

# HILTI

## DD 150-U

Operating instructions

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Mode d'emploi

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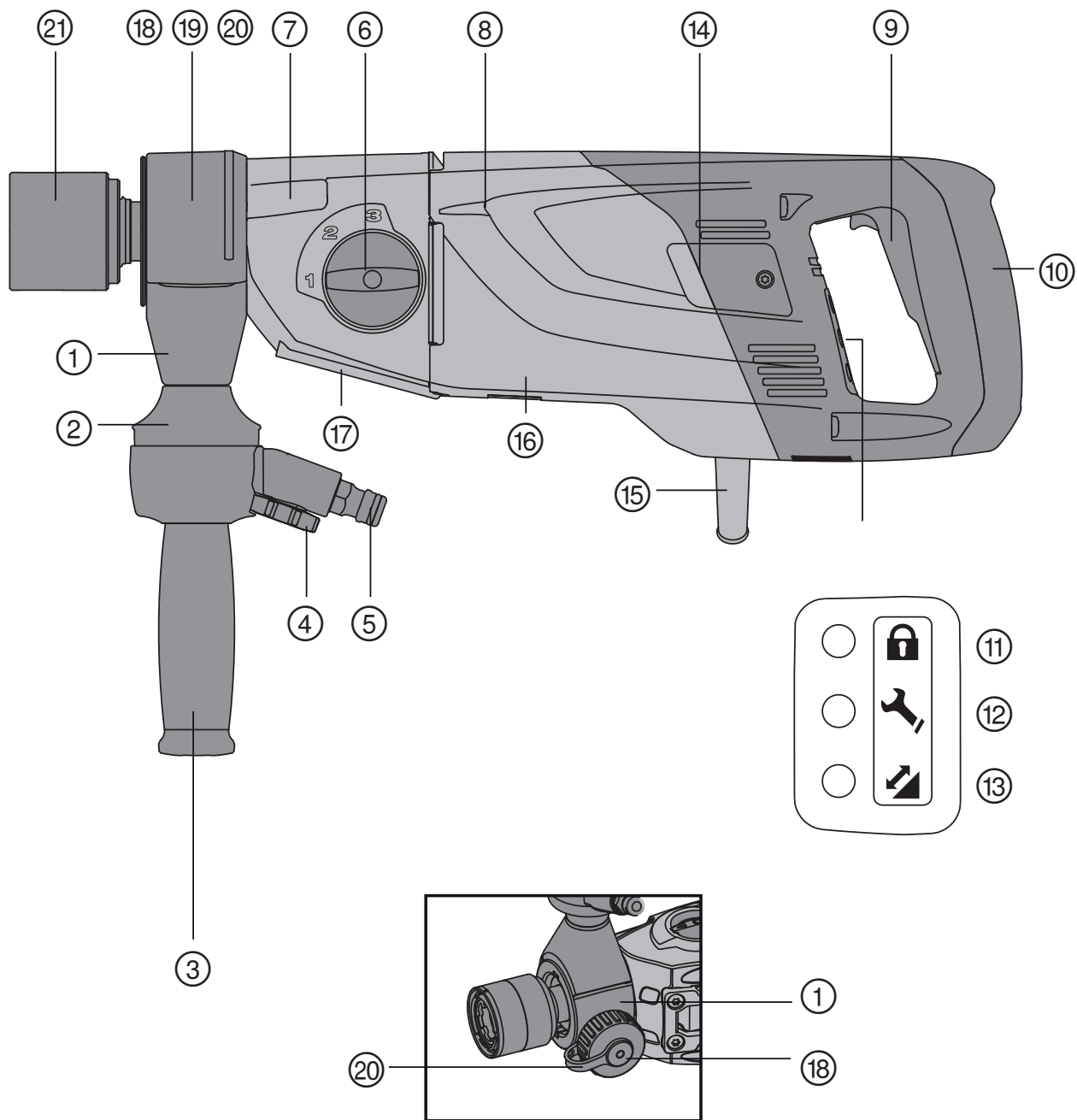
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Manual de instruções

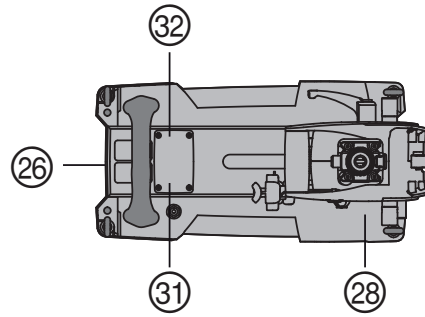
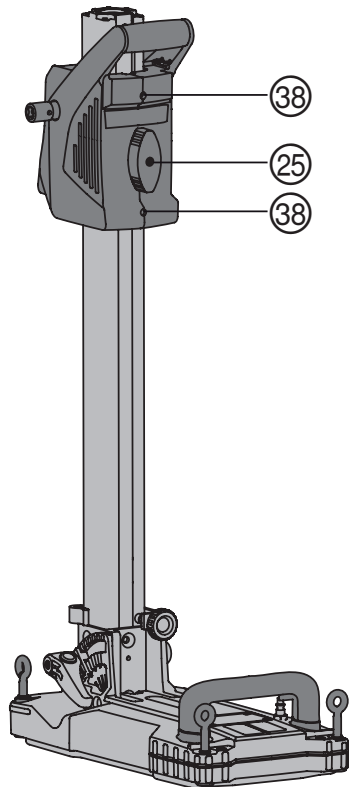
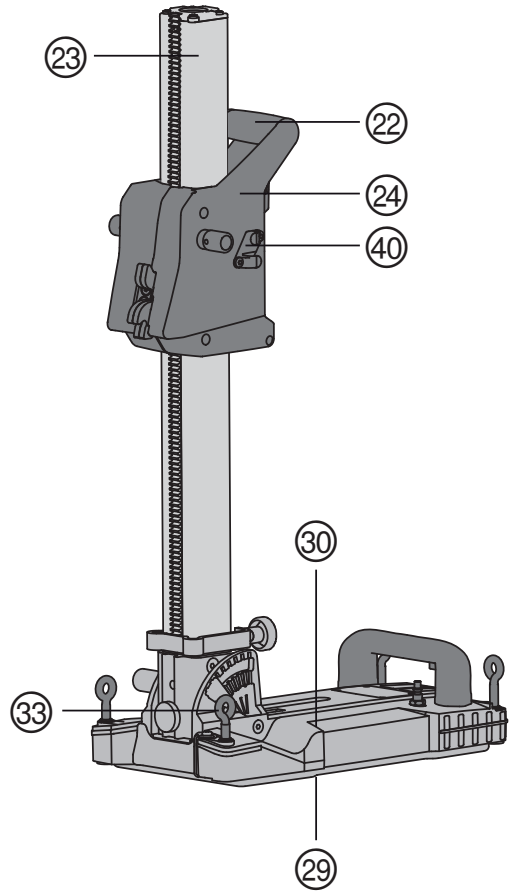
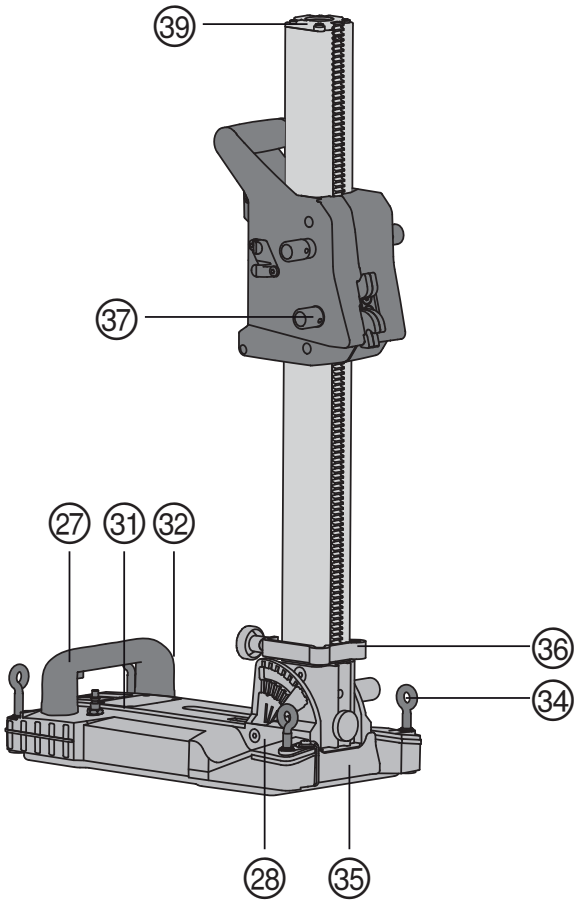
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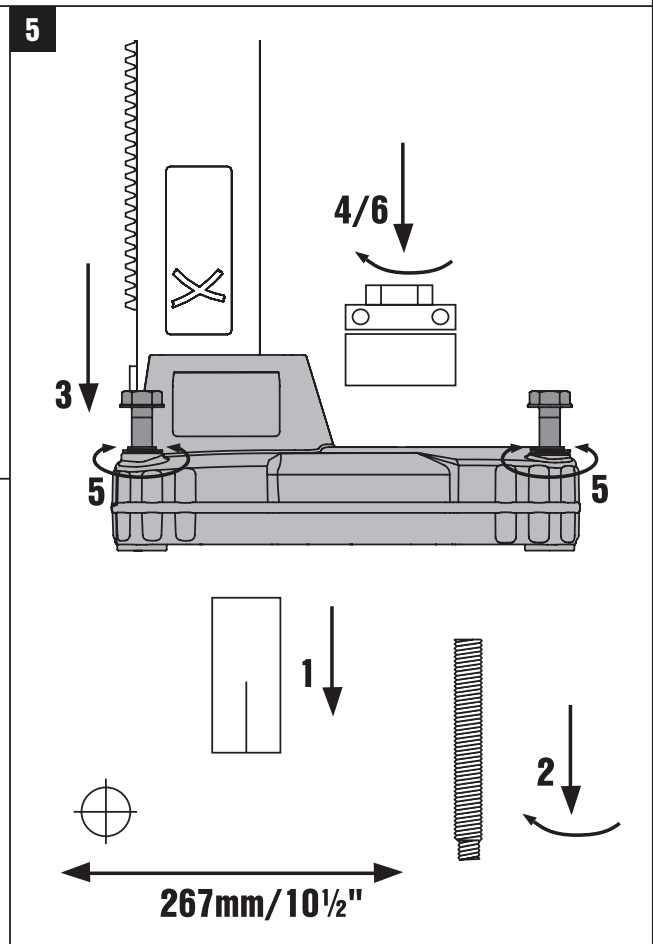
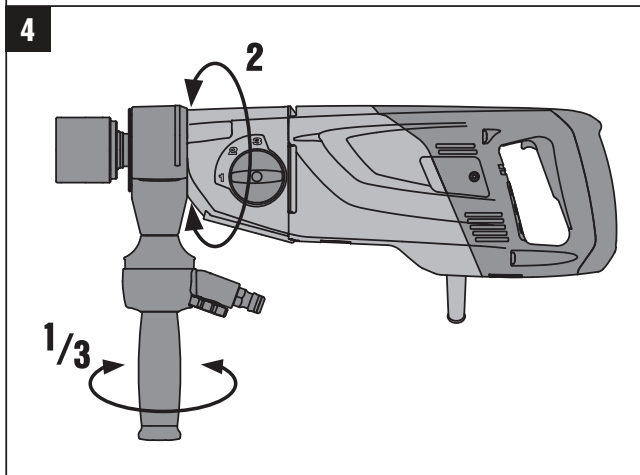
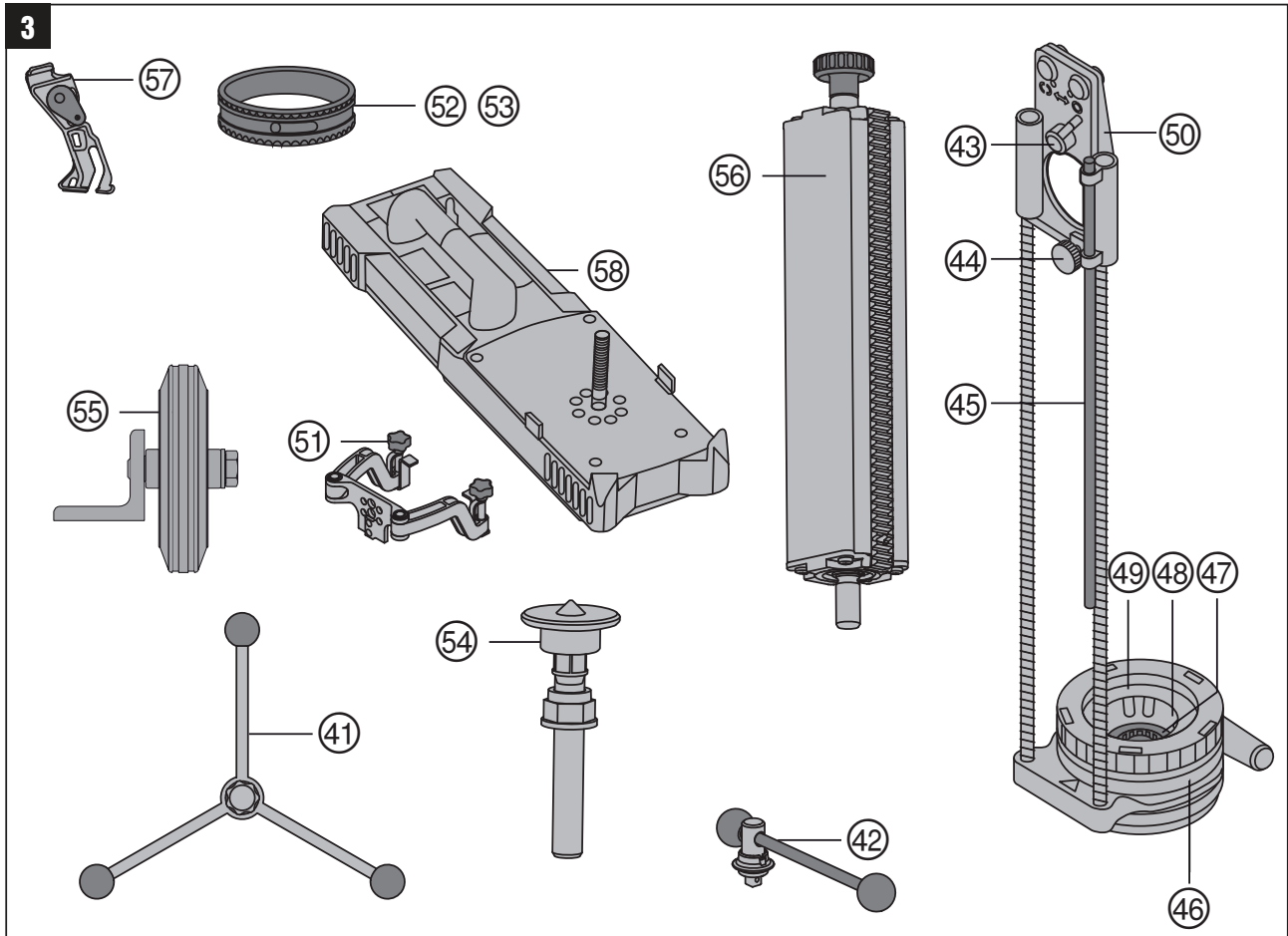


