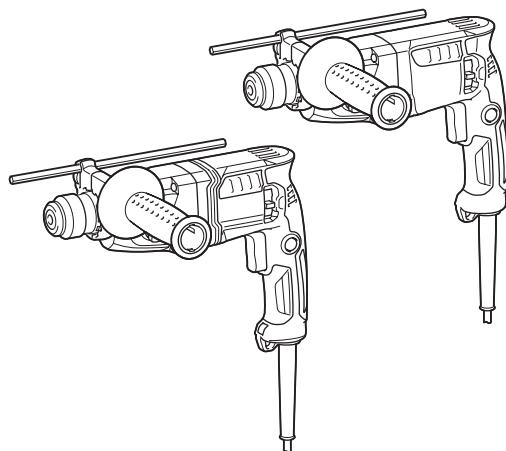


INSTRUCTION MANUAL



Rotary Hammer

HR1840
HR1841F



DOUBLE INSULATION



Read before use.

SPECIFICATIONS

Model:		HR1840	HR1841F
Capacities	Concrete	18 mm	
	Core bit	35 mm	
	Diamond core bit (dry type)	65 mm	
	Steel	13 mm	
	Wood	24 mm	
No load speed		0 - 2,100 min ⁻¹	
Blows per minute		0 - 4,800 min ⁻¹	
Overall length		285 mm	
Net weight	2.0 - 2.4 kg	2.0 - 2.5 kg	
Safety class		<input checked="" type="checkbox"/> /II	

- 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.
- The weight may differ depending on the attachment(s). The lightest and heaviest combinations, according to EPTA-Procedure 01/2014, are shown in the table.

Symbols

The followings show the symbols which may be used for the equipment. Be sure that you understand their meaning before use.



Read instruction manual.



DOUBLE INSULATION



Only for EU countries
Due to the presence of hazardous components in the equipment, used electrical and electronic equipment may have a negative impact on the environment and human health.
Do not dispose of electrical and electronic appliances with household waste!
In accordance with the European Directive on waste electrical and electronic equipment and its adaptation to national law, used electrical and electronic equipment should be collected separately and delivered to a separate collection point for municipal waste, operating in accordance with the environmental protection regulations.
This is indicated by the symbol of the crossed-out wheeled bin placed on the equipment.

Intended use

The tool is intended for hammer drilling and drilling in brick, concrete and stone.

It is also suitable for drilling without impact in wood, metal, ceramic and plastic.

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. They

are double-insulated and can, therefore, also be used from sockets without earth wire.

Noise

The typical A-weighted noise level determined according to EN62841-2-6:

Model HR1840

Sound pressure level (L_{pA}) : 88 dB (A)
Sound power level (L_{WA}) : 96 dB (A)
Uncertainty (K) : 3 dB (A)

Model HR1841F

Sound pressure level (L_{pA}) : 88 dB(A)
Sound power level (L_{WA}) : 96 dB (A)
Uncertainty (K) : 3 dB(A)

NOTE: The declared noise emission value(s) has been measured in accordance with a standard test method and may be used for comparing one tool with another.

NOTE: The declared noise emission value(s) may also be used in a preliminary assessment of exposure.

WARNING: Wear ear protection.

WARNING: The noise emission during actual use of the power tool can differ from the declared value(s) depending on the ways in which the tool is used especially what kind of workpiece is processed.

WARNING: Be sure to identify safety measures to protect the operator that are based on an estimation of exposure in the actual conditions of use (taking account of all parts of the operating cycle such as the times when the tool is switched off and when it is running idle in addition to the trigger time).

Vibration

The following table shows the vibration total value (tri-axial vector sum) determined according to applicable standard.

Model HR1840

Work mode	Vibration emission	Uncertainty (K)	Applicable standard / Test condition
Hammer drilling into concrete (a _h , HD)	9.8 m/s ²	1.5 m/s ²	EN62841-2-6

Model HR1841F

Work mode	Vibration emission	Uncertainty (K)	Applicable standard / Test condition
Hammer drilling into concrete (a _h , HD)	8.9 m/s ²	1.5 m/s ²	EN62841-2-6

NOTE: The declared vibration total value(s) has been measured in accordance with a standard test method and may be used for comparing one tool with another.

NOTE: The declared vibration total value(s) may also be used in a preliminary assessment of exposure.

