

HILTI

DD 120

Operating instructions

en

Mode d'emploi

fr

Kullanma Talimatı

tr

دليل الاستعمال

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取扱説明書

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사용설명서

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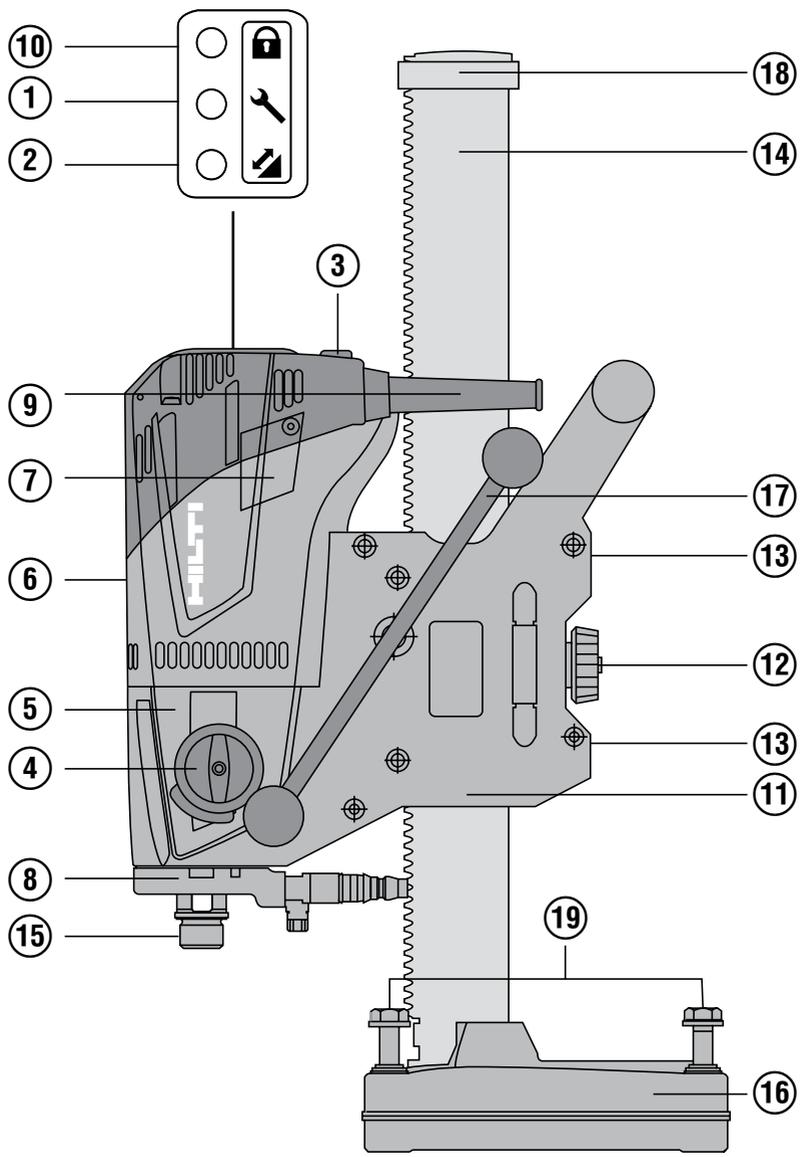
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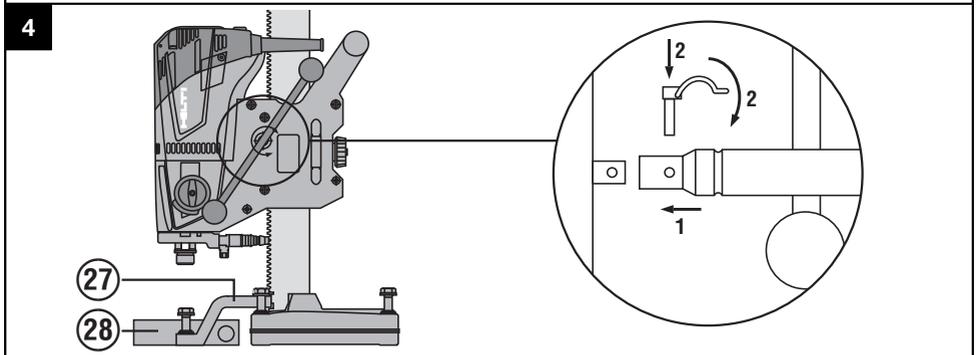