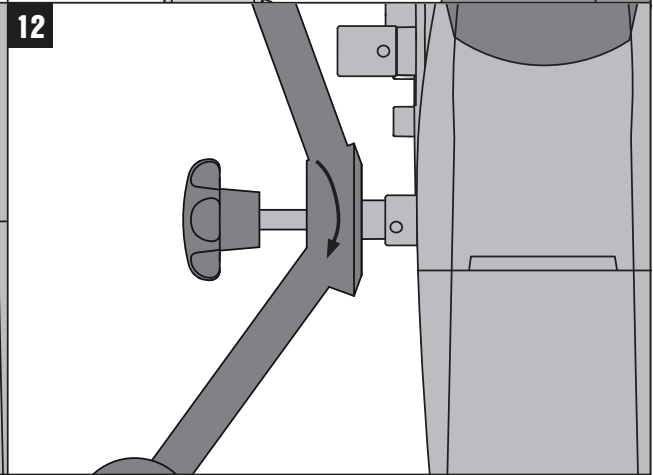
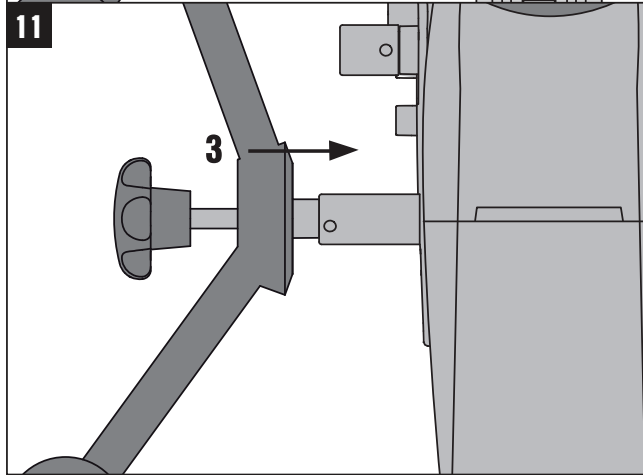
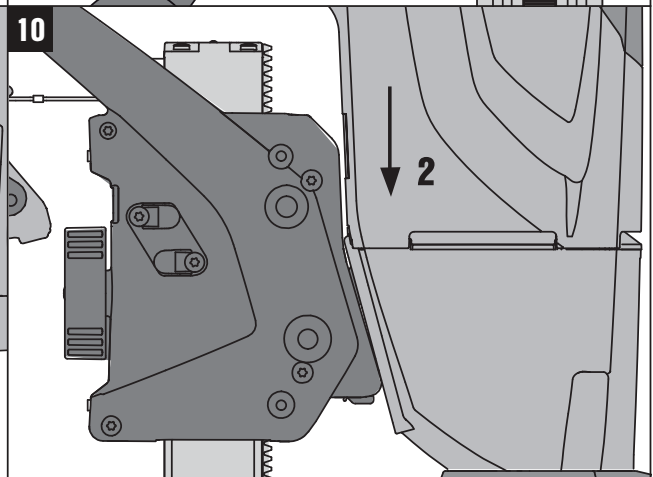
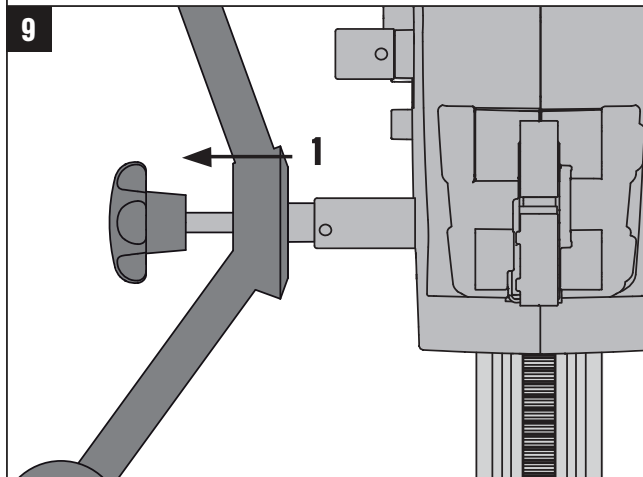
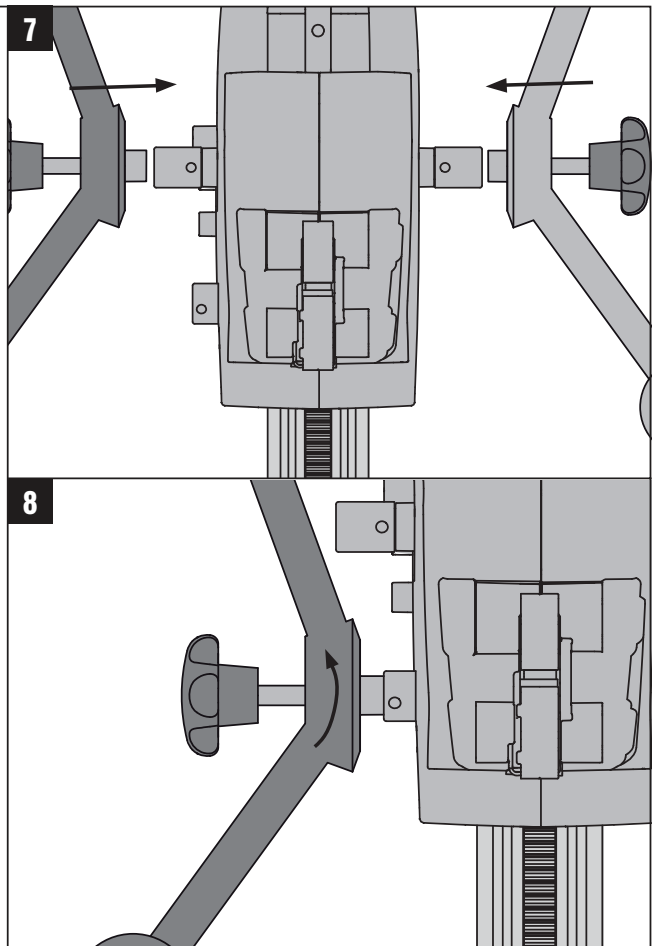
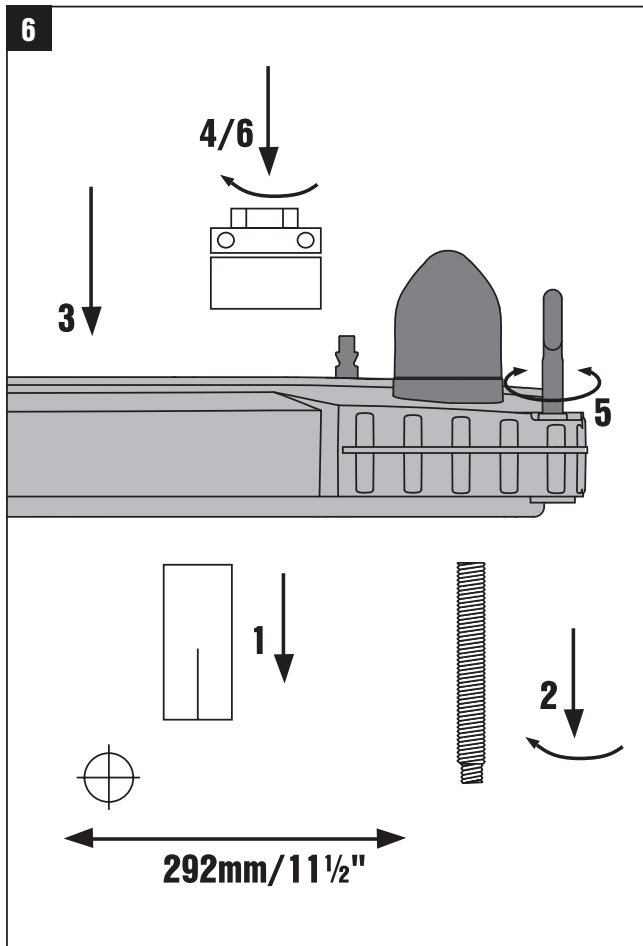