WARNING: The vibration emission during actual use of the power tool can differ from the declared value(s) depending on the ways in which the tool is used especially what kind of workpiece is processed.

WARNING: Be sure to identify safety measures to protect the operator that are based on an estimation of exposure in the actual conditions of use (taking account of all parts of the operating cycle such as the times when the tool is switched off and when it is running idle in addition to the trigger time).

Declarations of Conformity

For European countries only

The Declarations of conformity are included in Annex A to this instruction manual.

SAFETY WARNINGS

General power tool safety warnings

WARNING Read all safety warnings, instructions, illustrations and specifications provided with this power tool. Failure to follow all instructions listed below 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

1. **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.
2. **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.
3. **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
4. **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.
5. **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.
6. **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.
7. **Use of power supply via an RCD with a rated residual current of 30 mA or less is always recommended.**
8. **Power tools can produce electromagnetic fields (EMF) that are not harmful to the user.** However, users of pacemakers and other similar medical devices should contact the maker of their device and/or doctor for advice before operating this power tool.
9. **Do not touch the power plug with wet hands.**
10. **If the cord is damaged, have it replaced by the manufacturer or his agent in order to avoid a safety hazard.**

Personal safety

1. **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.
2. **Use personal protective equipment. Always wear eye protection.** Protective equipment such as a dust mask, non-skid safety shoes, hard hat or

hearing protection used for appropriate conditions will reduce personal injuries.

- 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.
- 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.
- Do not overreach.** Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
- Dress properly.** Do not wear loose clothing or jewellery. Keep your hair and clothing away from moving parts. Loose clothes, jewellery or long hair can be caught in moving parts.
- 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.
- Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles.** A careless action can cause severe injury within a fraction of a second.
- Always wear protective goggles to protect your eyes from injury when using power tools.** The goggles must comply with ANSI Z87.1 in the USA, EN 166 in Europe, or AS/NZS 1336 in Australia/New Zealand. In Australia/New Zealand, it is legally required to wear a face shield to protect your face, too.



It is an employer's responsibility to enforce the use of appropriate safety protective equipment by the tool operators and by other persons in the immediate working area.

Power tool use and care

- 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.
- 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.
- Disconnect the plug from the power source and/or remove the battery pack, if detachable,**

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.

- 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.
- Maintain power tools and accessories.** 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.
- Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- 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.
- Keep handles and grasping surfaces dry, clean and free from oil and grease.** Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.
- When using the tool, do not wear cloth work gloves which may be entangled.** The entanglement of cloth work gloves in the moving parts may result in personal injury.

Service

- 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.
- Follow instruction for lubricating and changing accessories.**

ROTARY HAMMER SAFETY WARNINGS

Safety instructions for all operations

- Wear ear protectors.** Exposure to noise can cause hearing loss.
- Use auxiliary handle(s), if supplied with the tool.** Loss of control can cause personal injury.
- Hold the power tool by insulated gripping surfaces, when performing an operation where the cutting accessory may contact hidden wiring or its own cord.** Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.

Safety instructions when using long drill bits with rotary hammers

- Always start drilling at low speed and with the bit tip in contact with the workpiece.** At higher speeds, the bit is likely to bend if allowed to rotate freely without contacting the workpiece, resulting in personal injury.

2. Apply pressure only in direct line with the bit and do not apply excessive pressure. Bits can bend, causing breakage or loss of control, resulting in personal injury.

Additional safety warnings

1. Wear a hard hat (safety helmet), safety glasses and/or face shield. Ordinary eye or sun glasses are NOT safety glasses. It is also highly recommended that you wear a dust mask 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 a while 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. Do not touch the bit, parts close to the bit, or workpiece immediately after operation; they may be extremely hot and could burn your skin.
11. Some material contains chemicals which may be toxic. Take caution to prevent dust inhalation and skin contact. Follow material supplier safety data.
12. Do not touch the power plug with wet hands.

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

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

CAUTION: 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.

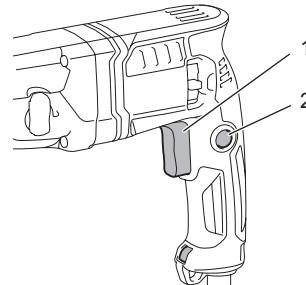


Fig.1

► 1. Switch trigger 2. Lock button

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.

