



DSW 3018-E (01)

English

DSW 3018-E

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Original operating instructions

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1 Information about the operating instructions

1.1 About these operating instructions

- **Warning!** Read and understand all accompanying documentation, including but not limited to instructions, safety warnings, illustrations, and specifications provided with this product. Familiarize yourself with all the instructions, safety warnings, illustrations, specifications, components, and functions of the product before use. Failure to do so may result in electric shock, fire, and/or serious injury. Save all warnings and instructions for future reference.
-  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 accompanying documentation corresponds to the current state of the art at the time of printing. Please always check for the latest version on the product's page on Hilti's website. To do this, follow the link or scan the QR code in this documentation, marked with the symbol .
- Ensure that these 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:

2	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 overview illustrations and refer to the numbers used in the product overview section
	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
	Suspension point provided for lifting by crane
	Warning: hazardous electrical voltage
	Risk of crushing parts of the body.



2 Safety

2.1 Safety instructions

The safety instructions in the section below contain all general safety instructions for power tools that the applicable standards require to be stated in the operating instructions. Consequently, some of the instructions might not be relevant for this tool.

2.2 General safety rules

⚠ WARNING Study all safety instructions and other instructions, images and technical data with which this power tool is provided. Failure to observe the instructions below can result in electric shock, fire and/or serious injury.

Keep all safety precautions and instructions for future reference.

The term “power tool” used in the safety precautions refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

Working area safety

- ▶ **Keep your working area clean and well lit.** Cluttered or dark working areas can cause accidents.
- ▶ **Do not operate the power tool in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
- ▶ **Keep bystanders, children and visitors away while operating the power tool.** Distractions may cause you to lose control of the tool.

Electrical safety

- ▶ **The plug on the supply cord of the power tool must match the power outlet. Do not change the plug in any way. Do not use adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching power outlets reduce the risk of electric shock.
- ▶ **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, cookers, stoves and refrigerators.** There is an increased risk of electric shock if your body is grounded.
- ▶ **Do not abuse the supply cord. Never use the supply cord for carrying, pulling or unplugging the power tool. Keep the supply cord well away from heat, oil, sharp edges and moving parts.** Damaged or tangled supply cords increase the risk of electric shock.
- ▶ **When operating a power tool outdoors, use only extension cords of a type suitable for outdoor use.** Use of an extension cord suitable for outdoor use reduces the risk of electric shock.

Personal safety

- ▶ **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating the power tool may result in serious personal injury.
- ▶ **Wear your personal protective equipment and always wear protective glasses.** Depending on the purpose for which the power tool is to be used, wearing safety equipment such as a dust mask, non-skid safety shoes, hard hat, or hearing protection will reduce the risk of injury.
- ▶ **Avoid accidental starting. Check that the power tool is switched off before you connect it to the power supply and/or the battery and before picking it up or carrying it.** Carrying power tools with your finger on the switch or plugging in power tools that are already switched on invites accidents.



- ▶ **Remove adjusting keys or switches before turning the power tool on.** A tool or a key left attached to a rotating part of the machine may result in personal injury.
- ▶ **Avoid unaccustomed body positions. Maintain proper footing and balance at all times.** This will allow you to control the power tool better, even in unexpected situations.
- ▶ **Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewelry or long hair can be caught in moving parts.
- ▶ **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** The use of a dust removal system can reduce dust-related hazards.
- ▶ **Do not lull yourself into a false sense of security and do not flout the safety rules for power tools, even if you are familiar with the power tool after using it many times.** Careless handling could cause serious injury within fractions of a second.

Using and handling the power tool

- ▶ **Do not overload the tool. Use the correct power tool for the job.** The correct power tool will do the job better and more safely within the performance range for which it is designed.
- ▶ **Do not use a power tool if it has a faulty on/off switch.** A power tool that can no longer be switched on or off is dangerous and must be repaired.
- ▶ **Disconnect the plug from the power outlet and/or remove a removable battery before making any adjustments, changing accessories, or storing the tool.** This precaution reduces the risk of the power tool starting accidentally.
- ▶ **Store power tools out of reach of children when not in use. Do not allow persons who are not familiar with the tool and these instructions to operate it.** Power tools are dangerous in the hands of inexperienced persons.
- ▶ **Maintain power tools and accessories carefully. Check that moving parts operate satisfactorily and do not jam, and whether any parts are broken or so damaged that the correct operation of the power tool is adversely affected. If parts are damaged, have the parts repaired before using of the tool.** Many accidents are caused by poorly maintained power tools.
- ▶ **Keep cutting tools sharp and clean.** Properly maintained tools with sharp cutting edges are less likely to jam and are easier to control.
- ▶ **Use power tools, accessories, insert tools, etc. in accordance with these instructions. Take the working conditions and the work to be performed into account.** Use of power tools for applications other than those intended can result in hazardous situations.
- ▶ **Keep grips and gripping surfaces dry, clean and free from oil and grease.** Slippery grips and gripping surfaces do not allow the power tool to be safely operated and controlled in unforeseen situations.

Service

- ▶ **Have your power tool repaired only by qualified,skilled personnel, using only genuine Hilti spare parts.** The safety of the power tool can thus be maintained.

2.3 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.



- ▶ Jointly with site management, make sure that no gas, water, electricity or other lines are located in the cutting area. Use existing drawings and, for example, a detector for this purpose. External metal parts on the device can become live, for example if you inadvertently damage electric wiring. 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 good lighting is in use.
- ▶ Make sure 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 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.
- ▶ 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. Use a dust-extraction device wherever possible. To achieve a high level of dust extraction, use a suitable vacuum extractor of a type that is recommended by **Hilti** for wood dust and/or mineral dust and which is designed for use with this power tool. Make sure 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.
- ▶ 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.
- ▶ Avoid skin contact with drilling and sawing slurry.
- ▶ Keep children clear. Keep everyone clear of your work zone.
- ▶ Do not allow other persons to touch the equipment or the extension cord.
- ▶ Always run cables and hoses flat on the floor or ground away from the machine to prevent trip hazards.
- ▶ Keep cables and hoses away from rotating parts.
- ▶ 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.

2.4 Safety during operation

- ▶ Before use, check that the wire saw and its components, the 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.