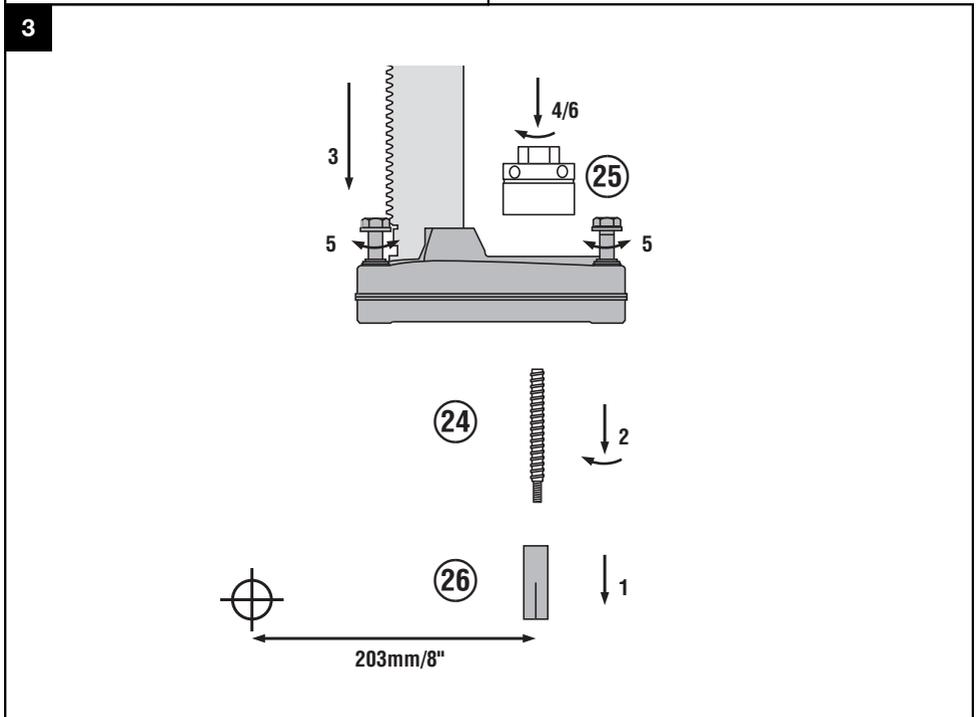
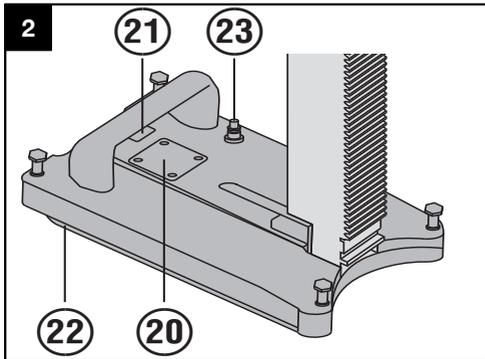
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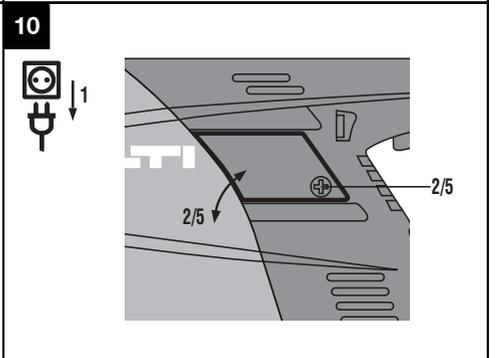
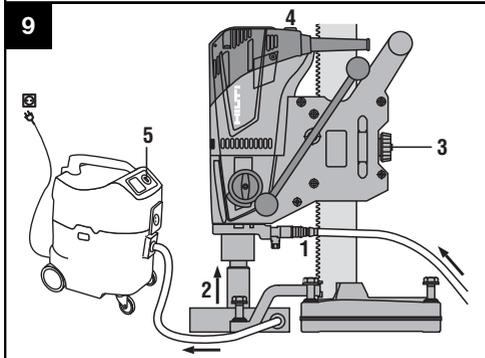
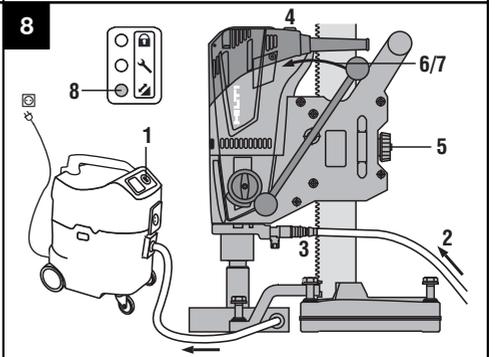
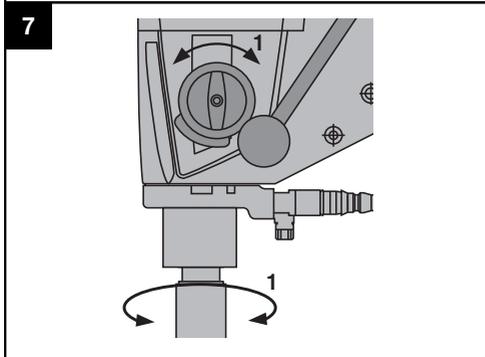
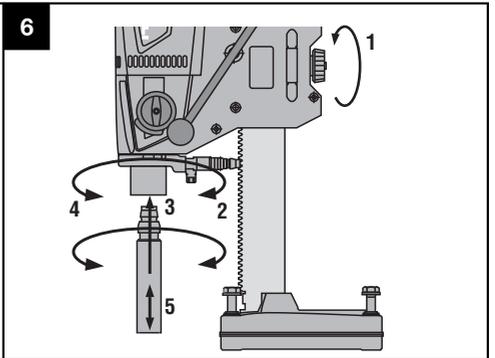
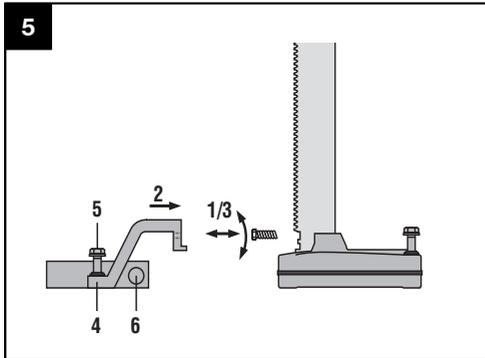
操作說明書