For continuous operation, pull the switch trigger, push in the lock button and then release the switch trigger. To stop the tool from the locked position, pull the switch trigger fully, then release it.

Lighting up the front lamp

For HR1841F

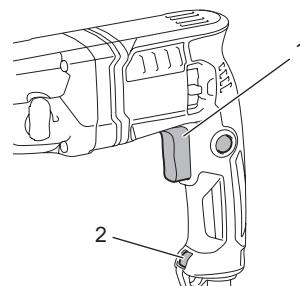


Fig.2

► 1. Switch trigger 2. Lamp

CAUTION: Do not look in the light or see the source of light directly.

To turn on the lamp, pull the switch trigger. Release the switch trigger to turn it off.

NOTICE: Do not use thinner or gasoline to clean the lamp. Such solvents may damage it.

NOTE: Use a dry cloth to wipe the dirt off the lens of the lamp. Be careful not to scratch the lens of the lamp, or it may lower the illumination.

Reversing switch action

CAUTION: Always check the direction of rotation before operation.

NOTICE: 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.

NOTICE: When changing the direction of rotation, be sure to fully set the reversing switch to position \triangleleft (A side) or \triangleright (B side). Otherwise, when the switch trigger is pulled, the motor may not rotate or the tool may not work properly.

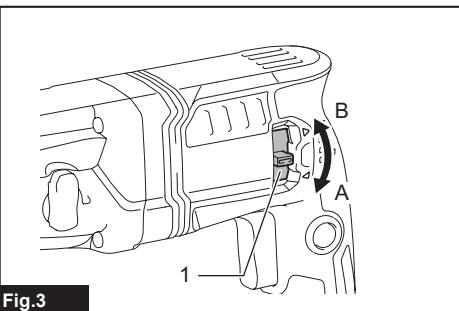


Fig.3

► 1. Reversing switch lever

This tool has a reversing switch to change the direction of rotation. Move the reversing switch lever to the position \triangleleft (A side) for clockwise rotation or to the position \triangleright (B side) for counterclockwise rotation.

Selecting the action mode

NOTICE: Do not rotate the action mode changing knob when the tool is running. The tool will be damaged.

NOTICE: To avoid rapid wear on the mode change mechanism, be sure that the action mode changing knob is always positively located in one of the action mode positions.

Rotation with hammering

For drilling in concrete, masonry, etc., rotate the action mode changing knob to the TH symbol. Use a carbide-tipped drill bit.

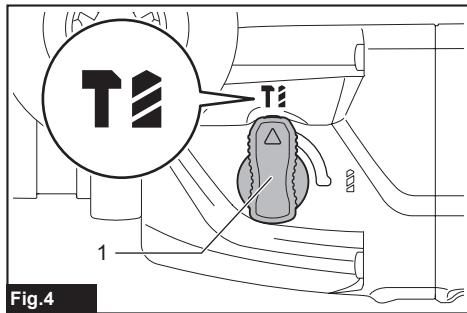


Fig.4

► 1. Action mode changing knob

Rotation only

For drilling in wood, metal or plastic materials, rotate the action mode changing knob to the \triangle symbol. Use a twist drill bit or wood drill bit.

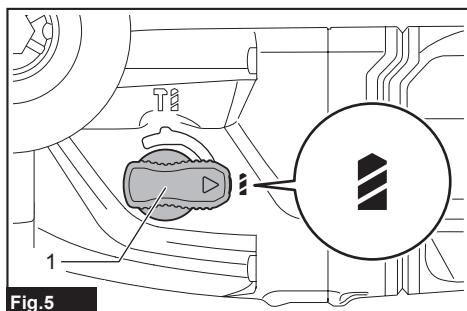


Fig.5

► 1. Action mode changing knob

Torque limiter

NOTICE: As soon as the torque limiter actuates, switch off the tool immediately. This will help prevent premature wear of the tool.

NOTICE: Drill bits such as hole saw, which tend to pinch or catch easily in the hole, are not appropriate for this tool. This is because they will cause the torque limiter to actuate too frequently.

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

ASSEMBLY

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

Side grip (auxiliary handle)

CAUTION: Always use the side grip to ensure safe operation.