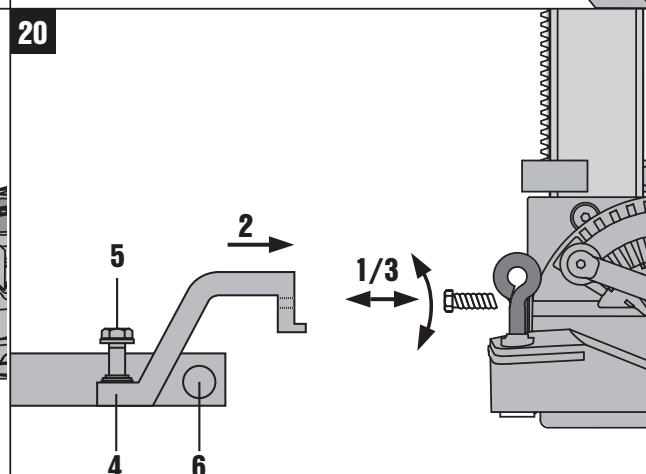
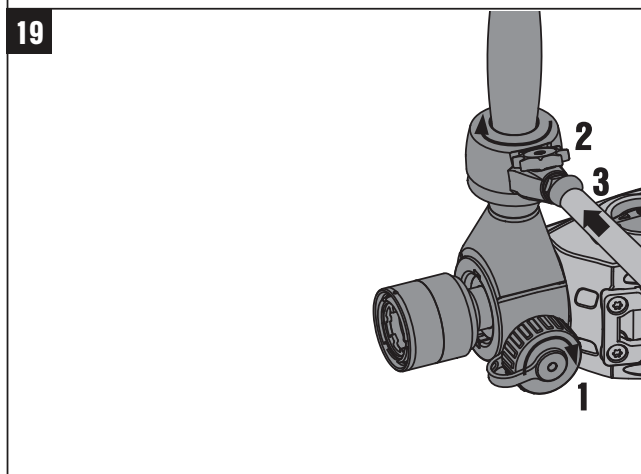
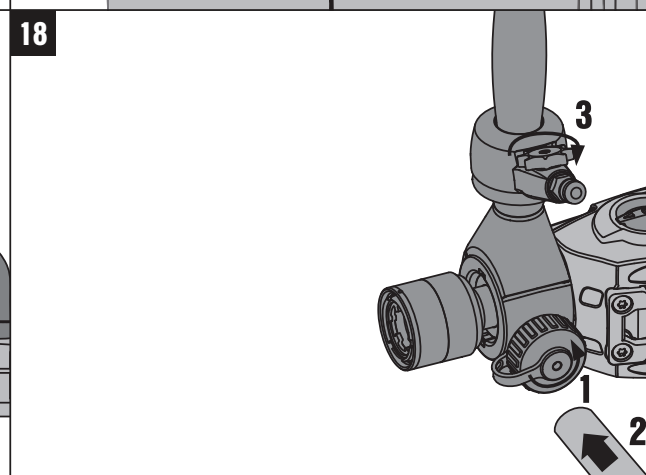
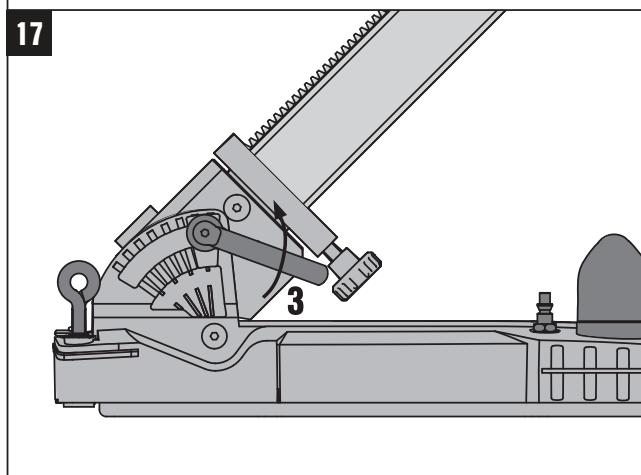
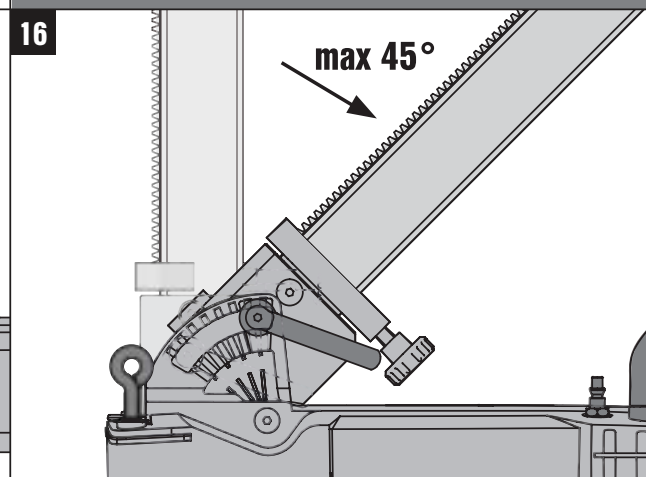
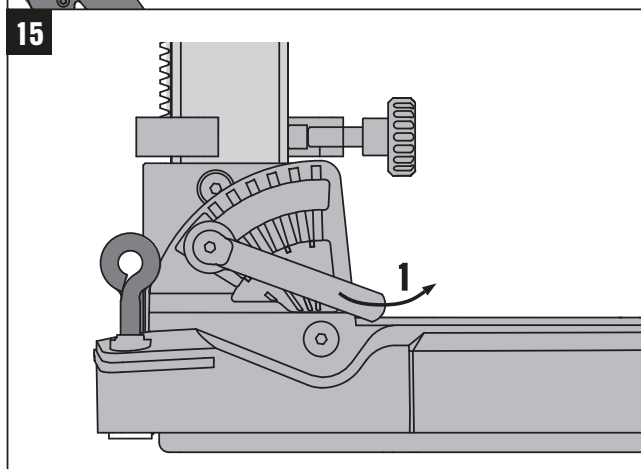
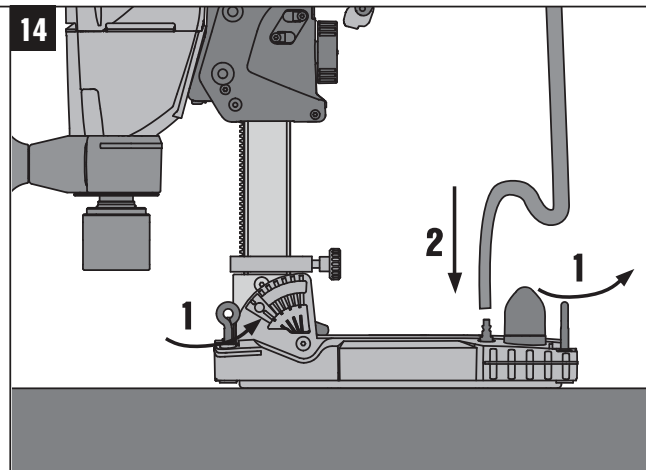
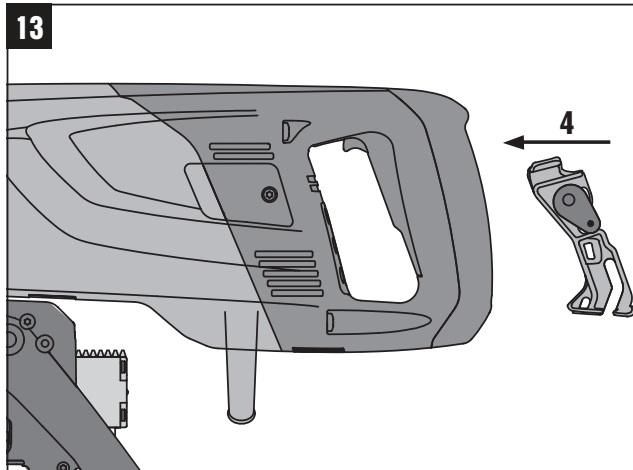
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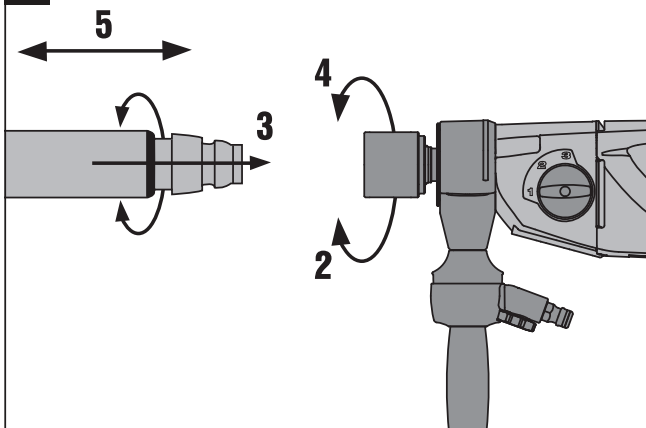




