



DSW 2005-TS

English



# **DSW 2005-TS**

**Original operating instructions**





# Original operating instructions

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# 1 Information about the documentation

## 1.1 About this documentation

- Read this documentation before initial operation or use. This is a prerequisite for safe, trouble-free handling and use of the product.
- Observe the safety instructions and warnings in this documentation and on the product.
- Always keep the operating instructions with the product and make sure that the operating instructions are with the product when it is given to other persons.

## 1.2 Explanation of symbols used

### 1.2.1 Warnings

Warnings alert persons to hazards that occur when handling or using the product. The following signal words are used:

#### **DANGER**

##### **DANGER !**

- ▶ Draws attention to imminent danger that will lead to serious personal injury or fatality.

#### **WARNING**

##### **WARNING !**

- ▶ Draws attention to a potential threat of danger that can lead to serious injury or fatality.





#### **CAUTION**

##### **CAUTION !**

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

### 1.2.2 Symbols in the documentation

The following symbols are used in this document:

	Read the operating instructions before use.
	Instructions for use and other useful information
	Dealing with recyclable materials
	Do not dispose of electric equipment and batteries as household waste

### 1.2.3 Symbols in the illustrations

The following symbols are used in illustrations:

<b>2</b>	These numbers refer to the corresponding illustrations found at the beginning of these operating instructions
3	The numbering reflects the sequence of operations shown in the illustrations and may deviate from the steps described in the text
⑪	Item reference numbers are used in the <b>overview illustrations</b> and refer to the numbers used in the <b>product overview section</b>





This symbol is intended to draw special attention to certain points when handling the product.

### 1.3 Product-dependent symbols

#### 1.3.1 Symbols on the product

The following symbols are used on the product:

	Wear protective gloves
	Wear eye protection
	Wear a hard hat
	Wear safety shoes
	Wear breathing protection
	Wear ear protection
	General warning
	Warning: hazardous electrical voltage
	Risk of crushing parts of the body.
	Warning: risk of injury by cutting.
	Unauthorized access prohibited.
	Recycle waste material.

### 1.4 Stickers

The following stickers are used on the product.

		<ul style="list-style-type: none"> <li>• Read the operating instructions before use</li> <li>• Wear a hard hat</li> <li>• Wear ear protection</li> <li>• Wear eye protection</li> <li>• Wear protective gloves</li> <li>• Wear safety shoes</li> <li>• Make sure that the sawing wire is correctly routed</li> <li>• Comply with all requirements concerning danger zones</li> <li>• Do not enter the danger zone while the product is in operation</li> <li>• Do not extend the guide rail</li> <li>• Do not work without an end stop</li> <li>• Do not work without guards</li> </ul>



## 1.5 Product information

**HILTI** products are designed for professional users and only trained, authorized personnel are permitted to operate, service and maintain the products. This personnel must be specifically informed about the possible hazards. The product and its ancillary equipment can present hazards if used incorrectly by untrained personnel or if used not in accordance with the intended use.

The type designation and serial number are printed on the rating plate.

- ▶ Write down the serial number in the table below. You will be required to state the product details when contacting Hilti Service or your local Hilti organization to inquire about the product.

### Product information

Wire saw	DSW 2005-TS
Generation	01
Serial no.	

## 2 Safety

### 2.1 General safety instructions

**Study all safety instructions and other instructions, images and technical data with which this product is provided.** Failure to comply with the instructions below can cause serious injuries.

**Keep all safety precautions and instructions for future reference.**

### 2.2 Proper arrangement of the workplace

- ▶ Approval must be obtained from the site engineer or site management before beginning drilling and sawing work. Drilling and sawing work on buildings and other structures can influence the statics, especially when steel reinforcing bars and load-bearing components are cut through.
- ▶ Ensure that good lighting is in use.
- ▶ Ensure that the workplace is well ventilated. Poorly ventilated workplaces can result in damage to health because of exposure to dust.
- ▶ Keep the workplace tidy. Objects which could cause injury should be removed from the working area. Untidiness at the workplace can lead to accidents.
- ▶ In order to avoid injuries and to prevent the diamond wire becoming trapped and stuck, steel wedges and/or supports must be used to prevent uncontrolled movement of objects that are being cut free.
- ▶ Ensure that adequately-sized supports are correctly installed so that the remaining structure maintains its stability after completion of the cutting work and removal of the part cut away.
- ▶ Never loiter in areas where loads are suspended by crane or lifting equipment.
- ▶ The area of the cut or the opening created by the cutting process must be safely and visibly cordoned off in order to avoid the risk of persons falling.
- ▶ Wear personal protective equipment. Wear safety footwear, protective gloves, a hard hat and protective glasses.
- ▶ Wear respiratory protection if the work causes dust.
- ▶ Wear suitable work clothes. Do not wear jewelry or loose clothing that could be snagged by moving parts. If your hair is long, wear a hair net.
- ▶ Do not allow other persons to touch the equipment or the extension cord.



- ▶ Keep children and other persons away from the working area.
- ▶ Avoid awkward postures. Maintain firm footing and balance at all times.
- ▶ Use only approved fasteners and lifting equipment of adequate load-bearing capacity to secure, lift clear and transport from site the parts of the structure that are cut away.
- ▶ Always run cables and hoses flat on the floor or ground away from the product to prevent trip hazards.
- ▶ Keep cables and hoses away from rotating parts.
- ▶ Jointly with site management, make sure that no gas, water, electricity or other lines are located in the cutting area. Lines in the vicinity of the cutting zone that could be damaged by falling parts, for example, have to be specially protected and, if necessary, temporarily taken out of service.
- ▶ Ensure that the cooling water used is drained or extracted in a suitably controlled manner. Cooling water allowed to drain away or spray around in an uncontrolled manner can lead to damage and accidents. Also bear in mind that water can drain away through hidden internal cavities.

### 2.3 General safety rules

- ▶ Use the product only after you have read the operating instructions, after becoming familiar with the content of the instructions and after receiving training by a **Hilti** specialist. Observe all warnings and instructions.
- ▶ Use the right product for the job. Do not use the product for purposes for which it was not intended. Use it only as directed and when in faultless condition.
- ▶ Use the product and its accessories, accessory tools, etc. in accordance with these instructions and in the manner intended for the particular type of product. Take the working conditions and the work to be performed into account. Use of this product for uses other than those intended could result in hazardous situations.
- ▶ Take influences of the surrounding area into account. Do not use the product where there is a risk of fire and explosion. Power tools create sparks which can ignite dust or gases.
- ▶ Keep the grips clean, dry and free from oil and grease.
- ▶ Do not overload your product. It will work more efficiently and more safely within its intended performance range.
- ▶ Never leave the product unattended.
- ▶ Store the product in a secure place when not in use. When not in use, products must be stored in a dry, high place or locked away, out of reach of children.
- ▶ Always disconnect the supply cord from the electricity supply when the product is not in use (e.g. during breaks between working), before changing settings, before cleaning and maintenance and before changing tools. This safety precaution prevents the product from starting accidentally.
- ▶ Remove adjusting tools or wrenches before switching on the product. A tool or a wrench left attached to a rotating part of the product can cause injury.
- ▶ Before use, the product, the sawing wire and accessories must be checked carefully to ensure that all items function faultlessly and as intended. Check that moving parts function faultlessly, without sticking, and that no parts are damaged. All parts must be fitted correctly and fulfill all conditions necessary for correct operation of the product. Damaged parts must be repaired or replaced properly by an authorized service center.
- ▶ Avoid skin contact with drilling and sawing slurry.
- ▶ Follow the instructions concerning care and maintenance.
- ▶ The product is not intended for use by children, by debilitated persons or by persons who have received no instruction or training.



## 2.4 Protection against electric shock

- ▶ Always check the product before use. In particular, check that all electricity cables, connectors and hoses are in good condition. Do not operate the product and its accessories if damage is found, if the system is incomplete or if its controls cannot be operated faultlessly. Have the product repaired by **Hilti** Service.
- ▶ Connect the product and its accessories only to a power source equipped with an earth/ground conductor and ground fault circuit interrupter (portable residual current device, PRCD). Check that these items are in perfect working order before operating the equipment.
- ▶ If a generator is used, connect it to a grounding/earthing rod driven into the ground to ground the system.
- ▶ Make sure that the electricity supply corresponds to the specification given on the type plate.
- ▶ Protect yourself against electric shock. Avoid body contact with grounded parts such as pipes, radiators, cooking stoves or refrigerators.
- ▶ Keep electric cables and especially their plug connectors dry. Close power outlets with the covers provided when not in use.
- ▶ Disconnect the power cable before beginning cleaning and maintenance work or in the event of an interruption between periods of operation.

## 2.5 Requirements to be met by users

- ▶ Only specialists who have received training in concrete cutting techniques are permitted to operate the product. These persons must be completely familiar with the content of these operating instructions and must have been trained by a **Hilti** specialist on the safe application of these instructions.
- ▶ Stay alert, watch what you are doing and use common sense when working. Do not use the product while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating the product can result in serious injury.
- ▶ The operator in charge must be aware of the possible dangers and of his responsibility for safety, both with regard to himself and to others. The operator is responsible for securing the exclusion zone by cordoning it off and taking protective measures (guards, etc.) as necessary.
- ▶ Dust from materials such as paint containing lead, some types of wood, minerals and metal can be harmful to health. Contact with or inhalation of the dust can cause allergic reactions and/or respiratory or other diseases to the operator or bystanders. Certain kinds of dust such as oakwood and beechwood dust are classified as carcinogenic, especially in conjunction with additives for wood conditioning (chromate, wood preservative). Only specialists are permitted to work on material containing asbestos. Ensure that the workplace is well ventilated. It is advisable to wear a filter class P2 dust mask. Comply with national regulations applicable to the materials you will be working with. To help prevent the product of dust in large quantities, position the water lances at the through-holes.
- ▶ Observe the national regulations and laws, as well as the operating instructions and the safety information applicable to the accessories used (e.g. diamond sawing wire, fastening accessories, lifting equipment, etc.).

