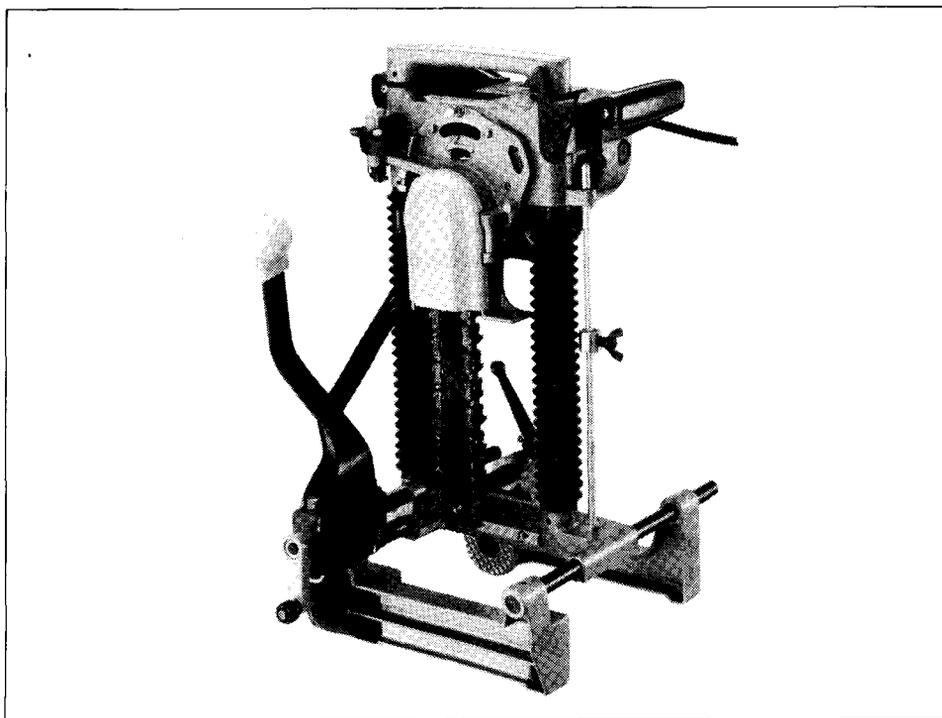




# Makita Chain Mortiser

MODEL 7104L

## INSTRUCTION MANUAL



### SPECIFICATIONS

Capacities		Width of applicable workpiece		Chain speed	Dimensions (L x W x H)	Net weight
Max. hole length (Longitudinal)	Max. hole depth					
130 mm (5-1/8")	155 mm (6-1/8")	80 mm (3-1/8")	308 mm (12-1/8")	300 m/min (1,000 FPM)	512 mm x 298 mm x 513 mm (20-3/16" x 11-3/4" x 20-3/16")	17 kg (37.4 lbs)

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

**BEFORE CONNECTING YOUR TOOL  
TO A POWER SOURCE**  
Be sure you have read all  
**GENERAL POWER TOOL SAFETY RULES**

**GENERAL SAFETY PRECAUTIONS**

1. **KNOW YOUR POWER TOOL.** Read the owner's manual carefully. Learn the tools applications and limitations, as well as the specific potential hazards peculiar to it.
2. **KEEP GUARDS IN PLACE** and in working order.
3. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
4. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
5. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
6. **KEEP CHILDREN AWAY.** All visitors should be kept safe distance from work area.
7. **MAKE WORKSHOP KID PROOF** with padlocks, master switches, or by removing starter keys.
8. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was designed.
9. **USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.
10. **WEAR PROPER APPAREL.** Wear no loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
11. **ALWAYS USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
12. **SECURE WORK.** Use clamps or a vise to hold work when practical. It's safer than using your hand and it frees both hands to operate tool.
13. **DON'T OVERREACH.** Keep proper footing and balance at all times.
14. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
15. **DISCONNECT TOOLS** before servicing; when changing accessories such as blades, bits, cutters, and the like.
16. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure switch is in off position before plugging in.
17. **USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.

18. **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.
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.
20. **DIRECTION OF FEED.** Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
21. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.
22. **PROPER GROUNDING.** This tool should be grounded while in use to protect the operator from electric shock.
23. **EXTENSION CORDS:** Use only three-wire extension cords which have three-prong grounding-type plugs and three-pole receptacles which accept the tool's plug. Replace or repair damaged or worn cord immediately.

