

DC 180-S



Operating instructions

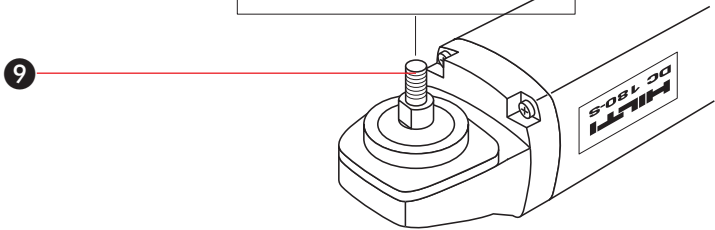
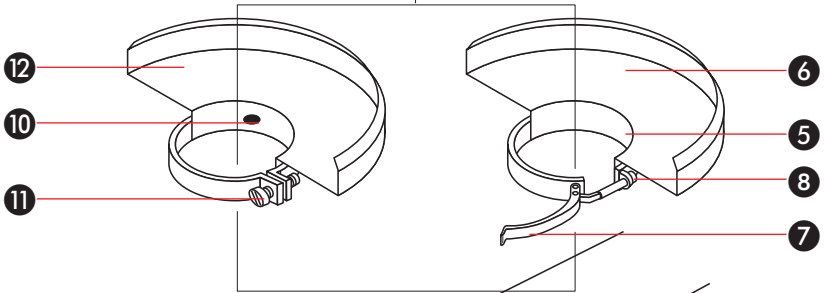
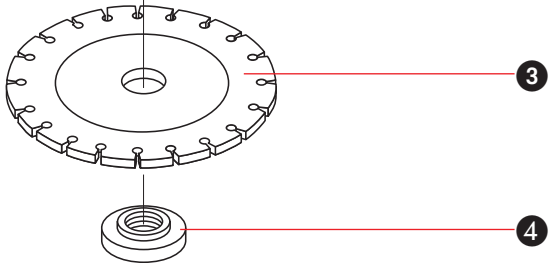
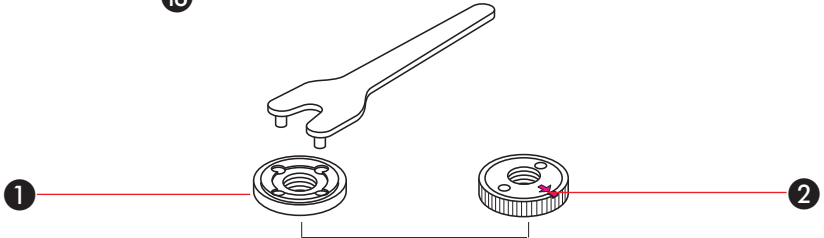
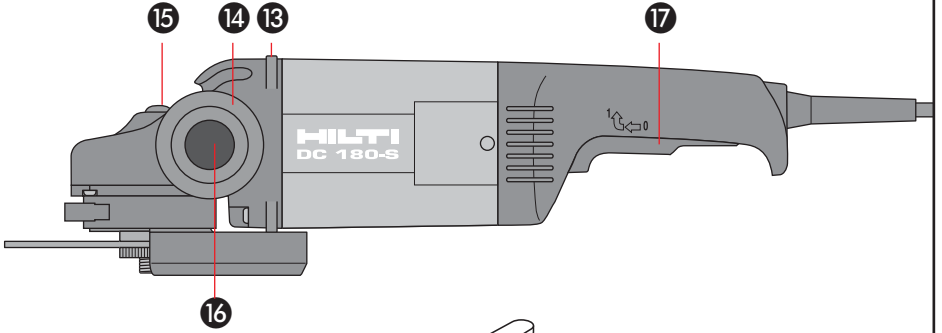
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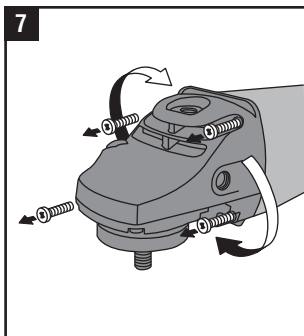
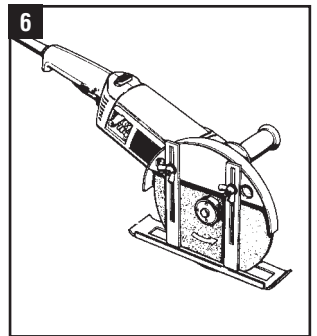
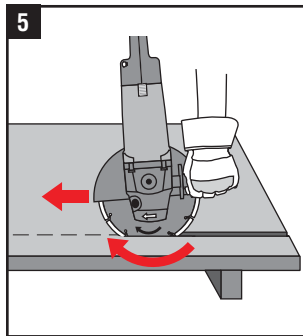
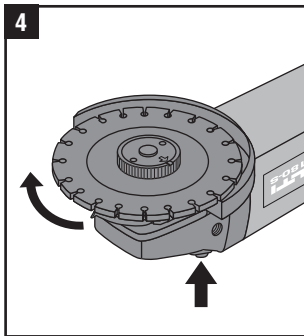
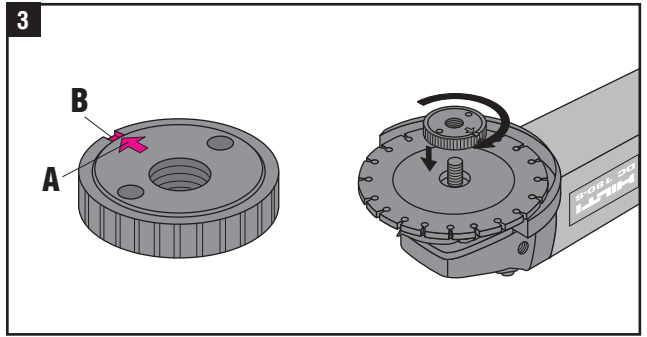
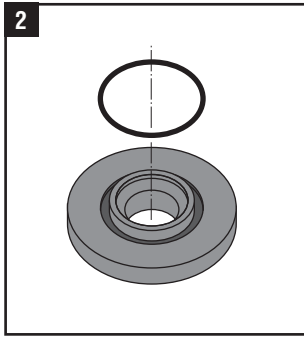