CAUTION: After installing or adjusting the side grip, make sure that the side grip is firmly secured.

Install the side grip so that the grooves on the grip fit in the protrusions on the tool barrel. Turn the grip clockwise to secure it. The grip can be fixed at desired angle.

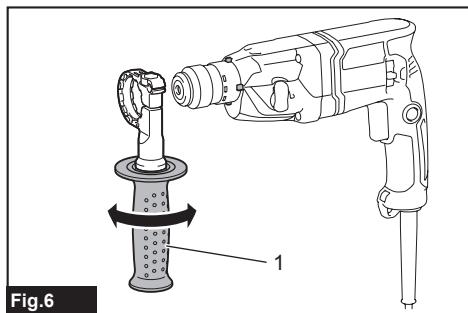


Fig.6

► 1. Side grip

Grease

Coat the shank end of the drill bit beforehand with a small amount of grease (about 0.5 - 1 g).

This chuck lubrication assures smooth action and longer service life.

Installing or removing drill bit

Clean the shank end of the drill bit and apply grease before installing the drill bit.

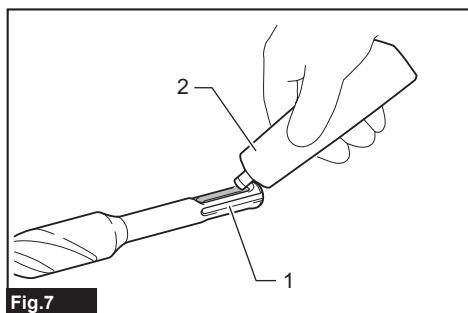


Fig.7

► 1. Shank end 2. Grease

Insert the drill bit into the tool. Turn the drill bit and push it in until it engages.

After installing the drill bit, always make sure that the drill bit is securely held in place by trying to pull it out.

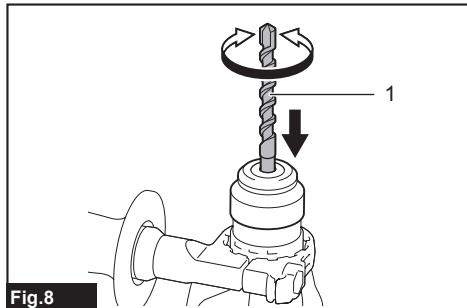


Fig.8

► 1. Drill bit

To remove the drill bit, pull the chuck cover down all the way and pull the drill bit out.

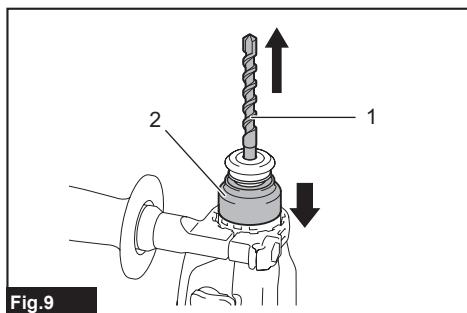


Fig.9

► 1. Drill bit 2. Chuck cover

Depth gauge

The depth gauge is convenient for drilling holes of uniform depth. Loosen the side grip and insert the depth gauge into the hole on the side grip. Adjust the depth gauge to the desired depth and tighten the side grip firmly.

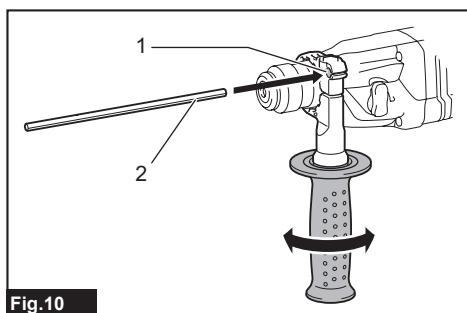


Fig.10

► 1. Hole 2. Depth gauge

NOTE: Make sure that the depth gauge does not touch the main body of the tool when attaching it.

Dust cup

Optional accessory

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 size of bits which the dust cup can be attached to is as follows.

