

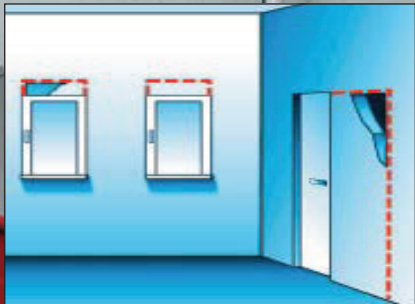
HILTI

DS TS 5-SE

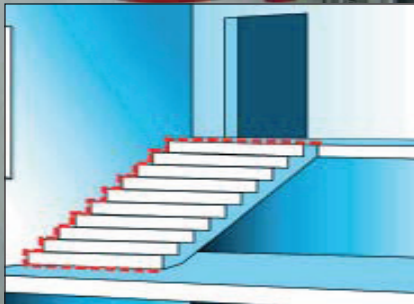
Operating instructions

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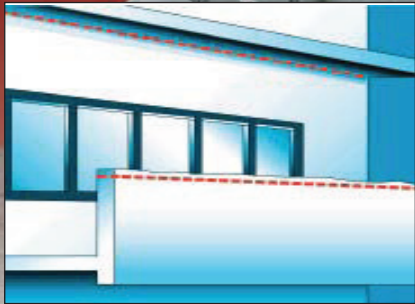
Openings and extensions to openings for doors and windows



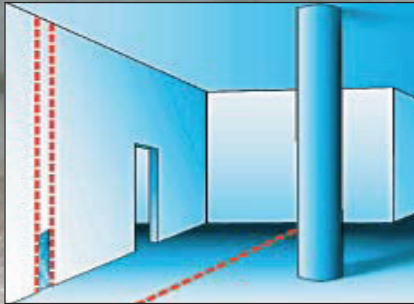
Light-duty cutting applications on stairs



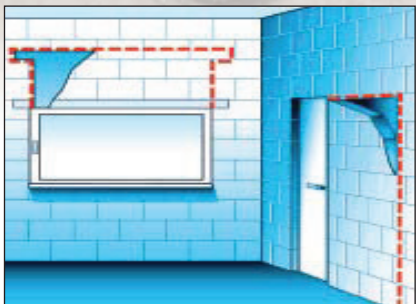
Facade slabs



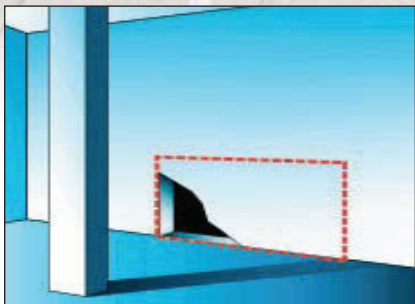
Parapets and balconies



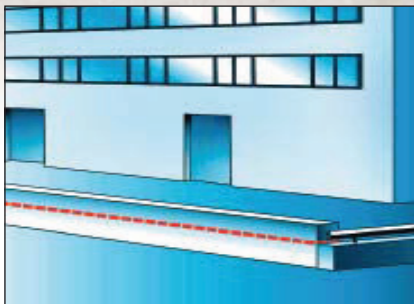
Slits and joints



Doors and windows in masonry



Openings for light and other flush-cutting applications



Perimeter walls

Electric wall saw

DS TS 5-SE 3×200 V / DS TS 5-SE 3×400 V

Congratulations!

In purchasing the Hilti **DS TS 5-SE** electric wall saw you have acquired a quality product that provides the highest level of performance, safety and reliability. Manufactured to comply with uncompromising quality assurance requirements, it has been designed to ensure a long service life.

Featuring one-man operation, high mobility, a quick and easy installation principle as well as automatically controlled advance independent of the material being cut, this saw offers advantages that make it a pleasure to use and guarantee high cost efficiency when cutting concrete and masonry, i.e. walls, floors and ceilings with a thickness of up to 28/30 cm.

These operating instructions are intended for the use of tradesmen in construction, subsequently referred as “the operator”. Before operating the **DS TS 5-SE** wall saw, the operator must read and understand the operating instructions and receive training from a Hilti representative. These are the prerequisites for efficient, safe operation of the system.

We would like to wish you every success in your work and thank you for placing your confidence in Hilti products.

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Safety precautions

Important!

When using electric tools, the following warnings and fundamental safety precautions must always be observed in order to prevent electric shock, injury and the risk of fire.

1. General warnings



1.1 Do not attempt to use the electric wall saw if you have not previously been given the appropriate training. Initial training will be given by a Hilti representative.

1.2 Read and observe all the information in the operating instructions before using the equipment for the first time. Always keep the operating instructions with the equipment and hand them over to subsequent users.

1.3 Approval must be obtained from the site engineer or site management before beginning sawing work or drilling corner holes etc. Sawing work can negatively affect the stability of a building or other structure, particularly when reinforcing bars or supporting members are cut through. There must be no concealed gas, water, electricity or other supply lines in the area where sawing work is to be carried out.

1.4 The area in front of, behind or below the surface where sawing work is to be carried out must be secured in such a way that persons or equipment cannot be injured or damaged by falling blocks of concrete. If necessary, cores or blocks of concrete should be secured to prevent them falling.

1.5 Operators and all other persons **MUST** stay clear of the area when a load is being lifted by a crane.

1.6 National regulations and applicable laws must be observed.

1.7 Dealing with drilling and sawing slurry

Working with diamond tools on mineral materials (e.g. concrete) in a wet process produces drilling or sawing slurry. As with fresh cement mortar, it may cause irritation if allowed to come into contact with the skin or eyes. Wear protective clothing, protective gloves and goggles. With regard to environmental aspects, allowing these slurries to flow directly into rivers, lakes or the sewerage system without suitable pre-treatment is problematical.

Disposal procedure

In addition to the following recommended pre-treatment procedures, the applicable national regulations must be observed when disposing of drilling or sawing slurry. Ask the local authorities concerned for further information.

We recommend the following pre-treatment:

- Collect the drilling and sawing slurry (e.g. using a suitable industrial vacuum cleaner).
- The fine content of the drilling and sawing slurry should be separated from the water by allowing it to settle (e.g. leave standing for some time or add a coagulation agent).
- Solid material from the drilling and sawing slurry should be deposited at a construction waste disposal site.
- Water from the drilling and sawing slurry should be neutralised (e.g. by adding a large quantity of water or other neutralisation agents) before it is allowed to flow into the sewerage system.

2. Safety precautions when setting up, fastening and operating the DS TS 5-SE electric wall saw



2.1 Ensure that sufficient space is available for working safely.

2.2 Use metal anchors (size M12) for fastening rail supports. Secure fastenings of a type suitable for the material being cut must be installed, e.g. Hilti HKD-D, HKD-E, HKD-S, HSA, HVU, HVA anchors.

2.3 Use only ISO 8.8 grade fastening screws for the rail supports.

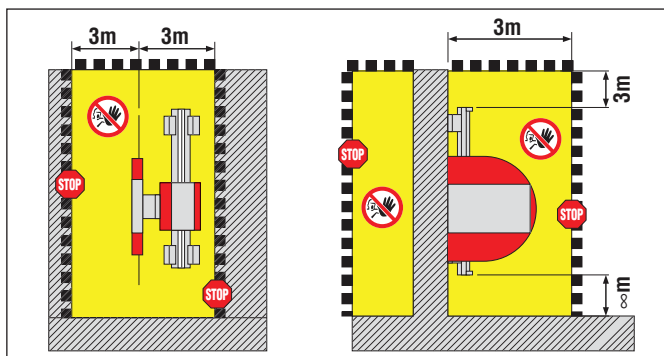
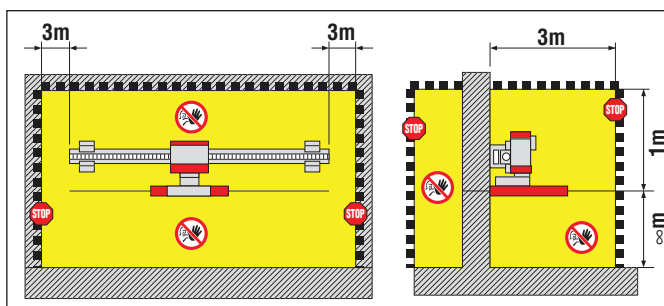
2.4 DS-ESSI end stops must always be fitted at the ends of the rail to prevent unintentional advance beyond this point (prevents saw coming off the end of the rail).

2.5 It is essential that the specified checks are carried out before beginning sawing (see section 4.1, "Operation").

2.6 The DS TS 5-SE electric wall saw must NOT be operated in environments where there is a risk of explosion.

2.7 Safety measures at the danger areas

Safety measures must be implemented in the area where sawing is taking place to ensure that operators and bystanders cannot be injured or property damaged by debris that may fly off or fall down (broken-off diamond segments, small stones, sawing slurry, etc.) while sawing is in progress. Safety measures must also be implemented in the area not directly visible to the operator, i.e. behind where sawing is taking place. Persons must NEVER enter the danger area (3 meters in all directions from the line of the cut to be made) while the blade drive is switched on.



-CAUTION-

Secure the working area. Ensure that no persons can be injured or property / equipment damaged by falling objects or debris that may fly off during the sawing operation.

1. Approval must be obtained from the site engineer or site management before beginning the sawing work.
2. Find out whether overcutting at corners is permitted. If not, the corresponding corner holes must be planned and drilled first.
3. Check that the area is cordoned off, that supports are in place and warnings to third parties are displayed.

The danger area may be entered only when the machine is switched off or when the emergency OFF button is pressed in. Use only saw blades that are approved for use at a cutting speed (blade peripheral speed) of

63 m/s and in conformance with the requirements of EN 13236

2.8 Wear suitable clothing. Do not wear loose clothing or jewellery which could become caught in moving parts of the machinery. Wear a helmet, protective goggles, protective gloves, safety shoes or boots, ear protectors and a hair net if you have long hair. A face mask should be worn to protect the respiratory system when working in enclosed areas.



2.9 Avoid body positions in which the back is bent when carrying the saw or other heavy components. Maintain a secure stance and always stay in balance, especially when using ladders or when working from scaffolding.

2.10 Recommended maximum ambient temperature ranges:

For storage: -15°C to $+50^{\circ}\text{C}$

For operation of the system: -15°C to $+45^{\circ}\text{C}$

Important: At temperatures below zero, the cooling water must be drained (blown out) from the electric wall saw after use.

2.11 Saw blade speeds and cutting depths

Observe the recommended speeds (r.p.m.) and cutting depths printed in the operating instructions and on the DS-RC-TS5-E remote control unit in order to avoid overloading the electric wall saw and saw blades.

2.12 Overhead sawing is possible when additional safety precautions are taken. The blade guard should be equipped with a means of water drainage. Do not stand beneath the saw.

Safety precautions

3. General safety precautions

3.1 Keep the working area tidy and always unroll cables to their full length. Disorderliness of the working area can be a cause of accidents.

3.2 The influences of the environment in which you are working must be taken into account. Ensure that the area is well lit. Do not use the equipment in the vicinity of inflammable liquids or gasses. Make provision for water removal.

3.3 Keep children away from the working area. Keep other persons away from the working area when the equipment is in operation. Tools, extension cables or water hoses should not be tampered with by other persons while the equipment is in operation.

3.4 Keep the electric wall saw in a safe place. The components of the system and tools should be kept in a dry, secure place out of reach of children when not in use. We recommend the use of our functional transport trolley.

3.5 Do not use the electric wall saw for purposes and applications for which it was not designed.

3.6 Good care and maintenance of the electric wall saw is essential in order to ensure safe and trouble-free operation. Follow the maintenance instructions. Keep the grips dry and free of oil and grease. Clean the electric wall saw daily after use. Wash your hands with soap and water after contact with concrete slurry.

3.7 Do not leave tools in position on the equipment (e.g. open-end wrench on nut). Check that all wrenches and setting-up tools have been removed before switching on.

3.8 Stay alert and carefully observe the progress of your work. Proceed logically and do not use the electric wall saw when your full concentration is not on the job.

3.9 You must be aware that working with the DS TS 5-SE electric wall saw always involves a certain element of risk due to parts becoming worn or damaged. Check that the electric wall saw and its accessories are in good condition and functioning correctly before use. Pay particular attention to the condition of wearing parts such as the blade guard holder rubber, end stop, blade mount-

ing screws, blade mounting screws for flush cutting, etc. Check that all parts have been assembled correctly and consider all other factors that could influence operation of the equipment.

Contact your Hilti representative or Hilti service centre if faults or deficiencies are found.

3.10 The transport trolley or saw head must be secured to prevent shifting of the load during transport (e.g. in a motor vehicle).

3.11 Concrete blocks with a weight of several hundred kg may be sawn out when the wall saw is in use. Measures for securing and transporting these concrete blocks must be planned and implemented. Make use of the steel wedges contained in the set of tools for securing concrete blocks.

Keep the working area clean and tidy and cordon off openings and holes where there may be a risk of falling.

3.12 Failure to observe warnings, safety precautions or the operating instructions may result in damage to the electric wall saw or present a risk of serious injury to the operator or other persons.

3.13 Use only the accessories or additional equipment listed or recommended in the operating instructions. The use of other insert tools (e.g. saw blades) or other accessories may be hazardous and present a risk of injury.

3.14 The saw blades used with the DS TS 5-SE electric wall saw must comply with the VBG 49 standard. Failure to observe this point may result in a risk of personal injury. The DS TS 5-SE electric wall saw and its DS-BE blades may be used for cutting concrete and stone only. Use of any other kind of saw blade with the DS TS 5-SE is prohibited.

4. Electrical safety precautions



4.1 Always ensure that the electric power cable, from the mains or from a generator, contains an earth / ground conductor and that this conductor is connected. The DS TS 5-SE must not, under any circumstances, be operated without an earth / ground conductor connected. Defective insulation or sawing into live cables presents a risk of fatal accident if no earth / ground conductor is connected.

4.2 Always ensure that the electric power cable, from the mains or from a generator, is equipped with an RCD residual current device (earth leakage circuit breaker, ground fault interrupter) with a rating of max. 30 mA. The RCD circuit breaker must be checked for correct functionality each time before operating the DS TS 5-SE.

4.3 Check that all cables and plugs are in good condition each time before use.

4.4 Do not operate the equipment if damage is found or if the operating controls are not in perfect working order.

4.5 The mains voltage must comply with the specification on the rating plate. Tolerance for operation of the DS TS 5-SE is $\pm 10\%$.

4.6 Always observe the self-check functions of the remote control indicator lamps when switching on the electric wall saw.

4.7 Ensure that the electric wall saw is switched off at the remote control unit before changing blades or disassembling the saw. As an additional safety measure, we recommend pressing in the emergency OFF button.

4.8 Electric power cables and, in particular, their plug connections should be kept dry. When unplugging, pull the plug and not the cable. Protect the electric cable from sharp edges and heat. Do not allow it to come into contact with oil.

4.9 Use only approved electric extension cables with conductors of adequate capacity (cable cross section). Failure to observe this point can result in a drop in performance and overheating of the cable.

4.10 Electric extension cables must not be coiled on a drum while the electric wall saw is in operation.

4.11 Only trained and authorised Hilti repair personnel and qualified electrical specialists may remove the cover from the casing of the DS TS 5-SE electric wall saw in order to carry out repairs.

4.12 Always unplug the power cable before carrying out any maintenance and when the electric wall saw is not in use.

4.13 Important: Information for repair personnel
The capacitors in the DS TS 5-SE hold a voltage for approx. 2 minute after the electric wall saw is disconnected from the mains supply.

4.14 Never open the cover on the housing of the DS TS 5-SE electric wall saw while on the job site.

4.15 If an electric generator is to be used for powering the DS TS 5-SE electric wall saw, we recommend the use of a unit with an output of 15 kVA (3×400 V) / 10 kVA (3×200 V). The generator must be earthed / grounded.