- ▶ Take up a position as far as possible away from the danger zone. Position yourself where you have the cutting process and the danger zone in clear view.
- ▶ Carry the wireless remote control with you at all times so that you can interrupt the cutting process immediately if a dangerous situation occurs.
- ▶ Do not start work until the drive unit and the pulley stands have been securely and firmly secured to a solid sub-base. A toppling or dropped part can result in serious damage or injury.
- ▶ Connect the electric power and compressed air supply only once the wire saw has been set up completely.
- ▶ Do not start up the product before all covers have been correctly installed and closed.
- ▶ 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 or the ON/OFF switch on the remote control unit has been pressed and the drive pulleys have come to a standstill.
- ▶ Adhere to the permissible drive unit parameters and recommended guide values for wire speed and advance pressure while sawing.
- ▶ Use only sawing wires that comply with the requirements of EN 13236. Use only one wire connector per diamond-wire loop and connect only diamond wires of the same type and diameter.
- ▶ The number of wire breakages experienced can be reduced considerably by using high-quality wires and wire connectors and the appropriate crimping tools for fitting connectors.
- ▶ The sawing wire can become hot, so do not touch it unless you are wearing protective gloves.
- ▶ Use only fastening materials of adequate size (anchors, bolts, etc.) to fasten the pulley stands for 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.
- ▶ Avoid awkward postures. Maintain firm footing and balance at all times.
- ▶ At all times while the saw is in operation, the operator must ensure that no persons are present in the danger zone. 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. Keep the sawing process and the surroundings of the working area under observation. Do not operate the machine if your full attention is not on the job.
- ▶ Modifications to the saw system are prohibited. Changes to the ex-works settings of the frequency converter parameters are prohibited.

2.5 Requirements to be met by operating personnel

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

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 danger area by cordoning it off and taking protective measures (guards, etc.) as necessary.

National regulations and laws, as well as the operating instructions and the safety information applicable to the accessories used (e.g. sawing wire, fastening accessories, lifting equipment, compressor, etc.), must be taken into account in this respect.

2.6 Safety instructions applicable to transporting the wire saw

- ▶ Avoid lifting and carrying heavy objects. Use suitable lifting equipment and means of transport and share heavy loads between several people.
- ▶ Use the grips provided for transportation. Keep the grips clean and free from oil and grease.
- ▶ Bear in mind that the machine could fall over. Stand the machine only on a solid, level surface.
- ▶ Secure the machine and its components to prevent movement or falling over during transportation.
- ▶ Use only tested and approved lifting gear secured to the point provided for the purpose to transport the device by crane. Before lifting, check that all removable parts are secure, the drive unit is locked and the end stop installed. Never stand or pass beneath a suspended load.

2.7 Additional safety instructions

- ▶ Avoid whiplash of a snapped sawing wire by always keeping the free lengths of sawing wire as short as possible (do not allow the taut and slack lengths of the sawing wire to cross). Also make sure that in the vicinity of the sawing wire there are no objects such as standing pipes, scaffold tubes or the like that the sawing wire could wrap itself around if it snaps. The whiplash effect results in rapid acceleration of the wire, possibly causing parts of the wire to fly off at high speed.
- ▶ Do not cut easily combustible aluminum or magnesium alloys.
- ▶ Never attempt to hold objects against the sawing wire, for example to use it as an improvised saw.

2.8 Safety concept for working with wire saws

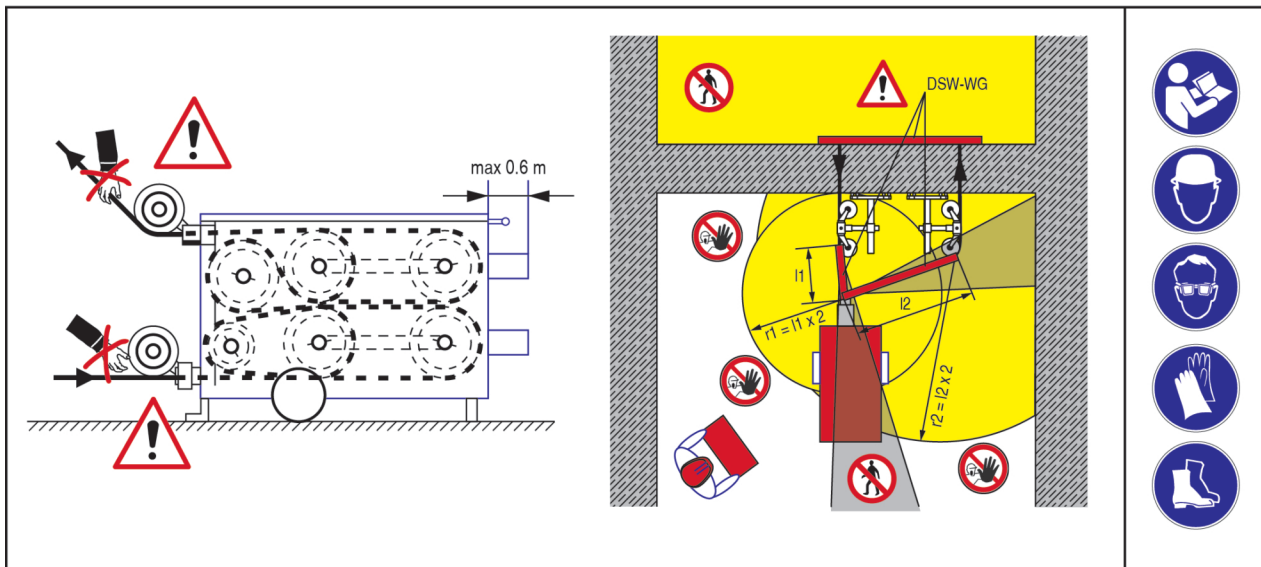
Operate the wire saw only when you and all other persons are as far as possible outside all danger zones. By adopting additional measures (e.g. setting up cordons or posting guards), make sure that no-one enters these danger zones while the equipment is in operation. Danger zones extend also to the areas that are hard to see or cannot be seen from in front (e.g. the rear of the structure to be cut).

Notes for safe working practice:

- Never enter the area underneath the work zone while the equipment is being set up and while the wire saw is in operation. Falling parts can cause serious injuries.
- Invariably, keep a safe distance of at least 2 m away from all parts that move while the equipment is in operation.



Description of the danger zone



The danger zone for wire saws includes zones in which:


- **(A)** Persons could be hit by a whipping diamond wire.
- **(B)** Persons could be hit by flying parts.

Danger zone A (shown here colored yellow)

Protection against whipping diamond wire.

In principle, you must assume that the diamond wire can break at any point. If this happens, the free ends of the wire can be deflected in any direction at the next relay point (in the direction of pull) of the sawing wire.