## 2.6 Safety during operation

- ▶ Before use, check that the product and its components, the diamond sawing wire and its connectors as well as the accessories are in good condition and in perfect working





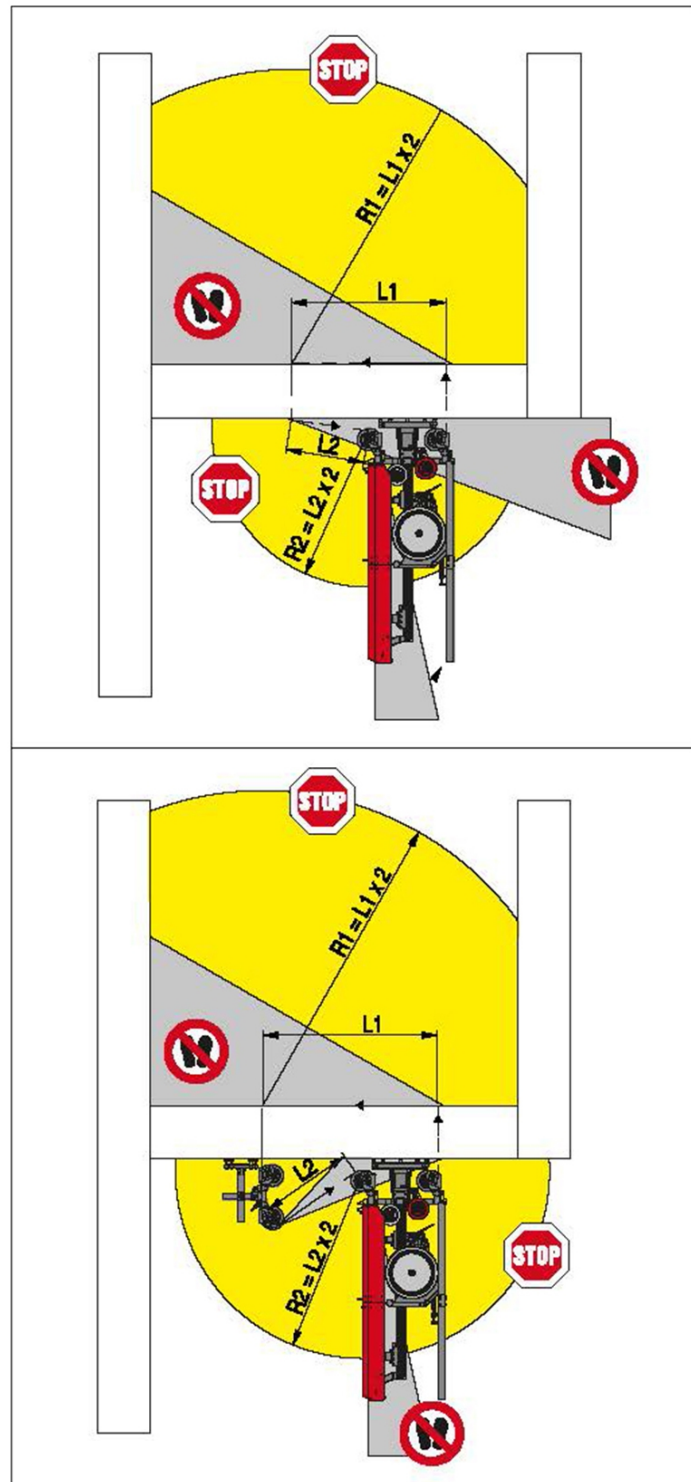
order. Make sure that any damage or malfunctions are rectified in a professional manner before operation commences.

- ▶ While the product is operating, remain in a location far outside the danger area with the remote control unit. Make sure that you have the entire working area in clear view at all times.
- ▶ Work only when the product and also the wire guides have been securely and firmly secured to a solid sub-base. A toppling or dropped part can result in serious damage or injury.
- ▶ Do not connect the electricity supply until the wire saw has been set up completely.
- ▶ Entry into the danger zone (e.g. to adjust the pulleys or water supply, hammer in wedges, etc.) is permissible only after the **Emergency Stop** button has been pressed and the drive pulley has come to a standstill.
- ▶ Adhere to the permissible drive unit parameters and recommended guide values for wire speed and advance speed while sawing.
- ▶ Use only diamond sawing wires that comply with the requirements of EN 13236. Use only diamond sawing wires approved for a cutting speed of at least 30 m/sec, with rubberized or plastic-coated spaces between the beads.
- ▶ The number of wire breakages experienced can be reduced considerably by using high-quality diamond sawing wires and wire connectors and the appropriate crimping tools for fitting connectors.
- ▶ The diamond sawing wire can become hot, so do not touch it unless you are wearing protective gloves.
- ▶ Use only fasteners (anchors, bolts, etc.) of adequate size to secure the wire guides and the wire saw and to secure the object being cut.
- ▶ If equipment such as scaffolding, platforms or ladders is used, check that this equipment complies with regulations, that it is undamaged and set up in accordance with regulations.
- ▶ At all times while the saw is in operation, the operator must ensure that no persons are present in the danger area. This also applies to the area not immediately visible to the operator, i.e. the area behind or below the object in which the cut is being made. If necessary, a large area must be cordoned off or security personnel posted.
- ▶ Stay alert at all times. Monitor the progress of the sawing operation and keep the cooling water system and the area surrounding the workplace under observation. Do not operate the product if your full attention is not on the job.
- ▶ Modifications to the saw system are prohibited. Operate the product only with the sawing wire mode active.





## 2.7 Danger zones and safety distances to be maintained



- ▶ The exclusion zone extends to at least twice the radius of the length of wire that would be unleashed in the event of the wire breaking (**L1**) (**L2**) and the areas in the extended axes of the directions in which the wire is running. This exclusion zone is not limited unless suitable protective devices are installed (protective barriers or curtains, wire guards, etc.). The protective devices must be designed and installed in such a way that they prevent whiplash of the diamond sawing wire and safely and reliably stop flying fragments or debris.
- ▶ Always keep a minimum distance of 1.5 m away from all movable parts during operation.



- ▶ When setting up and operating the saw system and when removing parts that have been cut away, always ensure that no persons are below the area in which you are working. Falling objects could cause serious injury.

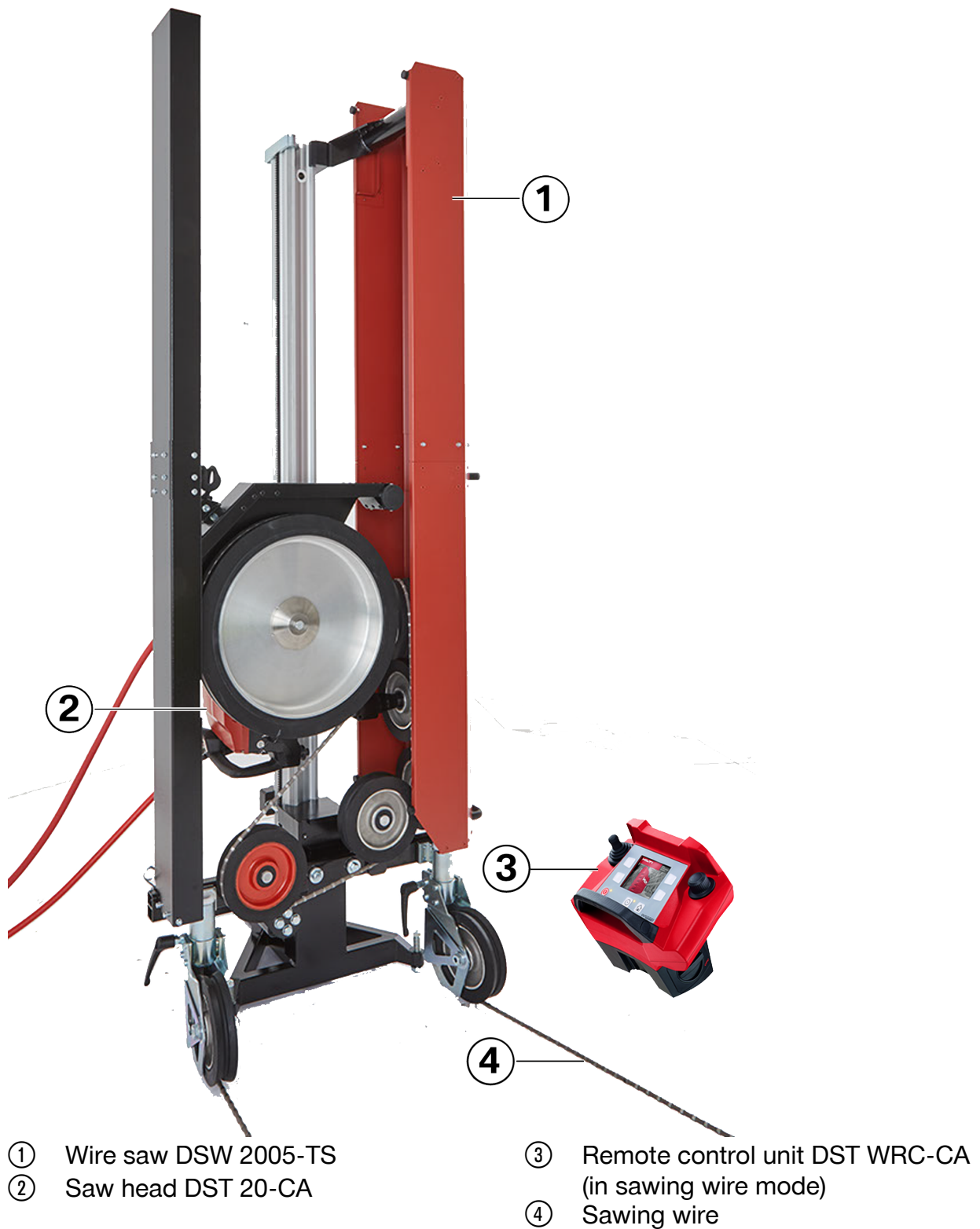
## **2.8 Additional safety instructions**