Technical data and description

1. Description of the electric wall saw

1.1 The DS TS 5-SE is an electrically powered, rail-guided wall saw that uses diamond saw blades of 500–700/745 mm in diameter to cut concrete containing light to medium-heavy reinforcement, masonry and rock.

1.2 All functions of the DS TS 5-SE can be controlled by the electric remote control unit. Saw blade speed can be infinitely adjusted between 800 and 1200 rpm.

1.3 The saw blade drive motor provides constant maximum power. The advance movement is manually and / or automatically controlled. Thanks to automatically con-

trolled advance, independent of the material being cut, operation is very simple and the saw runs automatically with maximum possible power in each situation.

1.4 The versatile rail / rail support system with built-in angle adjustment and pivot functions permits the operator to set up the saw very quickly and easily.

1.5 Best sawing performance will be achieved when the DS TS 5-SE is used in conjunction with the specially designed DS-BE wall saw blades.

2. Nominal technical data for the DS TS 5-SE electric wall saw

| 2.1 Saw | DS TS 5-SE 3×400 V | DS TS 5-SE 3×200 V |
|---|---|---|
| Nominal power P1: | 5 kW | 5 kW |
| Nominal voltage: | 400 V ~ 50 / 60 Hz 3 P + PE | 200 V ~ 50 / 60 Hz 3 P + PE |
| Nominal current (maximum fuse rating): | 16 amps | 32 amps |
| RCD circuit breaker at the jobsite power supply connection: | max. 30 mA | max. 30 mA |
| Protection class: | IP 65 | IP 65 |
| Nominal saw blade drive speed: | 800–1200 rpm | 800–1200 rpm |
| Cooling water supply: | 2–4 l / min., 4 to max. 6 bar, nominal data guaranteed at max. 18°C | 2–4 l / min., 4 to max. 6 bar, nominal data guaranteed at max. 18°C |
| Weight without power cable: | approx. 28 kg | approx. 28 kg |
| Saw blades: | 500 mm dia. / 700 mm dia. / 745 mm dia. | |
| Maximum cutting depths: | 18 cm 28 cm | 30 cm |
| Ambient temperature when in operation: | –15°C to +45°C (warmed up in advance when below zero) | |
| Storage temperature for dry machine: | –15°C to +50°C | |
| Operation at height above sea level: | Nominal data guaranteed at up to 2,000 m above sea level | |
| Generator power requirement: | min. 15 kVA | min. 10 kVA |
| 2.2 Remote control unit | DS-RC-TS 5-E | |
| Cable length: | 7 m | |
| Nominal voltage: | 24 V | |
| Protection class: | IP 65 | |
| Weight: | approx. 2.2 kg | |

3. Noise, EC conformity, rating plate

Noise information

(Values determined in accordance with EN 50144)

Typical noise levels (A-weighted)

| | |
|---|------------------------------|
| Machine: | DS TS 5-SE electric wall saw |
| Noise pressure level (at 3 m distance): | 94 dB (A) |
| Noise power level: | approx. 112 dB (A) |
| Wear ear protectors! | |

Note: The noise pressure level can be reduced by approx. 10 dB (A) by using low-noise saw blades.

EC declaration of conformity

| | | | |
|--------------|-------------------|-----------------|-------------------|
| Description: | Electric wall saw | Serial number: | from 0101 to 9999 |
| Designation: | DS TS5-SE | Year of design: | 2003 |

We declare, on our sole responsibility, that this product complies with the following directives and standards: until 28.12.2009 98/37/EC, as of 29.12.2009 2006/42/EC, 2004/108/EC, EN 60204-1, EN 55014-1, EN 55014-2, EN 61000-3-2 (3x400 V), EN 61000-3-3 (3x400 V).

Independent assessment

| | |
|--------------|---|
| Assessed by: | CE conformity confirmed through neutral test agency |
|--------------|---|

Hilti Corporation



Dietmar Sartor
Head of BA Quality and
Process Management
Business Area Electric Tools
& Accessories
01 / 2010



Johannes Wilfried Huber
Senior Vice President
Business Unit Diamond

01 / 2010

Rating plate

The rating plate is located on the underside of the saw head close to the lever for securing the saw head on the carriage.

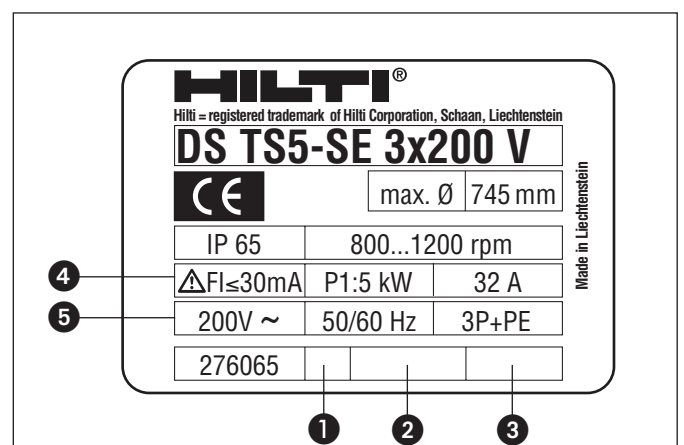
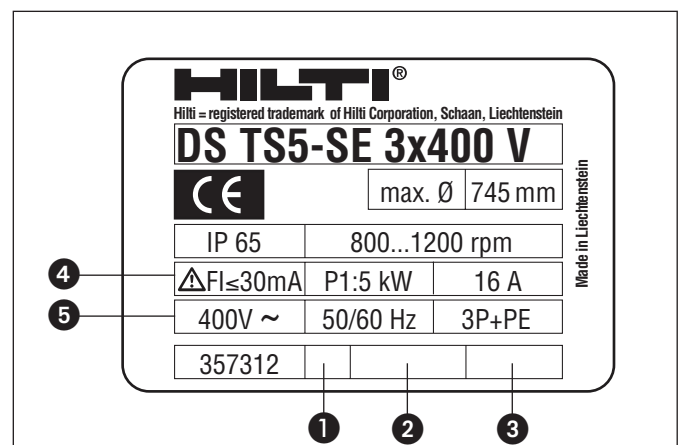
- ① = Spare parts index
- ② = Serial number
- ③ = Year of manufacture
- ④ = Δ FI \leq 30 mA means: Electric supply from jobsite equipped with RCD circuit breaker \leq 30 mA
- ⑤ = 3-phase alternating current, \pm 10%

Explanations:

Protection class IP65 (EN 60529)

6 = protection against entry of dust

5 = waterproof (protection against water jets)



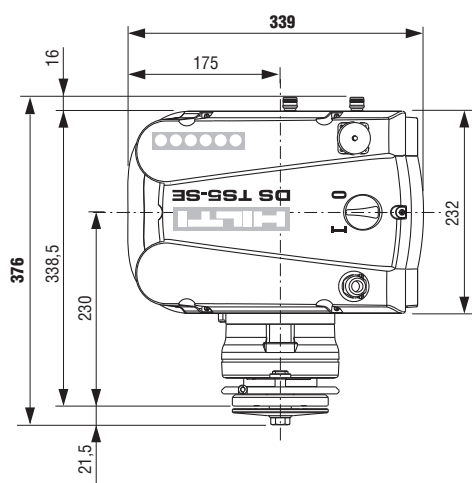
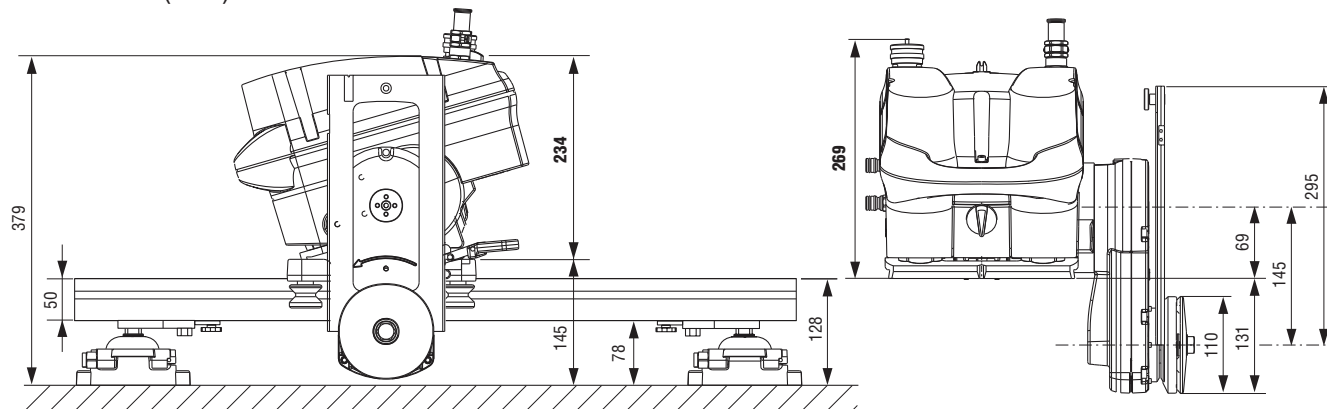
Technical data and description

4. Dimensions and weights

4.1 Main dimensions of the DS TS 5-SE saw head: L×W×H = 376×339×269 mm

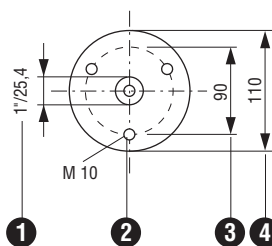
Weight of saw head: approx. 28 kg

Dimensions (mm)



View A

Saw blade mounting flange



- ① Centering spindle
- ② Special flush fastening screw
- ③ Pitch circle of flush cutting mount
- ④ Flange outside diameter

4.2 Main dimensions of transport trolley:

L×W×H = 850×655×1140 mm

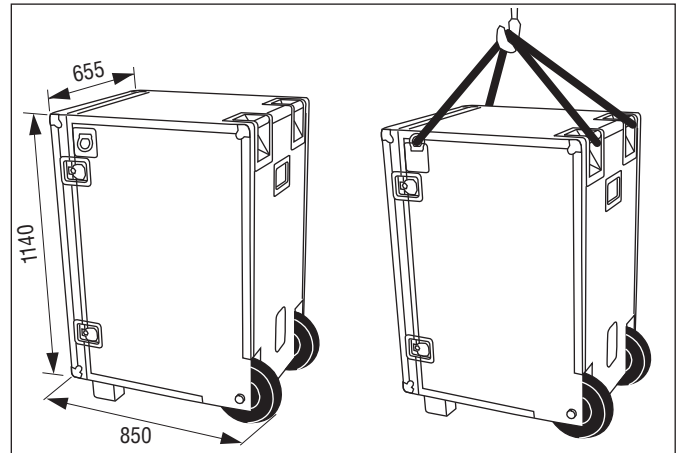
Total weight incl. basic equipment:

approx. 130 kg (empty trolley approx. 60 kg)

Basic equipment

In addition to the basic equipment, the following items can be stowed in the trolley box:

1 rotary hammer drill (e.g. Hilti TE 15-C)
3–4 saw blades (e.g. DS-BE 500/700/745)



Trolley:

- The maximum total permissible weight of the trolley is 180 kg.
- Lifting the trolley by crane is permissible only at the lifting point foreseen for this purpose.
- When transporting the equipment, all items must be secured to prevent movement or falling. Never loiter in the area below loads suspended by crane. Use only tested and approved lifting gear.
- The trolley may become unstable if stood on a sloping surface.

4.3 D-R 100 SI rail

Length: 1000 mm

Weight: 5.5 kg

D-R 230 SI rail

Length: 2300 mm

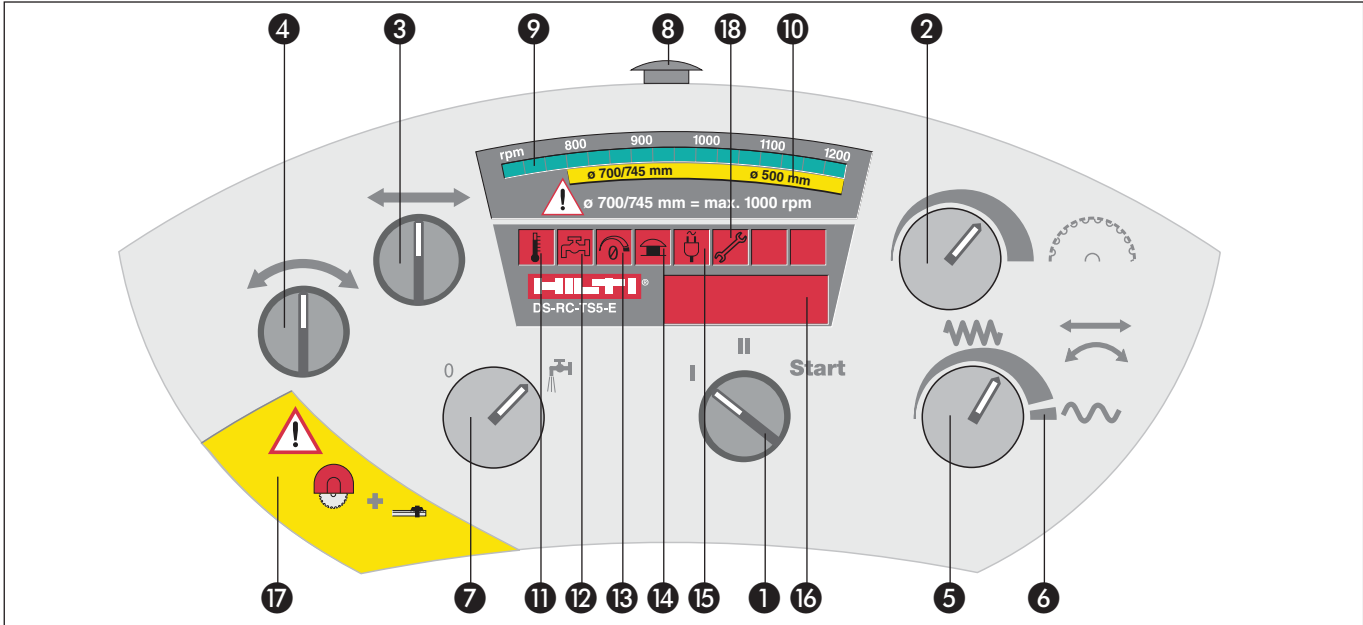
Weight: 12.7 kg

The rails feature an integrated rack and are manufactured from stainless steel.