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ORIGINAL OPERATING INSTRUCTIONS

DD 120 diamond coring system

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 illustrations. You can find the illustrations at the beginning of the operating instructions.

In these operating instructions, the designation “the machine” always refers to the DD 120 diamond core drilling system.

Operating controls, parts and indicators (drive unit and drill stand) 1

DD 120 diamond core drilling system

- ① Service indicator

- ② Drilling performance indicator
- ③ On/off switch
- ④ Gear selector
- ⑤ Gearing section
- ⑥ Motor
- ⑦ Carbon brush cover
- ⑧ Water swivel
- ⑨ Supply cord with PRCD
- ⑩ Theft protection indicator (option)
- ⑪ Carriage
- ⑫ Carriage brake
- ⑬ Carriage play adjustment screws
- ⑭ Rail
- ⑮ Chuck
- ⑯ Anchor base plate
- ⑰ Handwheel
- ⑱ End stop
- ⑲ Leveling screws

Alternative: Combination base plate (anchor or vacuum) 2

- ⑳ Pressure gauge
- ㉑ Vacuum release valve
- ㉒ Vacuum seal
- ㉓ Vacuum hose connector

Accessories 3

Fastening accessories

- ㉔ Clamping spindle
- ㉕ Clamping spindle nut
- ㉖ Anchor

Water collection system 4

- ㉗ Water collector bracket
- ㉘ Water collector

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.



Read the operating instructions before use.

Symbols

/min

Revolutions per minute



Lock symbol

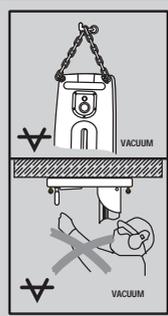


Equipped with theft protection system



Return materials for recycling

On the combination 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.

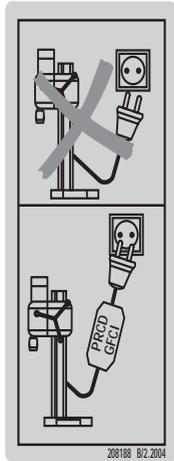
Lower: Use of the vacuum securing method for overhead drilling with the drill stand is not permissible.

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.

On the machine



Operate the system only with a properly functioning PRCD.

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: _____

Serial no.: _____

en

2 Description

2.1 Use of the product as directed

The DD 120 is an electrically-powered, rig-type diamond core drilling machine for drilling through-holes and blind holes in (reinforced) mineral materials using diamond core bits and the wet drilling technique (hand-held use is not permissible).

The machine must be adequately secured to the working surface with an anchor or vacuum base plate before use.

To avoid injury, use only genuine Hilti core bits and DD 120 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.

Observe the national health and safety requirements.

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 working overhead.

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 not permissible.

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 system with various items of equipment

Equipment	Core bit diameters	Drilling direction
With water collection system and wet-type industrial vacuum cleaner	16...132 mm (162*)	All directions
Without water collection system and wet-type industrial vacuum cleaner	16...132 mm (162*)	Not upwards
With water collection system	16...132 mm (162*)	Not upwards

* The machine's drilling diameter capacity can be found on the rating plate.

