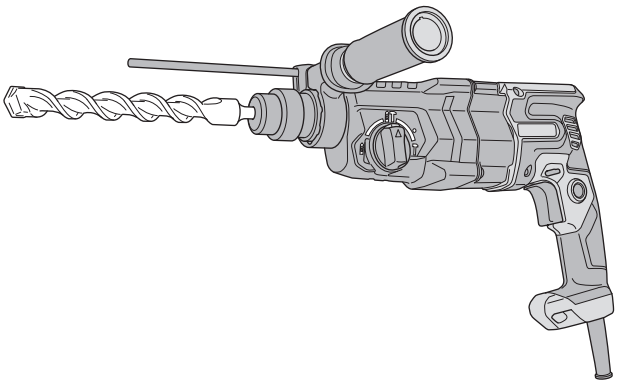
HiKOKI

DH 28PEC



Handling instructions

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.

1) **Work area safety**
   a) **Keep work area clean and well lit.**
   Cluttered or dark areas invite accidents.
   b) **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.
   c) **Keep children and bystanders away while operating a power tool.**
   Distractions can cause you to lose control.

2) **Electrical safety**
   a) **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.
   b) **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.
   c) **Do not expose power tools to rain or wet conditions.**
   Water entering a power tool will increase the risk of electric shock.
   d) **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.
   e) **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.
   f) **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.

3) **Personal safety**
   a) **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.
   b) **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.
   c) **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.
   d) **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.
   e) **Do not overreach. Keep proper footing and balance at all times.**
   This enables better control of the power tool in unexpected situations.
   f) **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.
   g) **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.
   h) **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.

4) **Power tool use and care**
   a) **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.
   b) **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.
   c) **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.
   d) **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.
   e) **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.
   f) **Keep cutting tools sharp and clean.**
   Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
   g) **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.
   h) **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.

5) Service

a) 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.

PRECAUTION

Keep children and infirm persons away.

When not in use, tools should be stored out of reach of children and infirm persons.

ROTARY HAMMER SAFETY WARNINGS

1) Safety instructions for all operations

a) Wear ear protectors

Exposure to noise can cause hearing loss.

b) Use auxiliary handle(s), if supplied with the tool.

Loss of control can cause personal injury.

c) Hold the power tool by insulated gripping surfaces, when performing an operation where the cutting accessory may contact hidden wiring.

Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.

2) Safety instructions when using long drill bits with rotary hammers

a) 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.

b) 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. Ensure that the power source to be utilized conforms to the power requirements specified on the product nameplate.
2. Ensure that the power switch is in the OFF position. If the plug is connected to a receptacle while the power switch is in the ON position, the power tool will start operating immediately, which could cause a serious accident.
3. When the work area is removed from the power source, use an extension cord of sufficient thickness and rated capacity. The extension cord should be kept as short as practicable.
4. Do not touch the bit during or immediately after operation. The bit becomes very hot during operation and could cause serious burns.
5. Before starting to break, chip or drill into a wall, floor or ceiling, thoroughly confirm that such items as electric cables or conduits are not buried inside.
6. Always hold the body handle and side handle of the power tool firmly. Otherwise the counterforce produced may result in inaccurate and even dangerous operation.
7. Wear a dust mask
   Do not inhale the harmful dusts generated in drilling or chiseling operation. The dust can endanger the health of yourself and bystanders.
8. Mounting the tool
   - To prevent accidents, make sure to turn the switch off and disconnect the plug from the receptacle.
   - When using tools such as bull points, drill bits, etc., make sure to use the genuine parts designated by our company.
   - Clean the shank portion of the tool.
   - Check the latching by pulling on the tool.
9. To prevent accidents, make sure to turn the switch off and disconnect the plug from the receptacle when the drill bits and other various parts are installed or removed. The power switch should also be turned off during a work break and after work.
10. Rotation + hammering
    When the drill bit touches construction iron bar, the bit will stop immediately and the rotary hammer will react to revolve. Therefore firmly tighten the side handle.
11. Rotation only
    To drill wood or metal material using the drill chuck and chuck adapter (optional accessories).
    - Application of force more than necessary will not only expedite the work, but will deteriorate the tip edge of the drill bit and reduce the service life of the rotary hammer in addition.
    - Drill bits may snap off while withdrawing the rotary hammer from the drilled hole. For withdrawing, it is important to use a pushing motion.
    - Do not attempt to drill anchor holes or holes in concrete with the machine set in the rotation only function.
    - Do not attempt to use the rotary hammer in the rotation and hammering function with the drill chuck and chuck adapter attached. This would seriously shorten the service life of every component of the machine.

