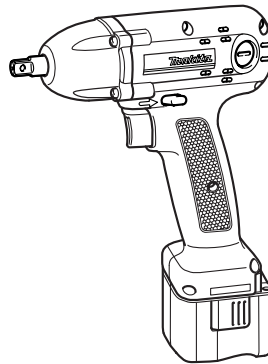




Cordless Impact Wrench

Equipped with Electric Brake
MODEL BTW072



001278

I N S T R U C T I O N M A N U A L

⚠ WARNING:

For your personal safety, READ and UNDERSTAND before using.
SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

SPECIFICATIONS

Model		BTW072
Capacities	Standard bolt	M5 - M12 (3/16" - 1/2")
	High tensile bolt	M5 - M10 (3/16" - 3/8")
Square drive		9.5 mm (3/8")
No load speed (RPM)		0 - 2,500/min.
Impacts per minute		0 - 3,000
Max. fastening torque		65 N.m (46.8 ft.lbs)
Overall length		166 mm (6-9/16")
Net weight		1.09 kg (2.4 lbs)

Battery Cartridge	Voltage	Battery Charger	Input	Output	Charging time
B9017A	9.6 V	DC14SA	A.C. only 50 Hz - 60 Hz	D.C. 7.2 V - 14.4 V	30 min.

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

GENERAL SAFETY RULES

USA003-1

(FOR ALL BATTERY OPERATED TOOLS)

⚠ WARNING:

Read and understand all instructions. Failure to follow all instructions listed below, may result in electric shock, fire and/or serious personal injury.

SAVE THESE INSTRUCTIONS

Work Area

1. **Keep your work area clean and well lit.**
Cluttered benches and dark areas invite accidents.

2. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Power tools create sparks which may ignite the dust or fumes.

3. **Keep bystanders, children, and visitors away while operating a power tool.** Distractions can cause you to lose control.

Electrical Safety

4. **A battery operated tool with integral batteries or a separate battery pack must be recharged only with the specified charger for the battery.** A charger that may be suitable for one type of battery may create a risk of fire when used with another battery.
5. **Use battery operated tool only with specifically designated battery pack.** Use of any other batteries may create a risk of fire.

Personal Safety

6. **Stay alert, watch what you are doing, and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating power tools may result in serious personal injury.
7. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts.
8. **Avoid accidental starting. Be sure switch is in the locked or off position before inserting battery pack.** Carrying tools with your finger on the switch or inserting the battery pack into a tool with the switch on invites accidents.
9. **Remove adjusting keys or wrenches before turning the tool on.** A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.
10. **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enable better control of the tool in unexpected situations.
11. **Use safety equipment. Always wear eye protection.** Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

Tool Use and Care

12. **Use clamps or other practical way to secure and support the workpiece to a stable platform.** Holding the work by hand or against your body is unstable and may lead to loss of control.
13. **Do not force tool. Use the correct tool for your application.** The correct tool will do the job better and safer at the rate for which it is designed.
14. **Do not use tool if switch does not turn it on or off.** A tool that cannot be controlled with the switch is dangerous and must be repaired.
15. **Disconnect battery pack from tool or place the switch in the locked or off position before making any adjustments, changing accessories, or storing the tool.** Such preventive safety measures reduce the risk of starting the tool accidentally.
16. **Store idle tools out of reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
17. **When battery pack is not in use, keep it away from other metal objects like: paper clips, coins, keys, nails, screws, or other small metal objects that can make a connection from one terminal to another.** Shorting the battery terminals together may cause sparks, burns, or a fire.
18. **Maintain tools with care. Keep cutting tools sharp and clean.** Properly maintained tools with sharp cutting edge are less likely to bind and are easier to control.
19. **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tool's operation. If damaged, have the tool serviced before using.** Many accidents are caused by poorly maintained tools.
20. **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one tool may create a risk of injury when used on another tool.

SERVICE

21. Tool service must be performed only by qualified repair personnel. Service or maintenance performed by unqualified personnel may result in a risk of injury.