- ▶ Do not cut easily flammable materials.
- ▶ National regulations and laws, as well as the operating instructions and the safety information applicable to the accessories used (e.g. diamond sawing wire, fastening accessories, etc.), must be taken into account.
- ▶ Do not work without the end stop fitted in order not to overrun the end of the rail with the saw head.
- ▶ Do not attempt to install the product on the ceiling.
- ▶ Do not hold objects against the diamond sawing wire by hand, e.g. with a view to using it as an improvised saw.
- ▶ Always work with fully fitted and a fully functional guards.
- ▶ Always install the holder for the wire storage cover so that the cover can be correctly secured.
- ▶ Install the wire saw only when the base plate is securely mounted on the sub-base. If the base plate is not securely installed, the wire saw can topple.

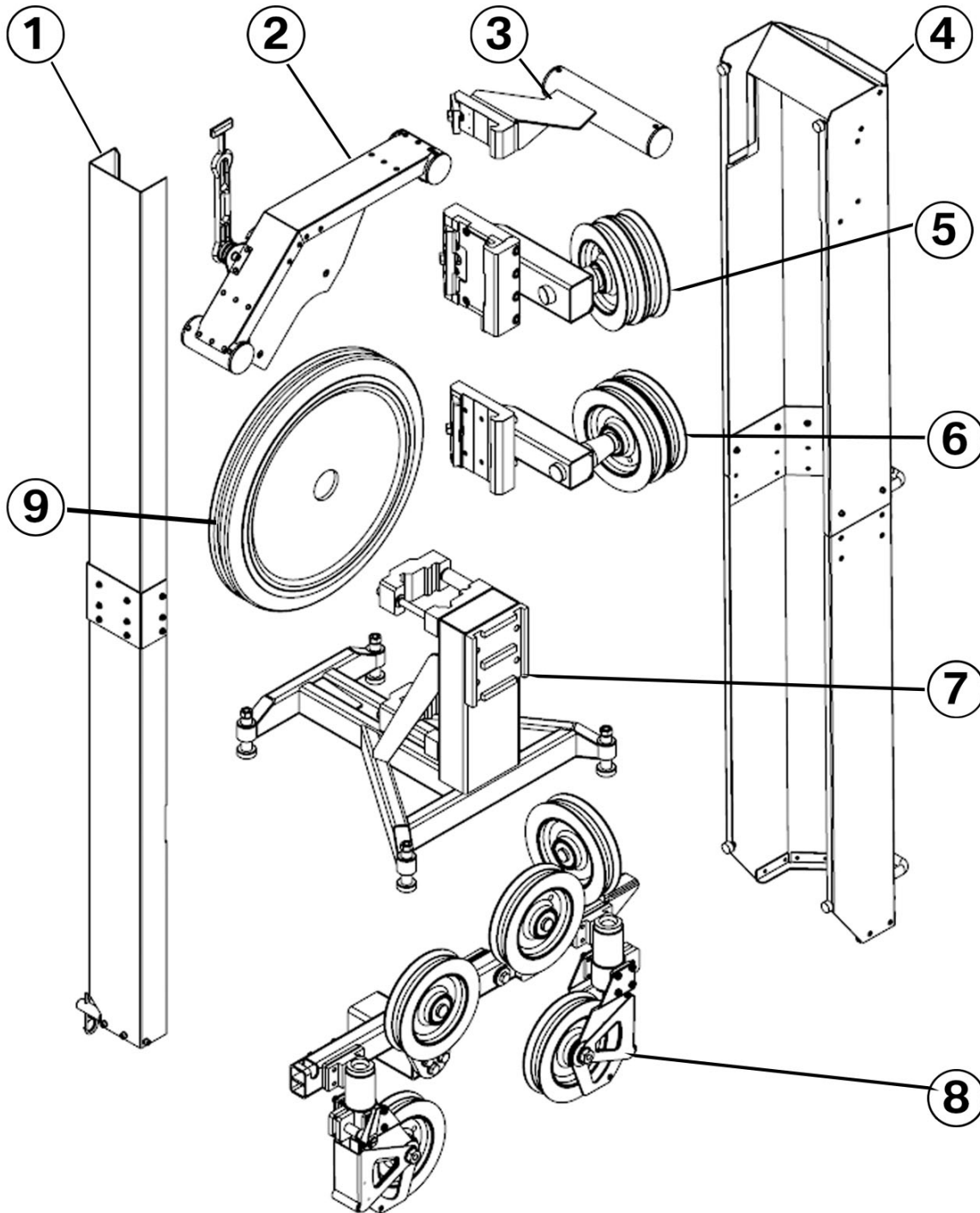


### 3 Description

#### 3.1 Product overview (saw system)



### 3.2 Product overview DSW 2005-TS



- |  |                                |
|--|--------------------------------|
| ① Guard for sawing wire loose side (black) | ⑤ Wire storage pulley (top)    |
| ② Guard for drive pulley                   | ⑥ Wire storage pulley (bottom) |
| ③ Holder for guard (red)                   | ⑦ Base plate                   |
| ④ Wire storage unit cover (red)            | ⑧ Wire spreader                |
|  | ⑨ Drive pulley                 |

### 3.3 Intended use

The DSW 2005-TS (01) is a modular wire-sawing system to be used only in combination with the DST 20-CA (01) wall saw as drive unit and the DST WRC-CA (01) as control unit. Operation of the saw head in combination with the wire saw system is permitted only in



the **wire sawing** operating mode. For information on safety and operation of the saw head, read the operating instructions of the DST 20-CA (01) wall saw. For information on safety and operation of the control unit, read the operating instructions of the DST WRC-CA (01) remote control unit.

The product is designed for the technical demolition of steel, concrete, stone or brickwork structures in construction and civil engineering applications.

The product is suitable for wet and dry cutting. A dust removal system must be used for dry cutting.

Only specialists who have received training in concrete cutting techniques are permitted to operate the product.

Changes or modifications not expressly approved by **Hilti** may restrict the user's right to operate the product.

### 3.4 Items supplied

DSW 2005-TS, operating instructions

Other system products approved for use with this product can be found at your local **Hilti Store** or at: [www.hilti.group](http://www.hilti.group)

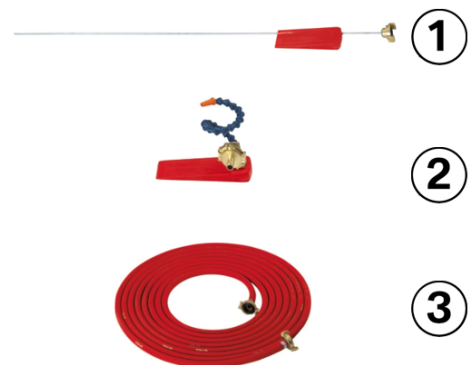
### 3.5 Additionally required accessories

DST 20-CA saw head, DST WRC-CA remote control unit, DS-R200-L or DS-R230-L rail, DS-ES-L end stop, diamond sawing wire.

### 3.6 Optional accessories

#### 3.6.1 Water supply

The following accessories can be used to bind the dust produced during sawing and to cool the diamond sawing wire.



- ① Water supply, long
- ② Water supply, short
- ③ Water hose



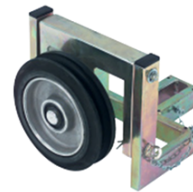
### 3.6.2 Single-pulley stand (DSW-SPP)

The diamond sawing wire can be redirected over a single-pulley stand.



### 3.6.3 Release pulley (DS-WSRW)

A release pulley can be used for cutting thick walls, for example, or for long cuts. This is a way of optimizing wire contact length and increasing cutting speed.



### 3.6.4 Guard (DSW-WG)

Guards must be fitted if it cannot be ensured that persons do not enter the danger zones where they would be at risk from flying fragments, or where there is a risk of damage to property, while work is in progress.