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DC 180-S diamond cutter


To ensure correct use, please read the complete operating instructions carefully before the tool is operated for the first time.

All instructions concerning the use of the tool are given also for your own safety!

Always keep these operating instructions together with the tool. Ensure that the operating instructions are with the tool when it is given to other persons.

The tool must be held in both hands when in use. Always ensure that you work from a secure stance.

General information

 In these operating instructions, this symbol indicates points of particular importance to safety. The instructions at these points must always be observed in order to avoid the risk of serious injury.

 Danger: electricity

1 The numbers refer to the illustrations. The illustrations can be found on the fold-out cover pages. Keep these pages open while you read the operating instructions.

In these operating instructions, the power tool to which these operating instructions apply is referred to as “the tool”.

DC 180-S operating controls **1**

- 1** Clamping nut
- 2** Kwik-lock clamping nut
- 3** Diamond cutting disc / grinding disc
- 4** Clamping flange
- 5** Clamping ring
- 6** Disc guard
- 7** Clamping lever
- 8** Adjusting nut
- 9** Spindle
- 10** Locating lug
- 11** Clamping screw
- 12** Disc guard

Parts of the machine **1**

- 13** Supporting rib
- 14** Threaded bushing for side handle
- 15** Spindle lockbutton
- 16** Side handle
- 17** On / off switch

Description



The DC 180-S is an electrically powered diamond cutter for professional use in construction.

 **The following conditions must be observed when the machine is in use:**

- The machine must be connected to an AC mains supply which complies with the information printed on the rating plate.
- Use only insert tools which are intended for use with this machine.
- The machine is double insulated and must not be earthed/grounded.
- Observe the accident prevention regulations issued by the applicable trade association.

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Technical data

Rated voltage:	110 V	230 V
Rated current:	18.4 A	9.2 A
Rated power input:	2000 W	2000 W
Rated power output:	1136 W	1250 W
Mains frequency:	50 Hz	50 Hz
Speed under no load:	8500 rpm	8500 rpm
Drive spindle thread:	M14	M14
Cutting disc diameter:	max. 180 mm	max. 180 mm
Approx. weight (without accessories):	4.2 kg	4.2 kg
Weight as per EPTA-Procedure 01/2003:	5.0 kg	5.0 kg
Insulation class:	II  (double insulated)	II  (double insulated)

Noise and vibration information

Values determined in accordance with EN 50144

Typical noise levels (A-weighted):	
Sound pressure level:	91 dB (A)
Sound power level:	104 dB (A)

Ear protectors must be worn!