Notes for safe working practice:


- Keep a safe distance in all directions away from the relay points. The safe distance should be at least twice the radius of the length of sawing wire that can whip free in the event of a wire break.
- Invariably, work only when wire guides are mounted on the object to be cut. This precaution reduces the length of wire that can whip free and makes the danger zone considerably smaller.
-  Avoid presence in the danger zones! Make sure that no-one enters the danger zones!

Danger zone B (shown here colored gray)

Protection against flying fragments.

In regular operation and in the event of a wire break, parts (e.g. fragments splintered off the structure or shattered cutting beads from the wire) can be flung out at high energy in the diamond wire's direction of pull. In principle, this is a risk that originates from every free length of wire. The danger zones, therefore, consist of additional corridors that extend in the direction of pull along the free lengths of sawing wire and beyond.

Notes for safe working practice:

- Unless additional safety measures such as protective paneling, protective curtains or sawing-wire guards are installed to stop flying fragments, these corridors are unlimited in length.
- Whenever possible, use the tubular guards for exposed lengths of sawing wire.
-  Never pass through the hazard corridors while the wire saw is in operation!



3 Description

3.1 Overview of parts



- | | |
|--|--|
| ① Drive unit | ⑦ Flexible water supply head |
| ② Control panel | ⑧ Water hoses, 2x10 m |
| ③ Air compressor | ⑨ Tool set |
| ④ Compressed air hoses 2x7 m,
1x1 m | ⑩ Wire guard set (optional) |
| ⑤ Single-pulley stand (2 of) | ⑪ Electric supply socket 63 A, 5P,
400 V, 6 h (not shown) |
| ⑥ Long water supply nozzle | |

3.2 Controls on the drive unit

- ① Transport handle
- ② Lifting point



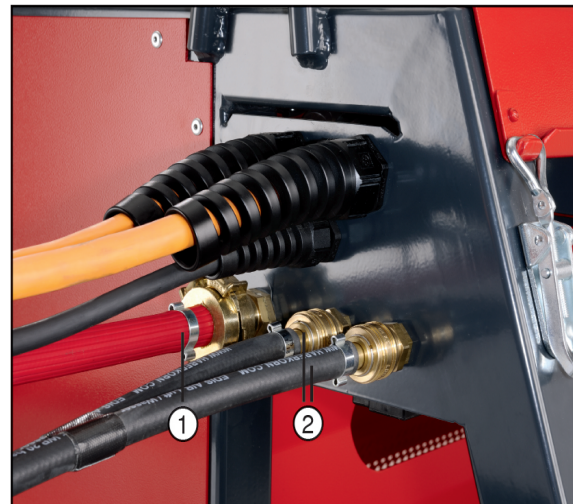
3.3 Extension cords

- ① Cable and hose storage point
- ② Supply cable for drive motors (orange)
- ③ Control system cable (black)



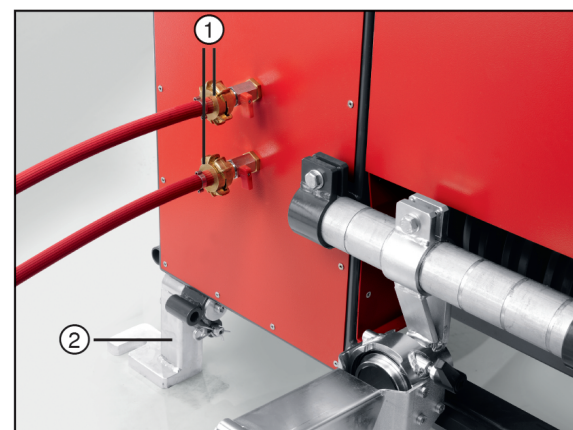
3.4 Water connection and compressed air connection

- ① Water connection (water supply from the construction site)
- ② Compressed air connections for advance pressure cylinder



3.5 Water connection and foot plate

- ① Water connections for cooling the sawing wire
- ② Plates for securing the drive unit to the floor or ground



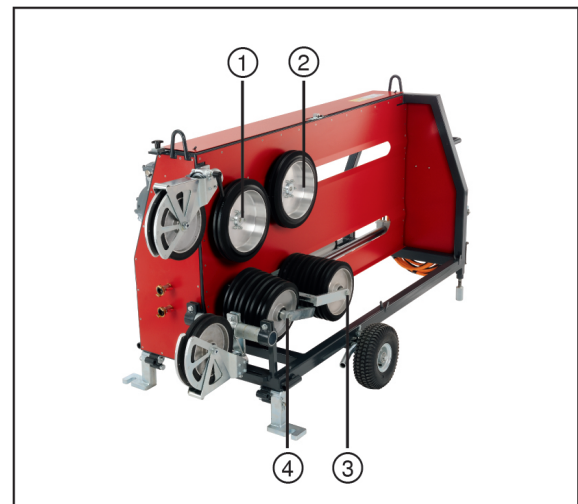
3.6 Stand foot

- ① Height-adjustable stand foot



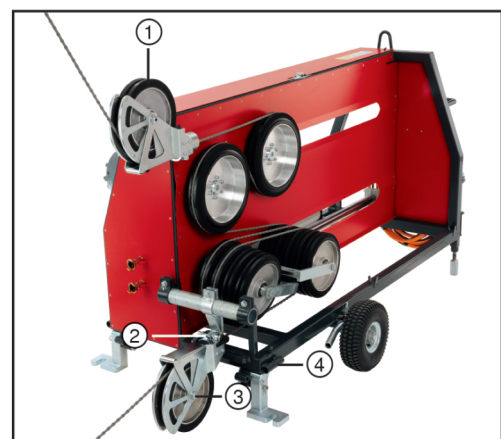
3.7 Drive and storage pulleys

- ① Drive pulley 1 ø360 mm
- ② Drive pulley 2 ø360 mm
- ③ Storage pulleys ø280 mm
- ④ Storage pulleys ø280 mm