**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. Use this tool only to cut holes in wood.**
- 2. This tool is for cutting holes in flat-surfaced wood. Never use it for cutting holes in a log.**
- 3. Wear ear protectors.**
- 4. Handle the cutter chain carefully; it is very sharp.**
- 5. Place the workpiece on wood blocks or short beams to prevent the cutter chain from hitting the ground, floor, etc., causing damage to the cutter chain at the time of hole breakthrough.**
- 6. Check the cutter chain carefully for cracks or damage before operation. Replace cracked or damaged cutter chain immediately.**
- 7. Secure the tool to the workpiece firmly.**
- 8. Inspect for and remove nails or foreign matter from the workpiece before operation.**
- 9. Do not operate the tool with the safety cover open.**
- 10. Do not wear gloves during operation.**
- 11. Keep hands away from moving parts.**
- 12. Remove the tool from the workpiece after operation to keep it from falling off and possibly causing injury.**
- 13. Don't abuse cord. Never yank cord to disconnect it from the receptacle. Keep cord away from heat, oil, water and sharp edges.**

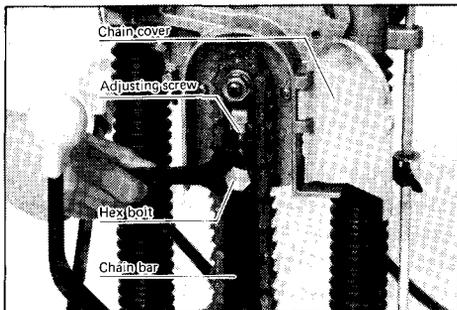
**SAVE THESE INSTRUCTIONS.**

### Installing or removing cutter chain

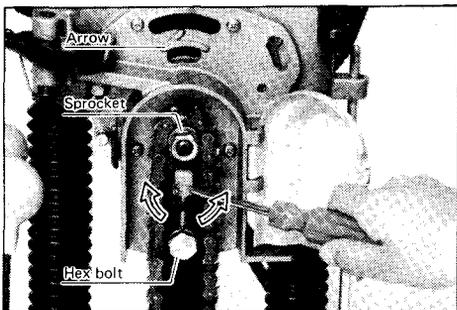
#### WARNING:

- Always be sure that the tool is switched off and unplugged before installing or removing the cutter chain.
- Always close the chain cover after installing, removing or adjusting the cutter chain.

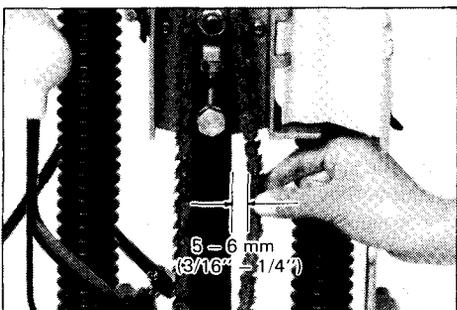
To install the cutter chain, open the chain cover. Loosen the hex bolt securing the chain bar and the adjusting screw.



Orient the cutters in the direction of the arrow on the tool (rotational direction). Attach the cutter chain to the sprocket first and then to the chain bar. Semi-tighten the hex bolt.



Turn the adjusting screw to increase the tension on the cutter chain. Pull the middle of the cutter chain lightly. When there is a clearance of approx. 5 – 6 mm (3/16" – 1/4") between the chain bar and the cutter chain, the tension on the cutter chain is adequate.

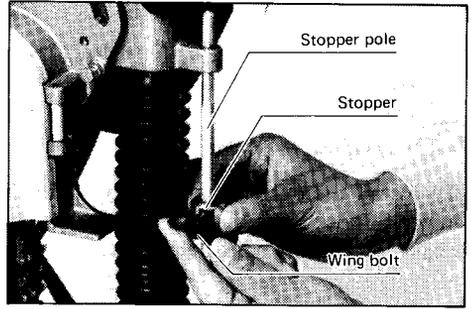


After adjusting the tension, tighten the hex bolt firmly to secure the chain bar. Additionally tighten slightly the adjusting screw. Close the chain cover.

To remove the cutter chain, follow the installation procedures in reverse.

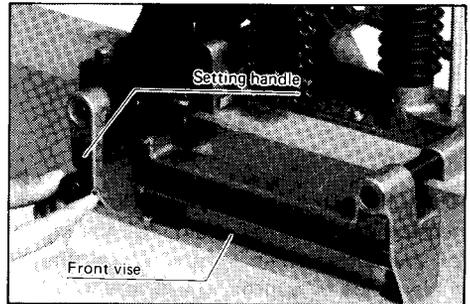
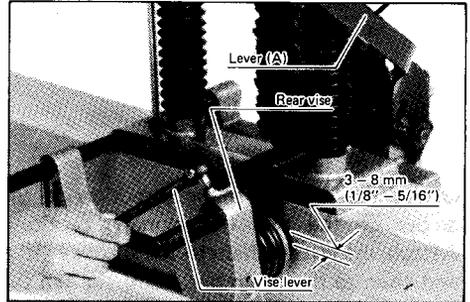
### Adjusting depth of cut

Loosen the wing bolt on the stopper. Move the stopper to the desired position and tighten the wing bolt. When tightened, the tip of the stopper pole should contact the flat surface of the stopper. The numbers indicated on the stopper pole are in cm units (3 mm; 1/8" per graduation).