22. When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual. Use of unauthorized parts or failure to follow Maintenance instructions may create a risk of shock or injury.

SPECIFIC SAFETY RULES

USB025-2

DO NOT let comfort or familiarity with product (gained from repeated use) replace strict adherence to cordless impact wrench safety rules. If you use this tool unsafely or incorrectly, you can suffer serious personal injury.

- 1. Hold tool by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring.** Contact with a “live” wire will also make exposed metal parts of the tool “live” and shock the operator.
- 2. Be aware that this tool is always in an operating condition, because it does not have to be plugged into an electrical outlet.**
- 3. Wear ear protectors.**
- 4. Check the socket carefully for wear, cracks or damage before installation.**
- 5. Hold the tool firmly.**
- 6. Always be sure you have a firm footing.**
- 7. Be sure no one is below when using the tool in high locations.**
- 8. The proper fastening torque may differ depending upon the kind or size of the bolt. Check the torque with a torque wrench.**

SAVE THESE INSTRUCTIONS

⚠ WARNING:
MISUSE or failure to follow the safety rules stated in this instruction manual may cause serious personal injury.

SYMBOLS


USD302-1

The followings show the symbols used for tool.

V volts

.../min..... revolutions or reciprocation per minute

⎓ direct current

 number of blow

n₀ no load speed

IMPORTANT SAFETY INSTRUCTIONS FOR CHARGER & BATTERY CARTRIDGE

USC002-3

1. **SAVE THESE INSTRUCTIONS-** This manual contains important safety and operating instructions for battery charger.
2. Before using battery charger, read all instructions and cautionary markings on (1) battery charger, (2) battery, and (3) product using battery.
3. **CAUTION -** To reduce risk of injury, charge only MAKITA rechargeable batteries marked on the charger label. Other types of batteries may burst causing personal injury and damage.
4. Do not expose charger to rain or snow.
5. Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock, or injury to persons.
6. To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger.
7. Make sure cord is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
8. An extension cord should not be used unless absolutely necessary. Use of improper extension cord could result in a risk of fire and electric shock. If extension cord must be used, make sure:
 - a. That pins on plug of extension cord are the same number, size, and shape as those of plug on charger;
 - b. That extension cord is properly wired and in good electrical condition; and
 - c. That wire size is at least as large as the one specified in the table below.

Table 1: RECOMMENDED MINIMUM AWG SIZE FOR EXTENSION CORDS FOR BATTERY CHARGERS

Length of Cord (Feet)	25	50	100	150
AWG Size of Cord	18	18	18	16

9. Do not operate charger with damaged cord or plug - replace them immediately.
10. Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified serviceman.

-
11. Do not disassemble charger or battery cartridge; take it to a qualified serviceman when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
 12. To reduce risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.
 13. The battery charger is not intended for use by young children or infirm persons without supervision.
 14. Young children should be supervised to ensure that they do not play with the battery charger.
 15. If operating time has become excessively shorter, stop operating immediately. It may result in a risk of overheating, possible burns and even an explosion.
 16. If electrolyte gets into your eyes, rinse them out with clear water and seek medical attention right away. It may result in loss of your eyesight.



ADDITIONAL SAFETY RULES FOR CHARGER & BATTERY CARTRIDGE

1. Do not charge Battery Cartridge when temperature is BELOW 10°C (50°F) or ABOVE 40°C (104°F).
 2. Do not attempt to use a step-up transformer, an engine generator or DC power receptacle.
 3. Do not allow anything to cover or clog the charger vents.
 4. Do not short the battery cartridge:
 - (1) Do not touch the terminals with any conductive material.
 - (2) Avoid storing battery cartridge in a container with other metal objects such as nails, coins, etc.
 - (3) Do not expose battery cartridge to water or rain.
 5. Do not store the tool and Battery Cartridge in locations where the temperature may reach or exceed 50°C (122°F).
 6. Do not incinerate the Battery Cartridge even if it is severely damaged or is completely worn out. The battery cartridge can explode in a fire.
 7. Be careful not to drop, shake or strike battery.
- A battery short can cause a large current flow, overheating, possible burns and even a breakdown.