Triaxial vibration value (vibration vector sum) measured in accordance with EN 60 745-2-3 prAA: 2006

Surface grinding, ($a_{h, AG}$):	
with the vibration-absorbing side handle	7.3 m/s ²
with the hoop handle	8.2 m/s ²
Uncertainty (K) for triaxial vibration value:	1.5 m/s ²

Other applications such as cutting-off or wire brushing, may have different vibration emission values.

The tool is designed for the following uses:

	Diamond cutting disc	Use / base material
Hilti insert tool:	DC- D 180 C1	concrete / cement
	DC- D 180 C2	concrete / hard rock
	DC- D 180 M1	masonry / sand-lime blocks
	DC- D 180 M2	masonry / tiles
From other manufacturers:	abrasive cutting discs abrasive grinding discs abrasive flap discs and brushes	



Ear protection must be worn



Safety gloves must be worn



Eye protection must be worn



Respiratory equipment must be worn



Safety overalls must be worn





Read the operating instructions

Safety precautions (Please read and keep these instructions)

Caution: The following fundamental safety precautions must always be observed when using electric tools/machines as protection against electric shock, the risk of injury and fire hazards. Please read and take note of these precautions before you use the tool/machine. Keep these safety precautions in a safe place!

1 Keep your place of work clean and tidy. Disorder where you are working creates a potential risk of accidents.

2  Make allowance for influence from the surroundings. Don't expose your electric tools/machines to rain. Don't use electric tools/machines in damp or wet surroundings. Make sure the work area is well lit. Don't use electric tools/ machines near inflammable liquids or gases.

3  Always protect yourself against electric shock. Never touch grounding (earthing) parts e.g. pipes, radiators, cookers, ovens, refrigerators.

4 Keep children away. Don't let other persons touch the electric tool/machine or supply cord. Keep them away from your work area.

5 Keep your electric tool/machine in a safe place. Electric tools/machines not in use should be kept in a dry locked-up place out of the reach of children.

6 Don't overload your electric tools / machines. You will do your work better and safer in the specified performance / rating range.


7 Do not use the electric tool for purposes for which it is not intended (e. g. by fitting drill bits or similar, fitting saw blades for woodworking, etc.).

8 Wear suitable clothing. Don't wear loose clothing or jewellery – they could be caught up in moving parts. When working outside, the use of rubber gloves and non-slip shoes is recommended. Wear a helmet or cap if you have long hair.

9 Always wear protective goggles. If work causes dust, wear a mask as well.

10 Connect dust extraction equipment. If devices are provided for the connection of dust extraction and col-


lection facilities ensure these are connected and properly used.

11  Don't use the supply cord for any other purpose. Don't carry the electric tool/ machine by the supply cord and don't pull the plug out of the socket/receptacle by pulling the supply cord. Protect the cable from heat, oil and sharp edges.

12 Secure the workpiece. Use a clamping device or vice to hold the workpiece. It is secured more reliably in this way than in your hand and you can then hold and operate your electric tool/machine with both hands.

13 Don't bend over too far when working. Avoid an unusual stance. Make sure that you are standing firmly and keep your balance at all times.

14  Take good care of your electric tools/machines. Keep the drill bits, insert tools etc. sharp and clean so that you can do your work better, safer and more reliably. Observe the cleaning and maintenance regulations and the instructions for changing drill bits, insert tools etc. Check the supply cord regularly and have it renewed by a recognized specialist if it is damaged. Check the extension supply cord regularly and, if it is damaged, replace it. Keep grips and side handles dry and free from oil or grease.

15  Always pull out the plug from the mains if the electric tool/machine is not in use, prior to cleaning and maintenance work and when changing insert tools.

16 Never leave a key in place. Always check before switching on that the key or adjusting tools have been removed.

17 Avoid any unintentional start-up. Never carry a plugged-in electric tool/machine with your finger on the switch. Always make sure that the switch is off when plugging the electric tool/machine into the main electric supply.

18 If an extension supply cord is used outside, only use one which has been approved for the purpose and is correspondingly marked.


19 Be attentive at all times. Keep your eye on your work. Remain in a sensible frame of mind and don't use the electric tool/machine if you cannot concentrate completely.

20 Check your electric tool/machine for damage. You must check the safety devices or damaged parts care-



fully for perfect functioning in keeping with the intended purpose before using the electric tool/machine further. Check whether the moving parts function properly, whether they aren't sticking, whether any parts are broken, whether all other parts work properly and are fitted correctly, and make sure that all other conditions which can influence operation and running of the electric tool/machine are as they should be. Damaged guards and protective devices and parts must be repaired properly by an authorized service workshop or replaced provided that nothing else is stated in the operating instructions. Damaged switches must also be replaced by a Hilti service centre. Never use electric tools/machines which cannot be switched on and off by the switch.