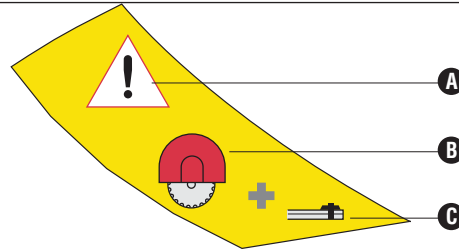


5. Operating controls

5.1 Operating controls on the DS-RC-TS 5-E remote control unit



- A** Warning
- B** Always use the blade guard
- C** Always fit end stops on the rail



5.1 Operating controls on the DS-RC-TS 5-E remote control unit

| No. | Designation | Function |
|-----|--|--|
| 1 | Saw blade drive ON / OFF | Starting blade drive: Turn to START (switch returns to position II when released) Position II = saw blade drive running Position I = saw blade drive OFF |
| 2 | Saw blade speed (rpm) | Infinite speed (rpm) regulation |
| 3 | Direction of advance (right / left or up / down) | Selects direction of advance of the saw on the rail |
| 4 | Saw blade plunge movement (right / left) | Selects direction of saw blade plunge movement |
| 5 | Speed regulation for controls 3 and 4 | Manual and / or automatic advance or plunge movement |
| 6 | Rapid movement for 5 | For rapid advance and plunge movement when saw blade drive is switched off |
| 7 | Cooling water ON / OFF (water valve) | Controls cooling water supply to saw blade. Water flows when no power is connected. |
| 8 | Emergency OFF | Press in an emergency! Leave in depressed position when setting up or changing blades etc. When ready to restart: Turn in direction of arrow – button jumps out. |

5.2 Display, symbols and warning lamps on the DS-RC-TS 5-E

| No. | Designation | Function |
|-----|---|--|
| 9 | Saw blade drive speed indicator | ■ Green LED indicates the saw blade speed during operation, set by adjusting control 2. |
| 10 | Saw blade speed (rpm) range, 500 mm and 700/745 mm dia. | ■ Recommended speed (rpm) ranges for Hilti saw blades |
| 11 | Temperature indicator | ■ Lights when the machine overheats. Switches off automatically if no reaction from operator. |
| 12 | Water cooling | ■ Lights / blinks when cooling of machine is inadequate, i.e. water too warm or insufficient |
| 13 | Zero position | ■ Lights when one of the controls is not in "0" or "neutral" position when machine is switched on. |
| 14 | Emergency OFF | ■ Lights when emergency OFF is pressed. |
| 15 | Mains supply / warning lamp | ■ Lights when machine is still not ready for operation. ■ Lights when problem with mains voltage. ■ Blinks to indicate electrical fault in DS TS 5-SE. |
| 16 | Operating hours | ■ The present operating hours total is displayed when the machine is switched on. |
| | Power output | ■ During sawing, power output of the saw blade drive is displayed, e.g. 100% |
| | Supplied voltage | ■ During sawing, supplied voltage is displayed when ON/OFF switch 1 is turned to "start" |
| | Fault indicator | ■ Displays the applicable error message e.g. "Er01". |
| 17 | Warnings | ■ Do NOT operate the wall saw without the blade guard and rail end stops in position! |
| 18 | Service indicator | ■ Lights up after 100 operating hours, Service is recommended |

5.3 Operating controls on the DS TS 5-SE saw head

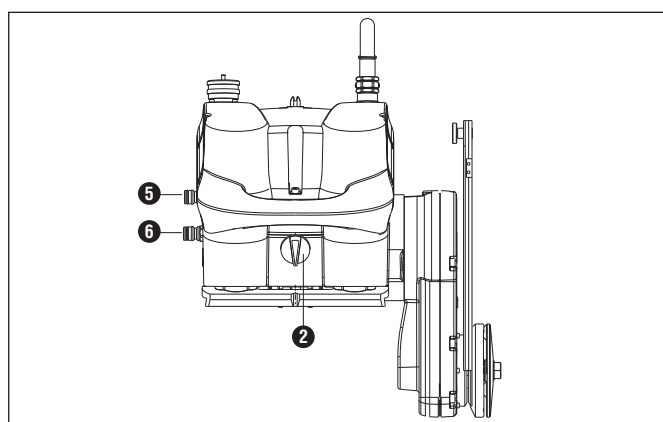
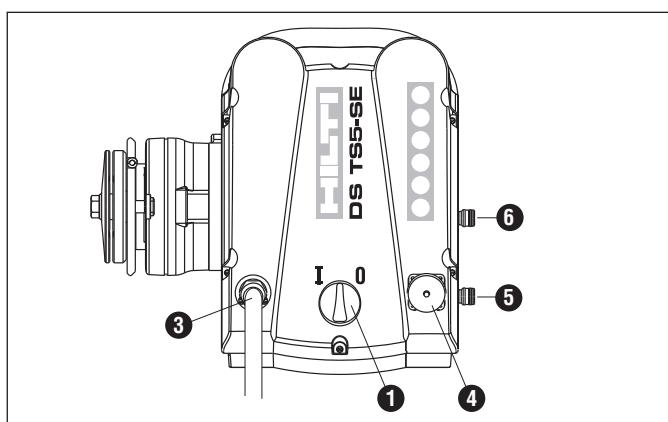
| No. | Designation | Function |
|-----|------------------------|--|
| 1 | Main switch | <p>Turn to position "0" to disconnect power from the complete system (incl. remote control unit). Note: The main switch always returns (from "0" or "I") to the middle position when released.</p> <p>Turn to position "I" to switch on. The system is ready for operation after approx. 10 sec. The indicators on the remote control unit are tested automatically during these 10 sec., as follows:</p> <ol style="list-style-type: none"> 1. Green LED, saw blade speed (rpm) 2. All red warning lamps 3. The digital display 4. The operating hours indicator <p>The mains supply warning lamp extinguishes when the machine is ready for operation.</p> |
| 2 | Water regulation valve | Position towards saw arm = all cooling water is directed to the saw blade. Intermediate positions are possible. |

Technical data and description

Positioned towards water connections = the cooling water is directed into the return circuit but a minimum quantity of approx. 0.5 l / min. always flows to the saw blade.

5.4 Electric power and water connections

| No. | Designation | Function |
|-----|---------------------------------|--|
| 3 | Power cable from mains supply | The power cable is permanently attached to the electric wall saw (no plug connection at the wall saw). Cable length: 7 m Caution: Connect the electric wall saw only to the specified mains voltage. Please refer to the rating plate. |
| 4 | Remote control connection | Socket for the remote control cable |
| 5 | Cooling water supply connection | Cooling water supply connection with standard Gardena coupling. The water serves to cool the electric motors, the control electronics and the saw blade. |
| 6 | Cooling water return connection | When the saw is operated with a minimum of cooling water at the saw blade, the water regulation valve 2 can be adjusted to redirect water to the return circuit 6 |



6. Parts of the electric wall saw

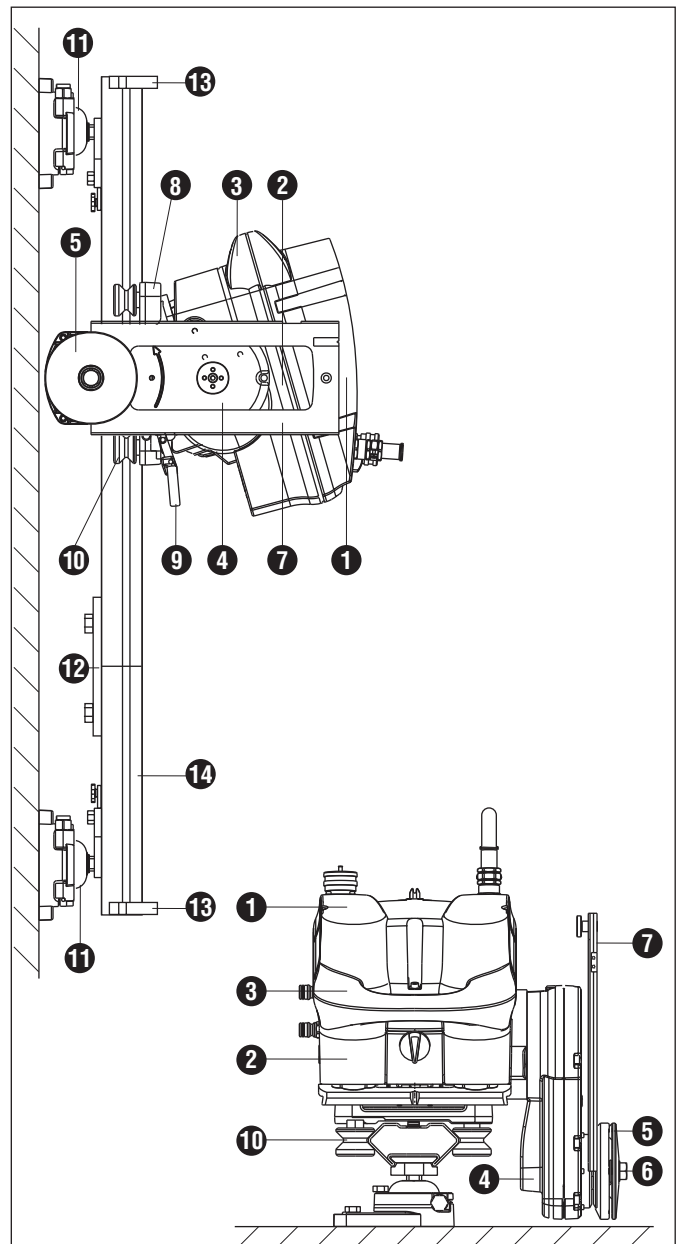
6.1 DS-RC-TS 5-E remote control unit

| No. | Designation |
|-----|--|
| 1 | Remote control unit housing |
| 2 | Grips / control panel protection bars |
| 3 | Display with operating controls |
| 4 | Shoulder belt with fastener |
| 5 | Attachment point for belt fastener |
| 6 | Rear side of remote control unit: Instructions / sawing guidelines |



6.2 DS TS 5-SE electric wall saw incl. rail system

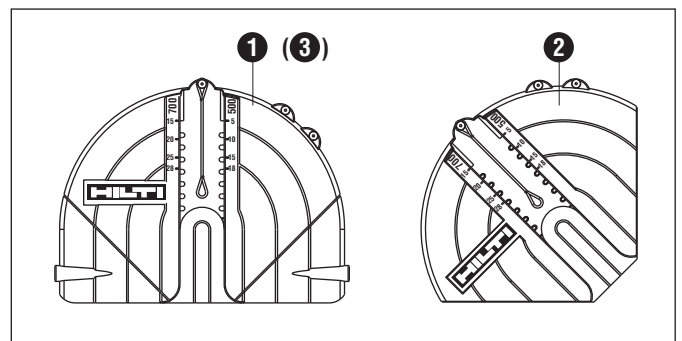
| No. | Designation |
|-----|------------------------------|
| ① | Saw head housing cover |
| ② | Saw head motor housing |
| ③ | Saw head carrying handle |
| ④ | Pivoting (360°) saw arm |
| ⑤ | Saw blade mounting flange |
| ⑥ | Special M12×25 screw |
| ⑦ | Blade guard holder |
| ⑧ | DS-CA 5-E carriage |
| ⑨ | Saw unit quick-release lever |
| ⑩ | Guide rollers |
| ⑪ | DS-RFSI rail support |
| ⑫ | DS-RCSI rail connector |
| ⑬ | DS-ESSI end stop |
| ⑭ | D-R 100 / 230 SI rail |



6.3 DS-BG 5-E blade guard

| No. | Designation |
|-----|--|
| ① | DS-BG 5-ES standard blade guard (700/745 mm dia.) |
| ② | DS-BG 5-EC corner blade guard (700/745 mm dia.) |
| ③ | DS-BG 5-EF flush cut blade guard (700/745 mm dia.) |

The same blade guard is used for 500 mm dia. saw blades.



Operation

1. Preparations at the workplace

1.1 Warnings and safety precautions

Read and observe the “Safety precautions” section before operating the DS TS 5-SE electric wall saw.

1.2 Power connection

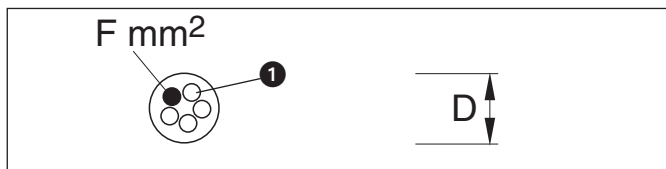
Always ensure that the electric power cable, from the mains or from a generator, contains an earth / ground conductor and that this conductor is connected. The electric power connection at the jobsite must fulfil the following safety requirements:

| Voltage | Max. fuse rating (amps) |
|--|-------------------------|
| 3×200 V | 32 A |
| 3×400 V | 16 A |
| RCD circuit breaker at jobsite power supply connection | max. 30 mA |

1.3 Extension cables

Only extension cables approved for this type of application and of adequate capacity (conductor cross section) should be used. If necessary, mount the supplied CEE 16 female coupling as per EN 60309 on your extension cable. The required conductor cross section of the cable used depends on the length of the cable, as follows:

Electric extension cable cross section



F = cross-sectional area in mm² of an individual conductor in the extension cable

❶ The extensions cable may have 4 or 5 contactors. The 5th contactor (neutral) is **not required**.

Cross-section F in mm²

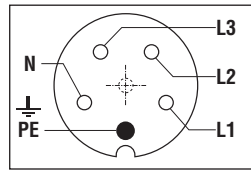
| Cable length in meters | Voltage and current: | |
|------------------------|-------------------------|-------------------------|
| | 400 V / 16 A | 200 V / 32 A |
| 25 | F = 1.5 mm ² | F = 2.5 mm ² |
| 50 | F = 1.5 mm ² | F = 2.5 mm ² |
| 75 | F = 2.5 mm ² | F = 4 mm ² |
| 100 | F = 2.5 mm ² | F = 4 mm ² |

1.4 Euro standard plug as per EN 60309

Wiring diagram, 3P + PE

PE = earth / ground

N = neutral: This contactor is not required for the DS TS 5-SE electrical wall saw.



L1 = Phase 1
L2 = Phase 2
L3 = Phase 3

The plug should be wired in accordance with the details shown on the base of the plug (numbered).

1.5 Cooling water

The specified cooling water volume is 2–4 l/min. at the optimum water temperature of ≤ 18°C.

The absolute minimum volume is 2 l/min.

Water supply pressure: 4 to max. 6 bar

Depending on the job and situation, arrangements should be made for water disposal, e.g. water barrier, water extraction, plastic covers etc.

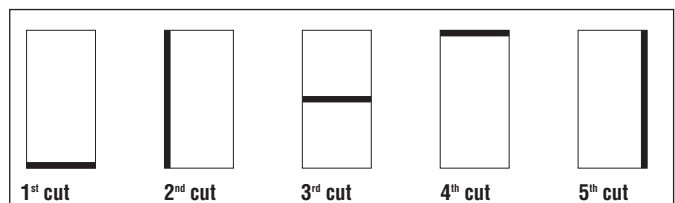
1.6 Clarify the situation and secure the workplace

Obtain approval from the site management before beginning sawing. Find out whether overcutting at corners is permitted. If not, the corresponding corner holes must be planned and drilled. Check that the area is cordoned off, that supports are in place and warnings are displayed.

1.7 Planning the cutting sequence and marking the cuts and fastening points

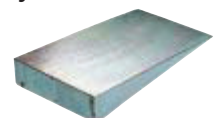
The parts to be cut out are usually marked by the client. A rational cutting sequence can be followed when the rail supports are cleverly positioned.

If necessary, adjust the maximum size and weight of the concrete blocks to the prevailing conditions, i.e. in accordance with the work order, the means of handling the blocks, the capacity of the crane or the maximum floor loading capacity.



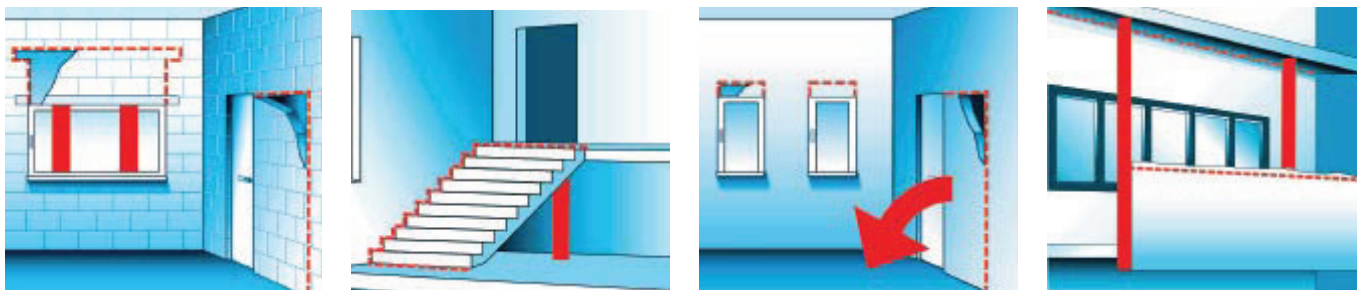
Steel wedges can be used as necessary to secure the cut-out concrete blocks.