Model	Bit diameter
Dust cup 5	6 mm - 14.5 mm
Dust cup 9	12 mm - 16 mm

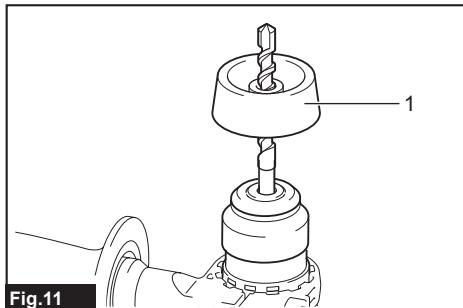


Fig.11

- 1. Dust cup

Dust cup set

Optional accessory

Installing the dust cup set

NOTICE: If you purchase the dust cup set as optional accessory, the standard side grip cannot be used with the dust cup set being installed on the tool. When the dust cup set is installed on the tool, remove the grip from the standard side grip, and then attach it to the optional grip base set.

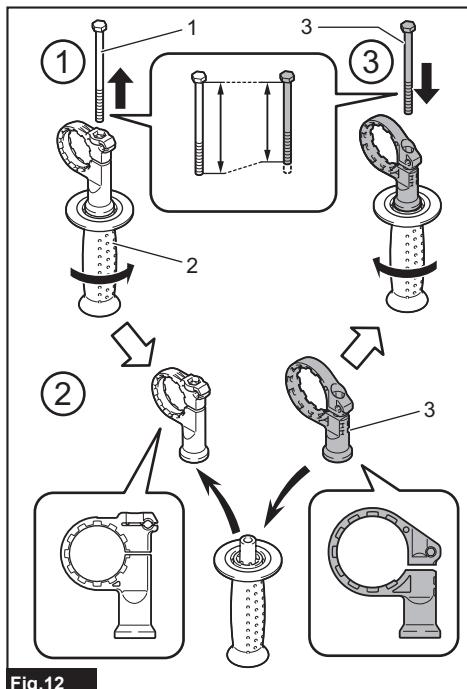


Fig.12

- 1. Bolt 2. Grip 3. Optional grip base set

NOTICE: Do not use the dust cup set when drilling in metal or similar. It may damage the dust cup set due to the heat produced by small metal dust or similar. Do not install or remove the dust cup set with the drill bit installed in the tool. It may damage the dust cup set and cause dust leak.

Before installing the dust cup set, remove the bit from the tool if installed.

1. Install the spacer so that the grooves on the spacer fit in the protrusions on the tool barrel while widening it. Be careful for the spring not to come off from the slit of spacer.

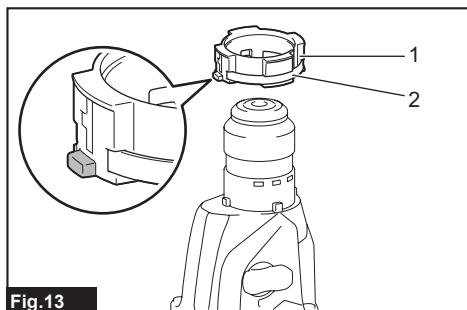


Fig.13

- 1. Spacer 2. Spring

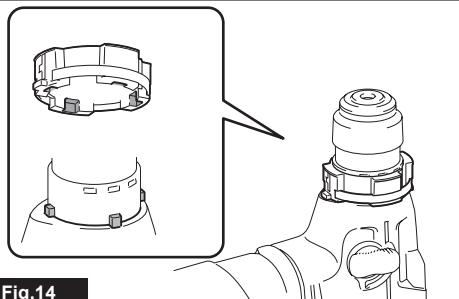


Fig.14

2. Install the side grip (optional grip base set and the grip removed from standard side grip) so that the groove on the grip fit in the protrusion on the spacer. Turn the grip clockwise to secure it.