12 RCD
   The use of a residual current device with a rated residual current of 30 mA or less at all times is recommended.

13. Make sure to securely hold the tool as shown in **Fig. 12** during operation.

SYMBOLS

WARNING

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

	DH28PEC: Rotary Hammer
	To reduce the risk of injury, user must read instruction manual.
	Only for EU countries Do not dispose of electric tools together with household waste material! In observance of European Directive 2012/19/EU on waste electrical and electronic equipment and its implementation in accordance with national law, electric tools that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.
V	Rated voltage (Ensure that the power source to be utilized conforms to the power requirements specified on the product nameplate.)
P	Power Input
n_0	No-load speed
Bpm	Full-load impact rate
ϕ max	Drilling diameter, max.
	Weight (According to EPTA-Procedure 01/2014)
	Concrete
	Steel
	Wood
	Rotation and hammering function
	Rotation only function
	Hammering only function
	Switching ON
	Switching OFF
	Changeover switch
	Display lamp
	Low mode
	Normal mode
	Disconnect mains plug from electrical outlet
	Class II tool

STANDARD ACCESSORIES

In addition to the main unit (1 unit), the package contains the accessories listed in the below.

- Plastic case 1
- Side handle 1
- Depth gauge 1

Standard accessories are subject to change without notice.

APPLICATIONS

Rotation and hammering function

- Drilling anchor holes
- Drilling holes in concrete
- Drilling holes in tile

Rotation only function

- Drilling in steel or wood (with optional accessories)
- Tightening machine screws, wood screws (with optional accessories)

Hammering only function

- Light-duty chiselling of concrete, groove digging and edging.

SPECIFICATIONS

The specifications of this machine are listed in the Table on page 8.

NOTE

Due to HiKOKI's continuing program of research and development, the specifications herein are subject to change without prior notice.

MOUNTING AND OPERATION

Action	Figure	Page
Inserting SDS-plus drilling tools	1	9
Removing SDS-plus drilling tools	2	9
Selecting rotation direction	3	9
Selecting the operating mode	4	9
Adjusting the drilling depth	5	9
Changing the chisel position	6	9
Selecting the operating mode	7	10
Auto stop function	8	10
Switching on and off and setting the speed	9	10
Locking-on the On / Off switch	10	10
Releasing the On / Off switch	11	10
Installing the side handle	13	11
Selecting accessories*	–	12

* For detailed information regarding each tool, contact a HiKOKI authorized service center.

SELECT OPERATION MODE

Pressing the changeover switch allows the selection of rotation speed and the auto stop function.

- Rotation speed (Low mode/Normal mode)
  Select either Low mode or Normal mode and operate the tool in the selected speed.
- Auto stop mode (on/off)
  This product is equipped with an auto stop function to support continuous drilling work. The function features a memory mode for storing the work time for drilling from switch ON to switch OFF, and an auto stop mode that automatically stops the motor from the second drilling onward should the work exceed the stored work time while the switch is ON.

AUTO STOP FUNCTION

In selection mode, pressing the button for longer than two seconds will move to memory mode.
(At the same time the auto stop lamp will blink.)
Conduct drilling when the auto stop lamp is flashing. The time between switching ON and switching OFF is stored by the tool.
(At the same time, the auto stop lamp will light up.)
Conduct drilling when the auto stop lamp is flashing. Continuous drilling is possible as the memory storage time will be recorded by the tool until the auto stop function's auto stop mode is cancelled.
The auto stop function is cancelled by pressing the changeover switch once again for over two seconds.
(At the same time, the auto stop lamp will switch off.)

CAUTION

- Switch ON the tool once you place the tip of the tool on the work material.
- The rotation speed and the level at which the switch is pulled during drilling is not stored to memory.
- Fully carry out drilling in one go during auto stop mode.
- The motor will stop even if you switch OFF within the memory storage time.
- When you switch OFF within the memory storage time, the count will be reset. If you rework a task in which a hole has been partially drilled, the memory storage time will be fully recounted.