## 4 Technical data

<b>Dimensions (W x D x H)</b>	33.9 in x 27.6 in x 92.5 in (860 mm x 700 mm x 2,350 mm)
<b>Drive wheel diameter</b>	19.7 in (500 mm)
<b>Cutting speed</b>	43.6 ft/s ... 79.1 ft/s (13.3 m/s ... 24.1 m/s)
<b>Capacity, wire storage</b>	18 ft - 4 in (5.6 m)
<b>Rail</b>	DS-R200-L or DS-R230-L



<b>Wire diameter</b>	0.3 in ... 0.5 in (8 mm ... 12 mm)
<b>Recommended wire length</b>	37 ft - 9 in (11.5 m)

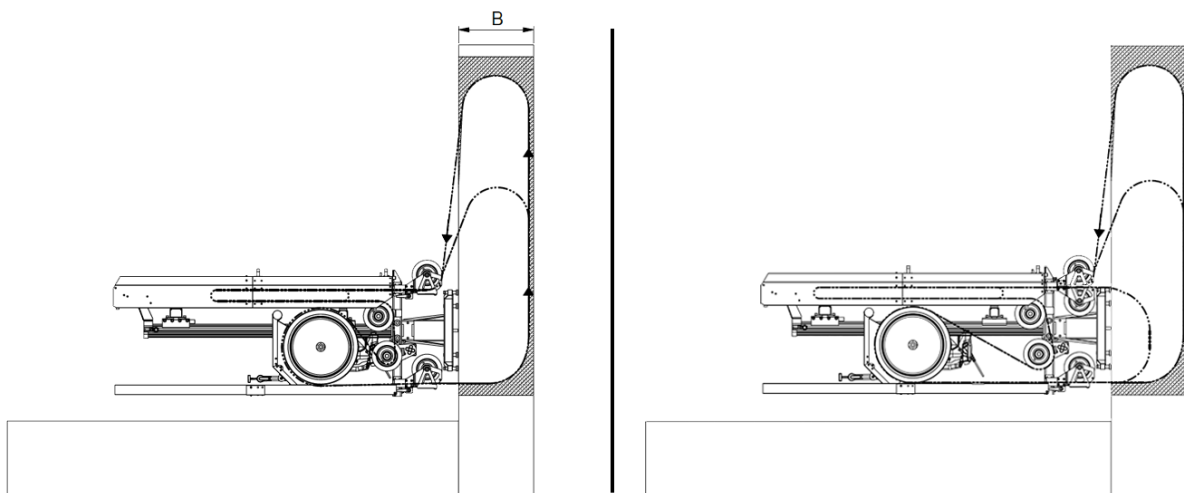
#### 4.1 Weights of the individual components

<b>Total weight without saw head</b>	231.5 lb (105.0 kg)
<b>Base plate</b>	45.2 lb (20.5 kg)
<b>Wire spreader</b>	68.3 lb (31.0 kg)
<b>Wire storage pulley (bottom)</b>	20.9 lb (9.5 kg)
<b>Wire storage pulley (top)</b>	25.4 lb (11.5 kg)
<b>Holder for guard (top)</b>	7.1 lb (3.2 kg)
<b>Drive pulley</b>	17.6 lb (8.0 kg)
<b>Guard for drive pulley</b>	11.5 lb (5.2 kg)
<b>Guard (red)</b>	22.5 lb (10.2 kg)
<b>Guard (black)</b>	8.8 lb (4.0 kg)

## 5 Typical examples of applications

The following examples illustrate the most common applications.

### 5.1 Vertical cut (default)



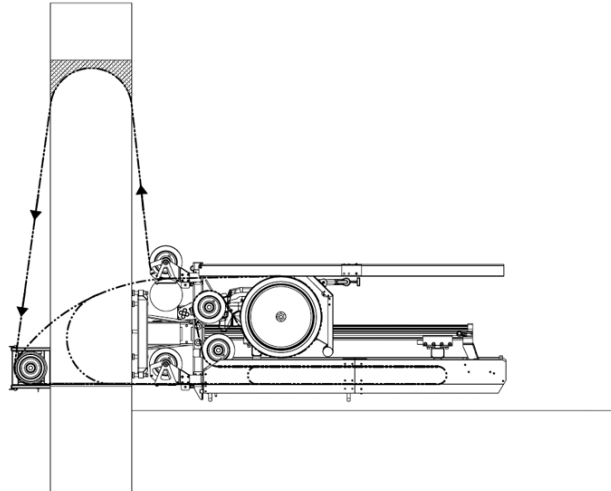
- At the start of the cut, pass the sawing wire as shown through the object to be cut.





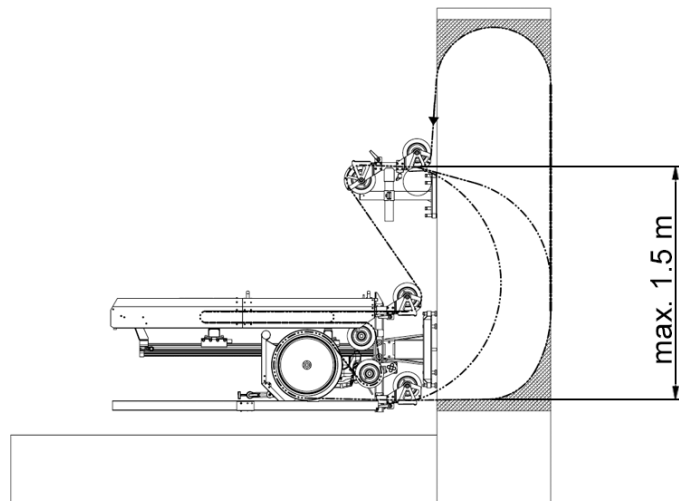
- Swivel the pulley at the wire infeed down as soon as the sawing wire approximately reaches the position shown. This prevents the sawing wire from damaging the wire guide.
- To prevent damage, do not exceed the maximum wire engagement length **(B)** of 1.5 meters.

## 5.2 Vertical cut with release pulley (DS-WSRW)



- At the start of the cut, pass the diamond wire over the release pulley.
- As soon as the cut comes level with the pulley, swing the pulley down and swivel the release pulley clear, to avoid damage to the wire guide.

## 5.3 Vertical cut with single-pulley stand

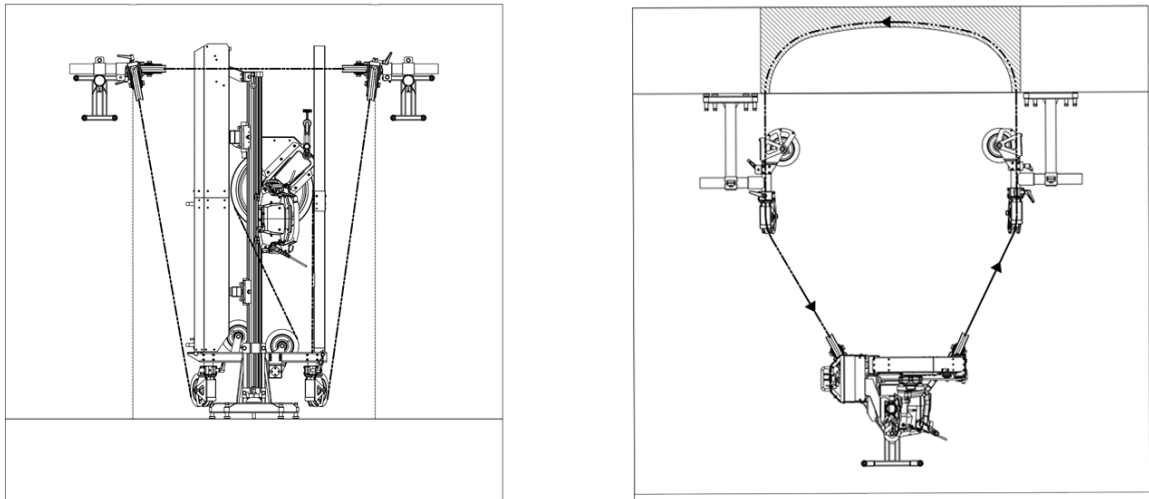


- At the start of the cut, pass the diamond wire over the single-pulley stand
- Swivel the guide pulley on the pulley stand down as soon as the diamond sawing wire reaches the position shown.  
This keeps the diamond wire from damaging the wire guide.



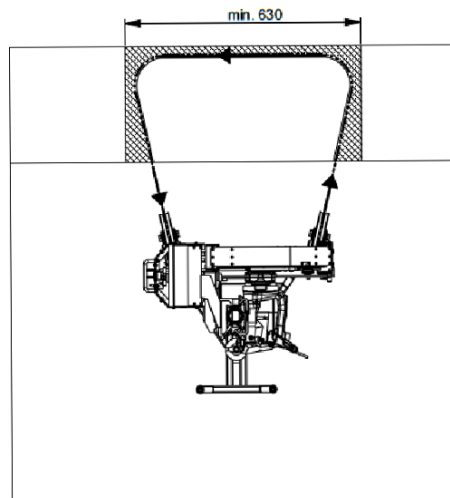


## 5.4 Horizontal cut with 2 single-pulley stands



- Pass the diamond sawing wire at the start of the cut over the pulley stands and through the object to be cut.

## 5.5 Flush cutting

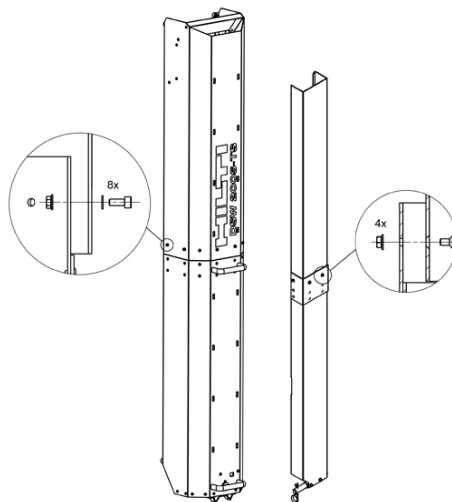


- Install the wire spreader at the bottom position on the base plate so that the movable guide pulley is in contact with the surface to be flush-cut.
- The guide pulleys at wire outfeed and infeed must be free to move so that they can follow the changing angle of engagement.



## 6 Preliminary Steps

### 6.1 Installing guards



- ▶ Install both guards, using the screws provided for the purpose.



The installation procedure is described on the enclosed leaflet.