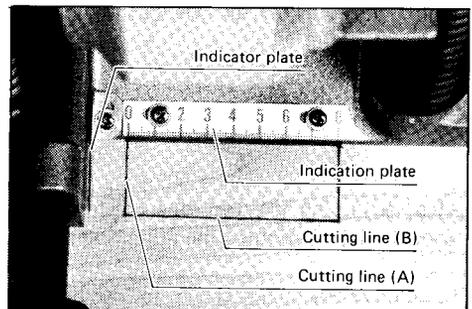


### Securing tool to workpiece

Loosen the vise lever and move the rear vise backward. Place the tool on the workpiece so that the front vise contacts the side of the workpiece. Move the rear vise forward until the distance between the rear vise and the workpiece is 3 – 8 mm (1/8" – 5/16"). Tighten the vise lever to secure the rear vise. Move the tool so that the "0" on the indication plate is aligned with the cutting line (A). Push the lever (A) down fully to secure the workpiece.

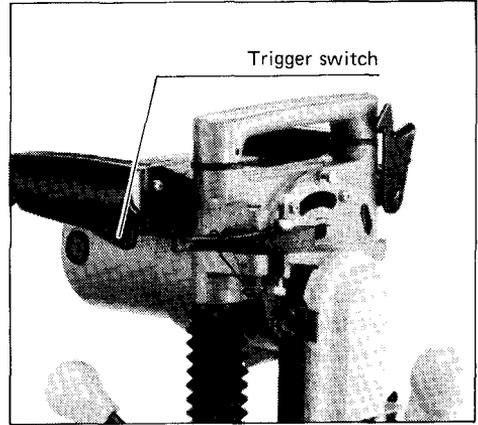


Turn the setting handle until the front edge of the yellow indicator plate is aligned with the cutting line (B).



### Switch action

To start the tool, simply pull the trigger. Release the trigger to stop.

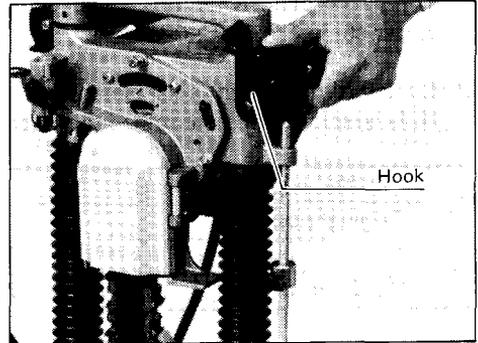


### WARNING:

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

### Operation

Grasp firmly the grips on either side. Switch on the tool and wait until the cutter chain attains full speed. Then release the hook and lower the tool head to cut in the workpiece. Do not apply excessive pressure to the tool. This may not only decrease the working efficiency but also cause a dangerous reaction. Feed slowly at the beginning of a cutting operation, at the time of hole breakthrough and when cutting a knot in the workpiece. After cutting, gently raise the tool head until you can hook the tool head back onto the hook. Then switch off the tool. Raise the lever (A) and remove the tool from the workpiece.



### WARNING:

- Always hook the tool head back onto the hook when not operating the tool.
- Never attempt to cut a twisted or warped workpiece which the tool is not secured firmly to.

### Adjusting indicator plate and indication plate

The yellow indicator plate and indication plate are factory adjusted for the standard-equipped cutter chain 18 mm (23/32"). If the alignment is off, for some reason, or when using another size cutter chain, loosen the screws and adjust the yellow indicator plate and indication plate.

## Enlarging hole

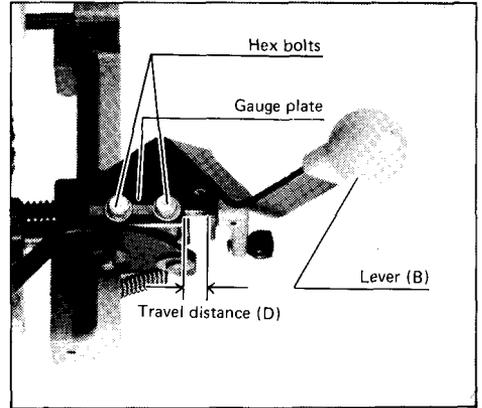
### 1. Transverse (width) enlargement

A hole can be enlarged transversely by adjusting the gauge plate. Max. expansion of hole width is 15 mm (9/16").

#### Example:

When cutting a hole 25 mm (1") wide using a cutter chain 18 mm (23/32"), proceed as follows:

Push the lever (B) away from you. Loosen the hex bolts securing the gauge plate. Adjust the gauge plate so that the travel distance (D) is 7 mm (9/32"); that is,  $25 \text{ mm (1")} - 18 \text{ mm (23/32")} = 7 \text{ mm (9/32")}$ . Tighten the hex bolts to secure the gauge plate. Cut the first hole with the lever (B) pushed away from you. Then pull the lever (B) toward you and cut again to enlarge the hole.