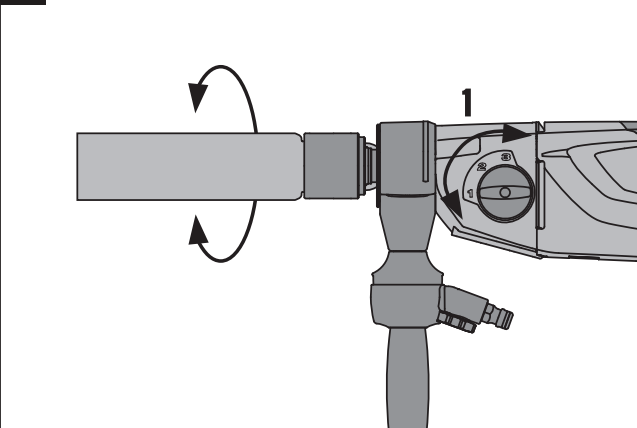




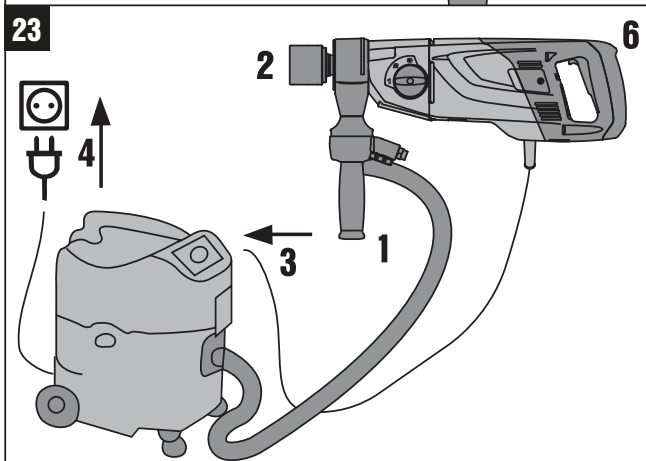
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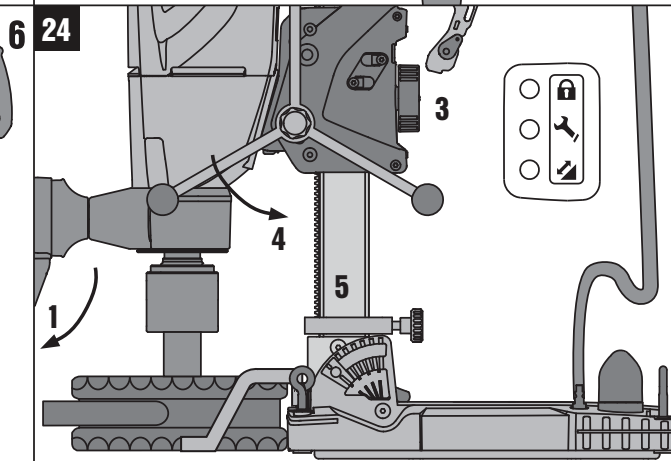
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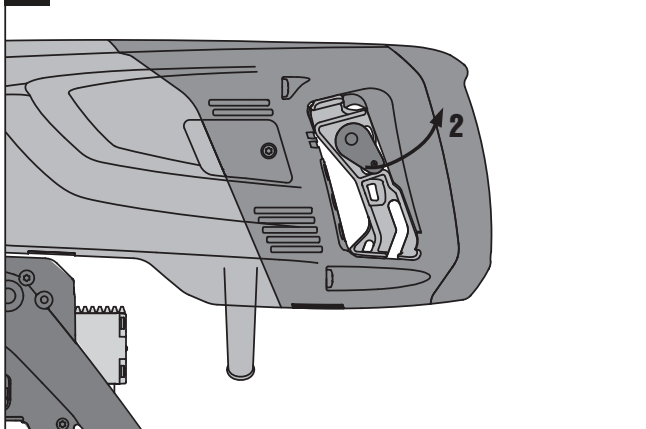
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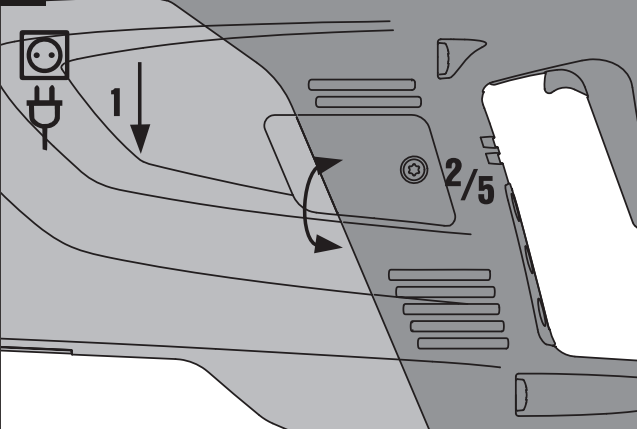
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## ORIGINAL OPERATING INSTRUCTIONS

# DD 150-U diamond coring system

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***It is essential that the operating instructions are read before the machine is operated for the first time.***

***Always keep these operating instructions together with the machine.***

***Ensure that the operating instructions are with the machine when it is given to other persons.***

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**1** These numbers refer to the corresponding illustrations. The illustrations can be found on the fold-out cover pages. Keep these pages open while studying the operating instructions.

In these operating instructions, the designation "the machine" always refers to the DD 150-U diamond core drilling machine.

### Operating controls, parts and indicators (motor unit and drill stand) **1**

#### DD 150-U diamond coring machine

- ① Water swivel / suction head
- ② Water flow rate indicator
- ③ Side handle
- ④ Water flow regulator
- ⑤ Water connection
- ⑥ Gear selector

- ⑦ Gearing section
- ⑧ Motor
- ⑨ On / off switch
- ⑩ Grip
- ⑪ Theft protection indicator (option)
- ⑫ Service indicator
- ⑬ Drilling performance indicator
- ⑭ Carbon brush cover
- ⑮ Supply cord with PRCD
- ⑯ Type identification plate
- ⑰ Interface plate
- ⑱ Connector screws (water swivel / suction head)
- ⑲ Cover (water swivel / suction head)
- ⑳ Suction hose connector
- ㉑ Chuck

#### Drill stand **2**

- ㉒ Grip
- ㉓ Column
- ㉔ Carriage
- ㉕ Carriage lock
- ㉖ Type identification plate
- ㉗ Vacuum release valve
- ㉘ Vacuum hose connector
- ㉙ Vacuum seal
- ㉚ Base plate
- ㉛ Pressure gauge
- ㉜ Leveling indicator
- ㉝ Adjusting lever
- ㉞ Leveling screws
- ㉟ Hole center indicator
- ㊱ Depth gauge
- ㊲ Locking pin
- ㊳ Carriage play adjusting screw
- ㊴ End stop screw
- ㊵ Supply cord holder

#### Hand wheel accessories **3**

- ㊶ Star handle
- ㊷ Lever



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### Water collector for manual operation 3

- ④3 Eccentric pin
- ④4 Clamping screw
- ④5 Depth gauge
- ④6 Water collector
- ④7 Centering ring
- ④8 Centering ring adapter
- ④9 Seal
- ⑤0 Machine mount

### Water collector for drill stand operation 3

- ⑤1 Holder
- ⑤2 Water collector
- ⑤3 Seal

### Various accessories 3

- ⑤4 Jack screw
- ⑤5 Wheel assembly
- ⑤6 Rota-Rail
- ⑤7 Switch lock for drill stand operation
- ⑤8 Vacuum base plate

## 1. General information

### 1.1 Safety notices and their meaning

#### DANGER

Draws attention to imminent danger that will lead to serious bodily injury or fatality.

#### WARNING

Draws attention to a potentially dangerous situation that could lead to serious personal injury or fatality.

#### CAUTION

Draws attention to a potentially dangerous situation that could lead to slight personal injury or damage to the equipment or other property.

#### NOTE

Draws attention to an instruction or other useful information.

### 1.2 Explanation of the pictograms and other information

#### Prohibition signs



Transport by crane is not permissible.

#### Warning signs



General warning



Warning: electricity



Warning: hot surface

#### Obligation signs



Wear eye protection.



Wear a hard hat.



Wear ear protection.



Wear protective gloves.



Wear safety shoes.



Wear breathing protection.

#### Symbols



Read the operating instructions before use.



Lock symbol



Equipped with theft protection system



Return waste material for recycling.



Service indicator



Drilling performance indicator

A

Amps

V

Volts



Alternating  
current

W

Watts

Hz

Hertz

$n_0$

Nominal speed  
under no load



Diameter

mm

Millimeters

**RPM**

Revolutions per  
minute

/min

Revolutions  
per minute

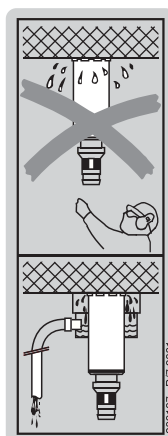
#### On the drill stand and the vacuum base plate



Upper: An additional means of securing the drill stand must be employed when the machine is used for horizontal drilling with the vacuum securing method.

Lower: Use of the vacuum securing method for overhead drilling with the drill stand is not permissible.

#### On the machine



Use of the water collection system in conjunction with a wet-type industrial vacuum cleaner is a mandatory requirement for working on ceilings.

#### Location of identification data on the machine

The type designation and serial number can be found on the type identification plate on the machine. Make a note of this data in your operating instructions and always refer to it when making an enquiry to your Hilti representative or service department.

Type: \_\_\_\_\_

Generation: 01 \_\_\_\_\_

Serial no.: \_\_\_\_\_

## 2. Description

### 2.1 Use of the product as directed

The DD 150-U is an electrically powered diamond core drilling machine for hand-guided wet and dry drilling of through holes or blind holes (e.g. anchor holes) and for wet drilling of through holes or blind holes in (reinforced) mineral materials with the machine mounted on a drill stand.

When mounted on the drill stand, the system must be adequately secured to the working surface with an anchor or vacuum base plate before use.

Drilling into materials that produce electrically conductive dust (e.g. magnesium) is not permissible.

Where possible, use a suitable industrial vacuum cleaner when working with the system, e.g. the Hilti VC 20-U/UM, VC 40-U/UM or VC 60-U.

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To avoid injury, use only genuine Hilti core bits and DD 150-U accessories.  
 Observe the safety rules and operating instructions for the accessories used.  
 Observe the information printed in the operating instructions concerning operation, care and maintenance.  
 Nationally applicable industrial safety regulations must be observed.  
 The machine, accessories and cutting tools may present hazards when handled incorrectly by untrained personnel or when used not as directed.  
 Use of the water collection system in conjunction with a wet-type industrial vacuum cleaner is a mandatory requirement for wet drilling overhead.  
 Use of the vacuum fastening method for overhead drilling is prohibited.  
 An additional means of securing the drill stand must be employed when the machine is secured with the vacuum base plate (accessory) for horizontal drilling.  
 Do not strike the base plate with a hammer or other heavy object when making adjustments to it.  
 Tampering with or modification of the machine, drill stand and accessories is strictly prohibited.

#### WARNING

**The machine may be operated only when connected to an adequately-rated electric supply equipped with an earth (ground) conductor.**

#### WARNING

**Drilling into materials hazardous to the health (e.g. asbestos) is not permissible.**

#### DANGER

**Use only the genuine Hilti accessories or ancillary equipment listed in the operating instructions.** Use of accessories or ancillary equipment not listed in the operating instructions may present a risk of personal injury.