21 **Caution!** For your own safety's sake, only use original Hilti accessories and attachments which are specified in the operating instructions. The use of accessories or insert tools or attachments other than those specified in the operating instructions can result in personal injury to you.

22 Only have repairs carried out by recognized electrical specialists. This electric tool/machine complies with respective safety regulations. Repairs may only be carried out by a Hilti service centre. Only original Hilti spare parts may be used otherwise an accident hazard for the operator can exist.

23  When working on electrically conductive materials, conductive dust may collect inside an electric tool, causing leakage of electric voltage and a possible risk of electric shock. Work of this kind, for example, includes drilling through steel reinforcement in concrete ceilings. Electric tools or machines used for applications of this kind must be inspected at regular, short intervals by a recognised specialist or at a Hilti service workshop in order to ensure that no hazardous deposits of conductive dust are present inside the tool and to confirm the integrity of the tool's electrical insulation.

Special safety precautions

- Check that the tool is switched off before plugging the supply cord into the mains socket.
- The side handle must always be fitted when the tool is in use.
- Always guide the supply cord away to the rear of the tool.
- Always wear goggles, ear protectors and a respiratory protection mask when carrying out grinding and cutting work.
- Wear protective gloves and sturdy footwear.
- For safety reasons, the disc guard, hand guard and auxiliary handle must always be fitted when the angle grinder is in use.
- The O-ring must always be in place on the clamping flange.
- The mounting bore of grinding and cutting discs must fit on the centering collar of the clamping / mounting flange without any play. Do not use reducers or adaptors. Before switching on the tool, check that the grinding / cutting disc is fitted correctly and that it can rotate freely.
- Use only grinding and cutting discs that are approved for use at the maximum permitted no-load speed of the tool.
- Observe the disc manufacturer's instructions when fitting and using grinding / cutting discs.
- New grinding/cutting discs should be tested by running the tool with the disc for at least 30 seconds.
- Grinding/cutting discs that are damaged, run out of true or vibrate must not be used.
- Prevent movement of the workpiece by clamping it securely in place.
- Do not clamp the tool in a vice.
- A dust extraction system equipped with a stone dust filter, e.g. the Hilti TDA-VC 40/60 vacuum cleaner, must be used when grinding or cutting stone.
- The tool may be used for dry grinding / cutting only.
- Grinding or cutting materials containing asbestos is not permitted.
-  **Caution:** Take care to avoid concealed electric cables, gas and water pipes. For example, a metal detector may be used to check the area where the work is to be carried out.
- Grinding or cutting metal causes sparks to fly. Ensure that persons are not at risk as a result. Due to possible fire hazards, ensure that there are no flammable materials in the immediate vicinity (within the area where sparks fly). Do not use the tool in areas where there is a risk of explosion.
- Observe the direction of rotation of the disc. Always hold the tool so that sparks and dust fly away from the body.
- **Caution:** The grinding or cutting disc continues to rotate even after the tool has been switched off.
- Do not attempt to brake the grinding / cutting disc by applying lateral pressure after the tool has been switched off.
-  Use of a ground fault interrupter switch (30 mA) can increase operator safety and is recommended in certain conditions, e.g. in extremely humid or damp surroundings or where the tool is exposed to conductive dust.
- After a power cut: Switch off the tool and unplug the supply cord.
- Always switch off the tool before fitting the disc guard or adjusting the guard to a different position.
- When fitting discs or insert tools, observe the arrow that indicates direction of rotation.
- The use of extension cables with multiple sockets permitting the simultaneous use of several electric tools should be avoided.

Do not use this product in any way other than as directed by these operating instructions.

Before use

- It is essential that the operating instructions are read before the tool is operated for the first time.
- Always keep these operating instructions together with the tool.
- Ensure that the operating instructions are with the tool when it is given to other persons.

Before beginning work

Always observe the enclosed safety precautions.

Disc guard


Never use the cutter without the disc guard in place.

The DC180-S diamond cutter is available with different disc guard systems depending on the country in which it is to be used.