REACTIVE FORCE CONTROL

This product is equipped with a Reactive Force Control (RFC) feature that reduces jerking of the tool body.
If the tool bit is suddenly overburdened, any jerking of the tool body is reduced by activation of the slip clutch or by stopping of the motor by the sensor built into the tool body.
When the RFC is activated, the two LEDs flash red in a synchronized manner. (**Table 1**) During the flashing, the motor will be off. Press the changeover switch to recommence operation.
Because the RFC feature may not activate or its performance may be insufficient depending on the working environment and conditions, be careful not to suddenly overburden the tool bit while operating.

- Possible causes of sudden overburdening

① Tool bit biting into material
② Impact against nails, metal or other hard objects
③ Tasks involving prying or any excess application of pressure, etc.

Also, other causes include any combination of the aforementioned.

- When the reactive force control (RFC) is triggered
  When the RFC is triggered and the motor stops, turn off the tool's switch and remove the cause of the overburdening before continuing operation.

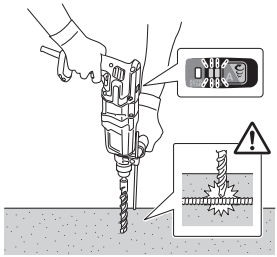


Fig. 14

ABOUT THE PROTECTION FUNCTION

This tool has a built-in protection circuit for preventing damage to the unit in the event of an abnormality. Depending on the following, the display lamp will flash, and the unit will cease to operate. Verify the problem indicated by the flashing and take the necessary steps to correct the problem.
When pressing the changeover switch, do so when the switch is not being pulled.

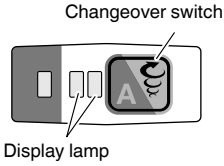


Fig. 15

Table 1

Display lamp flashing	Cause	Solution
	Operation has ceased because the internal temperature has exceeded the temperature limit. (High temperature protection function)	Allow the unit to cool for 15 to 30 minutes. When the temperature goes down, press the changeover switch to recover operation.
	① Excessive pressure applied to the tool has resulted in an overload that shut off the motor. (Overload protection function) ② Tool fails to operate or shuts down due to the unit being connected to a high or low voltage power source. ③ Tool has shut down due to a voltage signal read error that occurred from the unit's power cord being plugged in and out at short intervals. (Circuit protection function)	① Press the changeover switch to recover. Switch to low mode and avoid excess pressure when operating the tool. ② Connect the unit to a power supply matching the input voltage specified on the nameplate. Press the changeover switch to recover. ③ Allow for an interval of 3 seconds or more when plugging the power cord in and out. Press the changeover switch to recover.
 Alternately switch on and off	Unit fails to activate or ceases to operate due to a sensor signal read error. (Control monitoring function)	Press the changeover switch to recover. Repair may be required if this error continuously occurs.
	Sudden overburdening of the tool bit has activated the RFC, stopping further operation of the tool. RFC (See page 5 "REACTIVE FORCE CONTROL")	Press the changeover switch to recover. Before continuing operation, remove the cause of the overburden.

NOTE

Despite taking steps to correct a problem, the display lamp may continue to blink. Should this be the case, the unit may require repair. If so, please contact the outlet from which this product was purchased for repairs.

LUBRICATION

This Rotary Hammer is of full air-tight construction to protect against dust.
Therefore, this Rotary Hammer can be used without lubrication for long periods. Replace the grease as described below.

Grease Replacement Period

After purchase, periodically replace grease. Ask for grease replacement at the nearest authorized Service Center.

CAUTION

A special grease is used with this machine, therefore, the normal performance of the machine may be badly affected by use of other grease. Please be sure to let one of our service agents undertake replacement of the grease.

MAINTENANCE AND INSPECTION

1. **Inspecting the tools**
   Since use of a dull tool will cause motor malfunctioning and degraded efficiency, replace the tool with new ones or resharpen them without delay when abrasion is noted.
2. **Inspecting the mounting screws**
   Regularly inspect all mounting screws and ensure that they are properly tightened. Should any of the screws be loose, retighten them immediately. Failure to do so could result in serious hazard.
3. **Maintenance of the motor**
   The motor unit winding is the very "heart" of the power tool.
   Exercise due care to ensure the winding does not become damaged and/or wet with oil or water.
4. **Replacing supply cord**
   If the replacement of the supply cord is necessary, it has to be done by HIKOKI Authorized Service Center to avoid a safety hazard.

CAUTION

In the operation and maintenance of power tools, the safety regulations and standards prescribed in each country must be observed.

GUARANTEE

We guarantee HiKOKI Power Tools in accordance with statutory/country specific regulation. This guarantee does not cover defects or damage due to misuse, abuse, or normal wear and tear. In case of complaint, please send the Power Tool, undismantled, with the GUARANTEE CERTIFICATE found at the end of this Handling instruction, to a HiKOKI Authorized Service Center.