#### NOTE:

The gauge plate is factory adjusted for cutting a hole 30 mm (1-3/16") wide using a cutter chain 18 mm (23/32").

### 2. Longitudinal (length) enlargement

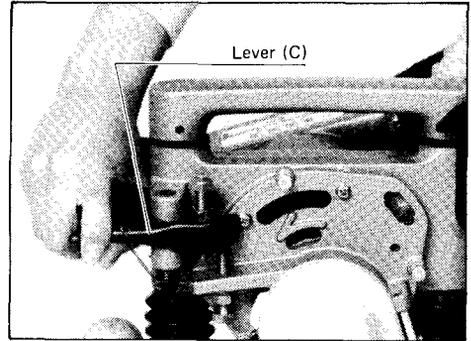
Hole length can be determined in three steps shown in the table below.

Cutter chain position	Hole length to be cut
Original position	52.5 mm (2-1/16")
No. 1 set position	52.5 mm (2-1/16") – 105 mm (4-1/8")
No. 2 set position	77.5 mm (3-1/16") – 130 mm (5-1/8")

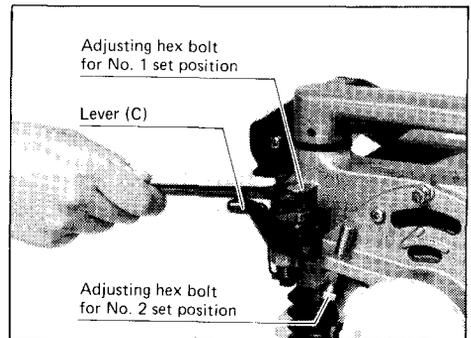
#### NOTE:

- A hole a little longer than predetermined may be cut depending upon the cutter chain tension.
- The adjusting hex bolts are factory adjusted for cutting holes 90 mm (3-9/16") long in the No. 1 set position and 120 mm (4-3/4") long in the No. 2 set position.

Push down the right-hand grip while raising the left-hand grip. Make sure that the adjusting hex bolt slips into place securely.



Loosen the hex nut securing the adjusting hex bolt. Turn the adjusting hex bolt until the cutter chain reaches the desired position, then tighten the hex nut.

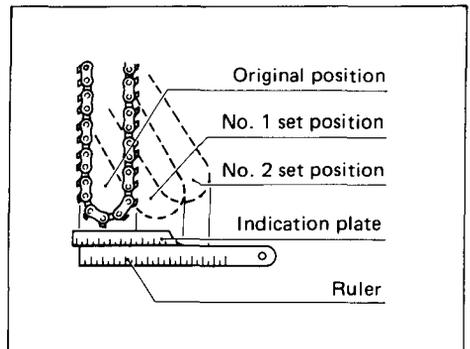


**WARNING:**

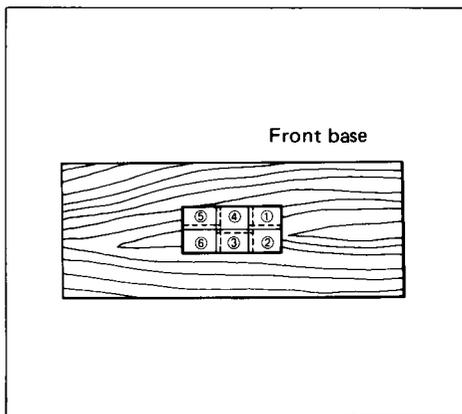
When using pressure to turn the adjusting hex bolt or hex nut, be careful not to allow the adjusting hex bolt to slip off the set position.

To bring the cutter chain back to the perpendicular (original) position, pull the lever (C) toward you while pressing down on the right-hand grip and slightly raising the left-hand grip and move the cutter chain back to its original position.

When cutting a hole, first use the perpendicular position, then No. 1 set position and finally No. 2 set position. Always safely hook the tool head back onto the hook when changing the cutter chain position.



When enlarging a hole both transversely and longitudinally, cut the holes in the order indicated from No. (1) to (6) as shown. This makes for more easy and efficient hole enlargement.



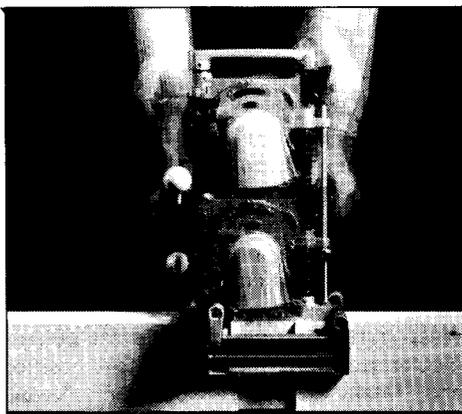
**WARNING:**

- Never attempt to enlarge a hole with the cutter chain still within the hole. This will cause unstable and dangerous operation.
- Never angle the cutter chain when cutting the first hole, or a dangerous kickback may result. Always have the cutter chain set to the perpendicular position when cutting the first hole.