Disc guard with clamping screw

- The locating lug 10 on the disc guard 12 ensures that the machine can be fitted only with the correct type of disc guard.
- Release the clamping screw 11 if necessary.
- Place the disc guard 12 on the spindle collar of the gear housing, with the locating lug 10 positioned in the locating groove. Rotate the guard to bring it into the correct working position.
- The closed side of the disc guard 12 must always be positioned towards the operator.
- Tighten the clamping screw 11.

Disc guard with quick-release mechanism

 The disc guard has been pre-adjusted to the diameter of the spindle collar. The adjusting screw 8 at the clamping lever therefore requires no further adjustment.

- Open the clamping lever 7.
- Place the disc guard 6 on the spindle collar as described above and close the clamping lever 7.

Changing discs

Always disconnect the tool from the electric supply before changing discs!

Caution: Press the spindle lockbutton 15 only when the spindle 9 has stopped rotating.

Clean the clamping flange 4 and clamping nut 1 or Kwik-lock nut 2. Use only grinding / cutting discs of a

type approved for use at spindle speeds at least as high as the maximum no-load running speed of the tool.

After fitting the disc guard 6, place the clamping flange 4 on the spindle 9.

Fit the diamond cutting disc, abrasive cutting or grinding disc 3 and screw on the clamping nut 1.

Fig. 2

- An O-ring (plastic part) is located around the centring collar of the clamping flange 4. If the O-ring is damaged or missing, it is essential that it is replaced before the clamping flange 4 is fitted.
- Prevent movement of the spindle by pressing the spindle lockbutton 2.
- The spindle lockbutton should be operated only when the spindle has stopped rotating.
- Use the pin wrench 1 to tighten the clamping nut.

Kwik-lock clamping nut

The Hilti Kwik-lock clamping nut can be used for fitting the grinding / cutting disc.

- The Kwik-lock nut 1 is used instead of the standard clamping nut 2. This permits grinding / cutting discs to be changed without the use of a tool.
- Clean the clamping flange 4 and Kwik-lock clamping nut 2.
- Check the Kwik-lock clamping nut before it is fitted:

Fig. 3

The arrow (A) on the top surface must be positioned within the index marks (B). If the Kwik-lock nut is tightened without first checking that the arrow is located within the index marks, it will no longer be possible to release it by hand. In this case, release the Kwik-lock nut using the pin wrench. Do not use a pipe wrench under any circumstances.

To fit a grinding disc, clean the clamping flange 4 and place it on the spindle, then fit the grinding disc 3 (see illustration). Screw on the Kwik-lock clamping nut as shown in the illustration (with lettering visible after the nut is screwed on) until it is seated against the grinding disc.

Fig. 4: Releasing the clamping nut

- Prevent movement of the spindle by pressing the spindle lockbutton.
- The Kwik-lock clamping nut can be released by hand by turning the knurled ring to the left (counterclockwise).

Important: Never use intermediate washers, flanges, etc. between the disc and Kwik-lock nut.

Caution! Only use the Kwik-lock nut on the Hilti DC180-S cutter. Do not use the Kwik-lock nut with cup wheels and brushes.

Operation

On / off switch without locking function 17

Depending on national regulations, the diamond cutter is equipped with an on / off switch without locking function or, alternatively, with a Tricontrol switch. The Tricontrol switch 17 incorporates 3 functions:

- Release
- On / off switch
- Lock

Instantaneous operation (without locking function)

Switching on: Slide the switch forward without applying pressure (unlock). Press the switch (switch on).

Switching off: Release the switch.

Sustained operation (Tricontrol switch)

Switching on: Slide the switch forward without applying pressure (unlock). Press the switch (switch on) and, while still applying pressure, slide the switch 17 further forward.

Switching off: Press the switch and then release it.

Testing new grinding / cutting discs

Run the tool for at least 30 seconds under no load. If a disc vibrates, it should not be used. Do not subject grinding / cutting discs to impacts. Do not allow discs to come into contact with grease.

Starting current regulator (230 V version)

The starting current required by the machine is several times higher than the nominal current input. The starting current regulator limits the current drawn by the machine when starting, preventing the mains fuse from tripping. It also ensures that the machine starts smoothly without a jolt.

Side handle and hand guard

 **Always use the side handle 14 for safety's sake.** The side handle can be screwed on to the gearing section in one of three positions.

Always use the hand guard (accessory) when working with the rubber backing pad.

The hand guard is secured to the gearing section by the side handle.