Item designation: Steel wedge



1.8 Supporting / securing concrete blocks

Concrete blocks with a weight of several hundred kg may be cut out during sawing. Secure the blocks as necessary before beginning sawing, as shown in the following examples:



2. Setting up the electric wall saw

2.1 Fastening to the base material

The saw can only be used efficiently and safely when it is anchored rigidly and securely to the base material. We recommend the use of Hilti drilling machines and anchor systems.

The rail supports must be fastened using anchors suitable for the base material. Observe the installation instructions given by the anchor manufacturer for setting the anchors.

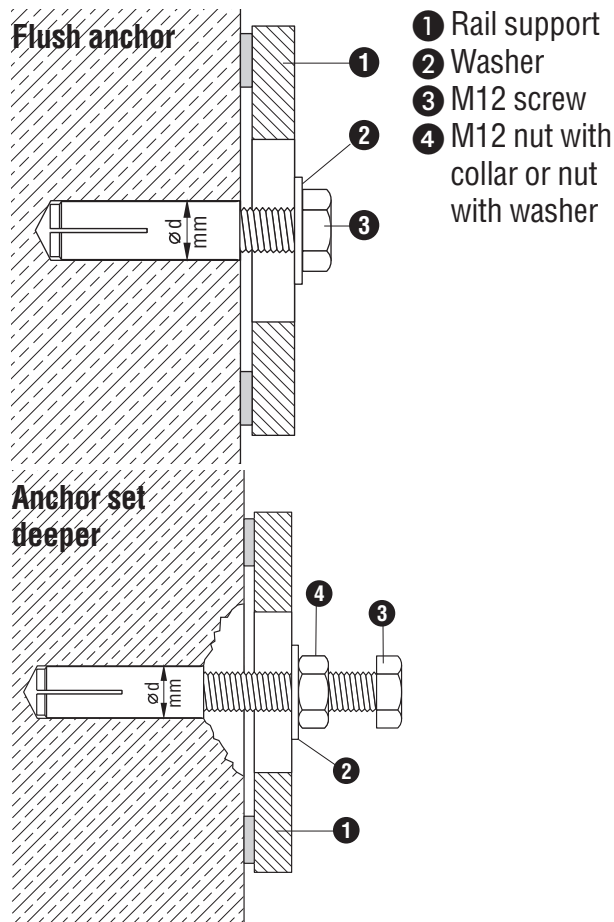
For example, when placing the Hilti HKD M12 metal expansion anchor, a minimum distance of 20 cm to the nearest edge must be observed (Reason: risk of splitting the concrete when the anchor is expanded). Generally speaking, these anchors should be set flush with the concrete surface, or deeper if the surface is uneven etc.

Important: The drilling dust must always be blown out of the anchor hole after drilling.

Alternative fastening methods such as Hilti HIT adhesive anchors or threaded rods in through holes may be used on masonry, rough stone walls or similar materials.

Unevenness or variations in the level of the concrete surface can be easily compensated by setting the rail support angle adjustment correspondingly.

Examples of anchor fastenings on concrete



Recommended by Hilti:

HKD-D M 12×50, anchor hole 16 mm dia.

HKD-E M 12×50, anchor hole 15 mm dia.

HKD-S M 12×50, anchor hole 15 mm dia.

Galvanised screws, 8.8 grade
M 12 × 40 mm
M 12 × 70 mm

Operation

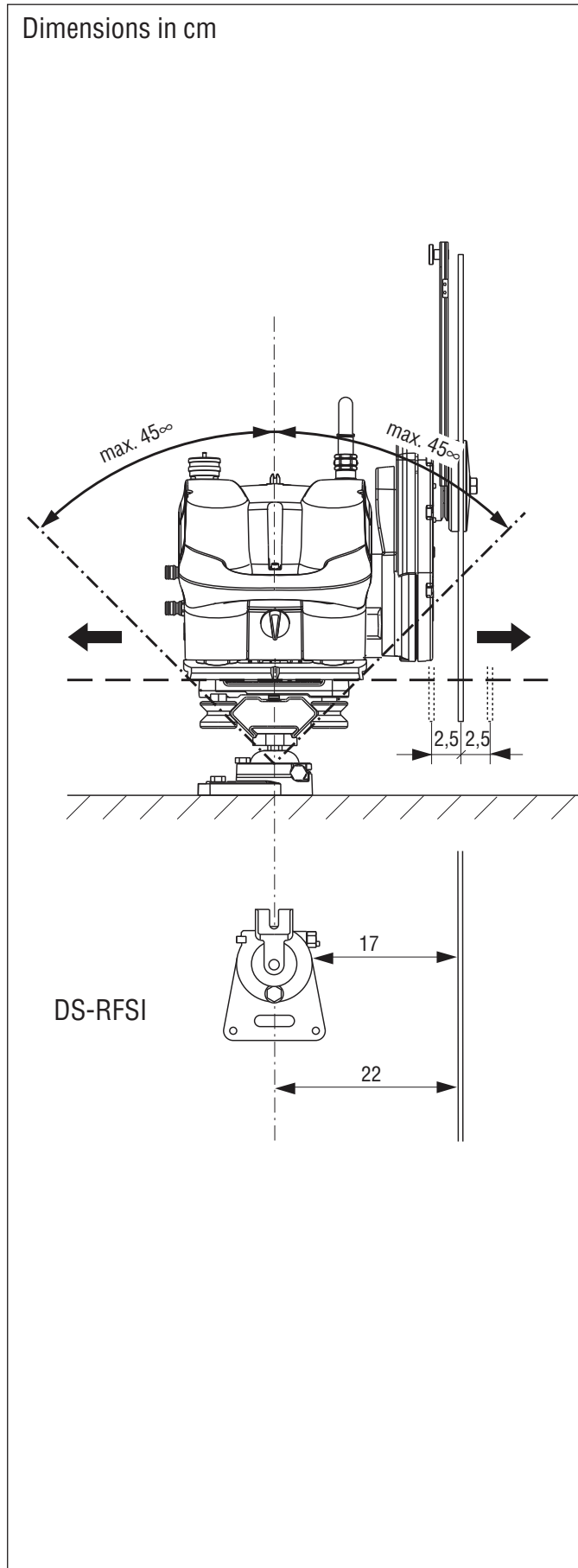
2.2 Positioning and mounting the rail supports

The rail supports can be fastened in countless positions thanks to their innovative Hilti design. The operator is required to know only 3 basic dimensions:

1. Anchor placement dimensions: saw cut to anchor hole = 22 cm / 30 cm
 2. Check dimension: saw cut to rail support = 17 cm
- These dimensions apply when the saw head is positioned in the middle of the carriage. In addition, the saw head can be shifted laterally on the carriage by a distance of + 2.5 cm. The same dimensions apply for standard cutting and flush cutting.

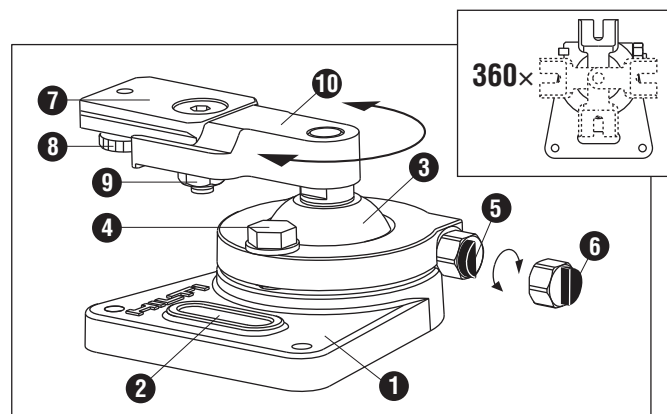
Standard mounting sequence

1. Mark and drill the anchor holes.
2. Place the anchors and mount the rail supports.
3. Mount the rail with the carriage.
4. Using the built-in bubble level on the carriage, bring the rail into vertical or horizontal alignment. Tighten the anchor fastening screws.
5. Mount the saw head on the carriage.
6. Fit the saw blade.
7. Adjust the blade angle so that the saw blade is at 90° to the wall or at any desired angle between 90° and 45°, as required. To do this, release the clamping screw ④. Retighten the screw when the desired angle has been set.
8. Position the saw blade exactly on the marked line of the cut by shifting the saw laterally on the carriage.
9. Use the 19 mm AF ring / open-end wrench to tighten the rail support fastening screws and clamping screws.



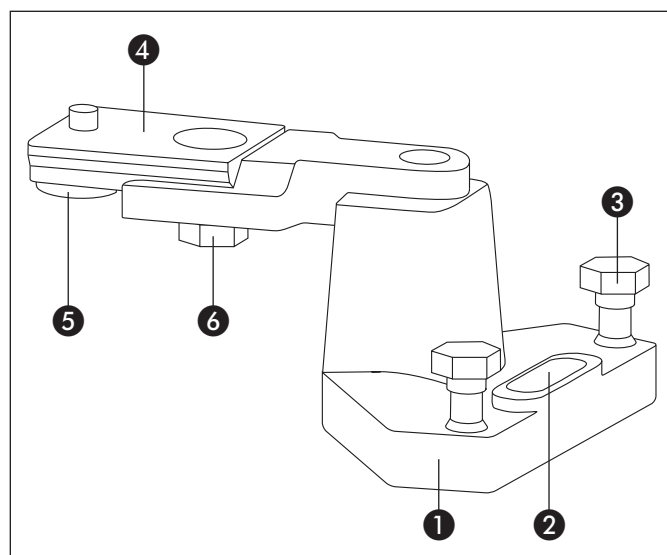
2.3 The DS-RFSI rail support

| No. | Designation |
|-----|---|
| 1 | Baseplate |
| 2 | Slot for M12 anchor screw |
| 3 | Ball swivel for rail angle adjustment (max. 45°) |
| 4 | Clamping screw for angle adjustment |
| 5 | 90° locking position: locked when the half-moon is turned towards the ball |
| 6 | Released position: released when the half-moon is turned away from the ball |
| 7 | Rail clamping piece |
| 8 | Knurled-head screw |
| 9 | M12 fastening nut with collar |
| 10 | Fastening fork (360° pivot) |



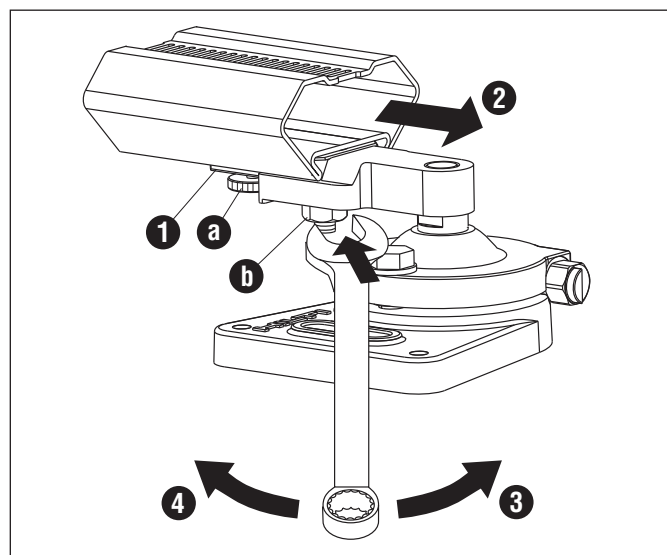
2.4 The DS-RFIX SI rail support

| | |
|---|-------------------------------|
| 1 | Baseplate |
| 2 | Slot for M12 anchor screw |
| 3 | Levelling screws |
| 4 | Rail clamping piece |
| 5 | Knurled-head screw |
| 6 | M12 fastening nut with collar |



2.5 Mounting the D-R 100/230 SI rail on the rail support

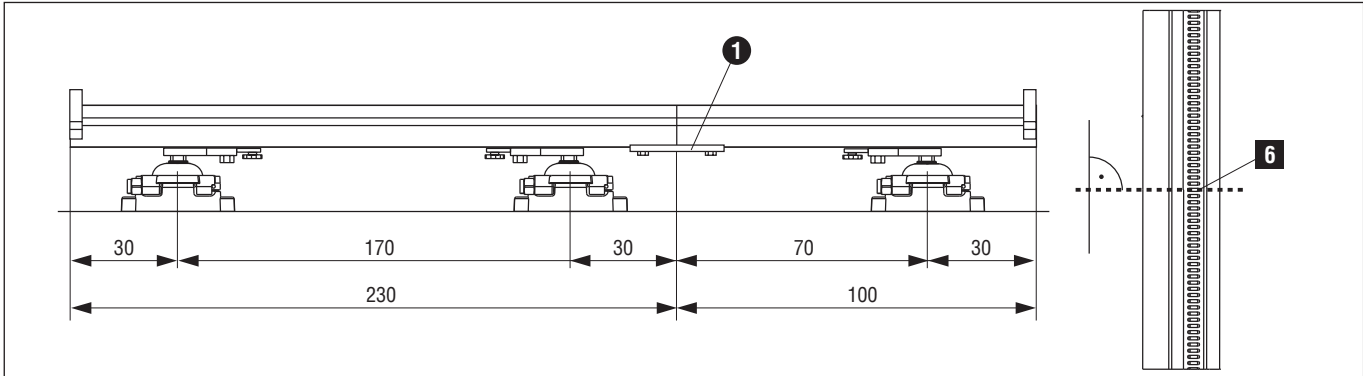
- Slide the clamping piece into the rail profile. The knurled-head screw (a) can be tightened to prevent movement or loss of the clamping piece.
- Slide the clamping piece onto the fastening fork of the rail support.
- Use the 19 mm AF open-end wrench to firmly tighten the M 12 nut with collar (b) of the clamping piece.
- Releasing the rail: Use the open-end wrench to release the M12 nut with collar (b) of the clamping piece and slide the clamping piece out of the fastening fork on the rail support.



Operation

2.6 Distance between rail supports, extending the rails

The distance between 2 rail supports must not exceed 170 cm. The rails may be shortened to any desired length, as required. The cut must be made exactly in the middle of one of the openings for the pinion teeth **6**. Burrs should be removed from the cut edge.

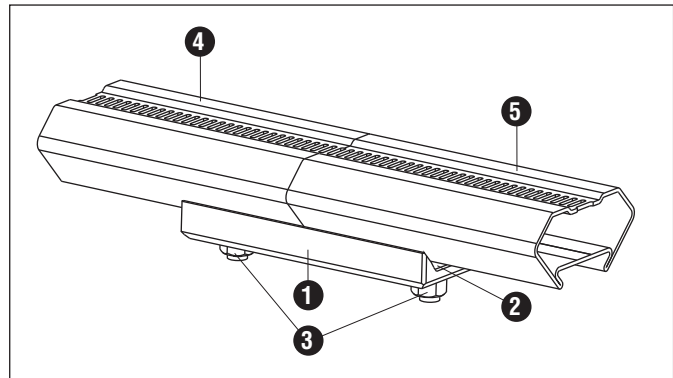


2.7 DS-RCSI rail connector

Slide the clamping piece into the rail and use the 19 mm AF open-end wrench to tighten the M12 nut securely.