2.3 Gears and corresponding core bit diameters

Gear	Core bit diameters (mm)	Core bit diameters (inches)	No-load speed (r.p.m.)
1	57...132	2¼...5¼	650
2	16...52	⅝...2	1,380

* The machine's drilling diameter capacity can be found on the rating plate.

NOTE

Second gear may be used to achieve faster progress when drilling holes up to 82 mm (3½") in diameter in lightly reinforced concrete.

2.4 Status indicator 1

LED indicators	State	Description / information
Theft protection indicator (10)	Blinking yellow light	The machine's theft protection system is active and must be unlocked with the TPS key.
Service indicator (1)	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	Motor speed error, see section "Troubleshooting".
Drilling performance display (2)	Orange light	Contact pressure too low
	Green light	Optimum contact pressure
	Red light	Contact pressure too high
	Blinking red light	The machine has temporarily overheated, see section "Troubleshooting".

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.

2.6 The items supplied as standard include:

- 1 Machine including hand wheel
- 1 Operating instructions
- 1 Hilti toolbox or cardboard box

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	1.5 mm ²	2 mm ²	2.5 mm ²	3.5 mm ²
Mains voltage 100V	Not recommended	Not recommended	Not recommended	40 m
Mains voltage 110-120 V	Not recommended	Not recommended	30 m	
Mains voltage 220-240 V	30 m		50 m	

Do not use extension cords with 1.25 mm² 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	Item number, description
TPS theft protection system with company card, company remote and TPS-K key	Option
Water collector bracket	331622
Flow indicator (BI+)	305939
Handwheel (lever)	332023
Handwheel (star handle)	332033
Clamping nut	333477
Clamping spindle	333629
Set of seals for combination base plate	333846
Leveling screw	351954
Core bit extension (BI+)	220929
Drill stand (anchor base plate, 600 mm rail, only as replacement part)	334206
Drill stand (anchor base plate, 720 mm rail)	352164
Drill stand (anchor base plate, 830 mm rail, only as replacement part)	277337
Drill stand (anchor base plate, 720 mm rail with tilt mechanism)	335883
Drill stand (combination base plate, 830 mm rail with tilt mechanism)	335896
Vacuum base plate	232991

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.

Rated voltage [V]	100	110	110	120	220	230	240
Rated power [W]	1,450	1,600	1,570		1,600	1,600	1,600
Rated current [A]	15	15.4	15	14.1	7.7	7.4	7.1
Mains frequency [Hz]	50...60	50	60	60	50/60	50...60	50
Rated speed under no load, 1st gear [/min]	650	650	650	650	650	650	650
Rated speed under no load, 2nd gear [/min]	1,380	1,380	1,380	1,380	1,380	1,380	1,380

Other information about the machine

Max. permissible water supply pressure	6 bar
Dimensions of drill stand with short rail (L x W x H)	330 mm x 147 mm x 600 mm
Dimensions of drill stand with medium rail (L x W x H)	330 mm x 147 mm x 720 mm
Dimensions of drill stand with long rail (L x W x H)	330 mm x 147 mm x 830 mm
Weight (600 mm rail)	9.8 kg
Protection class	Protection class I (earthed)

NOTE

The vibration emission level given in this information sheet has been measured in accordance with a standardised test given in EN 61029 and may be used to compare one tool with another. It may be used for a preliminary assessment of exposure. The declared vibration emission level represents the main applications of the tool. However if the tool is used for different applications, with different accessories or poorly maintained, the vibration emission may differ. This may significantly increase the exposure level over the total working period. An estimation of the level of exposure to vibration should also take into account the times when the tool is switched off or when it is running but not actually doing the job. This may significantly reduce the exposure level over the total working period. Identify additional safety measures to protect the operator from the effects of vibration such as: maintain the tool and the accessories, keep the hands warm, organisation of work patterns.

Noise and vibration information (measured in accordance with EN 61029-1)

Typical A-weighted sound power level	102 dB (A)
Typical A-weighted sound pressure level	89 dB (A)
Uncertainty for the given sound level	3 dB (A)

Total triaxial vibration values (vibration vector sum) at the hand wheel (star handle)

Drilling in concrete (wet), a_h	2.5 m/s ²
Uncertainty (K)	1.5 m/s ²

5 Safety instructions

5.1 Basic information concerning safety

- CAUTION: The following basic safety instructions must be followed when using electric tools or machines to ensure protection against electric shock, risk of injury and fire hazards.**
- Read all instructions before using this electric tool or machine and keep the safety instructions in a safe place.**

5.1.1 Proper organization of the work area



- 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.
- Ensure that the workplace is well lit.**
- Ensure that the workplace is well ventilated.** Exposure to dust at a poorly ventilated workplace may result in damage to the health.