### 6.2 Determining length of wire

- ▶ You can calculate the approximate length of wire needed as follows:
  - ▶ Minimum length of wire inside the machine of 5.6 meters.
  - ▶ + distance from the outfeed pulley to the diamond wire's point of engagement in the object to be cut
  - ▶ + 2 x thickness of object to be cut
  - ▶ + cutting length
  - ▶ + wire length from the point of exit from the object to be cut to the infeed pulley of the wire saw

### 6.3 Safety aspects to be clarified before work starts

- Is the cutting area free from hazardous pipes or cables (gas, water, electricity, etc.)?
- Have the effects of the cutting work on the stability of the structure been clarified and are all supports capable of taking up the resulting loads?
- Can the possibility of hazards or damage as a result of the cooling water used be ruled out?
- Can the work zone be secured to such an extent that persons cannot be injured or property damaged by falling or flying parts?
- Can the parts of the structure cut away be removed safely in a controlled operation and disposed of?
- Do the electricity supply and the water supply available for use meet the specified requirements?
- Has the work to be carried out been approved in full by site management?

### 6.4 Marking line of cut

The parts to be cut out are usually marked by the client. If necessary, make dividing cuts to adjust the maximum size and weight of the concrete blocks to the prevailing conditions (i.e. the lifting capacity of the crane or the maximum permissible floor loading capacity and size of doors).



## 6.5 Planning wire guidance and sequence of cuts

- Thorough training and experience are the most important prerequisites for optimum planning of the cutting configuration and wire guidance system.
- Long lengths of wire in contact with the object to be cut and cutting in a very flat arc reduce sawing performance.
- When planning the cut, make sure that the wire contact length does not exceed 1.5 meters.
- Arrange the cutting sequence so that the diamond sawing wire cannot become trapped by parts that are cut away.

## 7 Assembling the wire saw

### 7.1 Drilling through-holes



The location and positioning of the through holes has a direct influence on cutting accuracy.

When walls are thick or permissible tolerances are minimal, you should use a rig-based diamond coring machine to drill the through-holes.

When walls are thinner or permissible tolerances large, the through-holes can also be cut with a rotary hammer drill.

Drilling diameter should be at least 16 mm. If the object to be cut is thick, drilling diameter should be at least 4 % of the thickness of the object to be cut.

Rounding off right-angled edges of the object to be cut lets the sawing wire run smoothly round the corners and prevents damage.

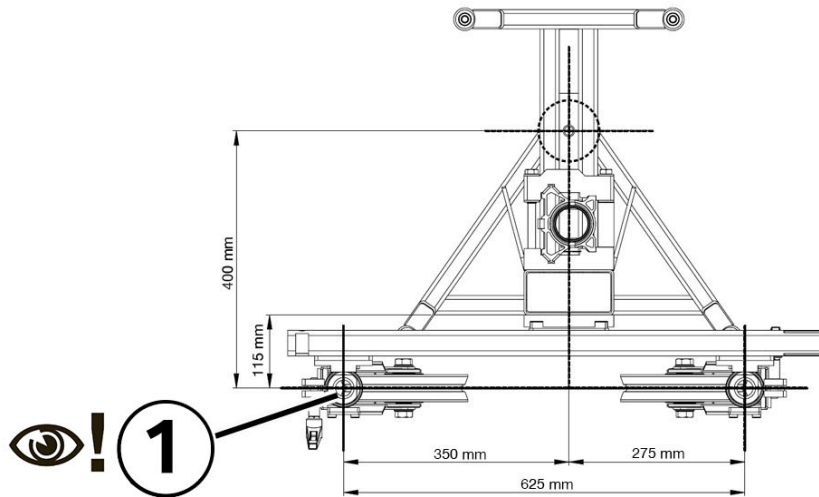
### 7.2 Installing base plate

#### **WARNING**

**Risk of injury by flying parts.** Death and severe injuries can result.

- ▶ Operate the wire saw only with the wire saw and the wire guides correctly mounted on the object to be cut.





① Through-hole

1. Mark the position of the anchor hole for the base plate.
2. Drill the anchor hole and clean it out.
3. Set the anchor for the base plate.

**Materials**

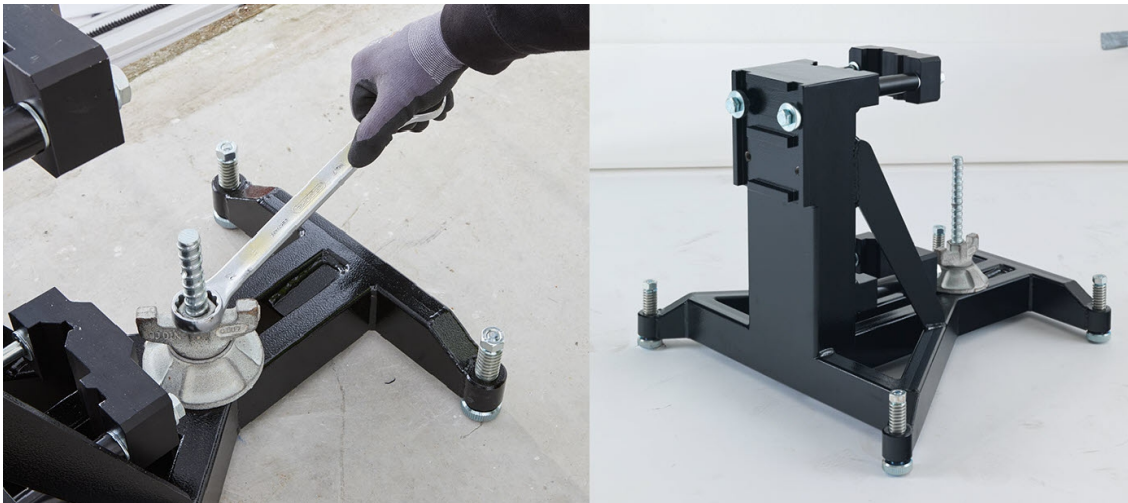
HKD M16 on concrete sub-base

DD-CS M16



If you have questions about fastening, contact your **Hilti** sales representative.

4. Screw the clamping spindle as far as it will go into the anchor.



5. Back off the clamping spindle one full turn.
6. Position the base plate.
7. Secure the base plate with the clamping nut.
8. Align the base plate.
9. Make sure that the clamping nut and the leveling screws are securely tightened.

**Materials**

Open-ended wrench, w/f 19

Open-ended wrench, w/f 27

- ▶ Clamping nut (w/f 27)
- ▶ Leveling screws (w/f 19)



### 7.3 Installing guide rail



1. Slide the guide rail into the holder on the base plate.

<b>Technical data</b>	
Rail	DS-R200-L or DS-R230-L

2. To secure the guide rail, tighten the screws on the left side first.

<b>Technical data</b>	
Securing screw for guide rail	90 Nm


<b>Materials</b>	
Open-ended wrench, w/f 19	

3. Then tighten the screws on the right side.

<b>Technical data</b>	
Securing screw for guide rail	90 Nm

<b>Materials</b>	
Open-ended wrench, w/f 19	

### 7.4 Fitting the end stop

 To prevent the saw head from over-running the end of the guide rail, always work with a correctly installed end stop.





1. Position the end stop on the guide rail.
2. If the following conditions are met, also take this action:

**Conditions:** DS-R200-L

- ▶ Install the end stop at the top end of the guide rail.

3. If the following conditions are met, also take this action:

**Conditions:** DS-R230-L

- ▶ Install the end stop 30 cm from the top end of the guide rail.

## 7.5 Installing wire spreader



1. Set the wire spreader in the top position on the holder of the base plate.
2. Uniformly tighten the securing screws.

### Technical data

Securing screws for wire spreader	90 Nm
-----------------------------------	-------

### Materials

Open-ended wrench, w/f 19



For cutting flush with the floor, set the wire spreader to the bottom position.





## 7.6 Installing holder for wire storage unit cover



1. Push the holder on to the guide rail.
2. If the following conditions are met, also take this action:

**Conditions:** DS-R200-L

- ▶ Install the holder at the top end of the guide rail.

3. If the following conditions are met, also take this action:

**Conditions:** DS-R230-L

- ▶ Install the holder 30 cm from the top end of the guide rail.

4. Tighten the screw on the holder.

### Materials

Open-ended wrench, w/f 19

## 7.7 Installing wire storage pulleys



1. Open the clamping plate of the wire storage pulley and set the bottom wire storage pulley on the rail.
2. Close the clamping plate and tighten the screw.