### 2.2 Use of the machine with various items of equipment

With / without the drill stand	With / without the system	Core bit diameter	Drilling direction
Hand-guided / dry	With dust removal system	37...162 mm (1½"...6¼")	All directions
Hand-guided / wet	Without water collection system	8...132 mm (½"...5")	Not upwards
Hand-guided / wet	With water collection system	8...62 mm (½"...2½")	All directions
On drill stand / wet	Without water collection system	12...162 mm (½"...6¼")	Not upwards
On drill stand / wet	With water collection system	12...162 mm (½"...6¼")	All directions

### 2.3 Gears and corresponding core bit diameters

#### On drill stand, wet

Gear	Core bit diameters (mm)	Core bit diameters (inches)	Speed under no load /min
1	102...162	4...6¼	780
2	28...87	1⅞...3½	1,520
3	12...25	½...1	2,850

#### Hand-guided, wet

Gear	Core bit diameters (mm)	Core bit diameters (inches)	Speed under no load /min
1	121...131	4 $\frac{3}{4}$ ...5	780
2	41...111	1 $\frac{5}{8}$ ...4 $\frac{3}{8}$	1,520
3	8...36	1 $\frac{1}{2}$ ...1 $\frac{1}{2}$	2,850

#### Hand-guided, dry, HDM

Gear	Core bit diameters (mm)	Core bit diameters (inches)	Speed under no load /min
1	122...162	4 $\frac{3}{4}$ ...6 $\frac{1}{4}$	780
2	67...112	2 $\frac{5}{8}$ ...4 $\frac{1}{4}$	1,520
3	37...62	1 $\frac{1}{2}$ ...2 $\frac{1}{2}$	2,850

#### Hand-guided, dry, PCM

Gear	Core bit diameters (mm)	Core bit diameters (inches)	Speed under no load /min
1	52...162	2...6 $\frac{1}{4}$	780

#### 2.4 Status indicator

LED indicators	State	Description / information
Theft protection indicator (11)	Blinking yellow light	The machine's theft protection system is active and must be unlocked with the TPS key.
Service indicator (12)	Red light and the machine starts	The carbon brushes are badly worn. After the lamp lights for the first time, the machine may continue to be used for several hours before the automatic cut-out is activated. Have the carbon brushes changed in good time so that the machine is always ready for use.
	Red light and the machine doesn't start	The carbon brushes must be changed.
	Blinking red light	Temporary fault, see Troubleshooting section.
Drilling performance indicator (13) (only in conjunction with the drill stand)	Orange light	Contact pressure too low
	Green light	Optimum contact pressure
	Red light	Contact pressure too high

#### NOTE

When using the machine for hand-guided coring, the drilling performance indicator gives no indication of the optimum pressure.

#### 2.5 TPS theft protection system (optional)

The machine may be optionally equipped with the TPS theft protection system. If equipped with this feature, the machine can be unlocked and made ready for operation only through use of the corresponding TPS key.

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## 2.6 Items supplied as standard

- 1 Machine
- 1 Operating instructions
- 1 Hilti toolbox or cardboard box

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## 2.7 Using extension cords

Use only extension cords of a type approved for the application and with conductors of adequate gauge.

### Recommended minimum conductor gauge (cross section) and max. cable lengths

Conductor cross section	AWG12	AWG10
Mains voltage 120 V	75 ft	125 ft
Mains voltage 127 V	75 ft	125 ft

Do not use extension cords with AWG 14 gauge conductors. Use only extension cords equipped with an earth conductor.

## 2.8 Using a generator or transformer

This machine may be powered by a generator or transformer when the following conditions are fulfilled: The unit must provide a power output in watts of at least twice the value printed on the type identification plate on the machine. The operating voltage must remain within +5% and -15% of the rated voltage at all times, frequency must be in the 50 – 60 Hz range and never above 65 Hz, and the unit must be equipped with automatic voltage regulation and starting boost.

### NOTE

Switching other machines or appliances on and off can cause undervoltage and/or overvoltage peaks which could damage the machine. Never operate other machines from the generator/transformer at the same time.

## 3. Accessories

Designation	Short designation	Description
TPS theft protection system with company card, company remote and TPS-K key		Option
Water collection system (for use with the drill stand)		
Water collection system (for hand-guided drilling)		
Drill stand (with combination base plate and tilt mechanism)		
Drill stand with anchor base plate		
Vacuum base plate	DD-ST-120/160-VBP	
Depth gauge		
Hand wheel (lever)		
Hand wheel (star handle)		
Core bit extension (BI+)		
Jack screw		
Rota-Rail (column swivel)		

## 4. Technical data

Right of technical changes reserved.

### NOTE


The machine is available in various voltage ratings. Please refer to the machine's type identification plate for details of its rated voltage and rated input power.

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Rated voltage [V]	120	127
Rated current [A]	19.5	18.5
Mains frequency [Hz]	60	50/60
<b>Other information about the machine</b>		
Max. permissible water supply pressure	6 bar (87.02 psi)	
Drilling depth	450 mm	
Machine dimensions (L x W x H)	516 mm (20.31") x 129 mm (5.08") x 159 mm (6.26")	
Drill stand dimensions (L x W x H)	610 mm (24.02") x 250 mm (9.84") x 952 mm (37.48")	
Weight of machine	8.2 kg (18.08 lb)	
Weight of the DD-ST 150 drill stand with combination base plate and carriage	13.3 kg (29.32 lb)	
Rated speed under no load	780 /min (1st gear), 1520 /min (2nd gear), 2850 /min (3rd gear)	
Protection class	Protection class I (earthed)	

## 5. Safety instructions

### 5.1 General Power Tool Safety Warnings

- a)  **WARNING**  
**Read all safety warnings and 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.

#### 5.1.1 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.

#### 5.1.2 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.

### 5.1.3 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 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, clothing and gloves 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.

### 5.1.4 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 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.
- 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. 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.

### 5.1.5 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.

### 5.2 Drill safety warnings

- a) **Wear ear protectors when impact drilling.** 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 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.

### 5.3 Additional safety rules

#### 5.3.1 Personal safety



- a) **During hand-held use, always hold the machine securely with both hands on the grips provided. Keep the grips dry, clean and free from oil and grease.**
- b) **Check that the side handle is tightened securely.**
- c) **Assemble the parts of the mounting device correctly before attaching the machine.** In order to avoid the risk of collapse, it is important that the parts are assembled correctly.
- d) **Attach the machine to the mounting device securely before beginning use.** Movement of the machine on the mounting device could lead to loss of control.
- e) **Place the mounting device on a solid, flat and level surface.** If the mounting device can slip or wobble, the machine cannot be guided smoothly and safely.
- f) **Check the nature of the surface.** Rough surfaces may reduce holding power. Coatings or composite materials may pull away from the surface while you are working.
- g) **Do not overload the mounting device and do not use it as a substitute for a ladder or platform.** Overloading the mounting device or standing on it may shift its center of gravity to a higher position, causing it to tip over.
- h) **Respiratory protection must be worn if the machine is used without a dust extraction system for work that creates dust.**
- i) **Improve the blood circulation in your fingers by relaxing your hands and exercising your fingers during breaks between working.**
- j) **Avoid touching rotating parts. Switch the power tool on only after bringing it into position at the workpiece.** Touching rotating parts, especially rotating drill bits, discs or blades, etc. may lead to injury.
- k) **When using the equipment, always lead the supply cord, the extension cord and the water hose (if applicable) away from the machine to the rear.** This will reduce the risk of tripping and falling over the cord or hose while working.
- l) **Avoid skin contact with drilling slurry.**

- m) **Wear protective gloves when changing core bits.** The core bit may become hot during use.
- n) **Children must be instructed not to play with the machine.**
- o) **The machine is not intended for use by children, by debilitated persons or those who have received no instruction or training.**
- p) **WARNING: Some dust created by grinding, sanding, cutting and drilling contains chemicals known to cause cancer, birth defects, infertility or other reproductive harm; or serious and permanent respiratory or other injury.** Some examples of these chemicals are: lead from lead-based paints, crystalline silica from bricks, concrete and other masonry products and natural stone, arsenic and chromium from chemically-treated lumber. Your risk from these exposures varies, depending on how often you do this type of work. **To reduce exposure to these chemicals, the operator and bystanders should work in a well-ventilated area, work with approved safety equipment, such as respiratory protection appropriate for the type of dust generated, and designed to filter out microscopic particles and direct dust away from the face and body. Avoid prolonged contact with dust. Wear protective clothing and wash exposed areas with soap and water.** Allowing dust to get into your mouth, nose, eyes, or to remain on your skin may promote absorption of harmful chemicals.

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#### 5.3.2 Power tool use and care

- a) **Secure the workpiece. Use clamps or a vice to secure the workpiece.** The workpiece is thus held more securely than by hand and both hands remain free to operate the machine.
- b) **Check that the core bits used are compatible with the chuck system and that they are secured in the chuck correctly.**
- c) **Switch the machine off and unplug the supply cord in the event of a power failure or interruption in the electric supply.** This will prevent accidental restarting when the electric power returns.



### 5.3.3 Electrical safety



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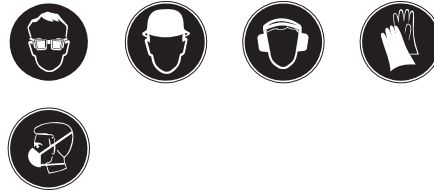
- a) **Before beginning work, check the working area (e.g. using a metal detector) to ensure that no concealed electric cables or gas and water pipes are present.** External metal parts of the machine may become live, for example, when an electric cable is damaged accidentally. This presents a serious risk of electric shock.
- b) **Never operate the machine without the supplied GFCI ground fault circuit interrupter (machines without GFCI: Never operate the machine without an isolating transformer). Test the GFCI each time before use.**
- c) **Check the machine's supply cord at regular intervals and have it replaced by a qualified specialist if found to be damaged. If the machine's supply cord is damaged it must be replaced with a specially-prepared supply cord available from Hilti Customer Service. Check extension cords at regular intervals and replace them if found to be damaged. Do not touch the supply cord or extension cord if damaged while working. Disconnect the supply cord plug from the power outlet. Damaged supply cords or extension cords present a risk of electric shock.**

### 5.3.4 Work area



- a) **Ensure that the workplace is well ventilated.** Exposure to dust at a poorly ventilated workplace may result in damage to the health.
- b) **Wear a protective mask during work that generates dust, e.g. dry drilling. Connect a dust removal system. Drilling in materials hazardous to the health (e.g. asbestos) is not permissible.**
- c) **Approval must be obtained from the site engineer or architect prior to beginning drilling work.** Drilling work on buildings and other structures may influence the statics of the structure, especially when steel reinforcing bars or load-bearing components are cut through.
- d) **It is recommended that rubber gloves and non-skid shoes are worn when working outdoors.**

### 5.3.5 Personal protective equipment



The user and any other persons in the vicinity must wear ANSI Z87.1-approved eye protection, a hard hat, ear protection, protective gloves and breathing protection while the machine is in use.

## 6. Before use



### CAUTION

The mains voltage must comply with the specification given on the type identification plate. Ensure that the power tool is disconnected from the electric supply.

### DANGER

When drilling through walls, cover the area behind the wall, as material or the core may fall out on the other side of the wall. When drilling through ceilings, secure (cover) the area below as drilled material or the core may drop out and fall down.