- Keep the workplace tidy. Objects which could cause injury should be removed from the working area.** Untidiness at the workplace can lead to accidents.
- 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.**
- Wear personal protective equipment. Wear eye protection.**
- Wear respiratory protection if the work causes dust.**
- Dress properly for the work. Do not wear loose clothing or jewelry as it could be caught in moving parts. Contain long hair.**
- It is recommended that rubber gloves and non-skid shoes are worn when working outdoors.**
- Keep children away. Keep other persons away from the working area.**
- Children must be instructed not to play with the machine.**
- The machine is not intended for use by children, by debilitated persons or those who have received no instruction or training.**

- m) Do not allow other persons to touch the machine or the extension cord.
- n) Avoid unfavorable body positions. Make sure you work from a safe stance and stay in balance at all times.
- o) Always lead the supply cord, extension cord and power hose away from the tool or machine to the rear to prevent a tripping hazard while working.
- p) Keep the supply cord, extension cord, suction hose and vacuum hose away from rotating parts.
- q) **CAUTION:** Before beginning drilling, check that there are no live electric cables located in the base material.
- r) Concealed electric cables or gas and water pipes present a serious hazard if damaged while you are working. Accordingly, check the area in which you are working beforehand (e.g. using a metal detector). External metal parts of the machine may become live, for example, when an electric cable is damaged accidentally.
- s) Do not work from a ladder.

5.1.2 General safety rules



- a) Use the right tool or machine for the job. Do not use the tool or machine for purposes for which it was not intended. Use it only as directed and when in faultless condition.
- b) 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.
- c) 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.
- d) Take the influences of the surrounding area into account. Do not expose the machine to rain or snow and do not use it in damp or wet conditions. Do not use the machine where there is a risk of fire of explosion. Electric tools and machines generate sparks which may ignite dust or gas.
- e) Keep the grips dry, clean and free from oil and grease.
- f) Do not overload the machine. It will work more efficiently and more safely within its intended performance range.
- g) 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.
- h) Never leave the machine unattended.
- i) Store machines in a secure place when not in use. When not in use, machines must be stored in a dry, high place or locked away out of reach of children.
- j) Avoid unintentional starting. Check that the on / off switch is in the off-position before plugging the supply cord into the power outlet.
- k) Always disconnect the supply cord from the electric supply when the machine is not in use (e.g. during breaks between working), before making adjustments, before carrying out care and maintenance and before changing core bits. This safety precaution prevents the machine starting unintentionally.
- l) Never operate the machine without the supplied PRCD (GB version: Never operate the machine without an isolating transformer). Test the PRCD each time before use.
- m) Look after cutting tools carefully. Keep the cutting tools sharp and clean. This will allow you to work more efficiently and more safely.
- n) 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.
- o) Check the machine and its accessories for any damage. Guards, safety devices and any slightly damaged parts must be checked carefully to ensure that they function faultlessly and as intended. Check that moving parts function correctly without sticking and that no parts are damaged. All parts must be fitted correctly and fulfill all conditions necessary for correct operation of the machine. Damaged guards, safety devices and other parts must be repaired or replaced properly at an authorized service center unless otherwise indicated in the operating instructions.
- p) Avoid skin contact with drilling slurry.
- q) 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.
- r) Dust from material such as paint containing lead, some wood species, minerals and metal may be harmful. Contact with or inhalation of the dust may cause allergic reactions and/or respiratory diseases to the operator or bystanders. Certain kinds of dust are classified as carcinogenic such as oak and beech dust especially in conjunction with additives for wood conditioning (chromate, wood preservative). Material containing asbestos must only be treated by specialists. Where the use of a dust extraction device is possible it shall be used. To achieve a high level of dust collection, use a suitable vacuum cleaner of the type recommended by Hilti for wood dust and/or mineral dust together with this tool. Ensure that the workplace is well ventilated. The use of a dust mask of filter class P2 is recommended. Follow national requirements for the materials you want to work with.

5.1.3 Mechanical



- a) Follow the instructions concerning care and maintenance.
- b) Follow the instructions concerning lubrication and changing core bits.
- c) Check that the core bits used are compatible with the chuck system and that they are secured in the chuck correctly.
- d) Make sure that the machine is correctly and securely mounted on the drill stand.
- e) Do not touch rotating parts.
- f) Check that all the clamping screws are correctly tightened.
- g) Make sure that the cover with built-in end stop is always fitted to the drill stand. The safety-relevant end-stop function becomes inoperative if this component is not fitted.

