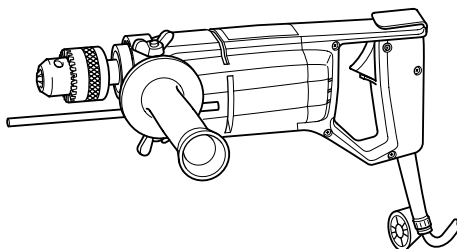


INSTRUCTION MANUAL

Hammer Drill

8416



012949

IMPORTANT: Read Before Using.

ENGLISH (Original instructions)

SPECIFICATIONS

Model		8416
Capacities	Concrete	16 mm
	Metal	13 mm
	Wood	24 mm
No load speed (min ⁻¹)		1,400
Blows per minute		21,000
Overall length		351 mm
Net weight		2.7 kg
Safety class		Class I

- Due to our continuing program of research and development, the specifications herein are subject to change without notice.
- Specifications may differ from country to country.
- Weight according to EPTA-Procedure 01/2003

END224-1

GEA005-3

Symbols

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



- Read instruction manual.



- Only for EU countries
Do not dispose of electric equipment together with household waste material! In observance of European Directive 2002/96/EC on waste electric and electronic equipment and its implementation in accordance with national law, electric equipment that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

ENE039-1

Intended use

The tool is intended for impact drilling in brick, concrete and stone as well as for drilling without impact in wood, metal, ceramic and plastic.

ENF001-1

Power supply

The tool should be connected only to a power supply of the same voltage as indicated on the nameplate, and can only be operated on single-phase AC supply. This tool should be grounded while in use to protect the operator from electric shock. Use only three-wire extension cords which have three-prong grounding-type plugs and three-pole receptacles which accept the tool's plug.

General Power Tool Safety Warnings

⚠ WARNING Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

Work area safety

1. **Keep work area clean and well lit.** Cluttered or 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 children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

Electrical safety

4. **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.
5. **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.
6. **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.

7. **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.
8. **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.
9. **If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply.** Use of an RCD reduces the risk of electric shock.
10. **Use of power supply via a RCD with a rated residual current of 30mA or less is always recommended.**

Personal safety

11. **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.
12. **Use personal protective equipment. Always wear eye protection.** Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
13. **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.
14. **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
15. **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
16. **Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts.
17. **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.

Power tool use and care

18. **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.
19. **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
20. **Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.
21. **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.
22. **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.
23. **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
24. **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.

Service

25. **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.
26. **Follow instruction for lubricating and changing accessories.**
27. **Keep handles dry, clean and free from oil and grease.**

HAMMER DRILL SAFETY WARNINGS

1. **Wear ear protectors when impact drilling.** Exposure to noise can cause hearing loss.
2. **Use auxiliary handle(s), if supplied with the tool.** Loss of control can cause personal injury.
3. **Always be sure you have a firm footing.** Be sure no one is below when using the tool in high locations.
4. **Hold the tool firmly with both hands.**
5. **Keep hands away from rotating parts.**
6. **Do not leave the tool running. Operate the tool only when hand-held.**
7. **Do not touch the bit or the workpiece immediately after operation; they may be extremely hot and could burn your skin.**
8. **Some material contains chemicals which may be toxic. Take caution to prevent dust inhalation and skin contact. Follow material supplier safety data.**

SAVE THESE INSTRUCTIONS.

⚠WARNING:

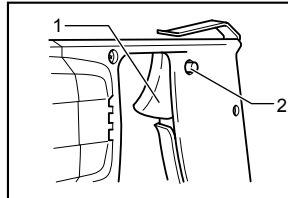
DO NOT let comfort or familiarity with product (gained from repeated use) replace strict adherence to safety rules for the subject product. MISUSE or failure to follow the safety rules stated in this instruction manual may cause serious personal injury.

FUNCTIONAL DESCRIPTION

⚠CAUTION:

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

Switch action



1. Switch trigger
2. Lock button

012953

⚠CAUTION:

- Before plugging in the tool, always check to see that the switch trigger actuates properly and returns to the "OFF" position when released.
- Switch can be locked in "ON" position for ease of operator comfort during extended use. Apply caution when locking tool in "ON" position and maintain firm grasp on tool.

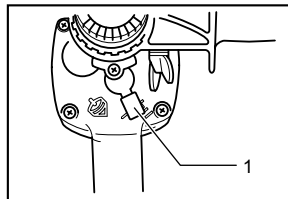
To start the tool, simply pull the switch trigger. Release the switch trigger to stop.