IMPORTANT

Correct connection of the plug
The wires of the main lead are coloured in accordance with the following code:

Blue: — Neutral
Brown: — Live

As the colours of the wires in the main lead of this tool may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:
The wire coloured blue must be connected to the terminal marked with the letter N or coloured black. The wire coloured brown must be connected to the terminal marked with the letter L or coloured red. Neither core must be connected to the earth terminal.

NOTE:
This requirement is provided according to BRITISH STANDARD 2769: 1984.
Therefore, the letter code and colour code may not be applicable to other markets except The United Kingdom.

Information concerning airborne noise and vibration
The measured values were determined according to EN62841 and declared in accordance with ISO 4871.

Measured A-weighted sound power level: 105 dB (A)
Measured A-weighted sound pressure level: 94 dB (A)
Uncertainty K: 3 dB (A).

Wear hearing protection.

Vibration total values (triax vector sum) determined according to EN62841.

Hammer drilling into concrete:
Vibration emission value $\mathbf{a_h}$, **HD** = 11.9 m/s^2
Uncertainty K = 1.5 m/s^2

Equivalent chiselling value:
Vibration emission value $\mathbf{a_h}$, **CHeq** = 10.4 m/s^2
Uncertainty K = 1.5 m/s^2

The declared vibration total value and the declared noise emission value have been measured in accordance with a standard test method and may be used for comparing one tool with another.
They may also be used in a preliminary assessment of exposure.

WARNING

- The vibration and noise emission during actual use of the power tool can diff er from the declared total value depending on the ways in which the tool is used especially what kind of workpiece is processed; and
- 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).

NOTE
Due to HiKOKI's continuing program of research and development, the specifications herein are subject to change without prior notice.

	DH28PEC
V	(110V, 230V, 240V) ~
P	900W
n_0	0 – 950 min^{-1}
Bpm	0 – 4300 min^{-1}
ϕ max	3.4 – 28 mm
ϕ max	13 mm
ϕ max	32 mm
kg	3.0 kg

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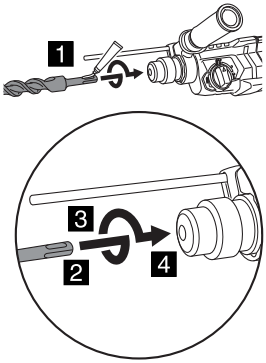

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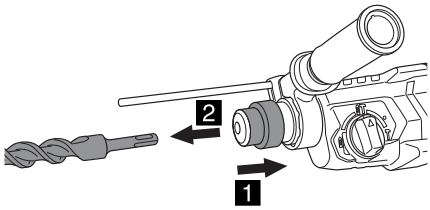

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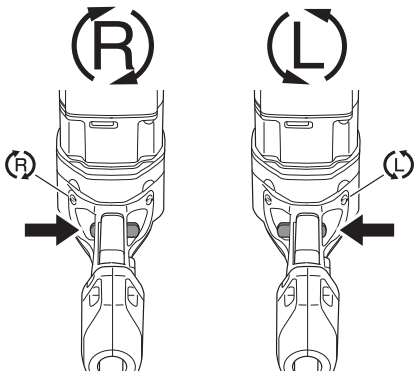

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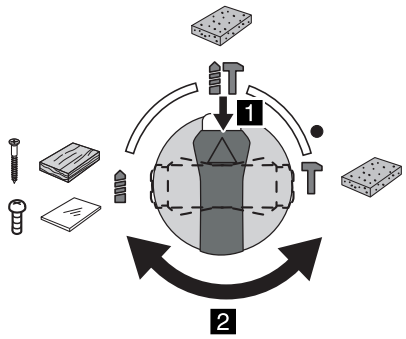

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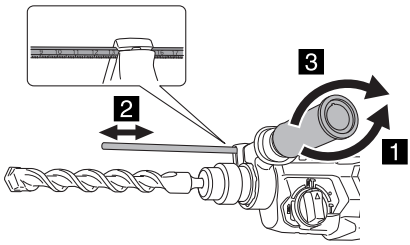