5.1.4 Electrical



- a) Protect yourself from electric shock. Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.
- b) Check the machine's supply cord at regular intervals and have it replaced by a qualified specialist if found to be damaged. Check extension cords at regular intervals and replace them if found to be damaged.
- c) Check the condition of the machine and its accessories. Do not operate the machine and its accessories if damage is found, if the machine is incomplete or if its controls cannot be operated faultlessly.
- d) Do not touch the supply cord or extension cord if it is damaged while working. Disconnect the supply cord plug from the power outlet.
- e) Damaged or faulty switches must be replaced at a Hilti service center. Do not use the machine if it cannot be switched on and off correctly.
- f) Have the machine repaired by an electrical specialist (Hilti Service) using genuine Hilti spare parts. The users may otherwise be exposed to potential hazards.
- g) Do not use the supply cord for purposes for which it is not intended. Never carry the machine by the supply cord. Never pull the plug out of the power outlet by pulling the supply cord.

- h) Do not expose the supply cord to heat, oil or sharp edges.
- i) When working outdoors, use only extension cords that are approved and correspondingly marked for this application.
- j) In case of an interruption in the electric supply: Switch the machine off and unplug the supply cord.
- k) Avoid using extension cords with multiple power outlets and the simultaneous use of several electric tools or machines connected to one extension cord.
- l) Never operate the machine when it is dirty or wet. Dust (especially dust from conductive materials) or dampness adhering to the surface of the machine may, under unfavorable conditions, lead to electric shock. Dirty or dusty machines should thus be checked at a Hilti service center at regular intervals, especially if used frequently for working on conductive materials.

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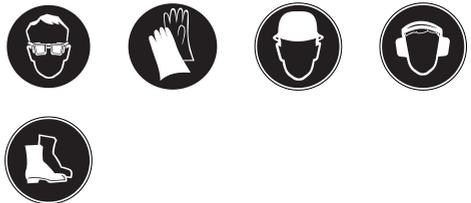
5.1.5 Thermal

Wear protective gloves when changing core bits. The core bit may become hot during use.

5.1.6 Requirements to be met by users

- a) The machine is intended for professional use.
- b) The machine may be operated, serviced and repaired only by authorized, trained personnel. This personnel must be informed of any special hazards that may be encountered.
- c) 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.
- d) Improve the blood circulation in your fingers by relaxing your hands and exercising your fingers during breaks between working.

5.1.7 Personal protective equipment



The user and any other persons in the vicinity must wear suitable eye protection, a hard hat, ear protection, protective gloves and safety footwear while the machine is in use.

6 Before use



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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 base material.

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 Fitting the handwheel 4

NOTE

The handwheel may be fitted on the left-hand or right-hand side of the carriage.

1. Fit the handwheel onto the shaft on the left-hand or right-hand side of the carriage.
2. Secure the handwheel with the retaining pin.

6.1.2 Fastening the drilling system with an anchor 3

WARNING

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

NOTE

Hilti M12 metal expansion anchors are usually suitable for fastening diamond core drilling equipment to uncracked concrete. Under certain conditions it may be necessary to use an alternative fastening method. Please contact Hilti Technical Service if you have any questions about secure fastening.

1. Set the anchor that is suitable for the material on which you are working at the (ideal) distance of 203 mm (8") from the center of the hole to be drilled.
2. Screw the clamping spindle (accessory) into the anchor.
3. Place the drill stand base plate over the spindle and align it.
4. Screw the clamping nut (accessory) 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 19 mm AF open-end wrench to tighten the clamping nut on the clamping spindle.
7. Make sure that the drilling system is secured reliably.

6.1.3 Fastening the drill stand with the vacuum base plate

DANGER

A coated, laminated, rough or uneven surface may significantly reduce the effectiveness of the vacuum system. **Check whether the surface is suitable for use of the vacuum method to fasten the drill stand.**

DANGER

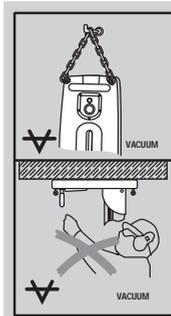
Overhead drilling with the machine secured only by the vacuum base plate is not permissible.

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

When using the vacuum base plate: Screw the anchor base plate onto 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 connector of the combination base plate to the vacuum pump.
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 203 mm (8") 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 base material.
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.