Lap joints up to 130 mm (5-1/8") can be cut with this tool.

**NOTE:**

Lap joints can be cut only on the front (side away from you) of the workpiece.



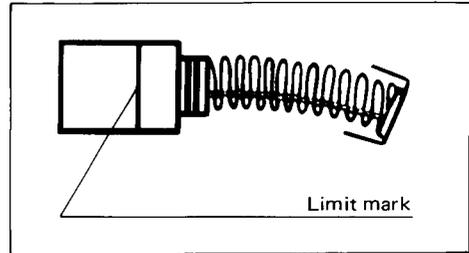
## MAINTENANCE

### CAUTION:

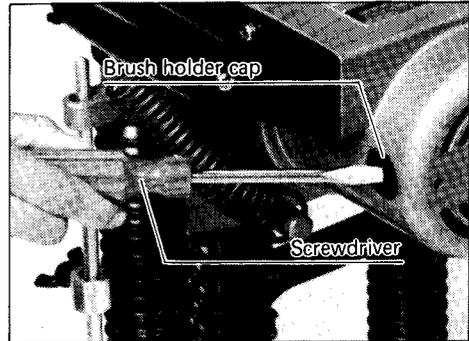
Always be sure that the tool is switched off and unplugged before attempting to perform inspection or maintenance.

### Replacing carbon brushes

Remove and check the carbon brushes regularly. Replace when they wear down to the limit mark. Keep the carbon brushes clean and free to slip in the holders. Both carbon brushes should be replaced at the same time. Use only Makita carbon brushes.



Use a screwdriver to remove the brush holder caps. Take out the worn carbon brushes, insert the new ones and secure the brush holder caps.



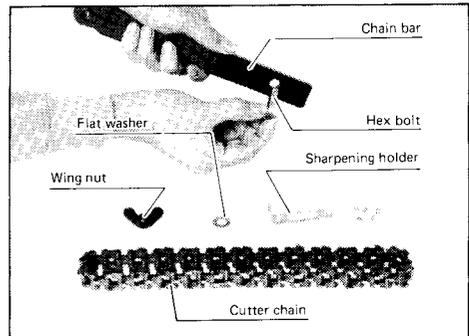
### Lubrication

After use, remove dirt, chips and foreign matter adhering to the tool. Then oil the moving parts (especially cutter chain) and the contact portions.

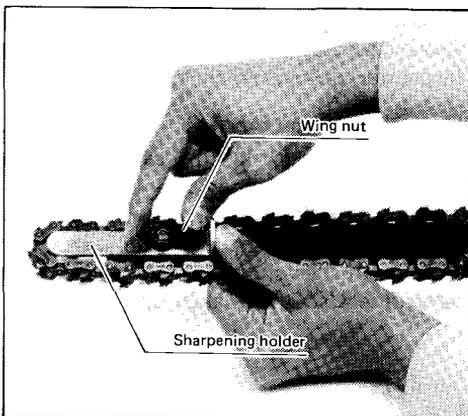
### Sharpening cutter chain

Remove the chain bar and cutter chain from the tool. Remove the adjusting screw from the chain bar.

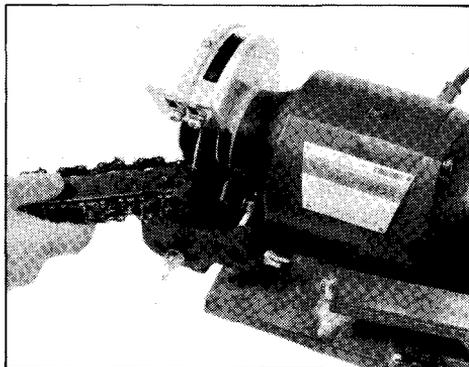
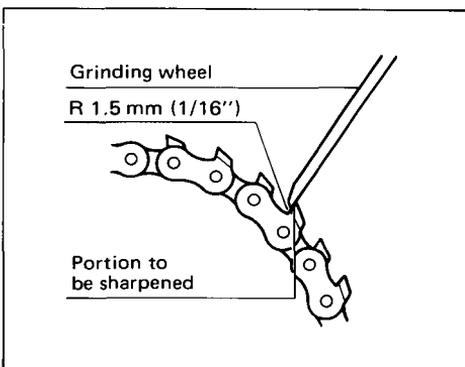
Remove the wing nut, flat washer and hex bolt from the sharpening holder assembly. Insert the hex bolt through the hole in the chain bar so that its hex head fits properly into the groove in the chain bar. Secure the sharpening holder to the chain bar using the wing nut and flat washer (semi-tighten).



Install the cutter chain around this assembly (chain bar and sharpening holder assembly). Push the bent portion of the sharpening holder to maintain the tension on the cutter chain and tighten the wing nut securely.