No. Designation

- | | |
|----------|---------------------------------|
| 1 | Rail connector |
| 2 | Clamps (2) |
| 3 | M 12 nut with collar (19 mm AF) |
| 4 | Rail 1 |
| 5 | Rail 2 |

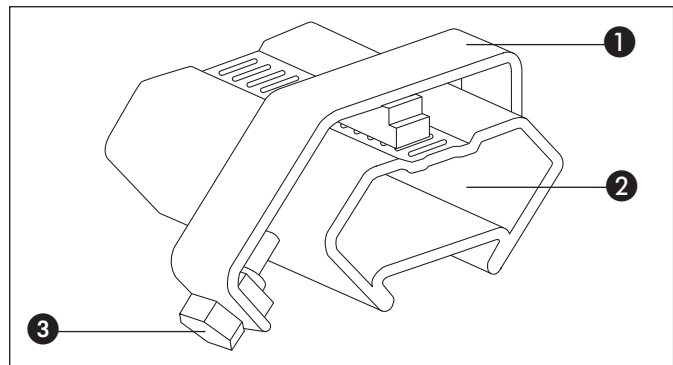


2.8 DS-ESSI rail end stop

An end stop must always be fitted at each end of the rail.

No. Designation

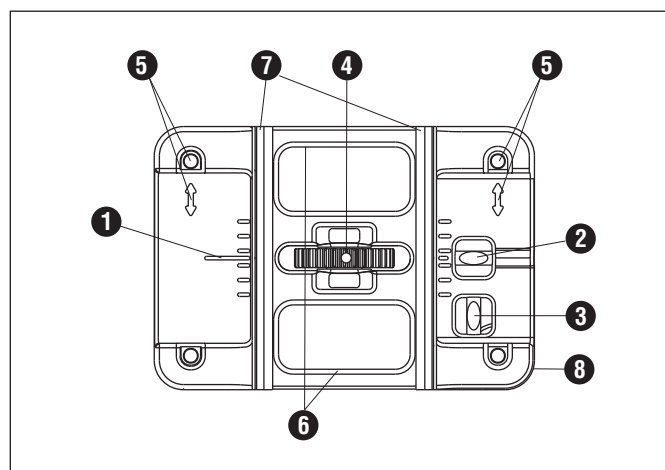
- | | |
|----------|----------------|
| 1 | Rail end stop |
| 2 | Rail |
| 3 | Clamping screw |



2.9 DS-CA5-E carriage

The carriage may be left permanently on the rail.

| No. | Designation |
|-----|---|
| ① | Mark for centering and scale for adjusting the saw head |
| ② | Horizontal bubble level |
| ③ | Vertical bubble level |
| ④ | Advance pinion |
| ⑤ | Guide rollers for adjustment without play |
| ⑥ | Grip opening (transport with rail) |
| ⑦ | Saw head mounting guides |
| ⑧ | Cable protector |



2.10 Example of an opening with flush cut at bottom with pivoting rail support

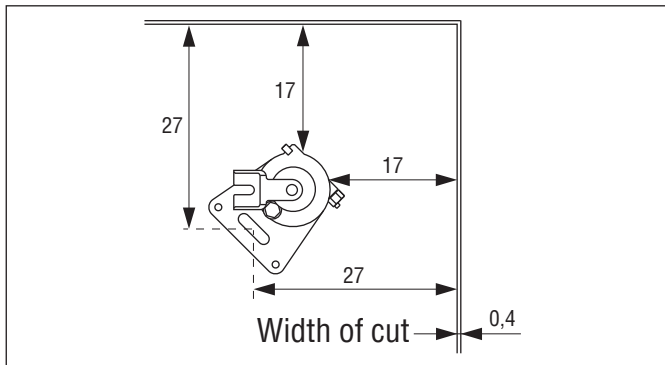
Possible rail support positions (all dimensions in cm)

In the example shown, the rail can be repositioned without having to detach the wall saw from it.

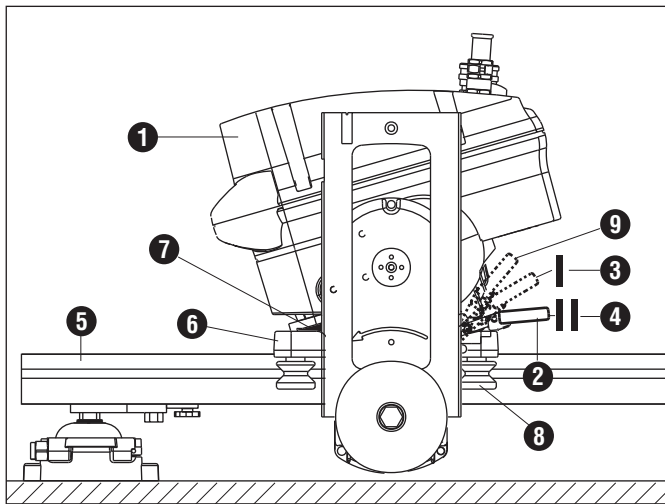
1. Run the saw along the rail to the pivot point.
2. Release the clamping piece from the rail support at the other end of the rail.
3. Pivot the rail, with the saw still attached, into the new position and fasten it to the previously installed rail support.
4. Adjust the saw, with blade fitted, to the cutting line.

Operation

2.11 Possible alternative positions of the DS-RFSI rail support (all dimensions in cm)



2.12 Mounting the DS TS 5-SE saw head



| No. | Designation |
|-----|-------------------|
| 1 | Saw head |
| 2 | Locking lever |
| 3 | I engaged, secure |
| 4 | II fixed position |
| 5 | Rail |
| 6 | Carriage |
| 7 | Guides |
| 8 | Guide rollers |
| 9 | Released position |

Step 1

Engage the saw head in the guide 7 and push it towards the carriage at the locking mechanism side. The locking mechanism should be heard to engage.

The locking mechanism is then in position I = 3. When in this position, the saw head is secure and cannot fall off. It can still be moved laterally by up to ± 2.5 cm.

Step 2

Push the locking lever 2 down past the dead-centre point into position II = 4 as far as it will go.

This is the sawing position. The saw head is firmly attached to the carriage.

Removing the saw head from the carriage

Release the locking lever 2 (position I) and continue to pull it up 9 until the saw head is released. Be prepared to hold its weight. Keep one hand on the carrying grip.

2.13 Mounting the saw blade

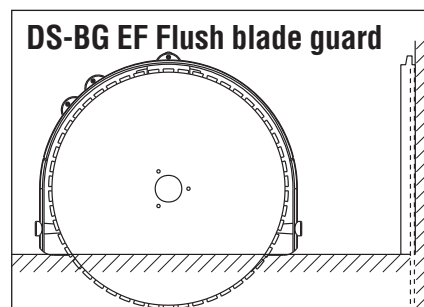
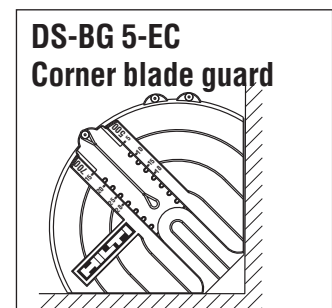
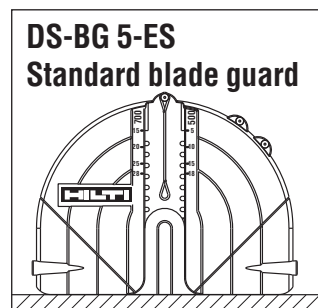
- Select the suitable saw blade specification depending on the material to be cut.
- Saw blade diameter: 500 or 700/745 mm
- Observe the correct direction of rotation when mounting the saw blade. The direction of rotation of the drive spindle is indicated on the saw arm (counter-clockwise as seen when facing the blade mount).
- Fit the saw blade flange and tighten the central fastening screw with the 19 mm ring / open-end wrench.

2.14 Mounting the blade guard

Bring the blade guard holder into the desired position on the saw arm.

Slide the blade guard onto the blade guard holder and secure it with the rubber fastener.

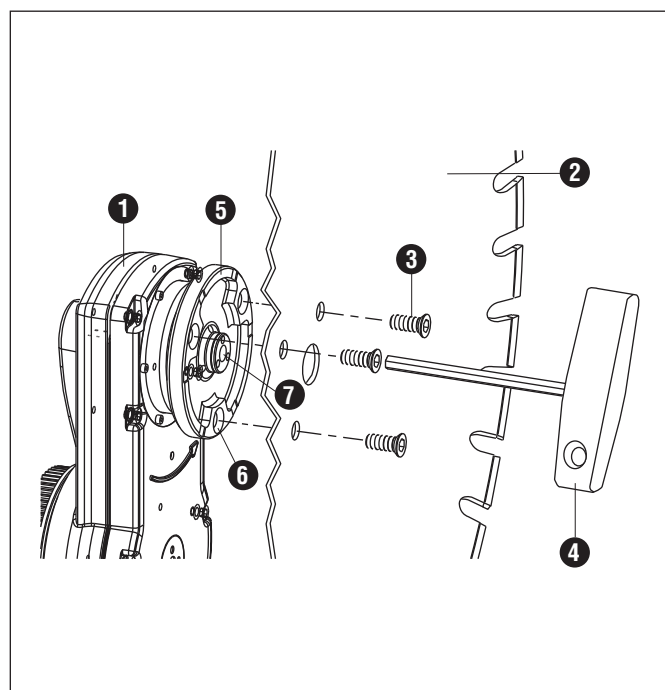
All blade guards can be used for both 500 and 700/745 mm blades and indicate the actual cutting depth. The blade guard holder serves as the depth scale.



2.15 Flush cutting

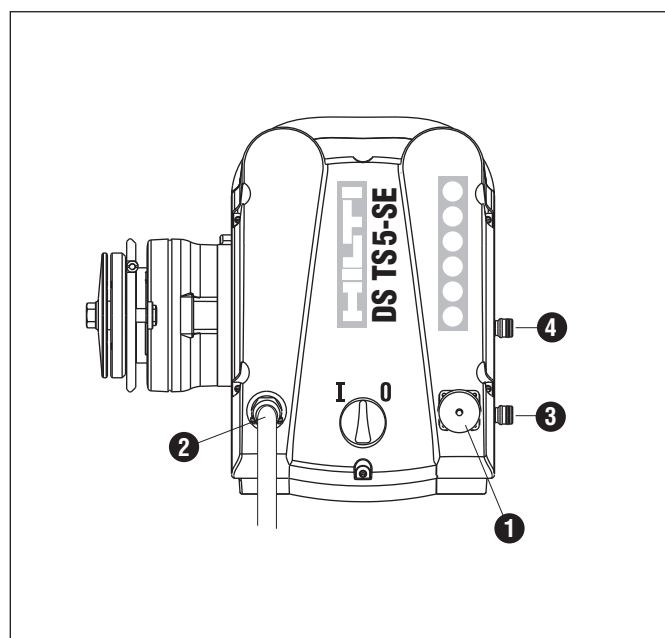
For flush cutting, the saw blade is mounted directly on the saw blade drive flange using 3 countersunk-head screws. The standard saw blade flange and central fastening screw are not used. The anchor placement dimensions and the check dimension thus remain exactly the same as for standard cutting. The three plastic plugs must be unscrewed before mounting the saw blade. At the same time, to prevent dirt entering the threaded hole during flush cutting, an M12 plastic plug must be inserted in the central M12 bore. To prevent dirt entering the threaded holes, the plastic plugs should be reinserted after completion of flush cutting.

| No. | Designation |
|-----|---------------------------------------|
| ① | Saw arm |
| ② | Saw blade |
| ③ | Saw blade fastening screws |
| ④ | 6 mm internal hex. wrench with T-grip |
| ⑤ | Saw blade mounting flange |
| ⑥ | Plastic plugs M10 (3 piece) |
| ⑦ | Plastic plugs M12 (1 piece) |



2.16 Connecting the remote control unit, power and water

| No. | Designation |
|-----|--|
| ① | Connect the bayonet-type plug of the DS-RC-TS 5-E remote control unit to the socket on the saw. Connect the cover caps of the plug connections together (prevents the entrance of dirt). |
| ② | Connect the power cable to the mains supply via the extension cable. The mains supply must comply with the specification on the rating plate. |
| ③ | Connect the water supply to the upper connection (with Gardena coupling). |
| ④ | If required, connect the water return hose (with Gardena coupling) to the lower connection. |



3. Diamond saw blades

3.1 Range of saw blades / recommendations

We recommend that the specially designed DS-BE saw blades are used with the DS TS 5-SE electric wall saw. Select the blade to be used, depending on the material being cut, its thickness and steel reinforcement content.

- Blades of the types RC and BC feature short-tooth design.
- The information and direction of rotation shown on the sticker must be observed.
Note: The instruction "Max. 1700 r.p.m. 63 m/s according to VBG 49" refers to the applicable standards / regulations. The recommended speeds for sawing can be found in the table in section 3.2.
- Flush cutting: Use the special M10 countersunk-head screws for mounting the saw blade.

3.2 Cutting speed and saw blade speed (rpm)

The optimum cutting speed (blade peripheral speed) depends on a number of factors such as: concrete quality, aggregates and steel reinforcement content.

Guide values for the DS TS 5-SE electric wall saw

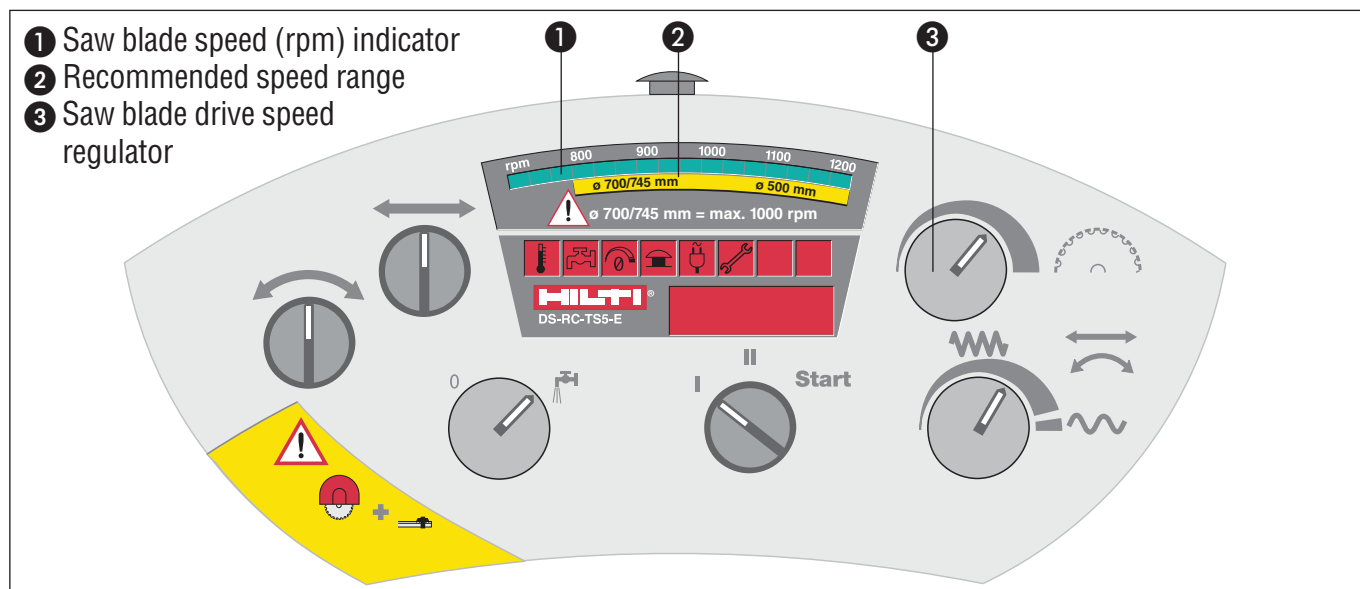
| Saw blade dia. (mm) | Speed (rpm) | Cutting speed (m/sec.) |
|---------------------|-------------|------------------------|
| 500 | 1200 | 31 |
| 700 | 850–1000 | 31–37 |
| 745 | 800–1000 | 31–39 |

The DS TS 5-SE electric wall saw can be operated within the 800 to 1200 rpm speed range. The speed can be adjusted, with infinite control, to the optimum setting within this range and is always indicated in the display (bright spot).

Caution: The saw must not be operated (sawing) at a speed below 800 rpm.