SAVE THESE INSTRUCTIONS

SYMBOLS


The following show the symbols used for the charger. Be sure that you understand their meaning before use.


  Ready to charge

 Charging

 Charging complete

 Delay charge (Cooling)

 Defective battery

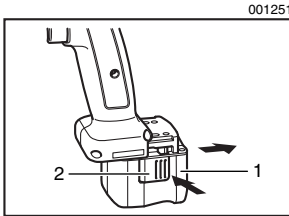
 Conditioning

 Cooling abnormality

FUNCTIONAL DESCRIPTION

⚠ CAUTION:

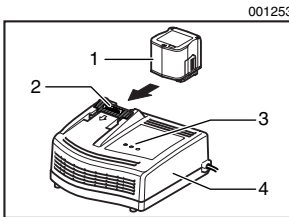
- Always be sure that the tool is switched off and the battery cartridge is removed before adjusting or checking function on the tool.



1. Battery cartridge
2. Button

Installing or removing battery cartridge

- To remove the battery cartridge, withdraw it from the tool while pressing the buttons on both sides of the cartridge.
- To insert the battery cartridge, align the tongue on the battery cartridge with the groove in the housing and slip it into place. Always insert it all the way until it locks in place with a little click. If not, it may accidentally fall out of the tool, causing injury to you or someone around you.
- Do not use force when inserting the battery cartridge. If the cartridge does not slide in easily, it is not being inserted correctly.



1. Battery cartridge
2. Terminal cover
3. Charging lights
4. Battery charger

Charging

1. Plug the battery charger into the proper AC voltage source. Two charging lights will flash in green color repeatedly.
2. Insert the battery cartridge into charger until it stops adjusting to the guide of charger. Terminal cover of charger can be opened and closed with pulling out the battery cartridge.
3. When the battery cartridge is inserted, the charging light color will change from green to red and charging will begin. The charging light will keep lighting up lit steadily during charging. One red charging light indicates charged condition in 0 - 80% and two red ones indicates 80 - 100%.
4. With finish of charge, the charging lights will change from two red ones to two green ones.
5. If you leave the battery cartridge in the charger after the charging cycle is complete, the charger will switch into its "trickle charge (maintenance charge)" mode which will last approximately 24 hours.
6. After charging, unplug the charger from the power source.

NOTE:

- The battery charger is for charging Makita battery cartridge. Never use it for other purposes or for other manufacturer's batteries.
- When you charge a new battery cartridge or a battery cartridge which has not been used for a long period of time, it may not accept a full charge. This is a normal condition and does not indicate a problem. You can recharge the battery cartridge fully after discharging it completely and recharging a couple of times.
- If you charge a battery cartridge from a just operated tool or battery cartridge which has been left in a location exposed to direct sunlight for a long time, the charging light may flash in red color. If this occurs, wait for a while. Charging will begin after the battery cartridge is cooled by the cooling fan installed in the charger. When the temperature on battery is more than approx. 70°C, two charging lights may flash in red color, and when approx. 50°C - 70°C, one charging light in red color.
- If the charging light flashes alternately in green and red color, charging is not possible. The terminals on the charger or battery cartridge are clogged with dust or the battery cartridge is worn out or damaged.
- Any of the following conditions indicates damage to the charger and/or battery cartridge. Ask your Makita Authorized or Factory Service Center to check them.
 - (1) The charging light does not flash (green) when the battery charger is plugged into a power source.
 - (2) The charging light does not light up or flash (red) when the battery is inserted in the charger port.
 - (3) Charging is not completed at even more than two hours after red light comes ON at start of charging.

Conditioning charge

Conditioning charge can extend the life of battery by automatically searching the optimum charging condition for the batteries in every situations.

The battery employed in the following conditions repeatedly, will be worn out shortly, and yellow warning light may flash.