6.1.4 Adjusting the drilling angle (optional for rails with tilt mechanism)



CAUTION

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

1. Release the screw on the rail tilt mechanism.
2. Adjust the rail to the desired angle.
3. Retighten the screw securely.

6.1.5 Fitting the water connection

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

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

NOTE

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

NOTE

A flow meter (accessory) may be fitted between the machine's water supply connector and the water supply hose.

1. Connect the water regulator to the machine.
2. Connect the water supply (hose coupling).

6.1.6 Fitting the water collection system (accessory)

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 hexagon-head screw at the front of the rail.
2. Push the water collector holder into position.
3. Fit the hexagon-head screw and tighten it.
4. Fit the water collector between the two moveable arms of the water collector holder.
5. Press the water collector against the base material 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.

6.1.7 Fitting the diamond core bit



DANGER

Do not use damaged core bits. Check the core bits for chipping, cracks, or heavy wear each time before use. Do not use damaged tools. Fragments of the workpiece or a broken core bit may be ejected and cause injury beyond the immediate area of operation.

NOTE

Diamond core bits must be replaced when the cutting performance and/or rate of drilling progress drops significantly. This generally is the case when the segments reach a height of less than 2 mm.

DANGER

To avoid injury, use only genuine Hilti core bits and DD 120 accessories. If using a machine with a BI+ chuck, only genuine Hilti core bits may be used with it.

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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.**

DANGER

Fitting and positioning the core bit incorrectly can lead to hazardous situations as this may cause parts to break and fly off. **Check that the core bit is seated correctly.**

CAUTION

Disconnect the supply cord plug from the power outlet.

NOTE

C-Rod, A-Rod, M27, and BR chucks are operated with a 27 mm AF open-end wrench.

1. Use the carriage brake to lock the carriage in position on the rail and check that the system components are securely mounted.
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.

6.1.8 Selecting the speed 7

CAUTION

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

1. Set the selector switch according to the core bit diameter used. Turn the selector switch to the recommended setting (see section "Description") while rotating the core bit by hand.

6.1.9 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 a C-Rod, A-Rod, M27 or BR chuck, lock the drive shaft with an M27 open-end wrench and use a suitable open-end wrench to release the core bit.

1. Turn the carriage brake lever to lock the carriage on the rail. Check that it is mounted securely.
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

Make sure that the supply cord does 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

Drilling may cause hazardous flying fragments. Flying fragments present a risk of injury to the eyes and body. **Wear eye protection and a hard hat.**

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.

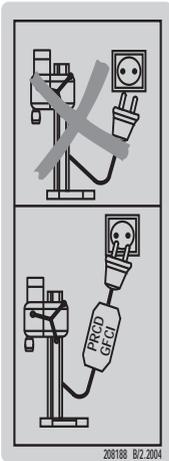
NOTE If, for example, the electric supply is briefly interrupted due to a power failure or disconnected when moving to a different workplace, the machine remains ready for operation for approx. 20 minutes. In the event of a longer interruption, the TPS key must be used again to unlock the machine.

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)



(Note: An isolating transformer is used with the GB version.)

1. Plug the machine's supply cord into an earthed 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 a qualified specialist using genuine Hilti spare parts. Press the “I” or “Reset” button on the ground fault circuit interrupter (PRCD). The indicator must light.

7.3 Drilling without use of the water collection system and industrial vacuum cleaner



WARNING

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

WARNING

Water drainage is uncontrolled. **Overhead drilling is not permissible.**

1. Slowly open the water flow regulator until the desired volume of water is flowing.
2. Press the on/off switch on the machine (position “I”). The drilling performance indicator lights orange.
3. Release the carriage brake.
4. Turn the handwheel until the diamond core bit is in contact with the base material.
5. Apply only light pressure until the diamond 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.

7.4 Drilling with use of the water collection system (accessory)



WARNING

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

CAUTION

The water is drained through a hose. **Overhead drilling is not permissible.**

1. Slowly open the water flow regulator until the desired volume of water is flowing.
2. Press the on/off switch on the machine (position "I"). The drilling performance indicator lights orange.
3. Release the carriage brake.
4. Turn the handwheel until the diamond core bit is in contact with the base material.
5. Apply only light pressure until the diamond 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.

7.5 Drilling with use of the water collection system and wet-type industrial vacuum cleaner (accessories)



WARNING

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

WARNING

The diamond core bit fills with water during overhead drilling. **Drilling upwards at an angle is not permissible (the water collector cannot function correctly).**

NOTE

The vacuum cleaner must be switched on manually before drilling is started and switched off manually once drilling is completed.