## **DANGER**

**Check that the drill stand is securely fastened to the work surface.**

## **CAUTION**

**Do not break the connection to earth by using an adaptor plug.**

### **6.1 Preparing for use**

## **CAUTION**

The machine and the diamond core bit are heavy. There is a risk of pinching parts of the body. **Wear a hard hat, protective gloves and safety boots.**

#### **6.1.1 Adjusting the side handle 4**

1. Release the side handle.
2. Pivot the side handle into the desired position.
3. Tighten the side handle securely by turning its grip.
4. Check to ensure that the side handle is tightened securely.

#### **6.1.2 Adjusting the depth gauge (when using the drill stand)**

1. Set the depth gauge to the desired depth.
2. Secure the depth gauge by tightening the clamping screw.

#### **6.1.3 Fastening the drill stand with an anchor 6 5**

## **WARNING**

**Use an anchor suitable for the material on which you are working and observe the anchor manufacturer's instructions.**

## **NOTE**

Use a metal expansion anchor (for example, a Hilti HKV M16) for fastening on uncracked concrete.

1. Set the anchor, of a type suitable for the material on which you are working, at the ideal distance from the center of the point where the hole is to be drilled (267 mm (10 ½") when using the anchor base plate or 292 mm (11 ½") when using the combination base plate). The anchor must be capable of taking up a tensile force of at least 12.6 kN (please refer to the anchor's specification).
2. Screw the clamping spindle into the anchor.
3. Place the drill stand base plate over the spindle and align it.

4. Screw the clamping nut onto the spindle but do not tighten it.
5. Level the base plate by turning the four leveling screws. Take care to ensure that the leveling screws make firm contact with the underlying surface.
6. Use a suitable open-end wrench to tighten the clamping nut on the clamping spindle.
7. Make sure that the drilling system is secured reliably.

#### **6.1.4 Fitting the hand wheel 7**

The hand wheel can be fitted on either side of the drill stand.

1. Fit the hand wheel onto the axle.
2. Secure the hand wheel.

#### **6.1.5 Mounting the machine on the drill stand 8 9 10 11 12 13**

## **CAUTION**

The locking pins on the drill stand must be in the open position and the carriage should be at the top of the column. The carriage must be locked in position.

1. Use the hand wheel to release the locking pin (turn counterclockwise) and then pull the locking pin out.
2. Engage the interface plate on the machine with the hooks on the drill stand.
3. Push the locking pin in and use the hand wheel to tighten it securely (turn clockwise).
4. Insert the switch locking device in the grip. The switch locking device can be used to lock the on/off switch in the "on" position for sustained operation.
5. Close the water valve on the side handle.
6. Connect the water supply

#### **6.1.6 Removing the machine from the drill stand**

## **DANGER**

**The machine must be disconnected from the electric supply.**

The carriage must be locked in position.

1. Close the water valve on the side handle.
2. Disconnect the water supply.
3. Remove the switch locking device from the grip.
4. Use the hand wheel to release the locking pin (turn counterclockwise).
5. Pull the locking pin out of the slot.

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6. Pivot the machine away from the drill stand.

#### 6.1.7 Fastening the drill stand by vacuum 14

##### DANGER

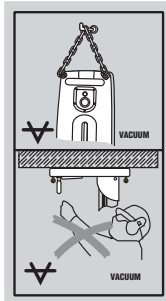
**en** Overhead drilling with the machine secured only by the vacuum base plate is not permissible.

##### CAUTION

Make yourself familiar with information contained in the operating instructions for the vacuum pump and follow these instructions before using it.

##### WARNING

Before beginning drilling and during operation it must be ensured that the pressure gauge indicator remains within the green area.



##### NOTE

Optional when using the drill stand with the anchor base plate: Screw the anchor base plate onto the vacuum base plate.

##### NOTE

Make sure that the anchor base plate lies flat against the vacuum base plate and that the two plates are securely connected. Make sure that the core bit selected for use will not damage the vacuum base plate.

1. Turn (retract) the 4 leveling screws until they project approx. 5 mm beneath the combination base plate or, respectively, the vacuum base plate.
2. Connect the vacuum pump to the vacuum connector on the combination base plate or vacuum base plate.
3. Locate the center point of the hole to be drilled.
4. Draw a line approximately 800 mm in length from the center of the hole to be drilled towards where the drill stand is to be positioned.

5. Make a mark on the line at a distance of 292 mm (11½") from the center of the hole to be drilled.
6. Switch on the vacuum pump and press the vacuum release valve.
7. Bring the mark on the combination base plate or vacuum base plate into alignment with the line.
8. Once the drill stand has been positioned correctly, release the vacuum release valve and press the base plate against the work surface.
9. Level and steady the combination base plate or vacuum base plate by turning the 4 leveling screws.
10. An additional means of securing the drilling system must be provided when drilling horizontally (e.g. a chain attached to an anchor, etc.).
11. Make sure that the drilling system is secured reliably.

#### 6.1.8 Securing the system with the quick-release brace (e.g. between floor and ceiling)

1. Extend the hole center indicator and use it to help bring the drill stand into position at the hole center.
2. Position the quick-release brace on the base plate (not on the level indicator or pressure gauge).
3. Apply slight pressure to the base plate by adjusting the quick-release brace.
4. Use the four leveling screws to level the base plate. The bubble level on the base plate indicates when the base plate is level.
5. Tighten the quick-release brace securely.
6. Check to ensure that the drill stand is secure.

#### 6.1.9 Fastening the drill stand with the jack screw

1. Fit the jack screw at the top end of the rail.
2. Position the drill stand on the work surface.
3. Level the base plate by turning the four leveling screws.
4. Secure the base plate by tightening the jack screw.
5. Check to ensure that the machine is fastened securely.

#### 6.1.10 Adjusting the drilling angle when using the drill stand with combination base plate 15 16 17

(in 7.5° increments; adjustable to max. 45°)



#### CAUTION

There is a risk of crushing the fingers in the pivot mechanism. **Wear protective gloves.**

1. At the foot of the drill stand, release the adjusting lever until the sliding nuts are disengaged.
2. Adjust the column to the desired angle.
3. Tighten the adjusting lever until the sliding nuts are fully engaged and the column is again secured in position.

#### 6.1.11 Connecting the vacuum removal system 18

1. Unscrew the cover from the water swivel / suction head.
2. Push the suction hose into the suction hose connector.
3. Close the water valve on the side handle.

#### 6.1.12 Fitting the water connection 19

##### CAUTION

**Regularly check the hoses for damage and make sure that the maximum permissible water supply pressure of 6 bar is not exceeded.**

##### CAUTION

**Make sure that the hose doesn't come into contact with rotating parts.**

##### CAUTION

**Make sure that the hose is not pinched and damaged as the carriage advances.**

##### CAUTION

**Max. water temperature: 40°C.**

##### CAUTION

**Check the water supply system to ensure there are no leaks.**

##### NOTE

To avoid damage to the components, use only fresh water containing no dirt particles.

1. Close the cover on the water swivel / suction head.
2. Connect the water regulator to the machine.
3. Connect the water supply (hose coupling).

#### 6.1.13 Fitting the water collection system (accessory) 20

##### WARNING

**Use of the water collection system in conjunction with a wet-type industrial vacuum cleaner is a mandatory requirement for work on ceilings. The machine must be positioned at an angle of 90° to the ceiling. The seal used must be of the correct size for the diamond core bit diameter.**

##### NOTE

Use of the water collection system allows water to be led away in controlled fashion, thus avoiding a mess or damage to the surrounding area. Best results are achieved with a wet-type industrial vacuum cleaner.

1. Release the screw at the front of the rail.
2. Push the water collector holder into position.
3. Fit the screw and tighten it.
4. Fit the water collector between the two movable arms of the water collector holder.
5. Press the water collector against the work surface by turning the two screws on the water collector holder.
6. Connect a wet-type industrial vacuum cleaner to the water collector or fit a length of hose through which the water can drain away.

#### 6.1.14 Fitting the diamond core bit 21



##### DANGER

**To avoid injury, use only genuine Hilti core bits and DD 150-U accessories. If using a machine with a BI+ chuck, only genuine Hilti core bits may be used with it.**

##### CAUTION

The core bit may become hot during use or during sharpening. There is a risk of burning your hands. **Wear protective gloves when changing the core bit.**

##### CAUTION

**Disconnect the supply cord plug from the power outlet.**

##### NOTE

If using an alternative type of chuck, lock the drive spindle with a suitable open-end wrench and use

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another suitable open-end wrench to tighten the core bit.

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1. Engage the carriage locking system with the channel and check that the channel is securely fastened.
2. Open the chuck (BI+) by turning it in the direction of the open brackets symbol.
3. Push the diamond core bit into the chuck (BI+) from below, turning the core bit until the teeth in the chuck engage with the core bit.
4. Close the chuck (BI+) by turning it in the direction of the closed brackets symbol.
5. Check that the diamond core bit is securely mounted in the chuck by pulling on the core bit and attempting to move it from side to side.

#### 6.1.15 Selecting the speed 22

##### CAUTION

**Do not change gear while the machine is running. Wait for the spindle to come to a halt.**

1. Set the switch to the correct position according to the core bit diameter used (see Section 2.3). When turning the switch, rotate the core bit by hand at the same time until the switch can be engaged in the recommended position.

#### 6.1.16 Removing the diamond core bit



##### CAUTION

The core bit may become hot during use or during sharpening. There is a risk of burning your hands.

**Wear protective gloves when changing the core bit.**

##### CAUTION

**Disconnect the supply cord plug from the power outlet.**

##### NOTE

If using an alternative type of chuck, lock the drive spindle with a suitable open-end wrench and use another suitable open-end wrench to release the core bit.

1. Engage the carriage locking system with the channel and check that the channel is securely fastened.
2. Open the chuck (BI+) by turning it in the direction of the open brackets symbol.
3. Pull the sleeve on the chuck in the direction of the arrow towards the machine. This releases the core bit.
4. Remove the core bit.

## 7. Operation



##### WARNING

**Take care to ensure that the supply cord and water or vacuum cleaner hoses do not come into contact with rotating parts.**

##### WARNING

**Make sure that the supply cord is not pinched and damaged as the carriage advances.**

##### CAUTION

The machine and the drilling operation generate noise. **Wear ear protectors.** Excessive noise may damage the hearing.

##### CAUTION

The drilling operation may create dangerous splinters. Splintering material presents a risk of injury to the eyes and body. **Wear eye protection and a hard hat.**

##### CAUTION

**Do not change gear while the machine is running. Wait until the drive spindle has stopped rotating.**

## **WARNING**

When using a two-part hole-starting aid, do not allow the machine to run without contact with the work surface.

### **7.1 TPS theft protection system (optional)**

#### **NOTE**

The machine may be equipped with the optional theft protection system. If the machine is equipped with this feature, it can be unlocked and made ready for operation only with the corresponding TPS key.