Operation of the saw at speeds greater than 1000 r.p.m. with blades of 700 / 745 mm in diameter is not permissible.



3.3 Basic rules concerning blade peripheral speed or cutting speed

- The blade peripheral speed or, respectively, the spindle speed (rpm) should be reduced when the concrete contains hard aggregates (types of rock such as silex and flint)
- A higher blade peripheral speed or, respectively, a slightly higher spindle speed (rpm) can be selected when the concrete cuts easily.
- The blade peripheral speed or, respectively, the spindle speed (rpm) should be reduced when a high steel reinforcement content is encountered.

Operation

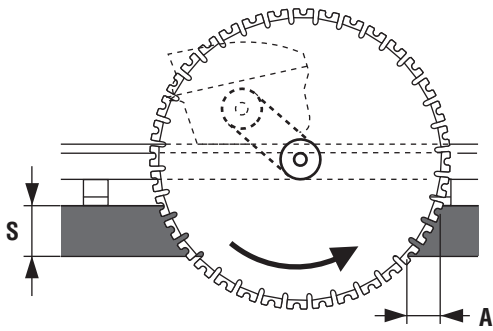
3.4 Cutting depths of DS-BE saw blades

| Blade dia. (mm) | Cutting depth (cm) |
|-----------------|--------------------|
| 500 | 18 |
| 700 | 28 |
| 745 | 30 |

Overcutting distances for the DS TS5-SE electric wall saw

Different overcutting distances result depending on the application and on whether or not the saw blade can be plunged to its maximum depth.

Example A

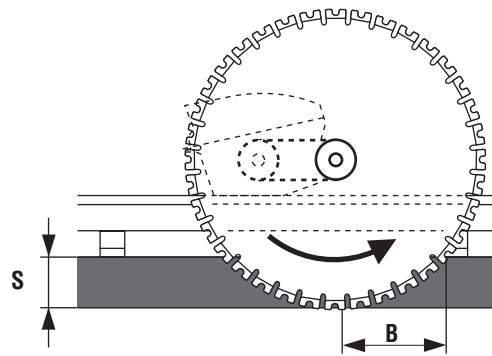


| Concrete S (cm) | 500 mm dia. blade A (cm) | 700 mm dia. blade A (cm) | 745 mm dia. blade A (cm) |
|-----------------|--------------------------|--------------------------|--------------------------|
| 10 | 7 | 4 | 3 |
| 15 | 13 | 8 | 6 |
| 20 | – | 13 | 11 |
| 25 | – | 20 | 17 |
| 30 | – | – | 32 |

Example A

| | | |
|--------------------------|--|--------|
| Saw blade diameter | | 500 mm |
| Concrete thickness (S) | | 15 cm |
| Overcutting distance (A) | | 13 cm |

Example B



| Concrete S (cm) | 500 mm dia. blade B (cm) | 700 mm dia. blade B (cm) | 745 mm dia. blade B (cm) |
|-----------------|--------------------------|--------------------------|--------------------------|
| 10 | 20 | 24 | 25 |
| 15 | 22 | 28 | 30 |
| 20 | – | 31 | 33 |
| 25 | – | 33 | 35 |
| 30 | – | – | 37 |

Example B

| | | |
|--------------------------|--|--------|
| Saw blade diameter | | 500 mm |
| Concrete thickness (S) | | 15 cm |
| Overcutting distance (A) | | 22 cm |

4. Checks, operation and the sawing procedure

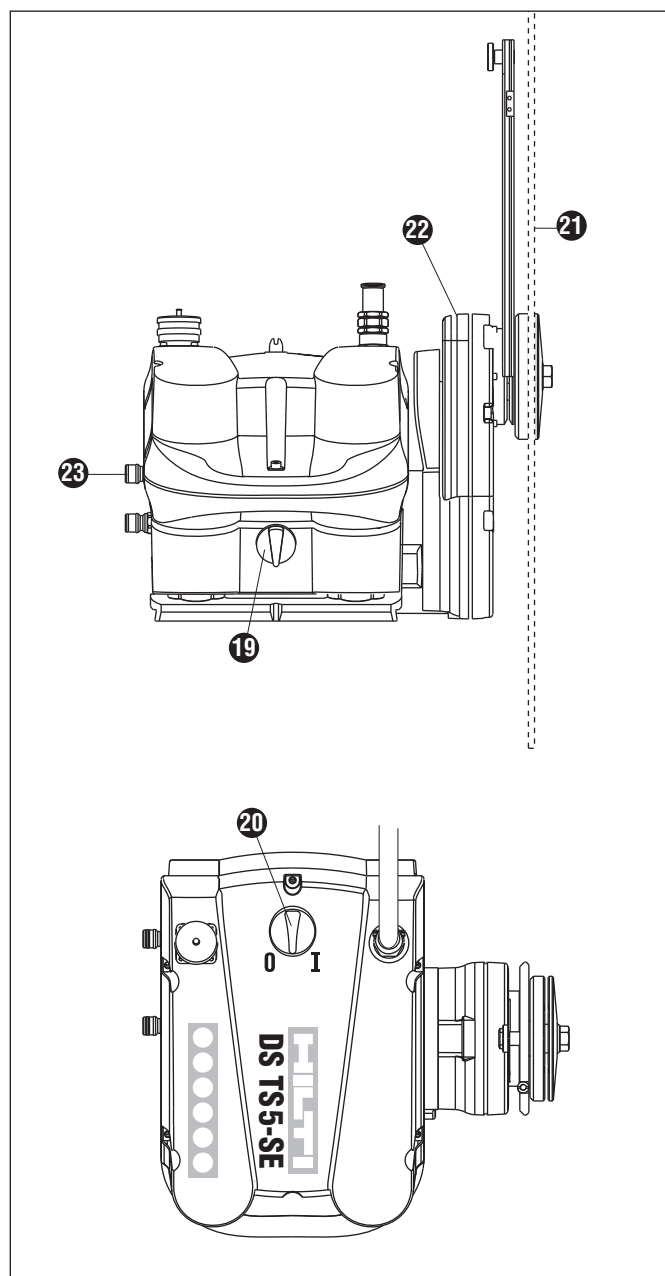
4.1 Points to check before beginning sawing

- The rail supports and rails must be aligned and fastened correctly (all screws tightened securely).
- The saw head must be mounted correctly on the carriage and secured with the locking lever in position 2.
- The saw blade must be mounted in the correct direction of rotation and the saw blade flange central locking screw (or the 3 M10 countersunk-head screws) tightened securely.
- The saw blade guard must be in place and the rail end stops fitted.
- The remote control unit, power cable and water hoses must be connected.
- All controls on the remote control unit must be set to OFF or the neutral position.
- The operator should carry the remote control unit (using the shoulder strap). The water regulation valve should be set to “Return” or “Saw blade”.
- The safety precautions must be observed.

4.2 Operation during the sawing procedure

Numbering: Please also refer to section 5.1, “Operating controls on the remote control unit”.

- | No. | Designation |
|-----|---|
| 1. | Turn on the water supply from the jobsite 23 and adjust the water regulation valve 19 to the desired water flow rate. |
| 2. | Turn the main switch 20 on the saw head to the I position (switch returns to middle position when released). ◀ The remote control unit carries out the self-test (see section 5.3: operating controls). ◀ The electric wall saw is ready for operation after approx. 10 seconds |
| 3. | Use the controls 3 and 5/6 to bring the saw head to the starting position (then return controls to neutral / zero position). |
| 4. | Turn control 1 to start the saw blade drive: I ◀ START ◀ II . The saw blade 21 begins to rotate. |
| 5. | Adjust the saw blade speed 2/9 |
| 6. | Open the water valve by remote control 7 |



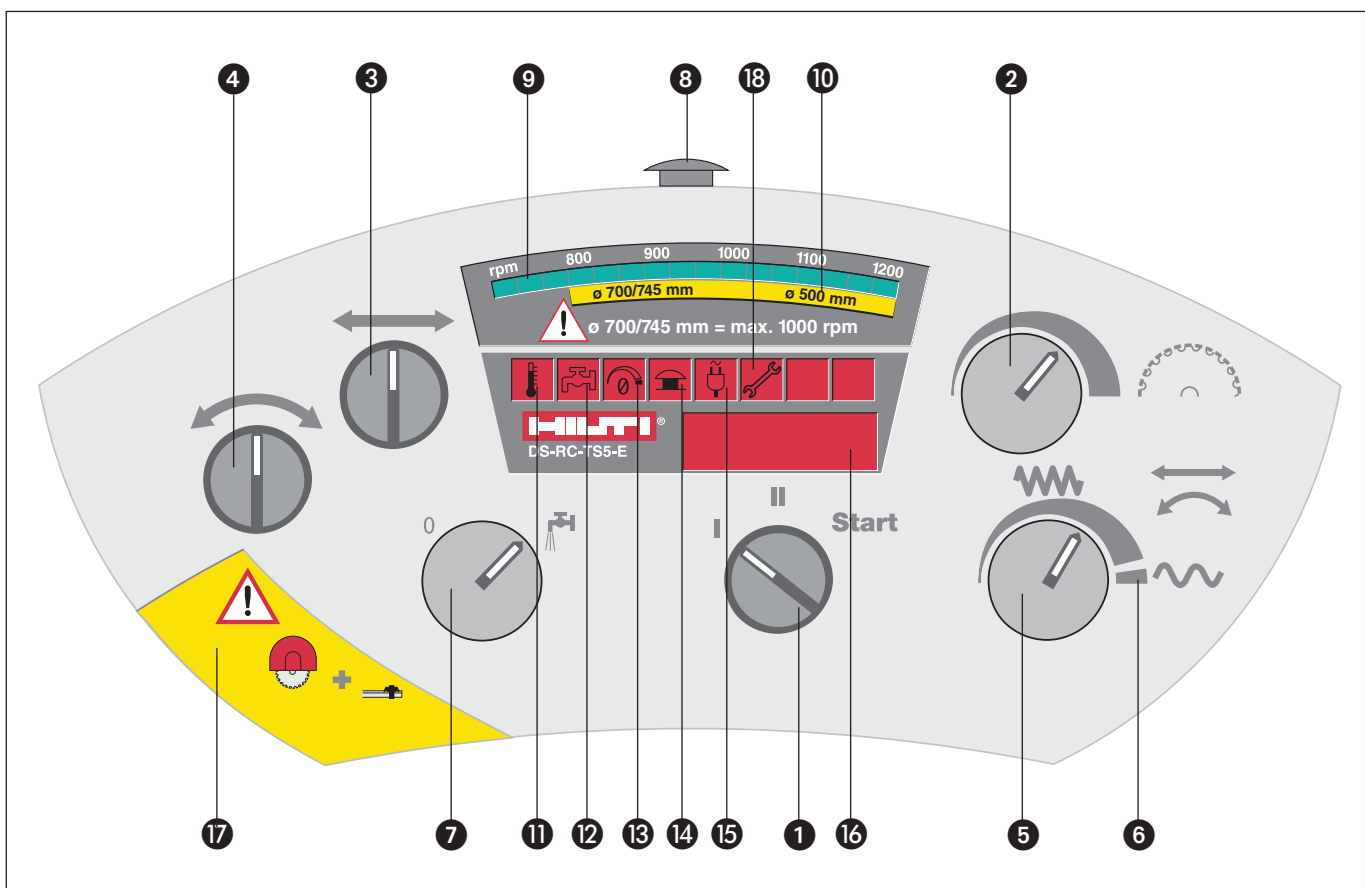
Operation

4.2 Operation during the sawing procedure (continued)

- | No. | Designation |
|-----|--|
| 7. | Pivot the saw arm to plunge the blade into the concrete using ④ and ⑤. |
| 8. | Select the direction of advance ③ and begin sawing by adjusting the speed control ⑤ (desired manual setting or set to maximum position). Saw advance is monitored electronically and movement reduced automatically when increased resistance is met (e.g. when cutting through reinforcing bars) thus preventing stalling of the blade. |
| 9. | Supervise the sawing procedure. The performance indicator ⑬ is now active. At the end of the cut, increase cutting depth (plunge) as necessary, select the advance direction and continue sawing (see paragraphs 7. and 8.). |
| 10. | When the cut has been completed, lift the saw arm up into the 90° / vertical position ⑫ and advance the saw along the rail to the desired position. Set to idling speed, switch off the saw blade drive (II < I), set the water valve ⑦ to the "0" position and set all other controls to the neutral / 0 position. Press the emergency OFF button ⑧ as an additional safety measure. Make preparations for the next saw cut. |



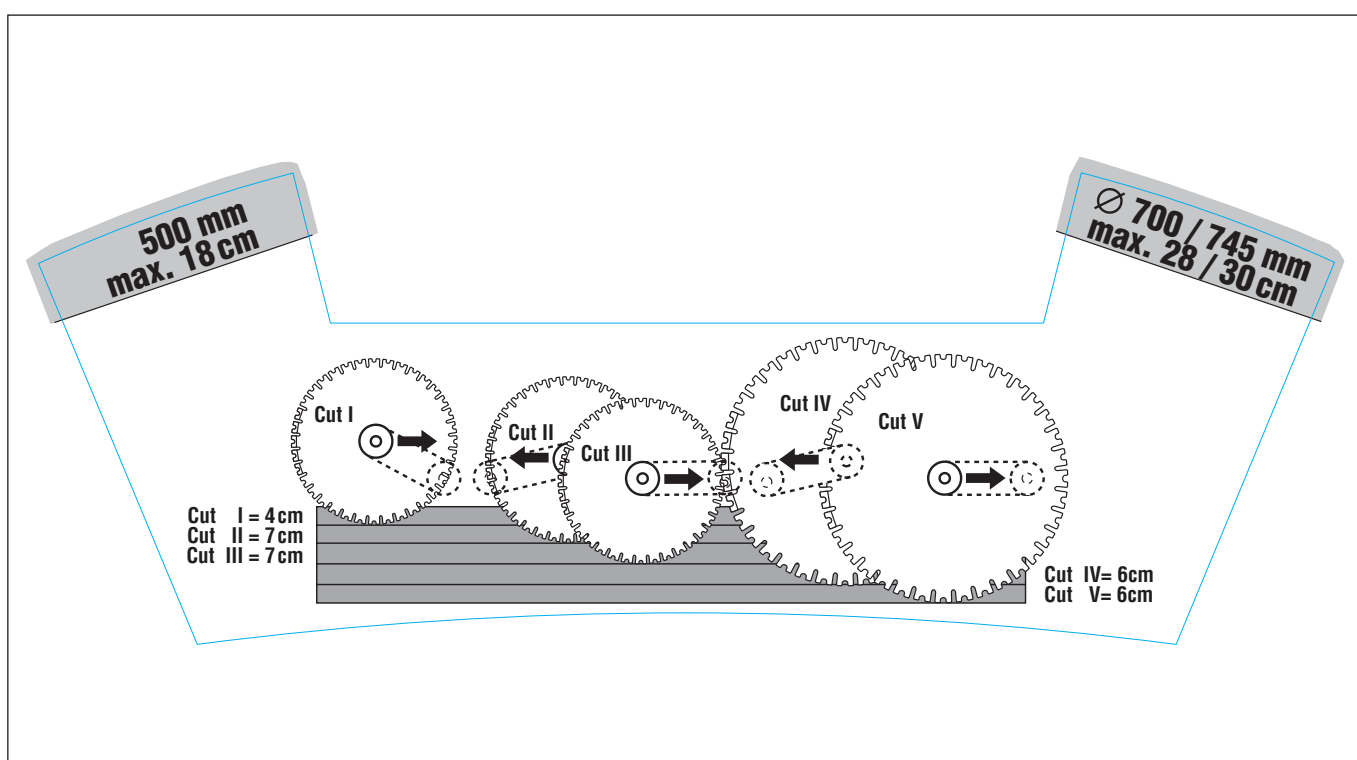
Press the emergency OFF button ⑧ in critical or dangerous situations during sawing!