Use a grinder suitable for sharpening a cutter chain. The grinder should be equipped with a grinding wheel (grit 60 – 1,000) having a profile as shown in the figure. Its no load speed should be 3,000 – 3,600 RPM (for example, Makita Model 9300). When sharpening, be careful to maintain the cutter chain configurations identical to the original cutter chain. Sharpen all cutters evenly, one by one. After sharpening, wipe off any foreign matter adhering to the cutter chain and then oil the link portions.



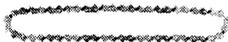
To maintain product SAFETY and RELIABILITY, repairs, any other maintenance or adjustment should be performed by Makita Authorized or Factory Service Centers, always using Makita replacement parts.

## 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.

#### ● Cutter chain



Part No.	Width
791085-4	15 mm (5/8")
791086-2	16.5 mm (21/32")
791087-0	18 mm (11/16")
791084-6	21 mm (13/16")
791088-8	24 mm (15/16")
* 791174-5	30 mm (1-3/16")

\* When using a cutter chain 30 mm (1-3/16"), remove the standard-equipped chain bar and sprocket, and install the chain bar for 30 mm (1-3/16") and sprocket for 30 mm (1-3/16").

#### ● Chain bar for 30 mm (1-3/16")

Part No. 122235-4



To remove the standard-equipped chain bar, loosen the hex bolt securing the chain bar. Then remove the hex bolt, spring washer, flat washer and chain bar. Remove the adjusting screw from the chain bar. To install the chain bar for 30 mm (1-3/16"), first install the adjusting screw on the chain bar for 30 mm (1-3/16"). Then install the chain bar using the hex bolt, spring washer and flat washer.

#### ● Sprocket 4 for 30 mm (1-3/16")

Part No. 221502-5



To remove the standard-equipped sprocket, insert a slotted screwdriver as shown in the figure to lock the sprocket. Loosen the hex nut securing the sprocket and then remove the hex nut, spring washer, flat washer, ring 15 and sprocket. To install the sprocket for 30 mm (1-3/16"), mount the sprocket onto the spindle with the round hole side facing in. Then secure using the spring washer, flat washer and hex nut. The ring 15 is not necessary when securing the sprocket for 30 mm (1-3/16").