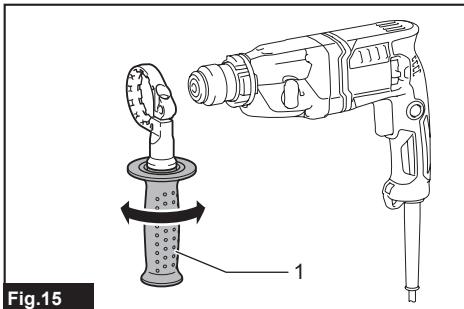


Fig.15

► 1. Side grip

3. Install the dust cup set so that the claws of the dust cup fit in the slits on the spacer.

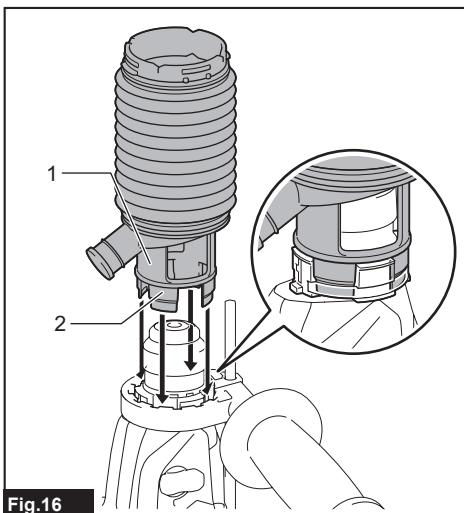


Fig.16

► 1. Dust cup 2. Claws

NOTE: If you connect a vacuum cleaner to the dust cup set, remove the dust cap before connecting it.

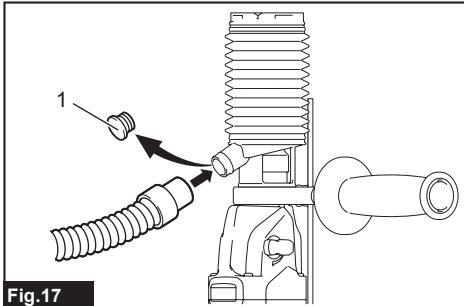


Fig.17

► 1. Dust cap

Removing the drill bit

To remove the drill bit, pull the chuck cover down all the way and pull the drill bit out.

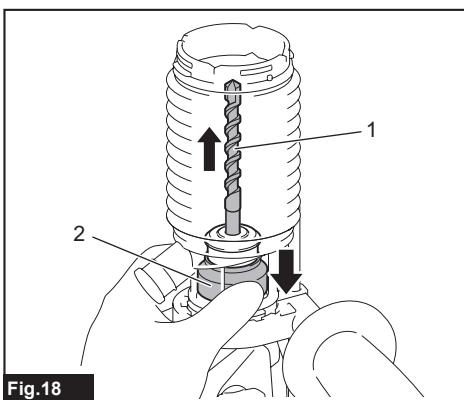


Fig.18

► 1. Bit 2. Chuck cover

Removing the dust cup set

To remove the dust cup set, follow the steps below.

1. Loosen the side grip.

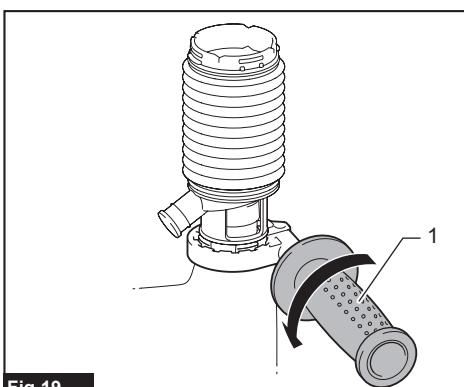


Fig.19

► 1. Side grip

2. Hold the root of dust cup and pull it out.

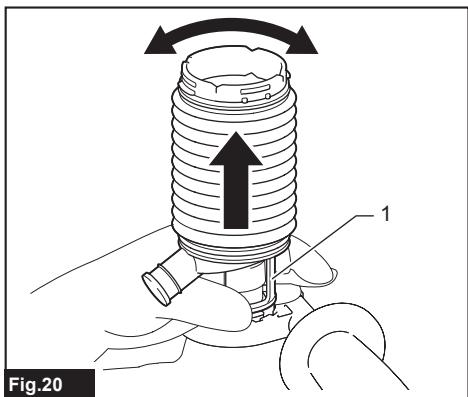


Fig.20

- 1. Dust cup

NOTE: If it is difficult to remove the dust cup set, remove the claws of the dust cup one by one by swinging and pulling the root of the dust cup.

NOTE: If the cap comes off from the dust cup, attach it with its printed side facing up so that groove on the cap fits in the inside periphery of the attachment.

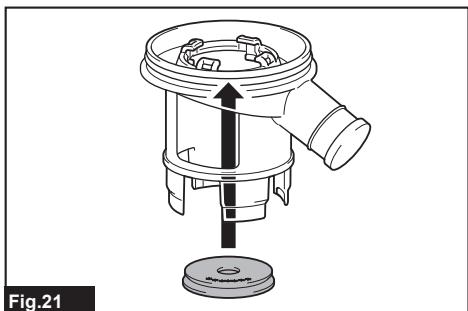


Fig.21

OPERATION

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

CAUTION: Always make sure that the workpiece is secured before operation.