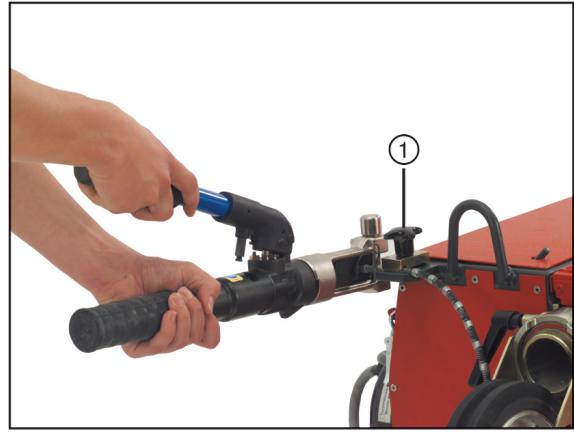
3.8 Guide pulley

- ① Slack-wire guide pulley, direction is adjustable
- ② Clamping lever for securing guide pulley
- ③ Taut-wire side guide pulley, adjustable in direction and position
- ④ Tubular mount for vertical sawing fixture (accessory)



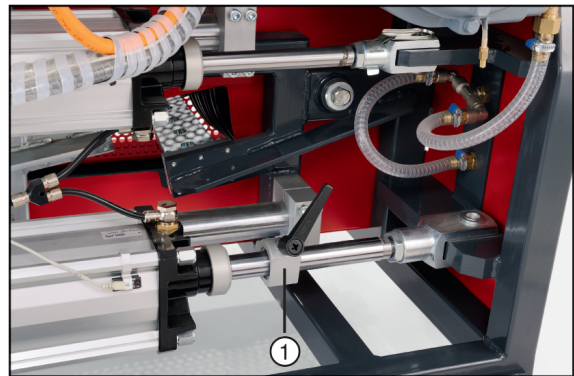
3.9 Vice

- ① Vice for fitting connectors



3.10 Starting lock

- ① Starting lock with clamping lever, compressed air cylinder stop piece



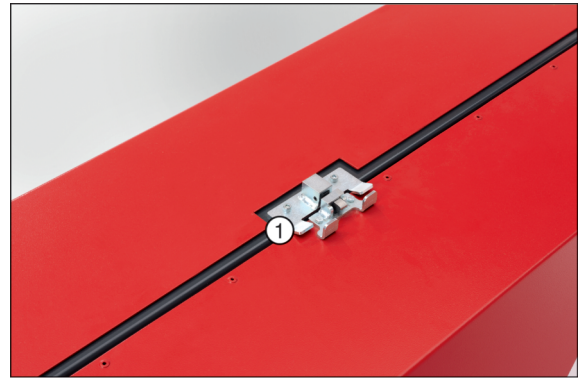
3.11 Wire storage cover

- ① Wire storage cover



3.12 Wire storage cover securing latch

- ① Wire storage cover securing latch



3.13 Controls on the control panel (rear)

- ① Lifting point
- ② Compressed air connections, supply to drive unit
- ③ 24 V socket for control circuit
- ④ Supply socket for drive motors
- ⑤ Compressed air supply from the compressor
- ⑥ Fold-out shelf for air compressor
- ⑦ Transportation handles



3.14 Controls on the control panel (front)

- ① Electric mains supply socket
- ② Grounding connection



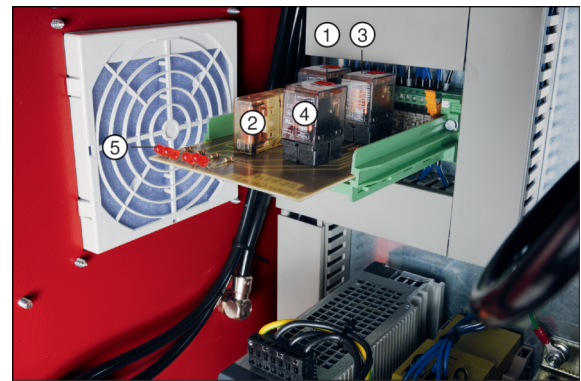
3.15 Controls on the control panel (top)

- ① Control panel cover lock
- ② Key for control panel cover lock
- ③ Main power switch
- ④ Indicator for cutting speed in m/s
- ⑤ "Ready for operation" indicator (lights green)
- ⑥ **Error** indicator (red)
- ⑦ **Storage full** indicator (yellow)
- ⑧ **Water flowing** indicator (white)
- ⑨ Gauge showing current input in amps
- ⑩ Gauge showing advance pressure in bar
- ⑪ Knob for regulating cutting speed
- ⑫ Main drive **ON** (green)
- ⑬ Main drive **OFF** (red)
- ⑭ **EMERGENCY STOP** switch
- ⑮ Water supply **OFF** (red)
- ⑯ Water supply **ON** (green)
- ⑰ Advance control ↑ = forward, neutral, ↓ = reverse
- ⑱ Knob for adjusting advance pressure, pushed in = locked, pulled out = unlocked



3.16 Overview of relays

- ① Relay no. 1, for starting the main drive
- ② Relay no. 2, for monitoring the motor cooling system and the guards / covers
- ③ Relay no. 4, for controlling the water valve
- ④ Relay no. 3, automatic shutdown when wire storage is full
- ⑤ LEDs 1, 2, 3, 4 (from left to right)



3.17 Intended use

The DSW 3018-E is an electrically powered wire saw with diamond sawing wires. The wire saw is capable of cutting through materials ranging from heavily reinforced concrete to meter-thick masonry. The wire saw is designed for the technical demolition of steel, concrete, stone or brickwork structures in construction and civil engineering applications. It can be used for wet or dry sawing (the wet sawing technique is normally used). Use extending beyond this is considered to be not as directed and requires to be clarified in advance with the manufacturer.

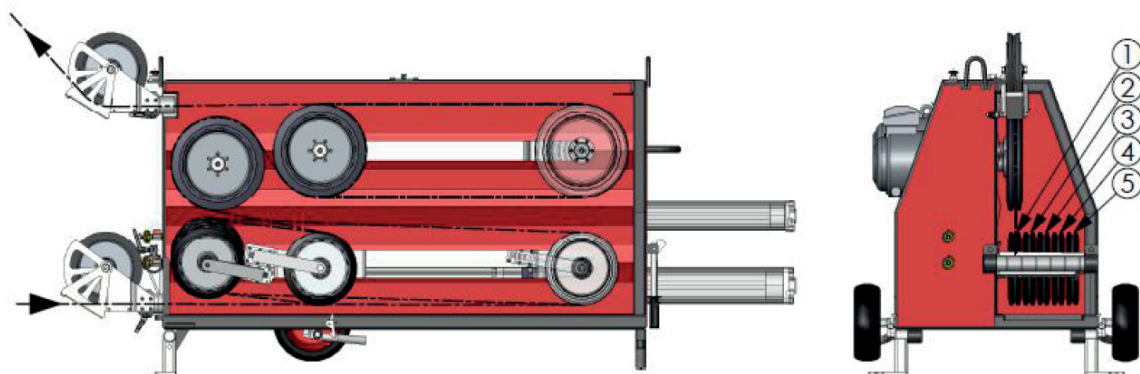
The operator in charge must be aware of the possible dangers and of his responsibility for safety, both with regard to himself and to others.