#### ● Sharpening holder assembly

Part No. 123028-2



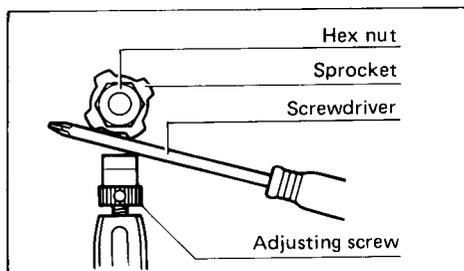
#### ● Wrench 13-17

Part No. 781204-0



#### ● Oil supply (100 cc)

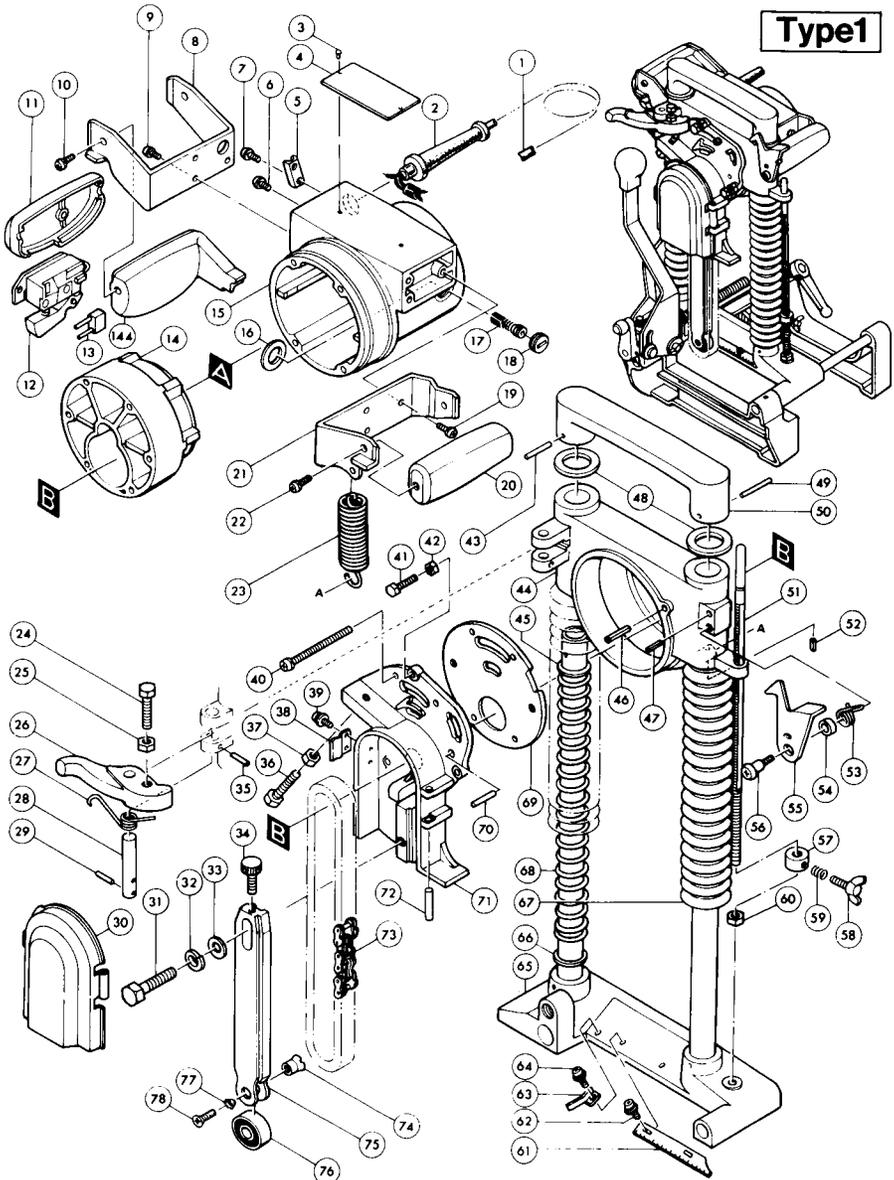
Part No. 181117-9



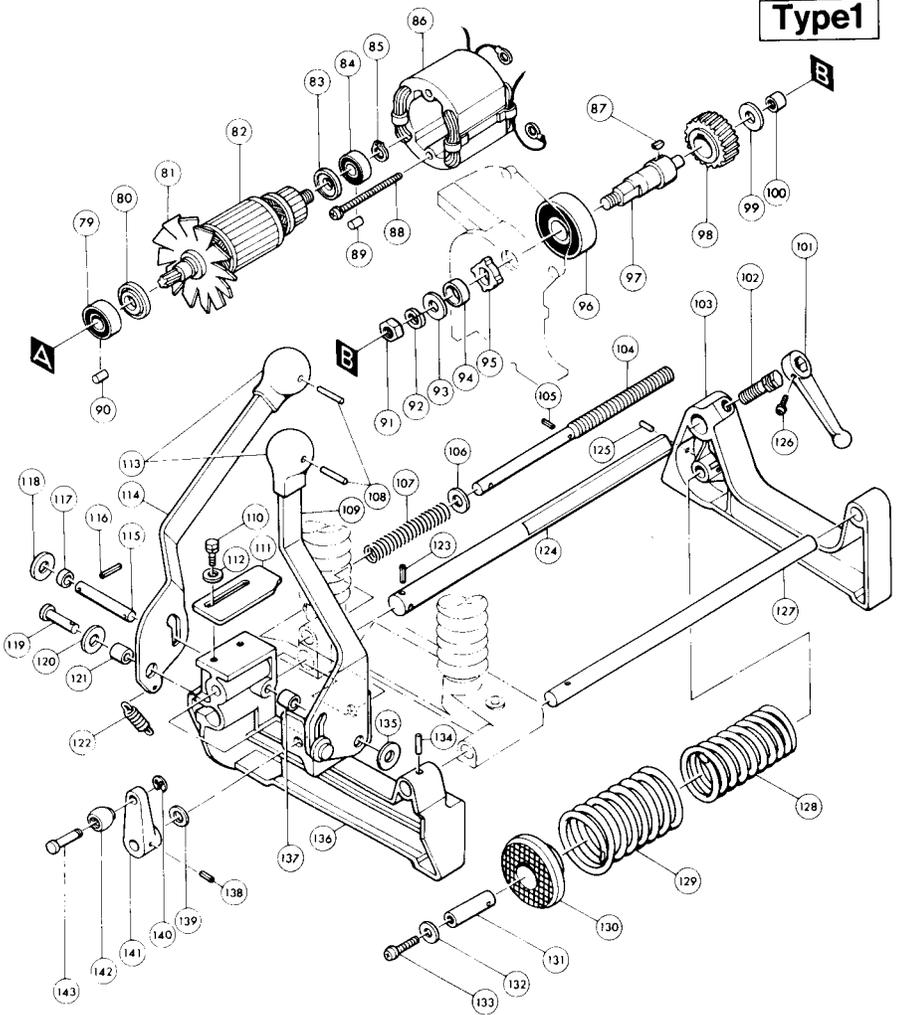


# CHAIN MORTISER Model 7104L

**Type1**



# Type 1



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
<b>MACHINE</b>			<b>MACHINE</b>		
1	1	Cord	73	1	Cutter Chain
2	1	Cord Guard	74	1	Head Shaft
3	2	Rivet 0 - 5	75	1	Chain Bar
4	1	Name Plate	76	1	Ball Bearing 100BLL
5	1	Strain Relief	77	1	Toothed Lock Washer 6
6	1	Pan Head Screw M4x8 (With Washer)	78	1	Countersunk Head Screw M6x12
7	2	Pan Head Screw M4x12 (With Washer)	79	1	Ball Bearing 6201LLB
8	1	Grip Holder R	80	1	Dust Seal 12
9	3	Pan Head Screw M5x18 (With Washer)	81	1	Fan 92
10	2	Pan Head Screw M5x10 (With Washer)	82	1	ARMATURE ASSEMBLY (With Item 79 - 85)
11	1	Switch Case Set (With Item 144)	83	1	Dust Seal 10
12	1	Switch	84	1	Ball Bearing 6206LLB
13	1	Noise Suppressor	85	1	Retaining Ring S - 10
14	1	Gear Housing	86	1	FIELD ASSEMBLY
15	1	Motor Housing	87	1	Woodruff Key 4
16	2	Insulation Washer	88	2	Pan Head Screw M5x75 (With Washer)
17	2	Carbon Brush	89	1	Rubber Pin 4
18	2	Brush Holder Cap	90	1	Rubber Pin 6
19	3	Pan Head Screw M5x18 (With Washer)	91	1	Hex. Nut M10
20	1	Grip 25	92	1	Spring Washer 10
21	1	Grip Holder L	93	1	Flat Washer 10
22	2	Pan Head Screw M5x10 (With Washer)	94	1	Ring 15
23	1	Tension Spring 20	95	1	Sprocket 4
24	1	Hex. Bolt M8x44	96	1	Ball Bearing 6304LLB
25	1	Hex. Nut M8	97	1	Spindle
26	1	Lever C	98	1	Helical Gear 47
27	1	Tension Spring 12	99	1	Flat Washer 10
28	1	Pin 10	100	1	Needle Bearing 1015
29	1	Spring Pin 4 - 20	101	1	Lever 98
30	1	Chain Cover	102	1	Hex. Bolt M12x34
31	1	Hex. Bolt M10	103	1	Vice Element
32	1	Spring Washer 10	104	1	Screw M14
