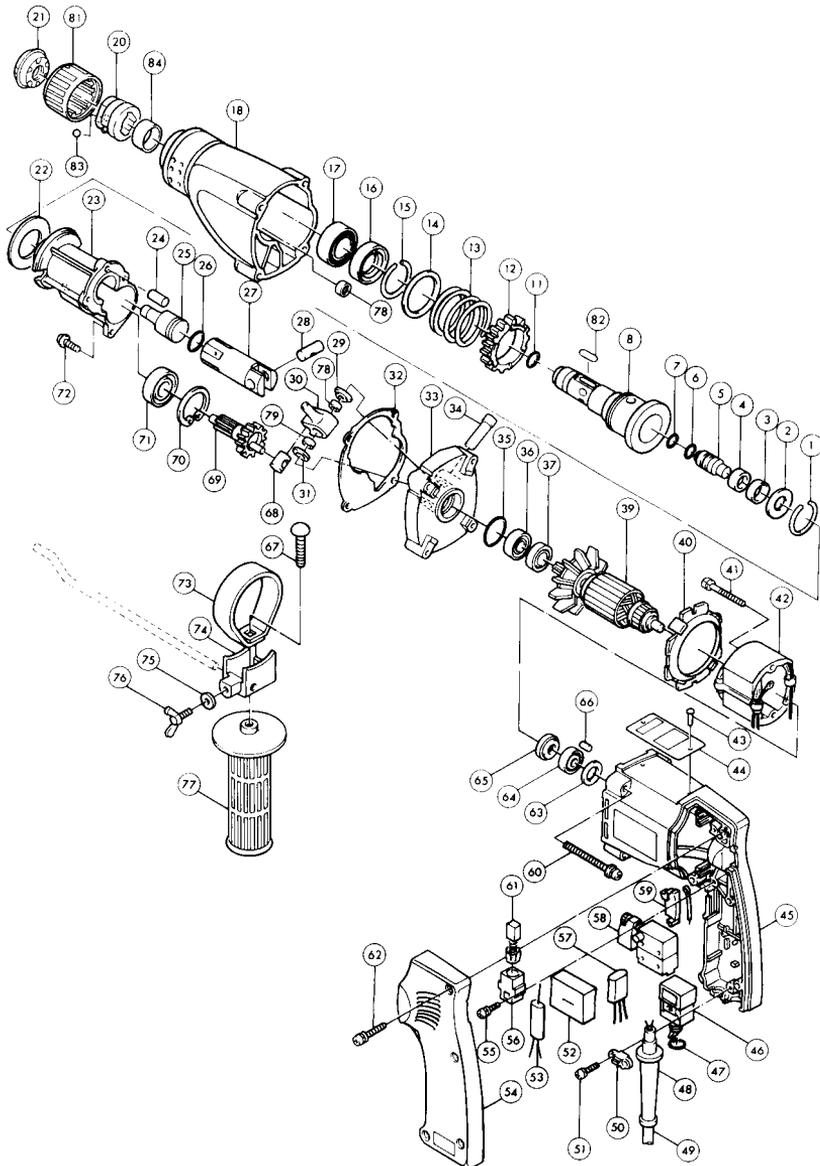


• Safety goggles

Part No. 191686-2



20 mm (3/4") ROTARY HAMMER Model HR2000



Note: The switch, noise suppressor and other part configurations may differ from country to country.

ITEM NO.	NO. USED	DESCRIPTION	ITEM NO.	NO. USED	DESCRIPTION
MACHINE			MACHINE		
1	1	Ring Spring 26	42	1	FIELD ASSEMBLY
2	1	Flat Washer 13.5	43	2	Rivet 0-5
3	1	Rubber Ring 17	44	1	Name Plate
4	1	Idler	45	1	Motor Housing
5	1	Impact Bolt	46	1	Switch
6	1	O Ring 10	47	1	O Ring 11
7	1	O Ring 10	48	1	Cord Guard
8	1	Tool Holder	49	1	Cord
11	1	O Ring 10	50	1	Strain Relief
12	1	Spur Gear 39	51	2	Pan Head Screw M4x18 (With Washer)
13	1	Compression Spring 35	54	1	Handle Cover
14	1	Flat Washer 34	55	2	Pan Head Screw M4x14 (With Washer)
15	1	Ring Spring 30.5	56	2	Brush Holder
16	1	Oil Seal 28	58	1	Switch
17	1	Ball Bearing 6904LLU	59	1	Switch Cover
18	1	Gear Housing	60	4	Pan Head Screw M5x55 (With Washer)
20	1	Change Ring	61	2	Carbon Brush
21	1	Cap 37	62	5	Pan Head Screw M4x22 (With Washer)
22	1	Washer 28	63	1	Flat Washer 14
23	1	Crank Housing	64	1	Ball Bearing 608LB
24	1	Pin 7	65	1	Insulation Washer
25	1	Striker	66	1	Rubber Pin 4
26	1	O Ring 16	67	1	Cap Square Neck Bolt M8x35
27	1	Piston Cylinder	68	1	Crank Joint
28	1	Piston Joint	69	1	Crank Shaft
29	1	Washer	70	1	Retaining Ring R-32
30	1	Bell Crank	71	1	Ball Bearing 6002
31	1	Washer	72	3	Pan Head Screw M5x14 (With Washer)
32	1	Gear Housing Packing	73	1	Belt
33	1	Gear Housing Cover	74	1	Grip Base
34	1	Pin 8	75	1	Rubber Washer 4.5
35	1	O Ring 26	76	1	Wing Bolt M5x15
36	1	Ball Bearing 6200	77	1	Grip 32
37	1	Oil Seal 12	78	1	Needle Cage 808
38	1	Fan 62	79	1	Needle Cage 808
39	1	ARMATURE ASSEMBLY (With Item 38, 64 & 65)	81	1	Change Ring Cover
40	1	Baffle Plate	82	2	Roller 7
41	2	Hex. Bolt M5x55 (With Washer & Bond)	83	1	Steel Ball 7.1
			84	1	Ring 20

Note: The switch and other part specifications may differ from country to country.

MAKITA LIMITED ONE YEAR WARRANTY

Warranty Policy

Every Makita tool is thoroughly inspected and tested before leaving the factory. It is warranted to be free of defects from workmanship and materials for the period of ONE YEAR from the date of original purchase. Should any trouble develop during this one-year period, return the COMPLETE tool, freight prepaid, to one of Makita's Factory or Authorized Service Centers. If inspection shows the trouble is caused by defective workmanship or material, Makita will repair (or at our option, replace) without charge.

This Warranty does not apply where:

- repairs have been made or attempted by others;
- repairs are required because of normal wear and tear;
- The tool has been abused, misused or improperly maintained;
- alterations have been made to the tool.

IN NO EVENT SHALL MAKITA BE LIABLE FOR ANY INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES FROM THE SALE OR USE OF THE PRODUCT. THIS DISCLAIMER APPLIES BOTH DURING AND AFTER THE TERM OF THIS WARRANTY.

MAKITA DISCLAIMS LIABILITY FOR ANY IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF "MERCHANTABILITY" AND "FITNESS FOR A SPECIFIC PURPOSE," AFTER THE ONE-YEAR TERM OF THIS WARRANTY.

This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

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