#### **7.1.1 Unlocking the machine**

1. Connect the supply cord to the electric supply and press the "I" or "Reset" button on the ground fault circuit interrupter. The yellow theft protection indicator LED blinks. The machine is now ready to receive the signal from the TPS key.
2. Hold the TPS key or the TPS watch strap buckle against the lock symbol. The machine is unlocked as soon as the yellow theft protection indicator LED no longer lights.

**NOTE** If, for example, the electric supply is briefly interrupted due to a power failure or disconnected when moving to a different workplace, the machine remains ready for operation for approx. 20 minutes. In the event of a longer interruption, the TPS key must be used again to unlock the machine.

#### **7.1.2 Activation of the theft protection system for the machine**

#### **NOTE**

Further detailed information on activation and use of the theft protection system can be found in the operating instructions for the theft protection system.

### **7.2 Switching on and checking the ground fault circuit interrupter (PRCD)**

An isolating transformer must be used with machines not equipped with a PRCD.

1. Plug the machine's supply cord into an earthed/grounded power outlet.
2. Press the "I" or "Reset" button on the ground fault circuit interrupter (PRCD).  
The drilling performance indicator lights orange.
3. Press the "0" or "Test" button on the ground fault circuit interrupter (PRCD).  
The indicator must go out.

4. **WARNING** If the indicator continues to light, further operation of the machine is not permissible. Have the machine repaired by trained personnel using genuine Hilti spare parts.  
Press the "I" or "Reset" button on the ground fault circuit interrupter (PRCD).  
The indicator must light.

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### **7.3 Hand-guided dry drilling**

#### **NOTE**

If a considerable quantity of dust collects in the core bit this can cause the core bit to run out of balance. Remove the dust from the core bit.

#### **7.3.1 Dry drilling with dust removal**

#### **CAUTION**

When working, always lead the vacuum cleaner hose away to the rear of the machine so that it cannot come into contact with the core bit.

#### **CAUTION**

Please read the operating instructions for the vacuum cleaner for information about disposal of the material collected.

#### **NOTE**

To avoid electrostatic effects, use an anti-static vacuum cleaner.

#### **7.3.1.1 Fitting the hole-starting aid**

A different hole-starting aid is required for each core bit diameter.

Fit the hole-starting aid into the open end of the diamond core bit.

#### **7.3.1.2 Vacuum cleaner with power outlet for power tools**

#### **CAUTION**

Do not use slotted core bits when working with a dust removal system.

#### **NOTE**

The optional operations are to be carried out when the two-part hole starting aid is used.

1. Bring the side handle into the desired position and secure it (see Section 6.1.1).
2. Fit the hole-starting aid (optional operation).
3. Plug the machine's supply cord into the power outlet on the vacuum cleaner.
4. Plug the vacuum cleaner supply cord into the power outlet and press the "Reset" button or the "I" button on the PRCD (see Section 7.2).
5. Position the machine at the point where the hole is to be drilled (hole center).
6. Press the on / off switch on the machine.  
**NOTE** The vacuum cleaner starts with a delay after the machine is switched on. After switching the machine off, the vacuum cleaner continues to run for a short time before switching itself off.
7. When beginning drilling, apply only light pressure until the core bit has centered itself and then increase the pressure. Drill to a depth of 3-5 mm to form a guide kerf (optional operation).
8. Switch the machine off by releasing the on / off switch and then wait until the core bit has stopped rotating (optional operation).
9. Remove the hole-starting aid from the core bit (optional operation).
10. Position the core bit in the guide kerf and then press the on / off switch to continue drilling (optional operation).

#### 7.3.1.3 Vacuum cleaner without power outlet for power tools

##### CAUTION

**Do not use slotted core bits when working with a dust removal system.**

##### NOTE

The optional operations are to be carried out when the two-part hole starting aid is used.

1. Bring the side handle into the desired position and secure it (see Section 6.1.1).
2. Fit the hole-starting aid (optional operation).
3. Plug the vacuum cleaner's supply cord into the power outlet and switch the vacuum cleaner on.
4. Plug the machine's supply cord into the power outlet and press the "Reset" button or the "I" button on the PRCD (see Section 7.2).
5. Press the on / off switch on the machine.
6. When beginning drilling, apply only light pressure until the core bit has centered itself and then increase the pressure. Drill to a depth of 3-5 mm to form a guide kerf (optional operation).

7. Switch the machine off by releasing the on / off switch and then wait until the core bit has stopped rotating (optional operation).
8. Remove the hole-starting aid from the core bit (optional operation).
9. Position the core bit in the guide kerf and then press the on / off switch to continue drilling (optional operation).
10. Allow the vacuum cleaner to run for a few seconds after switching off the machine in order to ensure that the remaining dust is removed.

#### 7.3.2 Working without dust removal



##### NOTE

Use slotted core bits when drilling without a dust removal system.

##### NOTE

The optional operations are to be carried out when the two-part hole starting aid is used.

##### CAUTION

**Disconnect the machine from the power outlet before removing the core from the slotted core bit.**

##### DANGER

**Wear respiratory protection.**

##### NOTE

Dust is released in all directions. Drilling without a dust removal system, especially overhead drilling, is very unpleasant and optimum performance is not achieved. Overhead drilling without use of dust removal system is therefore not recommended. For dry coring it is recommended that the dust removal attachment and a suitable vacuum cleaner are always used.

1. Secure the side handle in the desired position.
2. Fit the hole-starting aid (optional operation).
3. Insert the supply cord plug in the power outlet and then press the "Reset" button or "I" button on the PRCD (if applicable).
4. Position the machine at the point where the hole is to be drilled (hole center).
5. Press the on / off switch on the machine.

6. When beginning drilling, apply only light pressure until the core bit has centered itself and then increase the pressure. Drill to a depth of 3-5 mm to form a guide kerf (optional operation).
7. Switch the machine off by releasing the on / off switch and then wait until the core bit has stopped rotating (optional operation).
8. Remove the hole-starting aid from the core bit (optional operation).
9. Position the core bit in the guide kerf and then press the on / off switch to continue drilling (optional operation).

#### 7.4 Hand-guided wet drilling without use of a water collection system



##### WARNING

Water must not be allowed to run over the motor and cover.

##### WARNING

A water collection system with wet-type vacuum cleaner must be used when drilling in an upwards direction.

##### NOTE

The optional operations are to be carried out when the two-part hole starting aid is used.

1. Bring the side handle into the desired position and secure it (see Section 6.1.1).
2. Fit the hole-starting aid (optional operation).

3. Plug the supply cord into the power outlet and press the "Reset" button or the "I" button on the PRCD.
4. Position the machine at the point where the hole is to be drilled (hole center).
5. Slowly open the water flow regulator until the desired volume of water is flowing.
6. Press the on/off switch on the machine.
7. When beginning drilling, apply only light pressure until the core bit has centered itself and then increase the pressure. Drill to a depth of 3-5 mm to form a guide kerf (optional operation).
8. Switch the machine off by releasing the on / off switch and then wait until the core bit has stopped rotating (optional operation).
9. Remove the hole-starting aid from the core bit (optional operation).
10. Position the core bit in the guide kerf and then press the on / off switch to continue drilling (optional operation).

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#### 7.5 Hand-guided wet drilling with use of a water collection system



##### WARNING

Water must not be allowed to run over the motor and cover.



### WARNING

A water collection system with wet-type vacuum cleaner must be used when drilling in an upwards direction.

### en NOTE

The optional operations are to be carried out when the two-part hole starting aid is used.

### NOTE

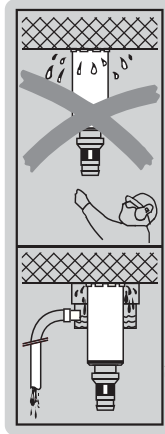
Start the wet-type vacuum cleaner manually before opening the water supply valve and switch it off again manually when the drilling operation is completed and after closing the water supply valve.

### NOTE

Do not use the power outlet on the vacuum cleaner.

1. If a water extraction system (vacuum cleaner) is used, switch it on.
2. Secure the side handle in the desired position.
3. Fit the hole-starting aid (optional operation).
4. Plug the supply cord into the power outlet and press the "Reset" button or the "I" button on the PRCD.
5. Position the machine at the point where the hole is to be drilled (hole center).
6. Slowly open the water flow regulator until the desired volume of water is flowing.  
The indicator on the side handle can be used to check the water flow.
7. Press the on/off switch on the machine.
8. When beginning drilling, apply only light pressure until the core bit has centered itself and then increase the pressure. Drill to a depth of 3-5 mm to form a guide kerf (optional operation).
9. Switch the machine off by releasing the on / off switch and then wait until the core bit has stopped rotating (optional operation).
10. Remove the hole-starting aid from the core bit (optional operation).
11. Position the core bit in the guide kerf and then press the on / off switch to continue drilling (optional operation).

### 7.6 Wet drilling using the drill stand 24 25



### WARNING

Water must not be allowed to run over the motor and cover.

### WARNING

A water collection system with wet-type vacuum cleaner must be used when drilling in an upwards direction.

### WARNING

Stop working if the vacuum removal system no longer functions.

### WARNING

The end stop screw must be fitted at the end of the guide rail when drilling in an upwards direction.

### CAUTION

Releasing the tilt mechanism on the drill stand may cause the column to tilt suddenly.

### NOTE

Start the wet-type vacuum cleaner manually before opening the water supply valve and switch it off again

manually when the drilling operation is completed and after closing the water supply valve.

#### NOTE

Do not use the power outlet on the vacuum cleaner.

1. Open the water flow regulator on the side handle slowly until the desired volume of water is flowing.  
The indicator on the side handle can be used to check the water flow.
2. Use the switch locking device to switch the machine on for sustained operation.  
The drilling performance indicator lights orange.
3. Release the carriage locking mechanism.
4. Turn the hand wheel until the diamond core bit is in contact with the work surface.
5. When beginning drilling, apply only light pressure until the core bit has centered itself and then increase the pressure.
6. Regulate the contact pressure while observing the drilling performance indicator.

**NOTE** The drilling performance indicator lights orange after switching on. Optimum drilling performance is achieved when the drilling performance indicator shows a green light. If the drilling performance indicator shows a red light, reduce the pressure applied to the core bit.

#### 7.7 Using the Rota-Rail (column swivel)

##### CAUTION

Do not use the Rota-Rail as a column extension.

The Rota-Rail allows quick and easy access to the hole being drilled, or to the core, with no need to partly or fully dismantle the system.

1. Switch the machine off.
2. Lock the carriage on the channel by engaging the carriage locking mechanism and check that it is securely attached.
3. Remove the end stop screw from the end of the rail.
4. Attach the Rota-Rail so that the toothed racks are facing the same direction.
5. Tighten the screw on the Rota-Rail securely.
6. Release the carriage lock and run the carriage along the rail onto the Rota-Rail.
7. Release the Rota-Rail fastening screw and pivot the machine with the Rota-Rail to the left or right to provide access to the hole being drilled.
8. Remove the core or change the core bit.

9. Pivot the machine back to its original position, tighten the Rota-Rail fastening screw securely and then run the carriage back onto the column of the drill stand in order to continue drilling.
10. After removing the Rota-Rail, refit the end stop screw to the end of the rail.