1. Recharge of battery with its high temperature
2. Recharge of battery with its low temperature

-
3. Recharge of full charged battery
 4. Over-discharge of battery (continue to discharge battery in spite of down of power.)
 5. Recharge under broken cooling system

The charging time of such battery is longer than usual.

Trickle charge (Maintenance charge)

If you leave the battery cartridge in the charger to prevent spontaneous discharging after full charge, the charger will switch into its “trickle charge (maintenance charge)” mode and keep the battery cartridge fresh and fully charged.

Tips for maintaining maximum battery life

1. Charge the battery cartridge before completely discharged.
Always stop tool operation and charge the battery cartridge when you notice less tool power.
2. Never recharge a fully charged battery cartridge.
Overcharging shortens the battery service life.
3. Charge the battery cartridge with room temperature at 10°C - 40°C (50°F - 104°F).
Let a hot battery cartridge cool down before charging it.
4. Charge the Nickel Metal Hydride battery cartridge when you do not use it for more than six months.

Refresh charging

Refreshing adapter (optional accessory) can refresh an inactive battery cartridge.

- Refresh charging should be done once a week.
- When you charge a new battery cartridge or a battery cartridge that has not been used for a long time, it may not accept a full charge. In this case, refresh charging must be done. The battery cartridge may decrease the tool performance, because the chemical substance of the battery cartridge is inactive.

001254

Indicating lamp			Capacity
(C)	E	F	
○	□	□	
●	■	■	80% - 100%
●	■	□	60% - 80%
●	□	□	40% - 60%
●	□	□	10% - 40%
⚡ orange	□	□	0% - 10%

Indicating lamp			Capacity
E	F		
□	□	□	
■	■	■	80% - 100%
■	■	□	60% - 80%
■	□	□	40% - 60%
■	□	□	10% - 40%
⚡ orange	□	□	0% - 10%

Checking the remaining battery capacity

When charging

When the charging begins, the first (far left) indicating lamp begins to flicker. Then, as charging proceeds, the other lamps light, one after the other, to indicate the battery capacity.

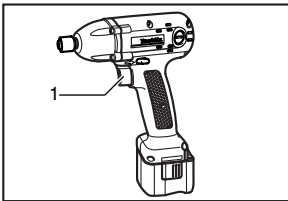
When using

When the tool is switched on, the lamps will light to indicate the remaining battery capacity. When the tool is switched off, the light goes out after approx. 5 seconds. If the battery has not been used for a long time, or is needed refresh charging, the orange lamp begins to flicker. Use Makita refreshing adapter to refresh the battery.

⚠ CAUTION:

- A battery cartridge extracted from the charger that has been unplugged with the battery cartridge inserted does not work even if it is inserted in the tool. At this time, recharge it for about five seconds before use.

001255



1. Switch trigger

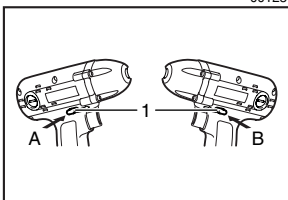
Switch action

⚠ CAUTION:

- Before inserting the battery cartridge into the tool, always check to see that the switch trigger actuates properly and returns to the "OFF" position when released.

To start the tool, simply pull the switch trigger. Tool speed is increased by increasing pressure on the switch trigger. Release the switch trigger to stop.

001257



1. Reversing switch lever

Reversing switch action

This tool has a reversing switch to change the direction of rotation. Depress the reversing switch lever from the A side for clockwise rotation or from the B side for counterclockwise rotation.

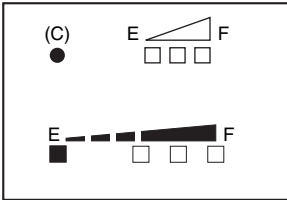
When the reversing switch lever is in the neutral position, the switch trigger cannot be pulled.

⚠ CAUTION:

- Always check the direction of rotation before operation.

- Use the reversing switch only after the tool comes to a complete stop. Changing the direction of rotation before the tool stops may damage the tool.
- When not operating the tool, always set the reversing switch lever to the neutral position.