### Technical data

Securing screws for wire storage pulley

90 Nm

### Materials

Open-ended wrench, w/f 19



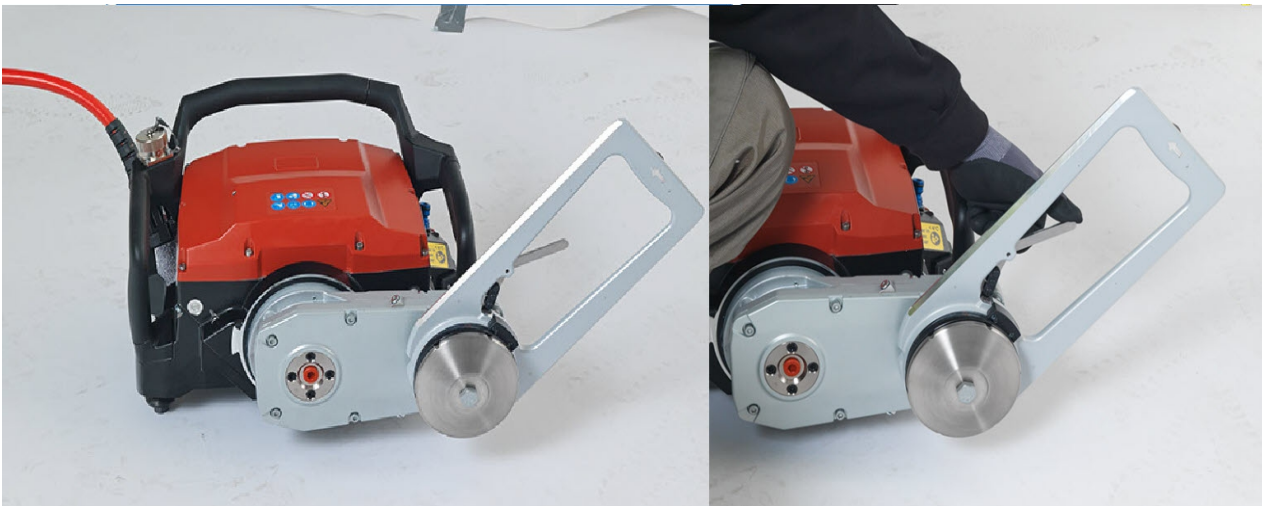
3. Open the clamping plate of the wire storage pulley and set the top wire storage pulley on the rail.
4. Close the clamping plate and tighten the screw.

Technical data	
Securing screws for wire storage pulley	90 Nm

Materials
Open-ended wrench, w/f 19

5. Make sure that the wire storage pulleys and the pulleys of the wire spreader do not touch.

## 7.8 Mounting the saw head



1. To define the position of the saw arm, lay the saw head on a smooth, level and clean surface.
2. Use the control unit to move the saw arm until the axis of the saw arm is exactly parallel with the surface.
3. Disconnect the electricity supply to the saw head.



4. Open the catch on the saw head and set the saw head on the guide rail.
5. Swing the blade guard to point 45 ° up and away from the rail.
6. Lock the blade guard holder.





## 7.9 Installing drive pulley



1. Clean the centering and clamping surfaces.
2. Fit the drive pulley on to the adapter on the saw head.
3. Secure the drive pulley with the flange cover and the clamping screw.

### Technical data

Securing screws for drive pulley	110 Nm
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### Materials

Open-ended wrench, w/f 19

## 7.10 Rounding off edges on object to be cut

**i** Rounding off edges on the object to be cut is a job for 2 persons.

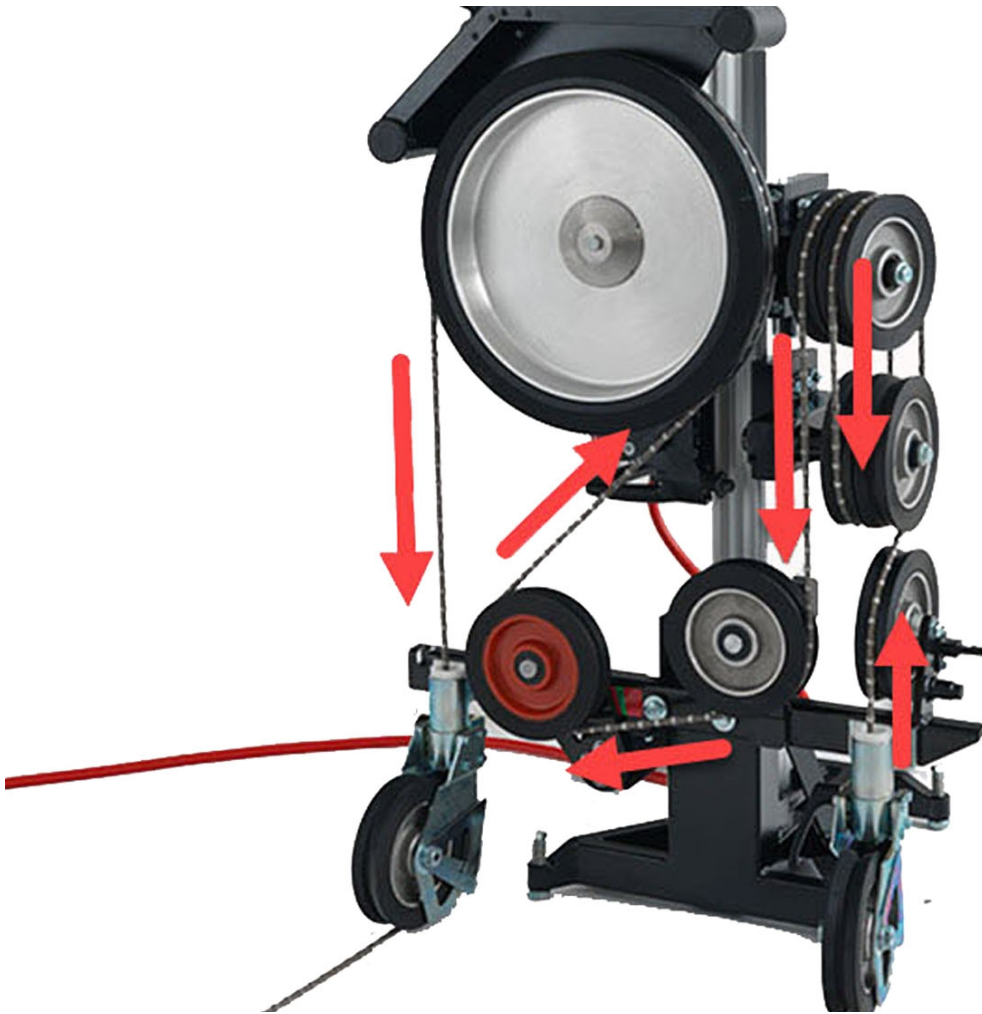
1. Pass the diamond wire through the hole drilled in the object.
2. Pass the diamond wire over the guide pulley of the wire saw or the wire guide.
3. To round off the edges, pull the diamond wire repeatedly back and forth.
4. Continue rounding off the edges of the object to be cut until the diamond wire pulls back and forth easily.

## 7.11 Installing diamond wire

**i** Make sure that the direction of travel of the diamond wire is correct. The arrow on the diamond wire or the smaller diameter of tapered beads points in the direction of travel.

To reduce the risk of wire breakage, use only one connector per wire loop.





1. Feed the diamond wire through the holes in the object to be cut, through wire guides if used, and through the hollow axles of the wire saw.



2. To avoid out-of-round wear, twist the diamond wire counter-clockwise 1 - 1.5 turns per meter of length.
3. Connect the ends of the diamond wire.
4. Align the guide pulleys.
5. Seat the diamond wire in the grooves of the pulleys.





6. After slacking the clamping screws, slide the top storage pulley assembly up the rail until the diamond sawing wire is taut.
7. Hold the top storage pulley in position and retighten the securing screws.
8. Make sure that the diamond sawing wire is correctly seated on all the pulleys.

### 7.12 Installing guard for drive pulley



1. Push the guard on to the blade guard holder on the saw head.

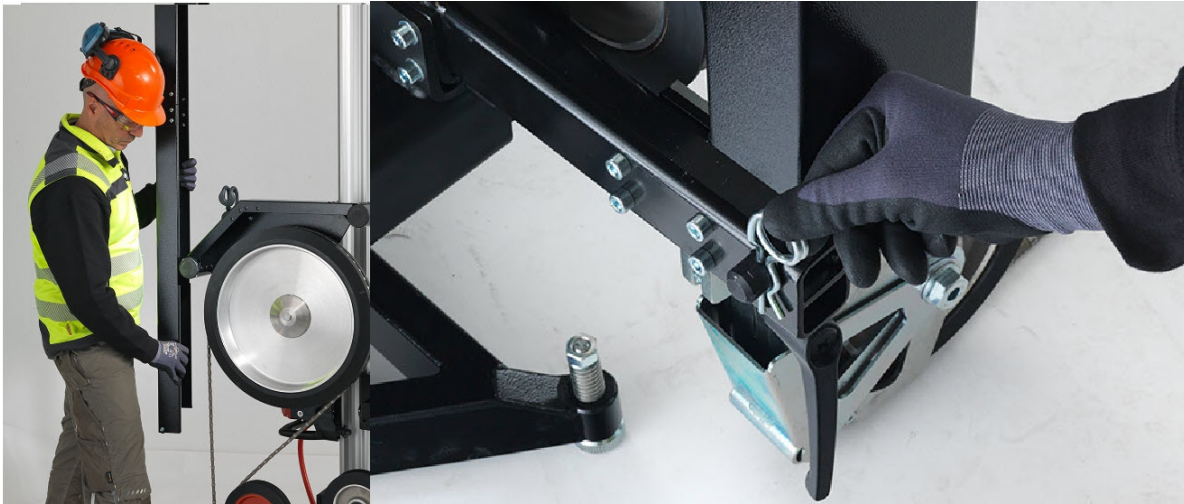


2. Secure the guard with a rubber strap to the blade guard holder.





### 7.13 Installing guard for sawing wire loose side



1. Push the guard over the guide on the guard for the drive pulley.
2. Secure the cover with the retaining pin on the wire spreader.

### 7.14 Installing wire storage unit cover



1. From below, push the wire storage unit cover as far as it will go on to the holder.
2. Pivot the wire storage unit cover down so that the wire storage unit cover engages the catch of the wire spreader.