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

3.18 Drive principle

The wire is driven by electric motors fitted with drive wheels. The wire is fed around the drive wheels in an “S” configuration. The motor characteristics and the control system are designed for high starting torque and working torque. Wire speed can be varied steplessly in the range 2.5 - 35 m/s.

3.19 Saw advance and wire storage




The wire advance mechanism works like a block and tackle system, but in reverse. Two pulley packages are forced apart, producing the advance movement by drawing in the



wire. The maximum wire storage volume is 18.4 m of wire. The minimum required length of wire in the drive system is 4.1 m.

Wire configuration in the drive unit

Wire configuration	Min. sawing-wire length in drive	Storage capacity per cylinder stroke	Recommended starting pressure	Max. recommended working pressure
1st storage level	4.1 m (13 ft - 5.4 in)	4 m (13 ft - 1 in)	1 bar (15 psi)	2 bar (29 psi)
2nd storage level	5.7 m (18 ft - 8.4 in)	6 m (19 ft - 8 in)	1.5 bar (21.8 psi)	3 bar (44 psi)
3rd storage level	7.3 m (23 ft - 11.4 in)	8 m (26 ft - 3 in)	2 bar (29 psi)	4 bar (58 psi)
4th storage level	8.9 m (29 ft - 2.4 in)	10 m (32 ft - 10 in)	2.5 bar (36.3 psi)	5 bar (73 psi)
5th storage level	10.5 m (34 ft - 5.4 in)	12 m (39 ft - 4 in)	3 bar (44 psi)	6 bar (87 psi)

 Excessive tensioning pressure can lead to damage to the sawing wire and/or the accessories used.

Wire configuration and storage capacity

Technical data	
Wire configuration in the drive unit	4.1 m ... 22.5 m (13 ft - 5.4 in ... 73 ft - 9.8 in)
Net storage capacity	18.4 m (60 ft - 4.4 in)

3.20 Wire guidance

There are guide pulleys on the taut-wire side and the on return side (slack-wire side) of the drive unit. The wire is guided by the bottom guide pulley (taut-wire side) to the pulley stand on the structure. From the pulley stand the sawing wire is passed through the hole drilled in the structure and along the back of the structure to the return hole. From the return hole the wire returns to the drive unit via a roller stand, and over the guide pulley on the slack-wire side back into the drive unit.

The purpose of the wire guidance system with pulleys and guide tube on the structure is to guide the sawing wire and keep it from jumping off at the end of the cut. If the sawing wire snaps, the wire guides with guide tube reduce the released length of the sawing wire. The length and height of the wire arc influence the rate of progress and service life of the sawing wire.

3.21 Items supplied

You can find other system products approved for use with this product at your local **Hilti** Center or online at: **www.hilti.group**

Drive unit, control panel, air compressor, 2 single pulley stands, case, 2 water nozzles and operating instructions.



i 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** Center or online at: **www.hilti.group**

3.22 Stickers

The following warning signs are used on the control panel.

<p>Warning! Risk of electric shock Connect only to properly grounded outlets</p> <p>Avertissement! Risque d'électrocution Se brancher uniquement à des prises reliées à la terre</p> <p>Advertencia! Riesgo de electrocución Conectar sólo a tomas de corriente con toma de tierra</p> 	<p>To be connected only to electricity supply sockets with a protective ground conductor</p>
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4 Accessories & spare parts

4.1 DS-W diamond wires

The use of high-grade diamond wires and wire connectors matched to the application and the wire saw is essential for safe and economical operation. Diamond wires of various specifications and types are available.

i Use only wire connectors and accessories specially matched to the applicable type of sawing wire. Follow the manufacturer's instructions when fitting and using these items.

The wire saw is designed for use with diamond wires in the 8 mm to 12 mm diameter range. At special request, the product can be configured by the manufacturer for use with thicker diamond wires.

For more information visit **www.hilti.group** or contact your **Hilti** specialist for diamond cutting equipment.

4.2 Accessories for diamond wire saws

Designation	Description
Single-pulley stand DSW-SPP 30	Guides the diamond wire from the drive unit to the structure to be cut.
Release pulley DSW-RW 30	At the start of a new cut, reduces friction at the edges.
Plunge wheel DS-WSPW	Permits a plunging initial cut (plunge cut) whenever there is no access to the rear of the structure.
Plunge wheel (pivoting) DSW-PW	Permits cutting of the bottom, final section after cutting with the plunge wheel.
Guards DSW-WG 250	Reduces the risk of injury at exposed runs of the diamond wire.
Dust cover DSW-DH 1.1-2.0	Reduces the quantity of dust produced, for example when dry cutting.



Designation	Description
Vertical-cut rig DSW-VSD 30	Permits cutting of columns and beams.
Hilti tools set	Contains anchor-setting tools and accessories.

4.3 Accessories for securing wire guides

The following accessories are part of the tool set supplied with the equipment:

Designation	Description / application
Open-ended / ring wrench, 19 mm	Installing pulley stand
<ul style="list-style-type: none"> • Hammer, 1.5 kg • HSD-G M16 5/8"x65 setting tool • BB blow-out pump 	Setting anchors
Screwdriver, 6 mm	Fitting the clamping spindle
<ul style="list-style-type: none"> • Folding rule • Spirit level • Wooden pencil 	Marking lines of cut and positions for fasteners
<ul style="list-style-type: none"> • Cleaning cloths (fabric) • Lubricant spray • Grease dispenser • Flat brush 	Cleaning and maintenance
<ul style="list-style-type: none"> • M16 clamping spindle • DD-CN-SML clamping nut 	Installing pulley stands and drive unit
Water connection nipple	Water supply
GK seal	Replacement seal for water supply
Steel wedge	Securing concrete blocks

4.4 Accessories for connecting wires

Designation	Description / application	Part number
DA-WSTHY crimping pliers	Crimping wire connectors to wire, crimping force 8 t	235845
DS-WCC Set connector	DS-WCC connector 9.2 - 11 mm	2305995
DA-WP pin	Replacement pin for flexible connectors	235842
DA-WS sleeve	Rigid, non-reusable wire connector	235841
10/4, 7x2,5 O-ring	Replacement O-ring for wire connectors	235844
DA-WJ crimping jaw	Replacement jaws for crimping pliers	340426
DS-WMT pin ejector	Opening flexible connectors	295161