1. Switch the vacuum cleaner on. Do not use the vacuum cleaner in automatic mode.
2. Connect the water supply.
3. Open the water flow regulator.
4. Press the on/off switch on the machine (position "I"). The drilling performance indicator lights orange.
5. Release the carriage brake.
6. Turn the handwheel until the diamond core bit is in contact with the base material.

- Apply only light pressure until the diamond core bit has centered itself and then increase the pressure.
- 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.

7.6 Switching off 9

WARNING

Exercise caution when drilling overhead : The diamond core bit fills with water during overhead drilling. **As a first step, carefully allow the water to drain away after completing overhead drilling. This is done by disconnecting the water supply from the water flow regulator and draining the water by opening the water flow regulator. Do not allow the water to run over the motor and cover.**

- Close the water flow regulator.
- Remove the diamond core bit from the hole.
- Engage the carriage brake.
- Switch the drilling machine off.
- Switch off the industrial vacuum cleaner.

7.7 Procedure in the event of the core bit sticking

The safety clutch releases in the event of the core bit binding and sticking. Following this, the motor is switched off by the electronic control system. If the user takes no action, the electronic control system switches the motor on twice automatically. If the core bit still can't be freed, the electronic control system switches the motor off for 90 seconds. The core bit can be released by taking the following action:

7.7.1 Using an open-end wrench to release the core bit

- Disconnect the supply cord plug from the power outlet.

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

7.7.2 Using the spider wheel to release the core bit

- Disconnect the supply cord plug from the power outlet.
- Use the spider wheel to rotate the core bit and release it from the base material.
- Plug the machine's supply cord into the power outlet.
- Resume the drilling operation.

7.8 Dismantling

CAUTION

Disconnect the supply cord plug from the power outlet.

- For instructions on removing the diamond core bit, please refer to the section "Removing the diamond core bit".
- Remove the core if necessary.
- Detach the drill stand from the base material.

7.8.1 Removing the system as a unit

NOTE

If you wish to remove the drilling system as a complete unit (without first removing the core bit) it is recommended that the drive unit is lowered on the rail (after switching off) until in contact with the base material. This will help to prevent it tipping over.

7.9 Disposing of drilling slurry

Please refer to the section "Disposal".

7.10 Transport and storage

Open the water flow regulator before putting the power tool into storage.

CAUTION

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

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.

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, pressure jet washer or running water for cleaning. This may negatively affect the electrical safety of the machine.

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 carbon brushes 10



NOTE

The indicator lamp with the 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 number: 39577 carbon brushes AO ML 100-120 V: 209487/209488; 39576 carbon brushes AO ML 220-240 V: 209485/209486).
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.
NOTE The indicator lamp goes out after the carbon brushes have been replaced.

8.5 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.

8.6 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.

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.

Fault	Possible cause	Remedy
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 carbon brushes 10
The machine doesn't start and the service indicator lights.	The carbon brushes are worn.	Replace the carbon brushes. See section: 8.4 Replacing carbon brushes 10
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.
The service indicator blinks.	Motor speed error.	Have the machine repaired by Hilti Service.
The machine doesn't start, drilling performance indicator blinks red.	The machine has overheated.	Wait 90 seconds until the light goes out. Switch the machine off and on again.
	The machine was overloaded for a short time.	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 brake is engaged.	Release the brake.
The handwheel turns but doesn't engage.	The retaining pin is broken.	Fit a new retaining pin.
	The water pressure is too high.	Reduce the water pressure.
Water escapes at the water swivel or gear housing.	The shaft seal is defective.	The machine should be repaired by Hilti Service.
	The core bit connection end or chuck is dirty or damaged.	Clean the connection end /chuck or replace if necessary.
The diamond core bit cannot be fitted into the chuck.	The core bit is not screwed securely into the chuck.	Tighten it securely.
Water escapes from the chuck during operation.	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.

Fault	Possible cause	Remedy
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: 8.5 Adjusting the play between rail and carriage
	The core bit connection end is defective.	Check the connection end and replace it if necessary.

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.



For EC countries only

Disposal of electric appliances together with household waste is not permissible.

In observance of the European Directive on waste electrical and electronic equipment and its implementation in accordance with national law, electrical appliances that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

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.

11 Manufacturer's warranty

Please contact your local Hilti representative if you have questions about the warranty conditions.

12 EC declaration of conformity (original)

Designation:	diamond coring system
Type:	DD 120
Year of design:	2006

We declare, on our sole responsibility, that this product complies with the following directives and standards: until 19th April 2016: 2004/108/EC, from 20th April 2016: 2014/30/EU, 2006/42/EC, 2011/65/EU, EN 61029-1, EN 61029-2-6, EN ISO 12100.

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