For continuous operation, pull the switch trigger and then push in the lock button.

To stop the tool from the locked position, pull the switch trigger fully, then release it.


Selecting the action mode

Rotation with hammering:



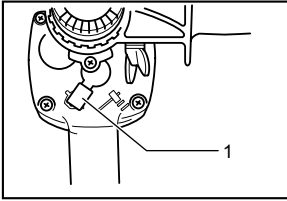
1. Change lever

012955

For drilling in concrete, granite, tile, etc., move the change lever to the  position.


Be sure to use concrete and masonry drilling bit.

Rotation only:



1. Change lever

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For drilling in wood, metal or plastic metals, move change lever to the  position.

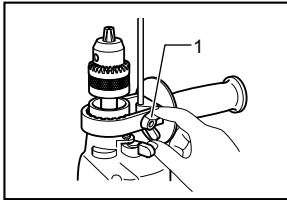
Use a conventional bit for drilling in wood or metal.

ASSEMBLY

⚠CAUTION:

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

Installing side grip (auxiliary handle)

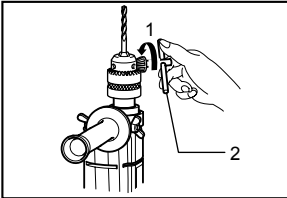


1. Wing nut

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To install the side grip, fit the teeth on the side grip into the grooves on the tool. Then tighten the wing nut securely. The position of the side grip can be changed in 30° increments. Simply loosen the wing nut and slip out the side grip teeth from the grooves on the tool. Swing the side grip to the desired position and then slip the side grip teeth back into the grooves on the tool. Then tighten the wing nut securely.

Installing or removing drill bit



1. Tighten
2. Chuck key

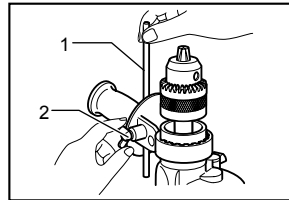
012951

To install the bit, place it in the chuck as far as it will go. Tighten the chuck by hand. Place the chuck key in each of the three holes and tighten clockwise. Be sure to tighten all three chuck holes evenly.

To remove the bit, turn the chuck key counterclockwise in just one hole, then loosen the chuck by hand.

After using the chuck key, be sure to return it to the original position.

Depth gauge



1. Depth gauge
2. Wing nut

012952

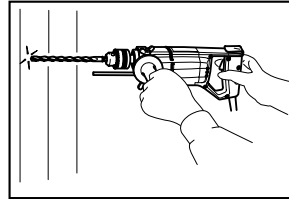
Loosen the wing bolt and adjust the depth gauge to the desired depth. After adjusting, tighten the wing bolt.

OPERATION

⚠CAUTION:

- Always use the side grip (auxiliary handle) and firmly hold the tool by both side grip and switch handle during operations.

Hammer drilling operation



012957

Position the bit at the desired location for the hole, then pull the switch 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 the bit partially from the hole. By repeating this several times, the hole will be cleaned out.

Drilling operation

Drilling in wood

When drilling in wood, the best results are obtained with wood drills equipped with a guide screw. The guide screw makes drilling easier by pulling the bit into the workpiece.

Drilling in metal

To prevent the bit from slipping when starting a hole, make an indentation with a center-punch and hammer at the point to be drilled. Place the point of the bit in the

indentation and start drilling.

Use a cutting lubricant when drilling metals. The exceptions are iron and brass which should be drilled dry.

⚠CAUTION:

- Pressing excessively on the tool will not speed up the drilling. In fact, this excessive pressure will only serve to damage the tip of your bit, decrease the tool performance and shorten the service life of the tool.
- There is a tremendous force exerted on the tool/bit at the time of hole break through. Hold the tool firmly and exert care when the bit begins to break through the workpiece.
- A stuck bit can be removed simply by setting the reversing switch to reverse rotation in order to back out. However, the tool may back out abruptly if you do not hold it firmly.
- Always secure small workpieces in a vise or similar hold-down device.

MAINTENANCE

⚠CAUTION:

- Always be sure that the tool is switched off and unplugged before attempting to perform inspection or maintenance.
- Never use gasoline, benzine, thinner, alcohol or the like. Discoloration, deformation or cracks may result.

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

Makita Corporation