Working with the cutter

Fig. 5

Do not try to force the disc into the material when cutting and grinding. Simply move the disc in a reciprocating motion across the workpiece. Only moderate pressure, appropriate to the material being cut or ground, should be applied in the direction of advance.

The cutting direction is important. The disc must always take a counter rotating approach to the material being cut as the tool is advanced (up cut). Accordingly, never

move the tool in the opposite direction. The tool may otherwise become uncontrollable, presenting a risk of the disc jumping out of the cut.

Special discs should be used for non-ferrous metals (e.g. aluminium, V2A).

Working with dry-cutting diamond discs

The DC180-S diamond cutter is particularly suitable for use with dry-cutting diamond discs. A range of Hilti diamond discs is available.

Dry-cutting diamond discs may overheat and thus suffer damage when cutting particularly hard mineral materials such as concrete containing a high proportion of hard aggregates (pebbles). A trail of sparks around the perimeter of a diamond cutting disc is a clear indication of this.

If this occurs, the cutting operation must be interrupted and the diamond disc allowed to cool for a short time by running the machine under no load. A drop in the rate of cutting progress may indicate that the diamond segments require sharpening (segments have become polished). The segments can be resharpened by making a few cuts in an abrasive material (a Hilti sharpening plate or abrasive sand-lime block).

Fig. 6: Use of a cutting guide is mandatory for cutting stone. This attachment prevents tilting of the disc relative to the workpiece.

Fig. 7: Adjusting the position of the gear housing

Disconnect the plug from the mains socket. Clean the diamond cutter. The gear housing may be adjusted at 90° intervals to one of four positions, thus making it possible to use the cutter safely and without fatigue in any working position (example: cutting using DC-D diamond cutting discs).

Release and remove the four screws. Rotate the gear housing through 90° without pulling it out towards the front end. Insert and tighten the screws, taking care to ensure that they are located correctly. Fit the side handle 16 in the threaded bushing 14.

Rough grinding/smoothing

The best effect is achieved if the grinding disc is held at an angle of approx. 30° to the work surface. Don't press heavily when grinding otherwise the tool will suffer damage, the disc will wear faster and the grinding performance will decrease.

 **Never use cutting discs for rough grinding / smoothing.**

Care and maintenance

Always disconnect the plug from the mains socket before carrying out any work on the tool.

The cooling slots in the motor housing must be kept clean and unobstructed at all times. Dust should be

blown out from the motor at regular intervals (approx. every four weeks), if possible using compressed air. Conductive dust may collect inside the tool when it is used under extreme conditions for working on metals. This may reduce the effectiveness of the tool's electrical insulation. In such cases, the use of a stationary dust extraction system and a ground fault interrupter switch (FI) are recommended. Dust should also be blown out from the ventilation slots at frequent intervals.

Repairs / Carbon brushes

- The tool has been manufactured carefully and subjected to stringent tests and inspections. Nevertheless, should it become necessary, the tool should be repaired at a Hilti service centre.
- Repairs may be carried out only by trained electrical specialists.
- The carbon brushes are of the automatic cut-out type. The tool will be switched off automatically when it becomes necessary to replace the carbon brushes. Use only original Hilti carbon brushes.
- The tool requires no other maintenance.

Warning: Building statics

Slits in load-bearing walls are subject to part 1 of the DIN 1053 standard, or other national regulations and directives.

It is essential that these regulations are observed. The design engineer, architect, or person in charge of the building project must be consulted before beginning slitting work.

Environment



Return waste material for recycling

Most of the materials from which Hilti electric tools 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 your old electric tools for recycling. Please ask your Hilti customer service department or Hilti representative for further information.



Only for EU countries

Disposal of electric tools together with household waste is not permissible!

In observance of European Directive 2002/96/EC on waste electrical and electronic equipment and its implementation in accordance with national law, electric tools that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

Accessories

- Kwik-lock clamping nut 
- Disc guard with cutting guide
- Toolbox
- DC-D diamond cutting discs

Manufacturer's warranty – tools

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 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.

EC declaration of conformity

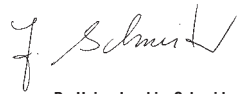
Description:	Cutter
Serial no.:	xx/0000001-xx/999999
Designation:	DC180-S
Year of design:	2000

We declare, under our sole responsibility, that this product complies with the following standards and directives: HD 400, EN 55014-1, EN 55014-2, EN 61000-3-2, EN 61000-3-3, according to the provisions of the directives 89/336/EWG, 98/37/EG

Hilti Aktiengesellschaft



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