### 7.15 Connecting electricity supply and water supply

1. Connect the electricity supply and the water supply to the saw head.
2. Connect the water supply to the diamond wire.

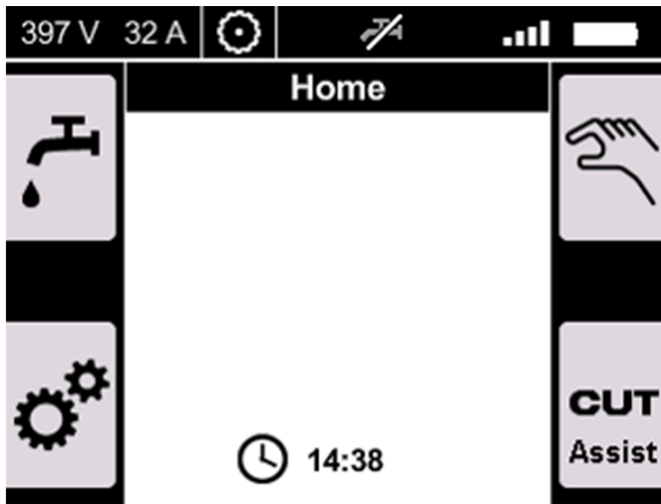
**i** Position a water supply (accessory) at the point where the diamond wire enters the object to be cut. In this way, water is carried into the cut, the diamond wire is cooled and the dust is bound by the water.

## 8 Before use

### 8.1 Home screen

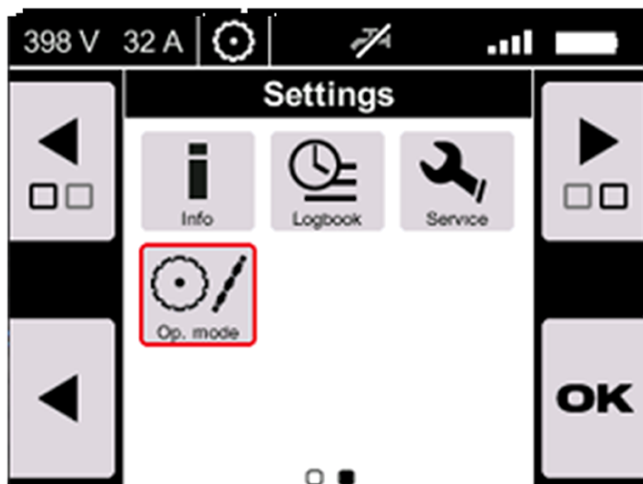
The home screen is the start screen of the DST WRC-CA wireless remote control. The information displayed varies, depending on which operating mode is selected. The functions assigned to the softkeys in the **Wall sawing** mode are as follows:





1. Switch the water supply on/off
2. Select manual sawing mode
3. Change settings

## 8.2 Selecting operating mode



1. In the home screen, select the **Settings** tile.
2. Select the **Operating mode** tile.





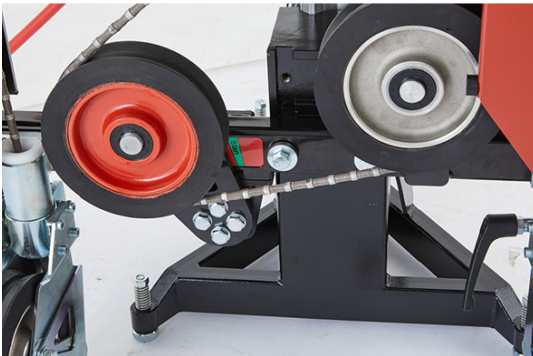
- Use the control knob to set the operating mode to **Wire saw** and confirm your selection with **OK**.

**i** Your setting is saved as the new basic setting on the DST WRC-CA wireless remote control.

## 9 Sawing operations

### 9.1 Operating the wire saw

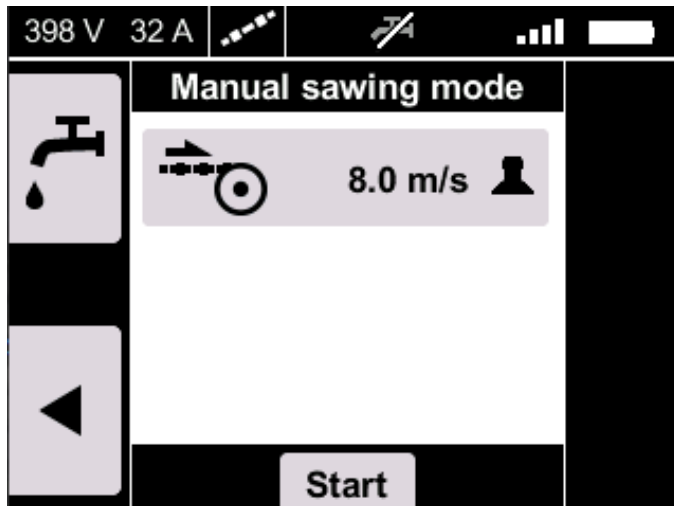
- In the home screen, select the **Manual operation** tile.



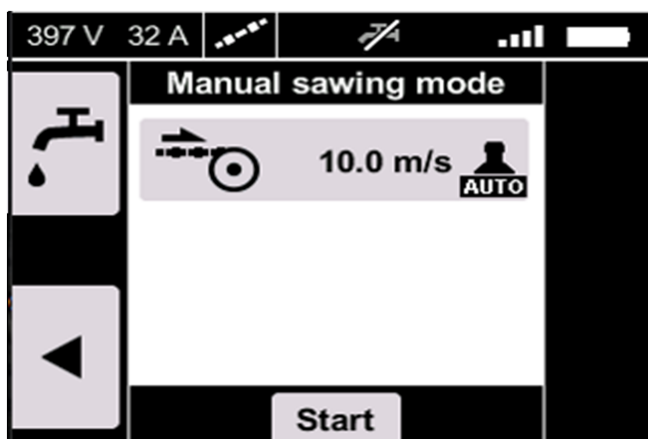
- Using the joystick, move the saw head up to tension the diamond sawing wire. Tension the diamond sawing wire until the holder of the tensioning pulley is in the green zone.
- Open the valve for the water supply at the saw cut.
- To start the saw, press the **Start** tile.
  - The green "Start" LED lights up.

**i** Make sure that the tensioning pulley does not move into the red zone while sawing is in progress. If the tensioning pulley does enter the red zone, pause wire advance until the tensioning pulley is back in the green zone.





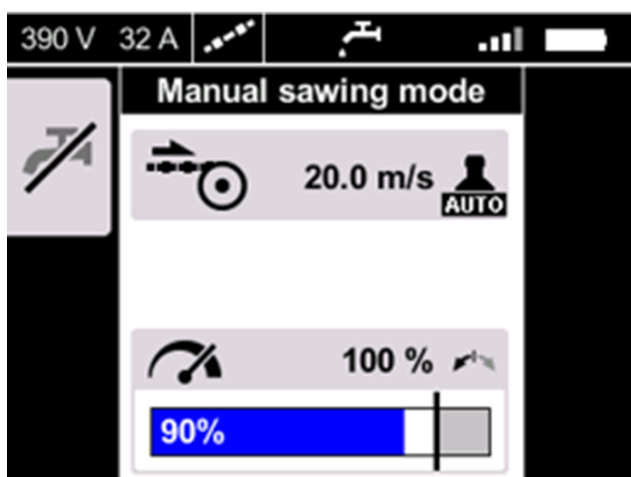
5. To increase the speed of the wire, push the joystick to the right; push it to the left to reduce speed.



6. To move the drive on the rail, push the joystick down.

- ▶ After 4 seconds, the wire saw switches to **AUTO** mode.
- ▶ Current wire speed and wire tension are shown on the display.

- i** • The **AUTO** function helps optimize sawing operations. **AUTO** automatically adjusts wire tension and speed to the progress of the cut.
- In "Wire saw" mode, the drive can only be moved upward on the rail or stopped.



7. To set the specified performance, turn the control knob.



8. If the drive unit reaches the limit stop, enlarge the wire storage unit. → page 32

## 9.2 Enlarging wire storage unit

In order for cutting to continue, the wire storage unit has to be enlarged shortly before the saw head reaches the limit stop.

1. Stop the advance shortly before the saw head reaches the limit stop and switch off sawing operation.
2. Use the advance to move the saw head to the bottom position.
3. To switch the system off, press the **Emergency stop** switch.



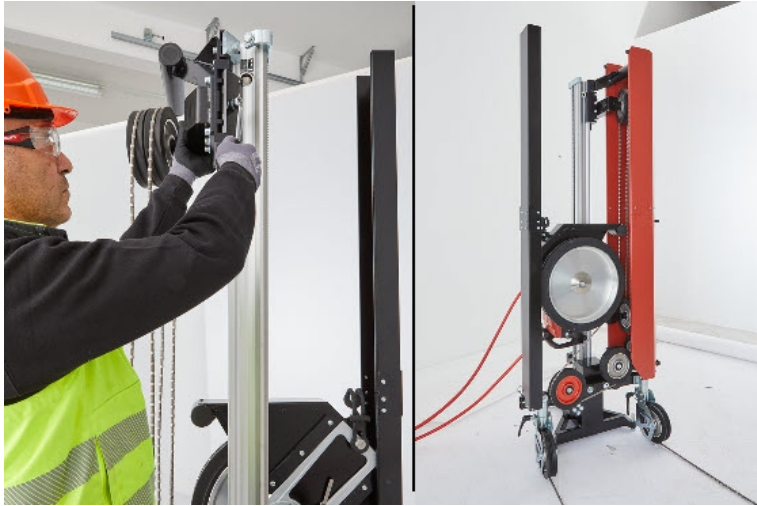
4. Remove the wire storage unit cover.