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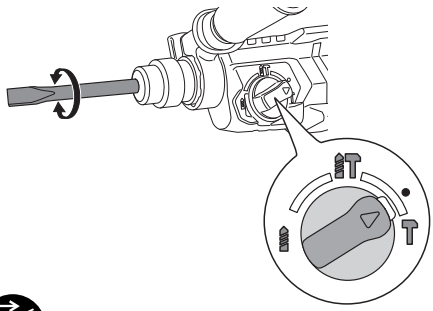

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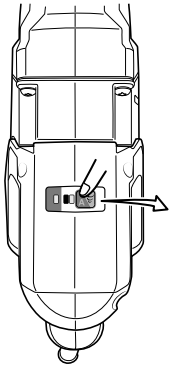

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Bpm	3170	4300

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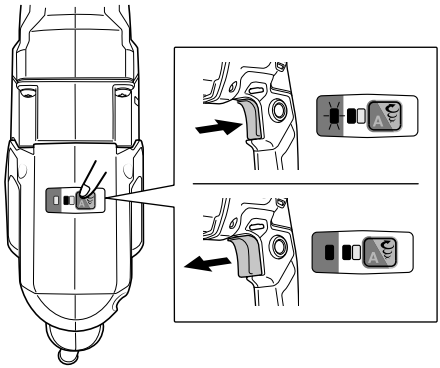

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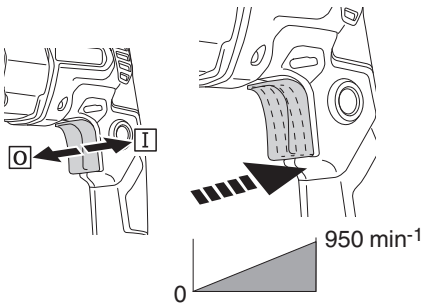

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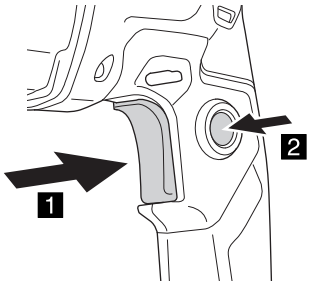

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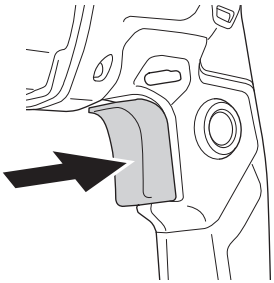

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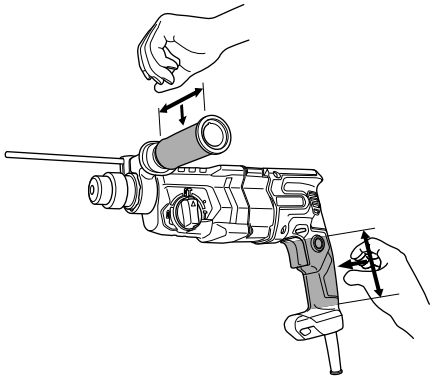

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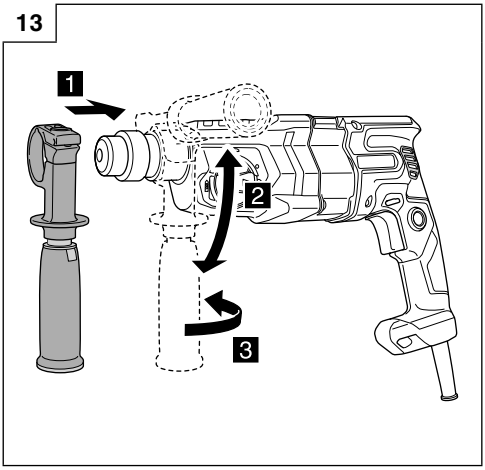