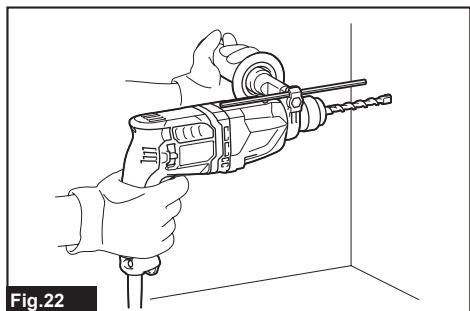


Fig.22

Hammer drilling operation

CAUTION: There is tremendous and sudden twisting force exerted on the tool/drill bit at the time of hole break-through, when the hole becomes clogged with chips and particles, or when striking reinforcing rods embedded in the concrete. **Always use the side grip (auxiliary handle) and firmly hold the tool by both side grip and switch handle during operations.** Failure to do so may result in the loss of control of the tool and potentially severe injury.

Set the action mode changing knob to the symbol. Position the drill 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 drill bit partially from the hole. By repeating this several times, the hole will be cleaned out and normal drilling may be resumed.

NOTE: Eccentricity in the drill bit rotation may occur while operating the tool with no load. The tool automatically centers itself during operation. This does not affect the drilling precision.

Drilling in wood or metal

CAUTION: Hold the tool firmly and exert care when the drill bit begins to break through the workpiece. There is a tremendous force exerted on the tool/drill bit at the time of hole break through.

CAUTION: A stuck drill 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.

CAUTION: Always secure workpieces in a vise or similar hold-down device.

NOTICE: Never use "rotation with hammering" when the drill chuck is installed on the tool. The drill chuck may be damaged. Also, the drill chuck will come off when reversing the tool.

NOTICE: 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 drill bit, decrease the tool performance and shorten the service life of the tool.

Set the action mode changing knob to the  symbol. Attach the chuck adapter to a keyless drill chuck to which 1/2"-20 size screw can be installed, and then install them to the tool. When installing it, refer to the section "Installing or removing drill bit".

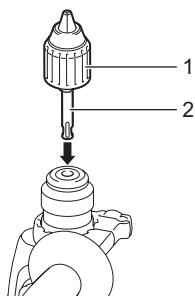


Fig.23

► 1. Keyless drill chuck 2. Chuck adapter

Blow-out bulb

Optional accessory

After drilling the hole, use the blow-out bulb to clean the dust out of the hole.

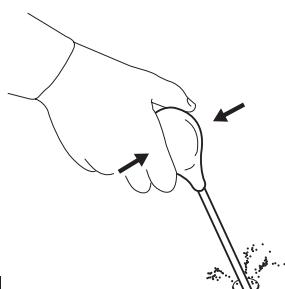


Fig.24

Using dust cup set

Optional accessory

Fit the dust cup set against the ceiling when operating the tool.

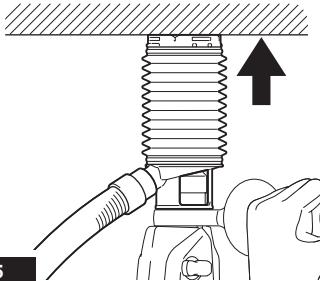


Fig.25

NOTICE: Do not use the dust cup set when drilling in metal or similar. It may damage the dust cup set due to the heat produced by small metal dust or similar.

NOTICE: Do not install or remove the dust cup set with the drill bit installed in the tool. It may damage the dust cup set and cause dust leak.

MAINTENANCE

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

NOTICE: Never use gasoline, benzine, thinner, alcohol or the like. Discoloration, deformation or cracks may result.

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.

OPTIONAL 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.

- Carbide-tipped drill bits (SDS-Plus carbide-tipped bits)
- Core bit
- Diamond core bit
- Chuck adapter
- Keyless drill chuck
- Bit grease

- Depth gauge
- Blow-out bulb
- Dust cup
- Dust cup set
- Grip base set
- Plastic carrying case

NOTE: Some items in the list may be included in the tool package as standard accessories. They may differ from country to country.

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