001258



The remaining Battery capacity

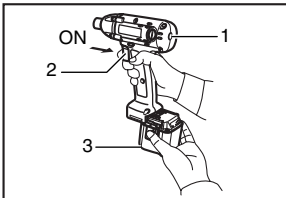
Auto-stop mechanism

The tool stops automatically (Red color lamp lights on) after the battery capacity reaches under 20% to prevent the lack of fastening torque. Charge the battery or use a new fully charged one.

Auto-stop setting for number of impacts

This tool has a convenient auto-stop mechanism that allows you to preset the desired number of impacts in terms of the application. The tool then stops automatically after reaching the preset number of impacts.

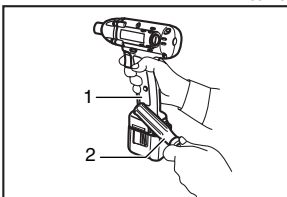
001259



1. Indicating lamp
2. Switch trigger
3. Battery cartridge

1. Pulling the trigger, insert the battery cartridge. Keep on pulling the trigger after inserting the battery cartridge. (The indicating lamp on the back of the tool will flash about 10 times, then the lamp will keep lighting up lit.)

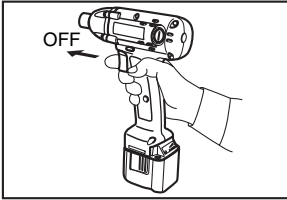
001260



1. Tool housing
2. Screwdriver

2. Hit the tool housing around the grip once with a screwdriver etc. (The indicating lamp will go out.)

001261



3. Release the trigger. (The indicating lamp will keep lighting up lit for 0.5 seconds, then the lamp will go out.)
4. Hit the tool housing preset number of first digit except 0. (The indicating lamp will light up in green color. Then, the light goes out.)

Example:

- When the preset number is 12, hit the tool housing once.

5. Pull the trigger, then release it.
6. Hit the tool housing preset number of second digit except 0. (The indicating lamp will light up in red color. Then, the light goes out.)

Example:

- When the preset number is 12, hit the tool housing two times.

7. Pull the trigger, then release the trigger. (The indicating lamp will light up.)
8. Remove the battery cartridge. (Presetting has finished.) (The indicating lamp will go out.)

⚠ CAUTION:

- When you change the presetting, do the same procedure as above 1 - 8.

Confirming the presetting

Switch off the tool and insert the battery cartridge. The indicating lamp will indicate the presetting number. Green lamp shows the first digit. Red lamp shows the second digit.

Example:

- presetting number is 12.
1. Green color lamp flashes once.
 2. Red color lamp flashes two times.
 3. The lamp goes out.

Relation between presetting number and action

003612

Presetting number	Clockwise rotation	Counterclockwise rotation
00	Auto-stop setting does not work.	Auto-stop setting does not work.
01 - 99	After impacting [number of impacts (presetting number x 2) x 0.02] seconds. Green color lamp lights on. Switch off before impacting [number of impacts (presetting number x 2) x 0.02] seconds. Red color lamp lights on. Then, the lamp goes out.	Auto-stop setting does not work. Indication lamp goes out.

Indicating lamp

- After impacting preset numbers, the indicating lamp lights in green color.
- The red color light will light on if the trigger is pulled before the presetting number of impacts is achieved. It indicates that the operation is incomplete.

ASSEMBLY

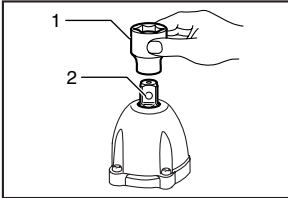
CAUTION:

- Always be sure that the tool is switched off and the battery cartridge is removed before carrying out any work on the tool.

Selecting correct socket

Always use the correct size socket for bolts and nuts. An incorrect size socket will result in inaccurate and inconsistent fastening torque and/or damage to the bolt or nut.

001265



1. Socket
2. Anvil

Installing or removing socket

To install the socket, push it onto the anvil of the tool until it locks into place.

To remove the socket, simply pull it off.