4.5 Accessories and wear parts for the wire saw system

Designation	Description / application	Part number
<ul style="list-style-type: none"> M16 clamping spindle HKD M16×65 flush anchor 	Installing pulley stands and drive unit	337378 382941
Water supply (extension)	Water supply to the diamond wire	339307
Water supply (flexible)	Water supply to the diamond wire	339379
Drive pulley 360 mm (14.2 in)	DSW 3018-E drive unit	435850
Wire storage pulley 280 mm (11.0 in)		339316
Guide pulley 280 mm (11.0 in)	Single-pulley stand DSW-SPP 30	2012743
Fuse 1A, slow-blow, 5×20	DSW 3018-E control unit	2058473
CEE coupling, 63A, 400V, 5P, 6H (not USA)	Power supply coupling	276828
CEE coupling, 63A, 480V, 3P+PE (only USA)	Power supply coupling	2021769

5 Technical data

5.1 DSW 3018-E drive unit

At temperatures below freezing, warm the machine up slowly before operation and blow the water out of the cooling circuit after use.

	DSW 3018-E
Product generation	01
Rated voltage	≈ 400 V
Rated frequency	5 Hz ... 67 Hz
Rated current input	60 A
Power rating	30 kW
Cooling water temperature at 5 l/min	4 °C ... 30 °C (39 °F ... 86 °F)
Cooling water pressure	2 bar ... 6 bar (29 psi ... 87 psi)
Drive running speed	140 /min ... 1,900 /min



	DSW 3018-E
Net storage capacity	18.4 m (60 ft - 4.4 in)
Wire speed	2.5 m/s ... 35 m/s (8.2 ft/s ... 115 ft/s)
Wire diameter	8 mm ... 12 mm (0.3 in ... 0.5 in)
Drive wheel diameter	360 mm (14.2 in)
Dimensions (L × W × H)	2,360 mm × 1,090 mm × 1,230 mm (92.9 in × 42.9 in × 48.4 in)
Weight	550 kg (1,213 lb)
Storage temperature	-15 °C ... 50 °C (5 °F ... 122 °F)
Ambient temperature	-10 °C ... 45 °C (14 °F ... 113 °F)
Extension cable length (Drive unit ↔ control panel)	10 m (32 ft - 10 in)
Degree of protection	IP 65
Minimum anchor diameter (in un-cracked concrete)	HDI 5/8"

5.2 Noise values

	DSW 3018-E
Sound pressure level	86.1 dB(A)
Sound (power) level	103.6 dB(A)
Uncertainty for the sound power level	3 dB(A)

5.3 Control panel DSW EB-3018-E

Rated voltage (Alternating current)	480 V
Rated frequency	50 Hz ... 60 Hz
Mains connection (phase requirements)	3P+PE
Rated current	50 A
Max. fuse rating	≤ 60 A
Output voltage	≈ 400 V
Output frequency	5 Hz ... 67 Hz
Control voltage	24 V
Degree of protection	IP 54
Dimensions (L × W × H)	584 mm × 769 mm × 1,060 mm (23.0 in × 30.3 in × 41.7 in)
Rated voltage	95 kg (209 lb)



Storage temperature	-15 °C ... 50 °C (5 °F ... 122 °F)
Ambient temperature	-10 °C ... 45 °C (14 °F ... 113 °F)
Leakage current	22 mA

5.4 Air compressor

	DSW 3018-E
Compressed air	6 bar ... 8 bar (87 psi ... 116 psi)
Min. air volume	100 ℓ/min (26 liq. gal _{US} /min)
Connection	120 V

5.5 DSW-SPP 30 single pulley stand

	DSW 3018-E
Weight	30 kg (66 lb)
Minimum anchor diameter (in uncracked concrete)	HDI 5/8"

6 Preparations at the workplace

CAUTION

Risk of injury! Inadvertent starting of the product.

- Unplug the supply cord before making adjustments to the power tool or before changing accessories.

Observe the safety instructions and warnings in this documentation and on the product.

6.1 Planning the cuts to be made

Ask the site engineer or architect for confirmation of the exact position of the cuts to be made and make sure that any pipes, conduits or tensioning cables etc. that are to be cut through do not present any risks or hazards.

Bear in mind that the parts cut away might have to be divided into smaller, more easily manageable sections for removal and transport (i.e. on account of permissible floor loads, loading capacity of lifting equipment, size of door openings, etc.).

6.2 Planning the wire guidance system and cutting configuration

Thorough training and experience are the most important prerequisites for optimum planning of the cutting configuration and wire guidance system.

Do not exceed the system's performance rating when planning the length of the cut. Avoid cutting in a very flat arc (slow rate of progress) and in over-tightly radiused arcs and do not try to turn the sawing wire at a sharp angle (possibility of damaging the sawing wire). Arrange the cutting sequence so that the wire cannot become trapped by parts that are cut away.

1. Plan the sequence of operations before setting up the system.



2. Plan the cooling water supply system and water disposal system.
3. Observe the safety instructions.
4. Define the danger area. Cordon off the danger area with barriers and adopt appropriate safety measures.
5. Plan how the section to be cut away is to be secured, removed and transported away and prepare measures for these steps.
6. Mark the cutting lines. If the section to be removed is large, cut it away in smaller parts if necessary.

6.3 Determining wire storage and wire length requirements

Estimating wire storage requirements: Thickness of object in cutting direction x 2

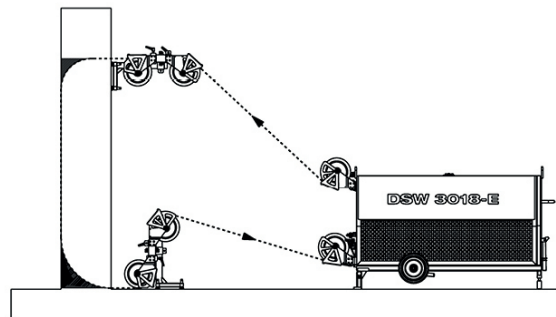
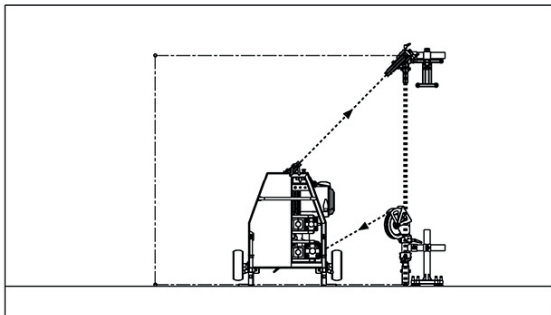
Estimating wire length requirements: Wire length required for minimum configuration of the saw + length of taut-wire side + 2 x thickness of object cut + length of cut + length of slack side