4.3 Recommendations concerning the guide cut and cutting sequence

Please refer to the sticker on the rear of the DS-RC-TS 5-E remote control unit.

| Cut | Blade Diameter | Depth of Cut | Total Cutting Depth | Sawing Arm Position | Power |
|-----|----------------|--------------|---------------------|---------------------|-------|
| 1 | 500 mm | 4 cm | 4 cm | always trailing | 65% |
| 2 | 500 mm | 7 cm | 11 cm | preferably trailing | 100% |
| 3 | 500 mm | 7 cm | 18 cm | preferably trailing | 100% |
| 4 | 700/745 mm | 6 cm | 24 cm | preferably trailing | 100% |
| 5 | 700/745 mm | 4/6 cm | 28/30 cm | preferably trailing | 100% |



4.4 The guide cut

The initial cut, known as the guide cut, must always be made with the saw arm in the trailing position (see illustration above). Depending on the base material (hard, soft or masonry) the guide cut may be made to a depth of between 2 and 4 cm. The guide cut should be made at approx. 65% power. This will prevent the blade from wandering and ensure a straight cut.

4.5 Subsequent cuts

After the guide cut, subsequent cuts can be made with the saw arm in the trailing or leading position. The depth of cut, on the other hand, depends greatly on the material being cut but should be between 4 and 7 cm.

4.6 Cutting depth

In applications where concrete walls with a thickness of up to approx. 15 cm are to be cut, we recommend, as a basic rule, use of the 500 mm dia. blade (max. cutting depth 18cm).

When cutting to a greater depth in concrete, always use the 500 mm dia. blade to make the initial guide cut.

When a greater cutting depth is required, the maximum depth of 28/30 cm can be achieved by changing to the 700/745 mm dia. blade.

4.7 Control of advance movement

The intelligent advance control operates automatically when set to the maximum position. This means that the

Operation

speed of advance is automatically reduced or increased depending on the resistance met by the diamond saw blade. This ensures that the DS TS 5-SE automatically makes use of the maximum power available when operating under full load.

4.8 Ending the sawing procedure

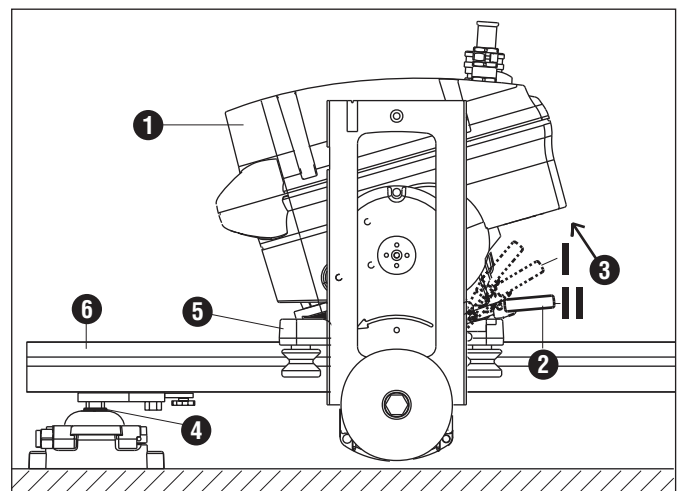
- The saw blade should always be lifted out of the cut while still rotating when, for example, the sawing procedure is interrupted in order to change a blade or when the concrete has been cut through and the sawing operation is complete.
- As soon as the saw blade has been fully lifted out of the cut, proceed as follows:
 1. Switch off the saw blade drive.
 2. Turn off the water.
 3. Bring the saw arm into its highest position (at 90° to the rail) and advance the saw head to the desired position.
 4. All controls on the remote control unit should be returned to the **0** or **neutral** position. If further cuts are to be made and the saw head is simply being repositioned without disconnecting the mains plug, the main switch on the saw head does not have to be turned to the **0** position. Press the emergency OFF button as a safety precaution.

5. Dismantling the saw system

- Advance the saw head **1** to the desired position and bring the saw arm to its highest point (at 90° to the rail) ready for fitting the saw blade the next time. Switch off the power by turning the main switch on the saw head to **20 0** (switch returns to the middle position when released).
- Before disassembly of the wall saw can begin, the sawn-out concrete blocks must be secured to prevent them from falling. Use the steel wedges provided in the tool box.
- Disconnect the saw head power cable from the mains supply.
- Clean the electric wall saw by spraying it with water and drying with a cloth.
- Remove the saw blade guard.
- Remove the saw blade.
- Disconnect the remote control cable from the saw head.
- Pull up the release lever **2 3** and remove the saw head from the carriage.
- The carriage **5** may be left on the rail or removed, as desired.
- Release and remove the rail.
- Release and remove the rail supports.
- Moving parts of the saw head locking mechanism **2** and the rail supports **4** should be lubricated with oil spray before being put away.
- Store the electric wall saw in the trolley box (optional accessory, depending on version).



Caution: Be prepared to take the weight of the saw head when releasing it from the carriage. Keep one hand on the carrying grip!

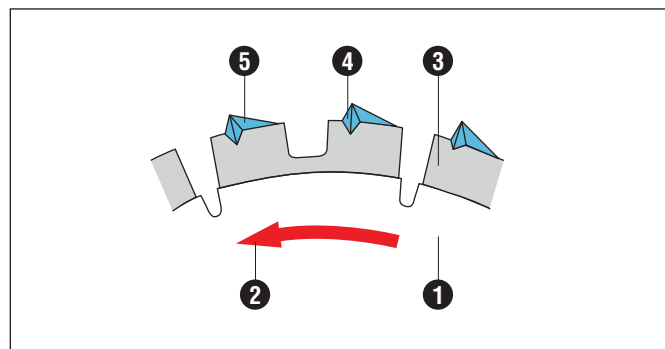


6. Tips and tricks

6.1 Direction of rotation of the saw blade

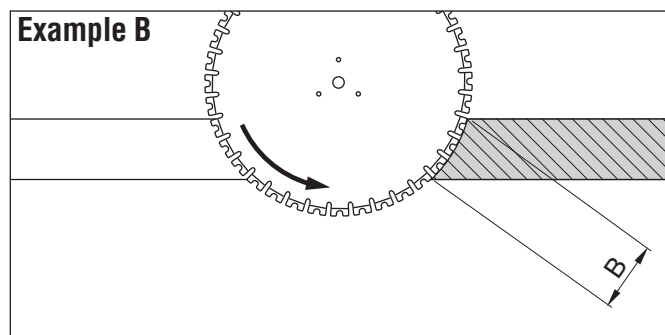
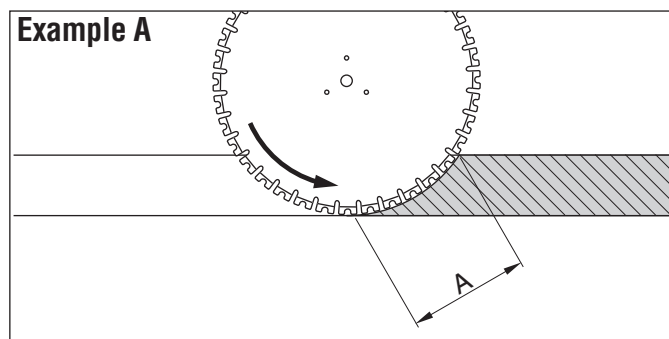
An arrow indicating direction of rotation is marked on every Hilti saw blade. Should the arrow have become illegible, the direction of rotation can be determined from the diamond segments.

| No. | Designation |
|-----|--|
| ① | Saw blade steel disc |
| ② | Direction of rotation of blade |
| ③ | Diamond segment |
| ④ | Individual diamond |
| ⑤ | Angle of the back of individual diamonds |



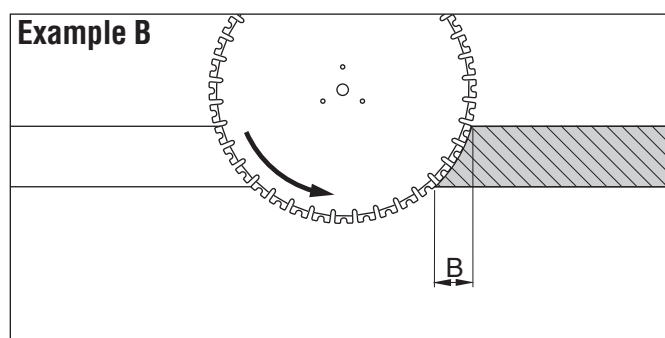
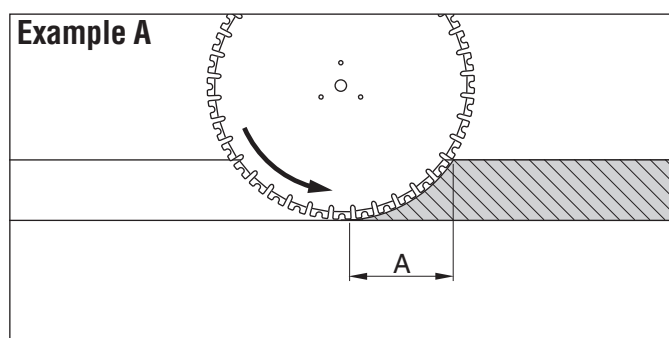
6.2 Sawing efficiently

The shorter the length of segment in contact with the concrete, the greater the material removal performance of the saw blade. This not only results in greater cutting power, it also greatly reduces the tendency of the segments to become polished.



6.3 Overcutting distance

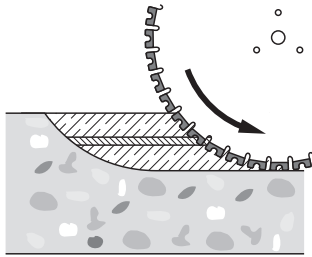
A short contact length (example B) always results in the shortest possible overcutting distance at the corners of window and door openings.



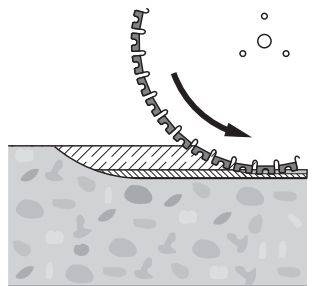
6.4 Sawing through reinforcing bars longitudinally

When a reinforcing bar has to be sawn through longitudinally, it is absolutely essential that the reinforcing bar is cut all the way through. This prevents the segments becoming polished as the blade cuts through concrete before and after (above and below) the steel bar.

Correct!



Incorrect!



6.5 Resharpener a saw blade

In the unlikely event of the segments becoming polished, it is absolutely essential that the blade is resharpened. Do not attempt to saw with a polished blade.

The consequences of sawing with a polished blade:

- Very low cutting power
- Blade wanders off the line
- Diamond segments and steel disk of the blade over-heat causing loss of blade tension
- Excessive mechanical stress on the diamond segments causes segment deformation
- Reduced blade life

Generally speaking, a polished diamond saw blade can be resharpened in three different ways:

1. Using a Hilti sharpening plate

Use wedges to clamp the sharpening plate directly against the rail support between the base material and the guide rail. The rotating saw blade should then be allowed to make a cut across the sharpening plate 2 or 3 times without using any water. (The sharpening plate must be moved approx. 1 cm after each cut.)

Tip: In order to make optimum use of the sharpening plate, it should not be cut all the way through.

2. Using an abrasive base material

(Sand-lime block or brick)

If no Hilti sharpening plate is available for use, a sand-lime block or abrasive brick can be used for sharpening as described in paragraph 1 above. When this method is employed, however, a little water should be used.

3. In the cut, during sawing

The saw blade can also be resharpened during the sawing operation, as follows:

- Cut to a depth of only approx. 2 cm in the concrete. The blade must not contact reinforcing bars.
- Reduce the speed (rpm) slightly
- Select rapid advance
- Use very little water
- Repeat the procedure 2–3 times.

1. Accessories / tool set

A set of tools and other accessories is supplied with every DS TS 5-SE electric wall saw. These items help to ensure that the electric wall saw can be operated efficiently and safely. The individual items (wearing parts) can be reordered from your Hilti representative. The item numbers of the accessories and wearing parts are listed in the instructions supplied with the accessories / tool set.

| Ordering designation | Qty. | Use |
|--------------------------------------|------|---|
| Accessory / tool | | Complete set |
| Open-end / ring wrench, 19 mm | 1 | Tightening all nuts, screws and locking devices |
| Hex. wrench with T-grip | 1 | Carriage, flush cutting, roller play adjustment |
| ABP blow out pump | 1 | Blowing out anchor holes and, in winter, blowing water out of the saw head. |
| 2-metre folding rule | 1 | Measuring position of fastenings |
| Wooden pencil, long | 2 | Marking position of fastenings |
| Spirit level | 1 | Used by the operator |
| UTP cleaning cloth | 1 | Cleaning |
| Hilti spray | 1 | Cleaning / lubrication |
| Flat brush | 1 | Cleaning |
| Ear protectors | 1 | To be worn by operator for personal protection |
| Protective goggles | 1 | To be worn by operator for personal protection |
| Hex. screw, M12×40 | 10 | Fastening the rail support |
| Hex screw, M12×70 | 10 | Fastening the rail support |
| Washer | 10 | Fastening the rail support |
| Nut with collar, M12 | 20 | Fastening the rail support |
| Rail clamp assembly | 1 | Fastening the rail support |
| DS-ESS 1 end stop | 3 | End stop on the rail, stops saw at end of rail |
| Steel wedge | 4 | Securing the concrete block |
| Rubber fastener for guard | 2 | Fastening blade guard on saw head |
| Plastic plug, M10 | 10 | Blade flange, covering flush holes |
| Plastic plug, M12 | 2 | Closes the central M12 threaded hole during flush cutting |
| Special countersunk head screw, M10 | 6 | Flush cutting, fastening saw blade |
| Special hex. screw, M12×25 | 1 | Fastening saw blade flange / blade |
| O-ring for hex. screw, M12 | 1 | For blade flange |
| Instructions for accessories / tools | 1 | Accessories, tools and wearing parts |
| Operating instructions | 1 | DS TS5-SE electric wall saw |
| Audio-visual instructional aids | | CD-ROM |

The following items are supplied fitted to the saw head

| | | |
|--|---|---|
| Water connection coupling | 2 | Water connection at the saw head |
| Plastic plug | 3 | Blade flange / cover for flush holes |
| CEE 16 A connector (3×400 V) / CEE 32 A connector (3×200 V) | 1 | Fit to user's extension cable, if necessary |

Please refer to the instructions for accessories / tools for information on other wearing parts.

2. Care and maintenance

2.1 Cleaning

- It is recommended that the electric wall saw is washed down by spraying it with water after every use.

Caution: High-pressure or steam cleaning systems must NOT be used.

2.2 Maintenance

- After completing the job, moving parts such as the saw head locking mechanism or rail supports should be lubricated with oil spray.
- As temperatures below zero, the cooling water should be blown out of the electric wall saw after use.
- The DS TS 5-SE requires no other maintenance.

2.3 Carriage roller play adjustment

- Generally speaking, there should be **no play** between the carriage and the rail but it should not be so tight as to cause sticking.
- Test for correct adjustment: Hold the DS-CA5-E carriage with 1 metre D-R 100 SI rail in front of you. The rail must not run down through the carriage under its own weight. If necessary, adjust the guide rollers **1** as follows: Fasten the rail with the rail supports to the base material. Without releasing the locking screws **8**, use the 19 mm AF open-end wrench **3** to pre-tension the guide rollers as required. After adjusting the rollers correctly, check that the locking screws **8** are tightened securely. When checking adjustment of the individual guide rollers to ensure no play, the carriage should be pushed on the rail with only one pair of rollers at a time.