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#### 7.8 Procedure in the event of the core bit sticking

In the event of the core bit sticking, the clutch will slip until the user switches the power tool off. The core bit can be released by taking the following action:

##### 7.8.1 Using an open-end wrench to release the core bit

1. Disconnect the supply cord plug from the power outlet.
2. Grip the core bit with a suitable open-end wrench close to the connection end and release the core bit by rotating it.
3. Plug the machine's supply cord into the power outlet.
4. Resume the drilling operation.

##### 7.8.2 Using the hand wheel to release a core bit (when using the drill stand)

1. Disconnect the supply cord plug from the power outlet.
2. Release the core bit from the hole by turning it with the hand wheel.
3. Plug the machine's supply cord into the power outlet.
4. Resume the drilling operation.

#### 7.9 Dismantling

##### CAUTION

**Disconnect the supply cord plug from the power outlet.**

1. For instructions on removing the diamond core bit, please refer to the section "Removing the diamond core bit".
2. Remove the core if necessary.

#### 7.10 Disposing of drilling slurry

Please refer to the section "Disposal".

#### 7.11 Transport and storage

Open the water flow regulator before putting the machine into storage.

#### CAUTION

When temperatures drop below zero, check to ensure that no water remains in the power tool.

#### WARNING

Do not lift the machine and/or the drill stand by crane.

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## 8. Care and maintenance

#### CAUTION

Disconnect the supply cord plug from the power outlet.

#### 8.1 Care of cutting tools and metal parts

Remove any dirt adhering to the surface of cutting tools, the chuck and drive spindle and protect their surfaces from corrosion by rubbing them with an oily cloth from time to time.

Always keep the connection end clean and lightly greased.

#### 8.2 Care of the machine

#### CAUTION

Keep the machine, especially its grip surfaces, clean and free from oil and grease. Do not use cleaning agents which contain silicone.

The outer casing of the machine is made from impact-resistant plastic.

Never operate the machine when the ventilation slots are blocked. Clean the ventilation slots carefully using a dry brush. Do not permit foreign objects to enter the interior of the machine. Clean the outside of the machine at regular intervals with a slightly damp cloth. Do not use a spray, steam pressure cleaning equipment or running water for cleaning. This may negatively affect the electrical safety of the machine.

Clean the chuck and the clamping segments with a cloth at regular intervals and lubricate the parts with Hilti lubricant spray. Remove any particles of foreign matter from the chuck.

Remove the filter from the water inlet on the side handle occasionally and flush the filter mesh through with water in the direction opposite to the normal water flow.

If the water flow indicator is dirty, remove it from the machine and clean it as necessary. Do not use abrasive cleaning agents or sharp objects to clean the sight glass. This may adversely affect the functionality of the water flow indicator.

#### 8.3 Maintenance

#### WARNING

Repairs to the electrical section of the machine may be carried out only by trained electrical specialists.

Check all external parts of the power tool for damage at regular intervals and check that all controls operate faultlessly. Do not operate the power tool if parts are damaged or when the controls do not function faultlessly. If necessary, the power tool should be repaired by Hilti Service.

#### 8.4 Replacing the carbon brushes 26



#### NOTE

The indicator lamp with wrench symbol lights up when the carbon brushes need to be replaced.

#### DANGER

**The machine may be operated, serviced and repaired only by trained, authorized personnel. This personnel must be particularly informed of any possible hazards.** Failure to observe the following instructions may result in contact with dangerous electric voltage.

1. Disconnect the machine from the electric supply.
2. Open the carbon brush covers on the left-hand and right-hand side of the motor.
3. Take note of how the carbon brushes are fitted and how the conductors are positioned. Remove the worn carbon brushes from the machine.
4. Fit the new carbon brushes just as the old ones were fitted (spare part numbers: 100-127 V carbon brush set: 2006844, 220-240 V carbon brush set: 2006843).

**NOTE** Take care to avoid damaging the insulation on the indicator lead as you insert the brushes.

5. Close the carbon brush covers on the left-hand and right-hand side of the motor and tighten the retaining screws.
6. Allow the tool to run in for approx. 1 min. under no load.

**NOTE** After replacing the carbon brushes the indicator lamp will go out after the machine has run for approx. 1 minute.

#### 8.5 Checking the power tool after care and maintenance

After carrying out care and maintenance, check that all protective and safety devices are fitted and that they function faultlessly.

#### 8.6 Adjusting the play between rail and carriage

##### NOTE

Play between the rail and the carriage can be adjusted by turning the carriage play adjustment screws.

Use an Allen key to tighten the carriage adjustment screws to a torque of 5 Nm (finger-tight) and then turn the screws back  $\frac{1}{4}$  of a turn.

The carriage is correctly adjusted if it remains in position when no core bit is fitted but moves down under its own weight when a core bit is fitted.

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## 9. Troubleshooting

Fault	Possible cause	Remedy
The machine doesn't start.	Interruption in the electric supply.	Plug in another electric appliance and check whether it works. Check the plug connections, supply cords and extension cords, PRCD and electric supply.
	On/off switch defective.	If necessary, the power tool should be repaired by Hilti Service.
	Interruption in the electric supply.	Check the supply cord, extension cord, supply cord plug, PRCD and have them replaced by a qualified electrician if necessary.
	The electronics are defective.	The machine should be repaired by Hilti Service.
	Water in the machine.	Dry the machine. The machine should be repaired by Hilti Service.
The service indicator lights.	The carbon brushes are worn; the machine will continue to run for a few hours.	The carbon brushes should be changed. See section: 8.4 Replacing the carbon brushes <a href="#">26</a>
The machine doesn't start and the service indicator lights.	The carbon brushes are worn.	Replace the carbon brushes. See section: 8.4 Replacing the carbon brushes <a href="#">26</a>
The machine doesn't start, carbon brushes have been changed, service indicator lights.	A fault has occurred in the power tool.	If necessary, the power tool should be repaired by Hilti Service.

<b>Fault</b>	<b>Possible cause</b>	<b>Remedy</b>
The machine doesn't run and the service indicator blinks.	The machine has overheated.	Wait a few moments until the motor has cooled down or allow it to run under no load in order to speed up the cooling-down process.
	Overload error.	Switch the machine off and on again.
The machine doesn't start, theft protection indicator blinks yellow.	The power tool has not been unlocked (tools with optional theft protection system).	Use the TPS key to unlock the power tool.
The motor runs. The diamond core bit doesn't rotate.	Gear selector doesn't engage.	Move the gear selector until felt to engage.
	The gearing is defective.	If necessary, the machine should be repaired by Hilti Service.
Drilling speed drops.	The diamond core bit is polished.	Sharpen the diamond core bit on a sharpening plate with water flowing.
	The diamond core bit is polished.	The wrong type of core bit has been used. Seek advice from Hilti.
	Water pressure / flow rate too high.	Reduce the water flow rate by adjusting the flow regulator.
	The core is stuck in the core bit.	Remove the core.
	Maximum drilling depth is reached.	Remove the core and use a core bit extension.
	The diamond core bit is defective.	Check the diamond core bit for damage and replace it if necessary.
	The slip clutch is disengaging prematurely or slipping.	If necessary, the machine should be repaired by Hilti Service.
	The carriage is locked.	Unlock the carriage.
	The water flow rate is too low.	Adjust (open) the water flow regulator. Check the water supply.
The motor cuts out.	The machine has stalled.	Guide the machine straight.
	The machine is too hot. The motor overheating protection system has been activated.	Relieve the load on the machine and press the switch several times to restart.
	The electronics are defective.	The machine should be repaired by Hilti Service.
	The cooling fan is defective.	The machine should be repaired by Hilti Service.
The handwheel turns but doesn't engage.	The retaining pin is broken.	Fit a new retaining pin.
Water escapes at the water swivel or gear housing.	The water pressure is too high.	Reduce the water pressure.
	The shaft seal is defective.	The machine should be repaired by Hilti Service.
No water flows.	The filter or water flow indicator is blocked.	Remove the filter or water flow indicator and flush it through.

Fault	Possible cause	Remedy
The diamond core bit cannot be fitted into the chuck.	The core bit connection end or chuck is dirty or damaged.	Clean the connection end /chuck or replace if necessary.
Water escapes from the chuck during operation.	The core bit is not screwed securely into the chuck.	Tighten it securely.
	The core bit connection end / chuck is dirty.	Clean the connection end / chuck.
	The chuck or connection end seal is defective.	Check the seal and replace it if necessary.
Excessive play in the drilling system.	The core bit is not screwed securely into the chuck.	Tighten it securely.
	The leveling screws or clamping spindle are not tightened.	Tighten the leveling screws or clamping spindle.
	Excessive play at the carriage.	Adjust the play between rail and carriage. See section: 8.6 Adjusting the play between rail and carriage
	The core bit connection end is defective.	Check the connection end and replace it if necessary.

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## 10. Disposal



Most of the materials from which Hilti machines or appliances are manufactured can be recycled. The materials must be correctly separated before they can be recycled. In many countries, Hilti has already made arrangements for taking back old machines and appliances for recycling. Ask Hilti customer service or your Hilti representative for further information.

### Recommended pretreatment for disposal of drilling slurry

#### NOTE

The disposal of drilling slurry directly into rivers, lakes or the sewerage system without suitable pretreatment presents environmental problems. Ask the local public authorities for information about current regulations.

1. Collect the drilling slurry (e.g. using a wet-type industrial vacuum cleaner)
2. Allow the drilling slurry to settle and dispose of the solid material at a construction waste disposal site (the addition of a flocculent may accelerate the separation process).
3. The remaining water (alkaline, pH value > 7) must be neutralized by the addition of an acidic neutralizing agent or diluted with a large volume of water before it is allowed to flow into the sewerage system.

### Recommended pretreatment for disposal of drilling slurry

#### NOTE

From the environmental and health point of view, the disposal of drilling dust can be problematic. Ask the local public authorities for information about current regulations.

## 11. Manufacturer's warranty

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Hilti warrants that the tool supplied is free of defects in material and workmanship. This warranty is valid so long as the tool is operated and handled correctly, cleaned and serviced properly and in accordance with the Hilti Operating Instructions, and the technical system is maintained. This means that only original Hilti consumables, components and spare parts may be used in the tool.

This warranty provides the free-of-charge repair or replacement of defective parts only over the entire lifespan of the tool. Parts requiring repair or replacement as a result of normal wear and tear are not covered by this warranty.

**Additional claims are excluded, unless stringent national rules prohibit such exclusion. In particular, Hilti is not obligated for direct, indirect, incidental or consequential damages, losses or expenses in connection with, or by reason of, the use of, or inability to use the tool for any purpose. Implied warranties of merchantability or fitness for a particular purpose are specifically excluded.**

For repair or replacement, send the tool or related parts immediately upon discovery of the defect to the address of the local Hilti marketing organization provided.

This constitutes Hilti's entire obligation with regard to warranty and supersedes all prior or contemporaneous comments and oral or written agreements concerning warranties.



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