6.4 Examples of applications

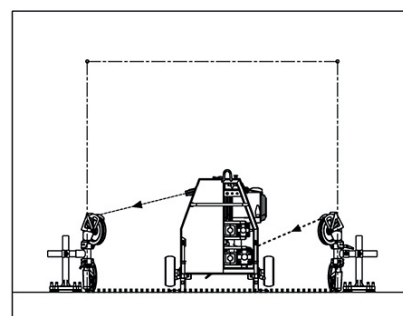
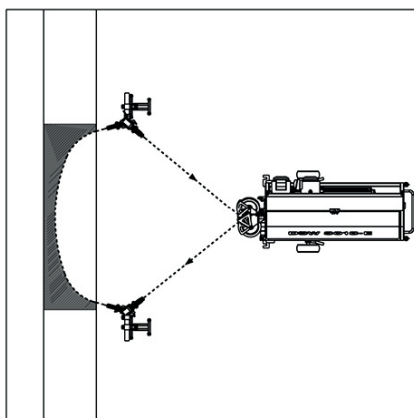
The following examples illustrate the most common applications.

For the sake of clarity, the illustrations below show the equipment with the protective covers not fitted.

6.4.1 Cutting out a rectangular opening in a wall

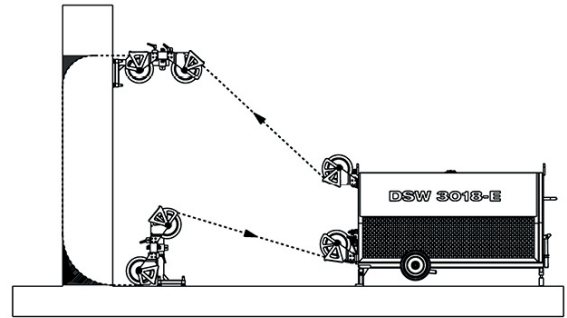
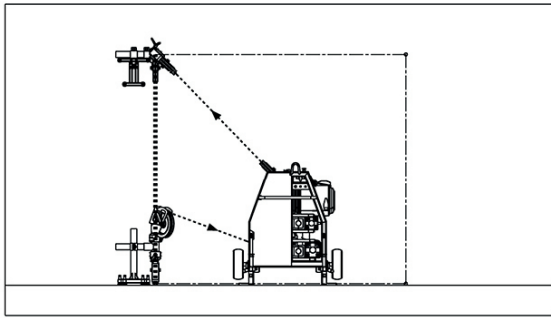


Vertical cut (on the right)

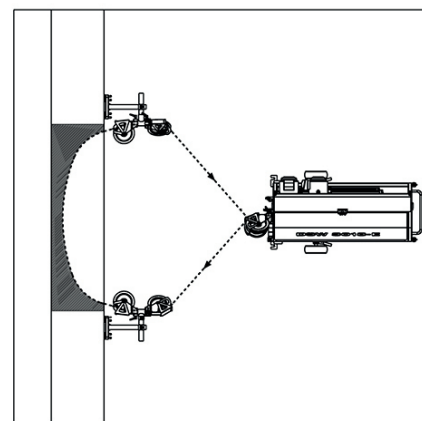
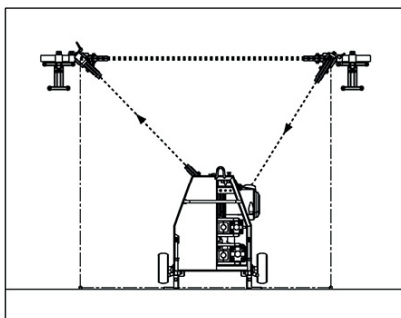


Horizontal flush cut (at the bottom)



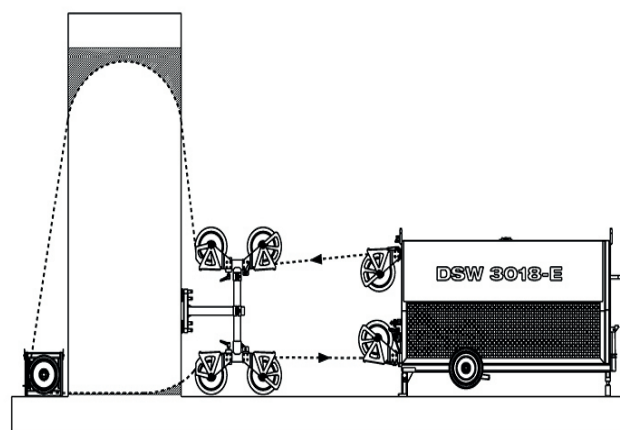


Vertical cut (on the left)



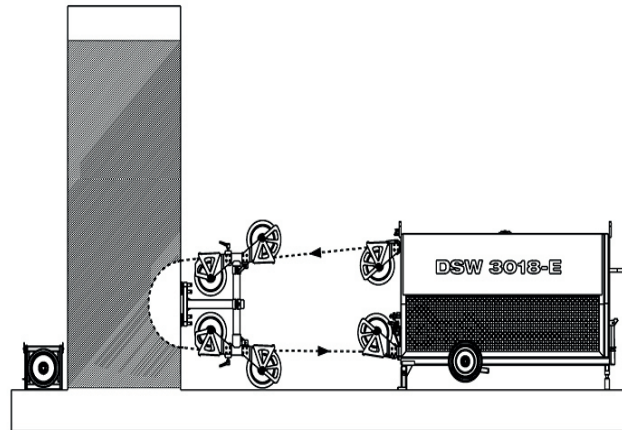
Horizontal cut (at the top)

6.4.2 Vertical cut using the twin-pair pulley stand and release pulley



Starting the cut





Finishing the cut

6.4.3 Cutting using the vertical sawing device



Cutting using the vertical sawing device


6.5 Safety aspects to be clarified

- 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 and disposed of safely and in a controlled manner?
- Do the electricity supply and the water supply available for use meet the specified requirements?
- Is the necessary equipment in the appropriate specification available for use?
- Has the work to be carried out been approved in full by site management?