5. Slacken the top pulley of the wire storage unit and slide the pulley up the rail until the diamond sawing wire is taut.
6. Hold the top pulley of the wire storage system in position and retighten the securing screws.
7. Make sure that the diamond sawing wire is correctly seated on all the pulleys and is not twisted.







8. Install the wire storage unit cover.
9. Start the wire saw.

### 9.3 Ending the sawing operation

1. Shortly before the diamond wire emerges from the object being cut, reduce wire speed and advance pressure.
2. As soon as the diamond wire emerges from the object being cut, immediately switch off the drive.

### 9.4 Removing wire saw

1. Switch off the drive.
2. Press the **Emergency stop** switch.
3. Disconnect the electricity supply and the water supply.
4. Remove the guards.
5. Open the connector and remove the diamond sawing wire.
6. Remove the drive pulley.
7. Remove the drive from the rail.
8. Remove the wire storage pulleys.
9. Remove the wire spreader.
10. Remove the rail.
11. Remove the base plate.
12. Clean the individual components of the product.
13. Check the product for damage.

## 10 Care and maintenance

### **WARNING**

**Electric shock hazard!** Attempting care and maintenance with the supply cord connected to a power outlet can lead to severe injury and burns.

- ▶ Always unplug the supply cord before carrying out care and maintenance tasks.

### Care

- Carefully remove any dirt that may be adhering to parts.



## Maintenance

### **WARNING**

**Danger of electric shock!** Improper repairs to electrical components may lead to serious injuries including burns.

- ▶ Repairs to the electrical section of the tool or appliance may be carried out only by trained electrical specialists.
- 
- Check all visible parts and controls for signs of damage at regular intervals and make sure that they all function correctly.
  - Do not operate the product if signs of damage are found or if parts malfunction. Have it repaired immediately by **Hilti Service**.
  - After cleaning and maintenance, check all guards and protective devices to ensure that they function correctly.



To help ensure safe and reliable operation, use only genuine Hilti spare parts and consumables. Spare parts, consumables and accessories approved by Hilti for use with the product can be found at your local **Hilti Store** or online at: **[www.hilti.group](http://www.hilti.group)**.

### 10.1 Cleaning the wire saw

1. Use the main switch on the control unit to switch the wire saw off and press the **Emergency stop** switch.
2. Disconnect the electricity supply.
3. After each cut, wipe the worst deposits of foreign matter off the wire saw and the pulley stands.
4. Remove the concrete slurry with water and a brush. Do not use a high-pressure water cleaner to remove the concrete slurry.
5. After cleaning, visually inspect all parts of the device (check for defects and check ease of movement).
6. To prevent accidents and consequential damage or injury, have all damaged parts and parts that are not in full working order replaced immediately.

## 11 Transport and storage

- Always unplug the supply cord before storing the product.
- Store the product in a dry place, where it cannot be accessed by children or unauthorized persons.
- Check the product for damage before use after long periods of transport or storage.

### 11.1 Transporting the system

- ▶ Secure the system with ratchet straps in order to transport the product and to protect against slippage and toppling.

## 12 Troubleshooting

If the trouble you are experiencing is not listed in this table or you are unable to remedy the problem by yourself, please contact **Hilti Service**.



## 12.1 Troubleshooting table

Trouble or fault	Possible cause	Action to be taken
The wire saw doesn't start.	Diamond sawing wire is stuck or snagged because the edges at the through-holes are too sharp.	▶ Use a suitable tool to round off the edges. Bed in the diamond sawing wire by hand.
	A new diamond sawing wire jams in a kerf made by a worn diamond sawing wire.	▶ Complete the cut with the worn diamond sawing wire or use a thinner diamond sawing wire. ▶ Drill another hole that can be used to draw the new diamond sawing wire into position.
	Contact length of the diamond sawing wire in the concrete is too long.	▶ Install more guide pulleys or release pulleys.
	Tension on the wire is too high.	▶ Reduce tension on the wire. ▶ Make sure that the tensioning pulley is in the green zone.
	Diamond sawing wire installed wrong way round.	▶ Check that the diamond sawing wire is installed for the correct direction of travel.
	Diamond sawing wire faulty	▶ Replace the diamond sawing wire.
The drive pulley slips / the diamond sawing wire is not driven by the pulley.	Insufficient wire tension.	▶ Adjust the rate of advance to increase wire tension. ▶ Note the wire damper.
	The drive pulley is too badly worn.	▶ Replace the drive pulley.
The diamond sawing wire jumps off the drive pulley or guide pulley as the saw starts.	Insufficient wire tension.	▶ Adjust the rate of advance to increase wire tension. ▶ Note the wire damper.
	Diamond sawing wire installed wrong way round.	▶ Check that the diamond sawing wire is installed for the correct direction of travel.
Uneven / one-sided wear of the diamond sawing wire.	The diamond sawing wire was not correctly twisted before the ends were connected together.	▶ Twist the diamond sawing wire 1 to 1.5 turns counter-clockwise per running meter.



Trouble or fault	Possible cause	Action to be taken
Uneven / one-sided wear of the diamond sawing wire.	Tension on the wire is too high.	<ul style="list-style-type: none"> <li>▶ Reduce tension on the wire.</li> <li>▶ Make sure that the tensioning pulley is in the green zone.</li> </ul>
Wire breakage right beside the connector.	The diamond sawing wire passes round a sharply angled corner on the object being cut.	▶ Install additional guide pulleys to reduce the angle of deflection.
	Material fatigue of the diamond sawing wire due to excessively long usage and aging.	▶ Use a new diamond sawing wire.
	Material fatigue of the diamond sawing wire due to excessive tensioning of the diamond sawing wire.	▶ Reduce the strain on the wire by reducing the advance force.
	Material fatigue of the diamond sawing wire due to excessive bending at the connector.	▶ Reduce bending of the wire with <b>Hilti</b> articulated connectors.
The diamond sawing wire is pulled out of the connector.	Crimping pliers incorrectly set.	▶ Check the setting of the crimping pliers.
	Insufficient pressure applied to the crimping pliers.	▶ Use a press crimping tool rated for at least 8 t.
	Incorrect or worn crimping jaws.	▶ Check and, if necessary, replace the crimping jaws.
	Diamond sawing wire was not pushed far enough into the connector.	▶ Install a connector (clevis) on the diamond sawing wire.
	The diamond sawing wire is continuously under too much tension.	▶ Reduce wire tension by slowing the rate of advance.
Diamond sawing wire jumps and oscillates severely.	Insufficient wire tension.	<ul style="list-style-type: none"> <li>▶ Adjust the rate of advance to increase wire tension.</li> <li>▶ Note the wire damper.</li> </ul>
	The guide pulleys are too far apart (unsupported length of wire is too long).	<ul style="list-style-type: none"> <li>▶ Install additional pulley stands to reduce unsupported wire length.</li> <li>▶ Position the wire saw closer to where the cut is being made.</li> <li>▶ Install a shorter sawing wire.</li> </ul>
	The grooves between the wire guides and pivoting pulleys are not in alignment with each other.	▶ Bring the pivoting guide pulleys into alignment with the relay pulleys.



Trouble or fault	Possible cause	Action to be taken
Sawing wire vibrates very strongly at a high frequency.	Wire tension too high in relation to length of cut.	▶ Reduce tension on the wire.
	Wrong speed.	▶ Correct the speed.
Excessive sawing wire wear.	Cutting speed, i.e. wire drive speed, is too low.	▶ Increase drive speed or cutting speed.
	Inadequate cooling of the diamond sawing wire.	▶ Ensure adequate cooling of the diamond sawing wire.
	Cutting or contact length too short.	▶ Increase the cutting or contact length.
	Wire tension too high in relation to length of cut.	▶ Reduce tension on the wire.
	Very abrasive material.	▶ Use different sawing wire specifications.
	Frequent changes of direction.	▶ To avoid overloading the diamond sawing wire, use the diamond sawing wire only in the direction of travel.

## 13 Disposal

Most of the materials from which **Hilti** products are manufactured can be recycled. The materials must be correctly separated before they can be recycled. In many countries, your old tools, machines or appliances can be returned to **Hilti** for recycling. Ask **Hilti** Service or your Hilti sales representative for further information.

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



- ▶ Disposal of electric tools or appliances together with household waste is not permissible.

### Drilling and sawing slurry

Disposing of drilling and sawing slurry directly into rivers, lakes or the sewerage system without suitable pretreatment is problematic from an environmental point of view.

- ▶ Ask the local public authorities for information about current regulations.

We recommend the following pretreatment:

- ▶ Collect the drilling or sawing slurry (for example, using a wet-type vacuum cleaner).
- ▶ Allow the drilling or sawing slurry to stand for some time or add a flocculation agent to help the fine particles in the slurry settle and separate from the water.
- ▶ Dispose of this solid portion of the drilling or sawing slurry at a construction waste disposal location.
- ▶ Neutralize the remaining water from the drilling or sawing slurry (alkaline, pH-value > 7) by adding an acidic neutralizing agent or dilute it by adding a large quantity of water before allowing it to enter the sewerage system.



## 14 Manufacturer's warranty

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

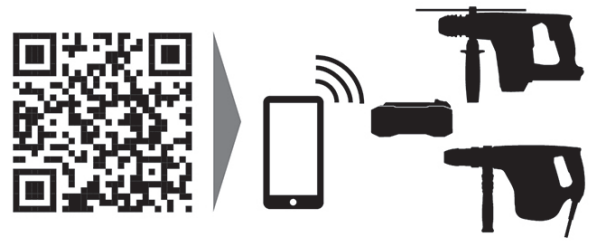








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