OPERATION

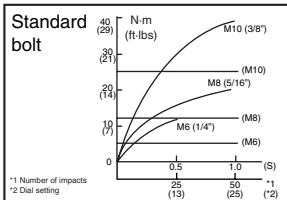
[*1] Presetting number of impacts is impossible for more than 200 impacts (4 seconds).

[*2] Fastening time includes when you pull the trigger completely.

⚠ CAUTION:

- Hold the tool firmly and place the socket over the bolt or nut. Turn the tool on and fasten for the proper fastening time and number of impacts (presetting number).
- If the tool is operated continuously until the battery cartridge has discharged, allow the tool to rest for 15 minutes before proceeding with a fresh battery.

001274

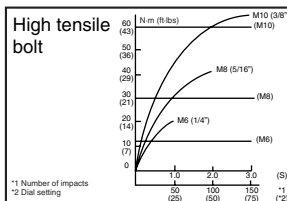


The proper fastening torque may differ depending upon the kind or size of the bolt, the material of the workpiece to be fastened, etc. The relation between fastening torque and fastening time is shown in the figures.

NOTE:

- When fastening screw M8 (5/16") or smaller, carefully adjust pressure on the switch trigger so that the screw is not damaged.
- Hold the tool pointed straight at the bolt or nut without applying excessive pressure on the tool.
- Excessive fastening torque may damage the bolt/nut or socket. Before starting your job, always perform a test operation to determine the proper fastening time for your bolt or nut. Especially for the bolt smaller than M8 (5/16"), perform the above test operation to prevent the trouble on socket or bolt, etc.

001275



The fastening torque is affected by a wide variety of factors including the following. After fastening, always check the torque with a torque wrench.

1. When the battery cartridge is discharged almost completely, voltage will drop and the fastening torque will be reduced.
2. Socket
 - Failure to use the correct size socket will cause a reduction in the fastening torque.
 - A worn socket (wear on the hex end or square end) will cause a reduction in the fastening torque.
3. Bolt
 - Even though the torque coefficient and the class of bolt are the same, the proper fastening torque will differ according to the diameter of bolt.
 - Even though the diameters of bolts are the same, the proper fastening torque will differ according to the torque coefficient, the class of bolt and the bolt length.
4. The use of the universal joint or the extension bar somewhat reduces the fastening force of the impact wrench. Compensate by fastening for a longer period of time.
5. Type of materials to be fastened, the manner of holding the tool and the tool speed will affect the torque.

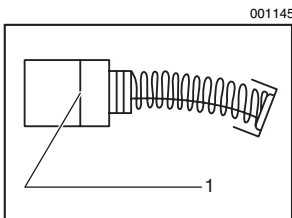
MAINTENANCE

CAUTION:

- Always be sure that the tool is switched off and the battery cartridge is removed before attempting to perform inspection or maintenance.

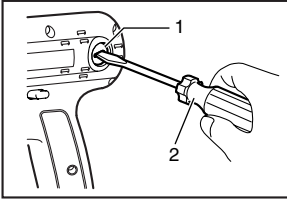
Replacing carbon brushes

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 identical carbon brushes.



1. Limit mark

001268



1. Brush holder cap
2. Screwdriver

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.

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. Only use accessory or attachment for its stated purpose.

If you need any assistance for more details regarding these accessories, ask your local Makita service center.

- Protector(clear,red,blue)
- Automatic refreshing adapter

Memo

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 Centres. 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 normal maintenance is required,
- repairs have been made or attempted by others,
- 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.

"The Makita Warranty is the only and the entire written warranty given by Makita for the Makita tools. No dealer or his agent or employee is authorized to extend or enlarge upon this warranty by any verbal or written statement or advertisement."

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 rights. The provisions contained in this warranty are not intended to limit, modify, take away from, disclaim or exclude any warranties set forth in any provincial legislation. To the extent required by law, the provisions in any provincial or federal legislation with respect to warranties take precedence over the provisions in this warranty."

Makita Corporation
3-11-8, Sumiyoshi-cho,
Anjo, Aichi 446-8502 Japan