33	1	Flat Washer 10	105	1	Spring Pin 4 - 20
34	1	Screw M8x28	106	1	Flat Washer 10
35	1	Spring Pin 4 - 20	107	1	Compression Spring 10
36	1	Hex. Bolt M8x44	108	2	Spring Pin 5 - 40
37	1	Hex. Nut M8	109	1	Lever 9
38	1	Leaf Spring	110	2	Hex. Bolt M8x16 (With Washer)
39	2	Pan Head Screw M4x8 (With Washer)	111	1	Stopper
40	4	Pan Head Screw M5x80 (With Washer)	112	2	Flat Washer 8
41	3	Hex. Bolt M5x16	113	2	Knob 40
42	3	Hex. Nut M5	114	1	Clamp
43	1	Spring Pin 5 - 32	115	1	Pin 9
44	1	Front Housing	116	2	Spring Pin 4 - 20
45	2	Flat Washer 24	117	1	Ring 9
46	1	Spring Pin 6 - 24	118	1	Flat Washer 9
47	1	Spring Pin 4 - 20	119	1	Pin 9
48	2	Rubber Washer 24	120	1	Flat Washer 9
49	1	Spring Pin 5 - 45	121	1	Sleeve 9
50	1	Carry Handle	122	1	Tension Spring 9
51	1	Stopper Pole	123	1	Spring Pin 4 - 16
52	1	Spring Pin 5 - 12	124	1	Slide Bar
53	1	Tension Spring 13	125	1	Spring Pin 5 - 20
54	1	Ring 8	126	1	Pan Head Screw M5x10
55	1	Hook	127	1	Guide Pole
56	1	Pan Head Screw M6	128	1	Compression Spring 36
57	1	Nut M10 20	129	1	Compression Spring 48
58	1	Wing Bolt M6x15	130	1	Vice Shoe
59	1	Compression Spring 7	131	1	Vice Shaft
60	1	Hex. Nut M8	132	1	Flat Washer 6
61	1	Indication Plate	133	1	Pan Head Screw M6x35 (With Washer)
62	2	Pan Head Screw M4x8 (With Washer)	134	1	Spring Pin 5 - 24
63	1	Indicator Plate	135	1	Flat Washer 9
64	1	Pan Head Screw M4x8 (With Washer)	136	1	Front Vice
65	1	Base	137	1	Sieve 9
66	2	Flat Washer 24	138	1	Spring Pin 4 - 20
67	2	BelloWS	139	1	Flat Washer 10
68	2	Compression Spring 25	140	1	Stop Ring E - 6
69	1	Disc	141	1	Handle
70	1	Spring Pin 6 - 24	142	1	Knob 20
71	1	Chain Bar Holder	143	1	Pin 8
72	1	Spring Pin 5 40	144	1	Switch Case Set (With Item 11)

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



**Makita Electric Works, Ltd.**

Anjo, Aichi, Japan