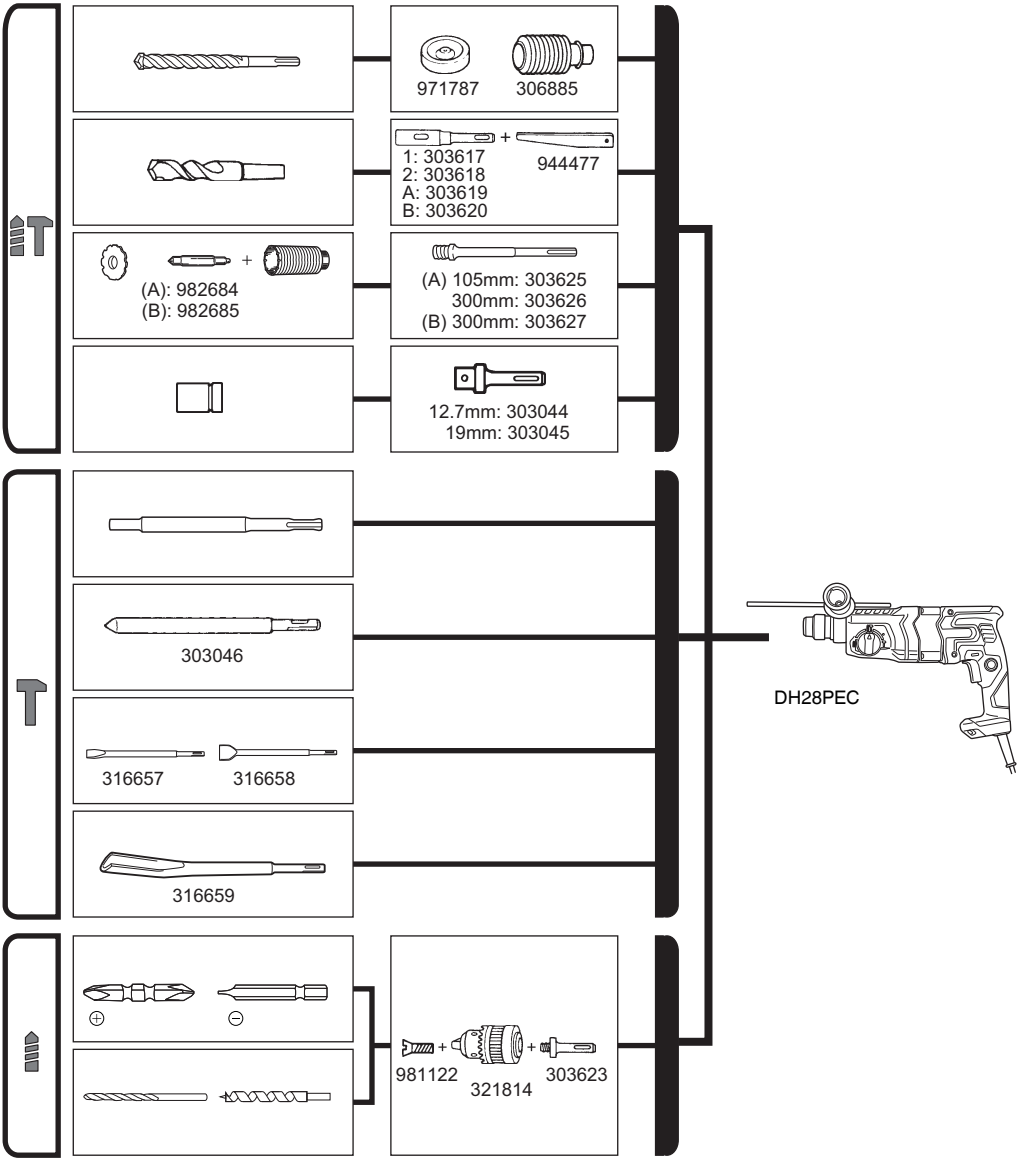
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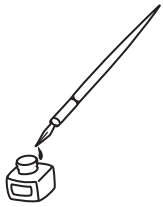
300mm: 303626
(B) 300mm: 303627
12.7mm: 303044
19mm: 303045
303046
316657
316658
316659
981122
321814
303623
DH28PEC

HiKOKI

GUARANTEE CERTIFICATE

Model No.
Serial No.
Date of Purchase
Customer Name and Address
Dealer Name and Address (Please stamp dealer name and address)

Hikoki Power Tools (U.K.) Ltd.
25 Majestic Road, Southampton, SO16 OYT, United Kingdom
Tel: +44 1908 660663
Fax: +44 1908 606642
URL: http://www.hikoki-powertools.uk



DECLARATION OF CONFORMITY

We declare under our sole responsibility that Rotary Hammer, identified by type and specific identification code *1), is in conformity with all relevant requirements of the UK regulations *2) and Designated standards *3). Technical file at *4) – See below.
This declaration is applicable to the product affixed UKCA marking.

*1) DH28PEC C357697R, C357698M

*2) S.I. 2008/1597, S.I. 2016/1091, S.I. 2012/3032

*3) EN62841-1:2015
EN IEC 62841-2-6:2020+A11:2020
EN55014-1:2006+A1:2009+A2:2011
EN55014-2:1997+A1:2001+A2:2008
EN61000-3-2:2014
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