2.4 Service

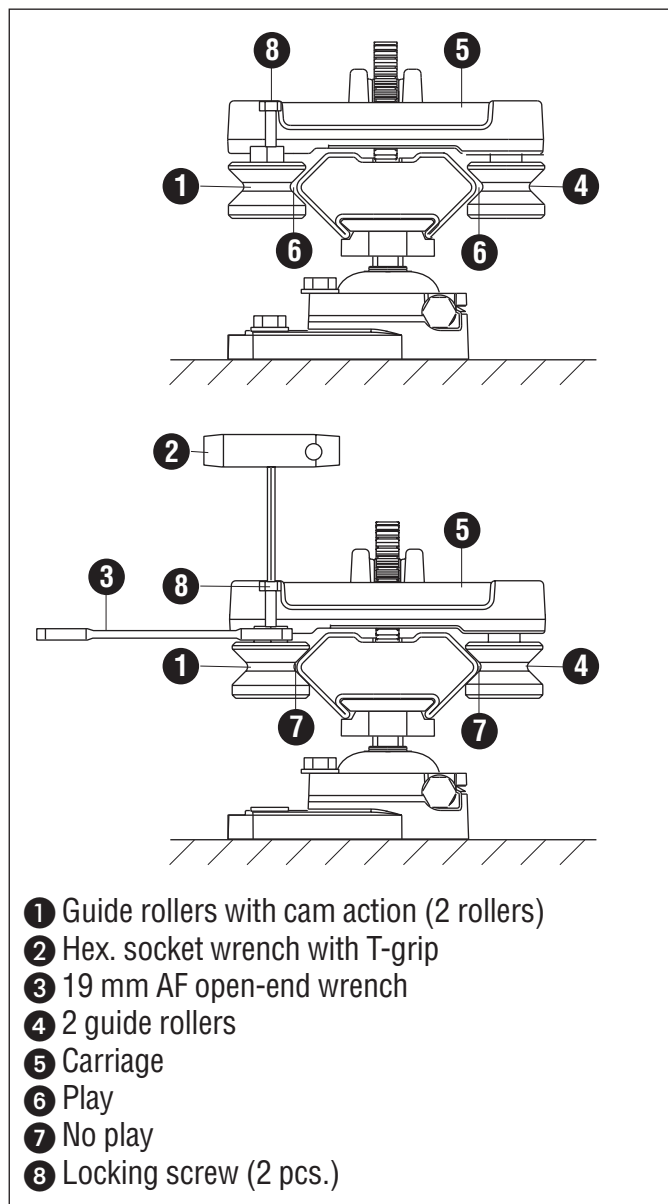
We recommend that the DS TS 5-SE electric wall saw is inspected at a Hilti service after every 100 operating hours. This will ensure that the saw is ready for use when needed.

2.5 Checks and inspections

The electrical and mechanical safety of the saw system and its accessories such as the extension cable must be checked in accordance with national regulations at the specified intervals.

In EC countries, following the requirements of EN 60204-1, it is recommended that the checks/inspections listed below are carried out annually:

- Earth conductor resistance measurement (max. 0.3 ohms)
- Instead of the insulation resistance measurement as per EN 60204-1, the leakage current during operation should be measured as possible failure of the insulation can be identified very quickly in this way.
- Earth conductor leakage current (max. 3.5 mA during operation, machine standing on insulated base)
- Functional test and visual inspection of emergency OFF, operating controls, indicators, seals, cable, blade guard and supporting system to identify obvious faults which could present a hazard.












3. Troubleshooting

3.1 Fault diagnosis

The electric wall saw is equipped with a fault diagnosis system that helps the operator to localize any malfunctions and, when possible, to remedy these by himself.











Should you be unable to remedy the fault by yourself, you can assist the Hilti service department by describing the fault as precisely as possible, giving details of the information shown on the display.

3.2 Meaning of fault indications and possible measures to remedy faults

| Indication on remote control | Description of fault | Possible cause | Recommended measures to remedy fault |
|--|---------------------------------------|---|--|
| Symbol 14 lights  | Machine cannot be switched on | Emergency off button pressed in | <ul style="list-style-type: none"> – Release the emergency off button. – Have the fault repaired by Hilti Service |
| Symbol 13 lights  | Saw blade drive cannot be switched on | One or more knobs or switches not set to the "0" or neutral position | <ul style="list-style-type: none"> – Set all controls to the "0" or neutral position |
| Symbol 13 lights and symbol 15 blinks   | Machine has switched itself off | Saw blade sticking (stalled) in the cut | <ul style="list-style-type: none"> – Set all controls to the "0" or neutral position. – Withdraw the blade from the cut by way of the advance/plunge movement. – Remedy the cause of the blade sticking and restart the sawing operation. – Have the fault repaired by Hilti Service if the symbol still lights. |
| Symbol 12 lights  | Machine is beginning to overheat | The protective (overheating) cut-out will be activated if operation continues with unchanged parameters | <ul style="list-style-type: none"> – Increase the cooling water flow rate (2-4l/min, 4-6 bar, 18° C) – Reduce set cutting depth (see recommendations on rear of remote control). – Use a faster-cutting saw blade. – Do not allow the blade to wander off the line. |
| Symbol 12 blinks slowly  | Machine has overheated | The protective (overheating) cut-out will be activated immediately if operation continues with unchanged parameters | <ul style="list-style-type: none"> – Increase the cooling water flow rate (2-4l/min, 4-6 bar, 18° C). – Reduce set cutting depth (see recommendations on rear of remote control). – Use a faster-cutting saw blade. – Do not allow the blade to wander off the line. |
| Symbol 12 blinks, symbols 11 and 13 light    | Machine has switched itself off | Temperature warnings were ignored; the protective (overheating) cut-out has been activated | <ul style="list-style-type: none"> – With cooling water flowing, allow the machine to cool until the symbol no longer lights and then restart the sawing operation. – Have the fault repaired by Hilti Service. |

Maintenance

3.2 Meaning of fault indications and possible measures to remedy faults, continued

| Indication on remote control | Description of fault | Possible cause | Recommended measures to remedy fault |
|---|---|---|---|
| Symbol 15 lights  | Machine cannot be switched on | Mains voltage outside the permissible range | <ul style="list-style-type: none"> – Check the electric supply voltage (turn switch 1 to "start"). – Have the electric supply and connection checked by an authorized electrician. – Have the fault repaired by Hilti Service. |
| Symbol 15 lights briefly during operation  | No fault | Electric supply voltage outside the tolerance range | <ul style="list-style-type: none"> – Check the electric supply voltage (turn switch 1 to "start"). – Have the electric supply and connection checked by an authorized electrician. – Have the fault repaired by Hilti Service. |
| Symbol 13 and 15 light   | Break in communication between the remote control unit and saw head | Cable or plug connections dirty or damaged | <ul style="list-style-type: none"> – Check the remote control cable and plug connections. – Replace the remote control unit. – Have the fault repaired by Hilti Service. |
| Symbol 13 lights and "8888" is shown in display 16   | Machine has switched itself off | Saw head has drawn excessively high current due to overload | <ul style="list-style-type: none"> – Incorrect operation / misuse. |
| No error indicated | Advance motor or main motor runs only slowly | Motor speed sensor out of adjustment or defective | <ul style="list-style-type: none"> – Have the fault repaired by Hilti Service. |
| No symbols light, no display | Saw is connected and main switch "on" but display on remote control unit remains inactive | Faulty electric supply connection Electric supply, saw or remote control unit defective | <ul style="list-style-type: none"> – Disconnect the electric supply and have the connection checked by an authorized electrician. – Replace the remote control unit. – Have the fault repaired by Hilti Service. |
| Symbol 18 lights  | Service is due (service interval) | A preventative service should be carried out every 100 hours in order to ensure trouble-free operation. | <ul style="list-style-type: none"> – Have the service carried out as recommended. |
| Error Er00  | Malfunction | Remote control unit not compatible with the saw head | <ul style="list-style-type: none"> – Check compatibility and replace the remote control unit with a suitable type. |
| Error Er01  | Malfunction | Fault in electrical connection between remote control unit and saw head | <ul style="list-style-type: none"> – Check the plug connections and cable. – Clean the contacts and have any damage repaired – Replace the remote control unit. – Have the fault repaired by Hilti Service. |
| Error Er03  | Malfunction | Fault in electrical connection between remote control unit and saw head or remote control electronics defective | <ul style="list-style-type: none"> – Check the plug connections and cable. – Clean the contacts and have any damage repaired – Replace the remote control unit. – Have the fault repaired by Hilti Service. |

3.2 Meaning of fault indications and possible measures to remedy faults, continued

| Indication on remote control | Description of fault | Possible cause | Recommended measures to remedy fault |
|------------------------------|---|--|--|
| Error Er04 | Er04 Malfunction | Remote control unit – electronics defective | – Replace the remote control unit. – Have the fault repaired by Hilti Service. |
| Error Er05 | Er05 Malfunction | Remote control unit – electronics defective | – Replace the remote control unit. – Have the fault repaired by Hilti Service. |
| Error Er06 | Er06 Malfunction | Remote control unit – electronics defective | – Replace the remote control unit. – Have the fault repaired by Hilti Service. |
| Error Er07 | Er07 Malfunction | Remote control unit – electronics defective | – Replace the remote control unit. – Have the fault repaired by Hilti Service. |
| Error Er11 | Er11 Malfunction | Saw head – electronics defective | – Have the fault repaired by Hilti Service. |
| Error Er12 | Er12 Malfunction | Saw head – electronics defective | – Have the fault repaired by Hilti Service. |
| Error Er13 | Er13 Malfunction | Saw head – electronics defective | – Have the fault repaired by Hilti Service. |
| Error Er15 | Er15 Malfunction | Saw head – main contactor or remote control cable / plug defective | – Check the cable and plug. – Clean the contacts and have any damage repaired. – Replace the remote control unit. – Have the fault repaired by Hilti Service. |
| Error Er21 | Er21 Malfunction | Saw head – main motor temperature sensor defective | – Have the fault repaired by Hilti Service. |
| Error Er22 | Er22 Malfunction | Saw head – cooling plate module temperature sensor defective | – Have the fault repaired by Hilti Service. |
| Error Er33 | Er33 Machine has switched itself off | Saw head has drawn excessively high current due to overload | – Incorrect operation / misuse. |

4. Repairs

Only authorised and trained Hilti repair personnel and qualified electrical specialists are permitted to open the cover on the casing of the DS TS 5-SE electric wall saw and carry out repairs. NEVER open the cover on the housing of the electric wall saw while on the jobsite.

Caution: Information for repair personnel

The capacitors in the DS TS 5-SE saw head hold a voltage for approx. 2 minutes after the saw has been disconnected from the mains supply.

1. Recycling

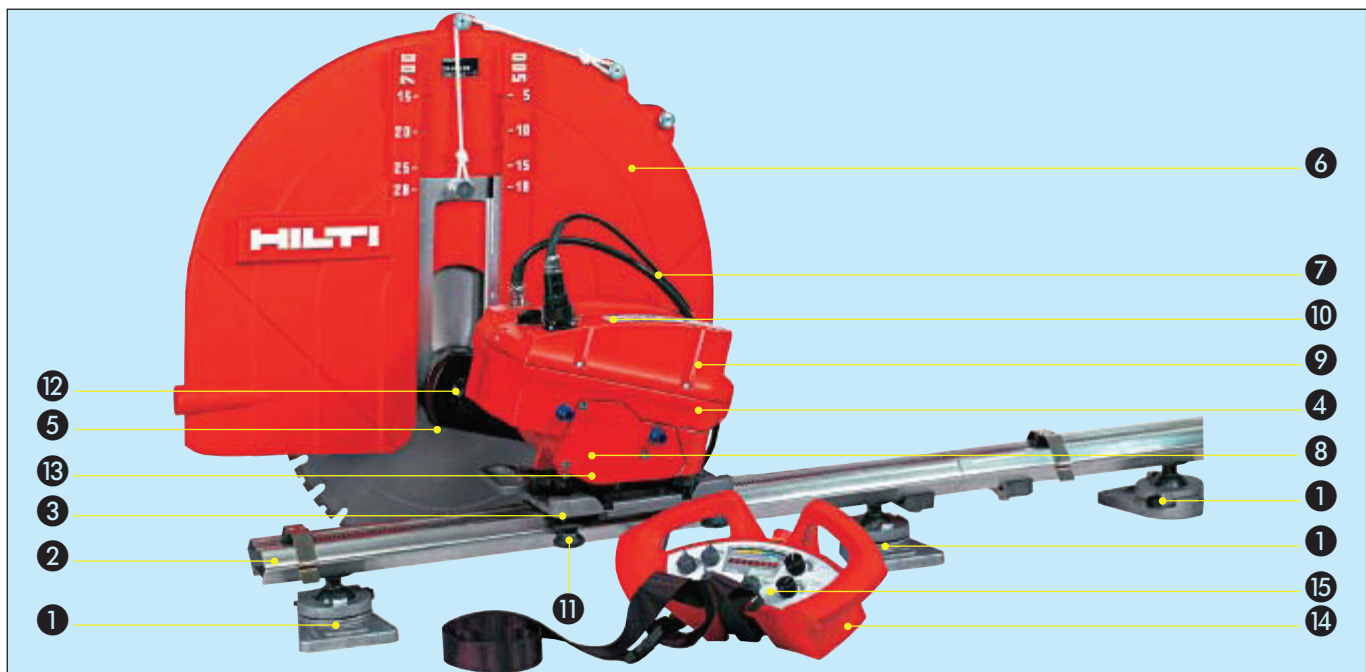


Return waste material for recycling

Recycling the DS TS 5-SE electric wall saw

- This product is manufactured exclusively from materials that can be recycled. The materials must be correctly separated before they can be recycled. Hilti has already made arrangements for taking back your old equipment for recycling. Please ask your Hilti customer service department or Hilti representative for further information.
- Should you wish to return the equipment yourself to a disposal facility for recycling, proceed as follows: Dismantle the equipment as far as possible without the need for special tools.
- Dispose of the individual parts.

| Pos. | Part / assembly | Main material | Recycling |
|------|------------------------------------|--------------------------|-------------------|
| ① | Rail support | Aluminium | Scrap metal |
| ② | Rail | Steel | Scrap metal |
| ③ | Carriage | Aluminium | Scrap metal |
| ④ | Saw head casing | Aluminium | Scrap metal |
| ⑤ | Pivoting arm | Aluminium | Scrap metal |
| ⑥ | Blade guard | Plastic | Plastic recycling |
| ⑦ | Electric mains cable | Copper, synthetic sheath | Scrap metal |
| ⑧ | Saw blade drive motor | Steel and copper | Scrap metal |
| ⑨ | Advance motors | Steel and copper | Scrap metal |
| ⑩ | Electronic controls | Various | Electronic scrap |
| ⑪ | Guide rollers | Steel | Scrap metal |
| ⑫ | Gearing parts | Steel | Scrap metal |
| ⑬ | Advance pinion | Steel | Scrap metal |
| ⑭ | Remote control casing | Plastic | Plastic recycling |
| ⑮ | Switches and printed circuit board | Various | Electronic scrap |





Only for EU countries

Do not dispose of electric tools together with household waste material!

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.

2. Warranty

Hilti warrants that the product supplied is free of defects in material and workmanship. This warranty is valid as long as the tool is operated and handled correctly, cleaned and serviced properly and in accordance with the Hilti operating instructions, all warranty claims are made within 12 months from the date of sale (invoice date), and the technical system is maintained. This means that only original Hilti consumables, components and spare parts may be used with the product.

This warranty provides the free-of-charge repair or replacement of defective parts only. 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 and/or related parts immediately upon discovery of the defect to the address of the local Hilti marketing organisation 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.

HILTI

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