6.6 Power supply and fuse rating

i Make sure that the site-provided electricity supply, regardless of whether it is from the electricity grid or from a generator, incorporates a ground conductor and ground fault circuit interrupter and that these components are correctly connected.

1. Make sure that the electric supply installation on the jobsite (3 x 480 ... V) has the following fuse rating:
3 x 480 V voltage  27
2. Route a second protective ground cable (min. AWG 4), of a type that cannot be disconnected without tools, to the screw terminal intended for the purpose on the control panel of the machine. **(1)**



6.6.1 3 x 480 V voltage

	DSW 3018-E
Fuse rating	60 A
Portable residual current device type A (FI)	30 mA

6.7 Power supply and plug connector

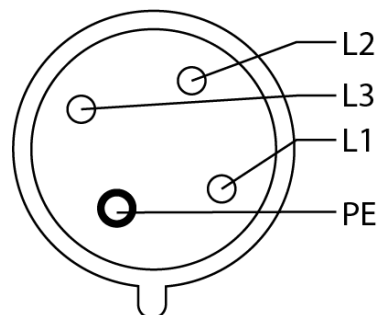
Do not attempt to modify or replace the electric tool power outlet on the control panel. If necessary, convert your extension cord by fitting the electric tool power outlet supplied.

Wiring diagram, power outlet (3x480 V, 60 A) on the control panel

i Route a second protective ground cable (min. AWG 4), of a type that cannot be disconnected without tools, to the control panel of the machine to ensure the best possible protective grounding.

Pin assignment 3P + PE

- L1 Phase 1
- L2 Phase 2
- L3 Phase 3
- PE Protective conductor (ground)



6.8 Extension cord and conductor cross-sections

Use only extension cords of a type approved for the application and with conductors of adequate cross-section. Conductor cross-section means the cross-sectional area of a



single conductor. In accordance with EN 61029-1, conductor cross-sections must be at least 10 mm² (AWG 9) for 63 A.

Smaller conductor cross-sections and long cables lead to a drop in voltage and cause the extension cord to overheat.

Never use an extension cord that is still coiled on its reel.

Current 60 A

Minimum cable cross-section	AWG 9	AWG 7	AWG 6
Maximum cable length	100 m (328 ft - 1 in)	150 m (492 ft - 2 in)	200 m (656 ft - 2 in)

6.9 Requirements to be met by the cooling water supply

- ▶ When the cooling water has a temperature of 30 °C (86 °F), a flow rate of approx. 5 l/min (1.3 gal/min) is required to cool the saw head.
 - ▶ The wire saw’s automatic shutdown trips if cooling is inadequate.
- ▶ Use only clean cooling water; do not use salty water (such as seawater, for example) or filtered or settled service water.
- ▶ Where pressure in the water supply line is low, a non-return valve should be fitted in order to prevent dirty water finding its way into the water supply.
- ▶ Use a pressure reduction valve if the line pressure is too high (above 6 bar).

6.10 Drilling the through holes

i When sawing through very thick objects, cut the part to be removed at slight angle to form a taper. The part cut out can then be removed more easily.

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

On very thick walls or where cutting tolerances are minimal, we recommend use of rig-based diamond coring machine for drilling the holes.

On thin walls or where cutting tolerances are greater, a rotary hammer can be used to drill the holes.

The diameter of the through-holes drilled should be at least one and a half times the diameter of the sawing wire.

After drilling, use a suitable tool to round off the sharp edge of the hole.

6.11 Fastening the wire saw

i Use anchors suitable for the sub-base and comply with the anchor manufacturer's instructions.

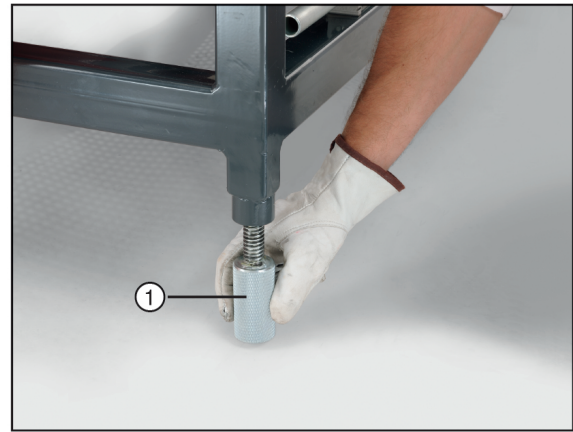
Hilti metal expansion anchors M16x65 are usually suitable for use as anchors for the wire saw equipment in uncracked concrete. An alternative method of attachment might be necessary however, depending on circumstances. Please contact **Hilti** Technical Service if you have any questions about secure fastening.

Set up the drive unit and control panel only on a flat and solid surface.

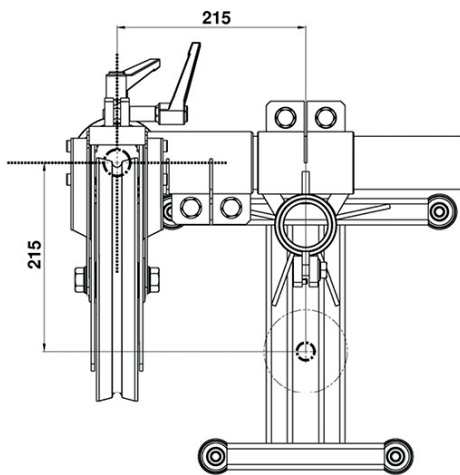
The drive unit can shift in the direction of the tension on the wire if the wire jams while sawing is in progress.



1. Transport the drive unit to the desired position.
2. Remove the studs from the supporting feet and secure each supporting foot with a retaining pin.
3. Swing the supporting feet down into position.
4. Insert a stud to lock each supporting foot.
5. Secure each stud by inserting a retaining pin.
6. Use the bar to lift the wheels at both sides.
7. Steady the drive by adjusting the leveling feet (1).



6.12 Fastening a pulley stand



1. Mark the position of the anchor hole for the pulley stand.
2. Drill the anchor hole and clean it out.
3. Insert the anchors in the holes and use the setting tool to expand the anchors.
4. Screw in the clamping spindle as far as it will go.
5. Hold the pulley stand in position and bring it into correct alignment.
6. Slightly tighten the clamping nut.
7. Tighten the leveling screws evenly until the drill stand is securely fastened.
8. Position the wire guide unit with clamp on the stand and bring the wire guide unit into correct alignment.
9. Tighten the clamp on the pulley stand.

6.13 Setting up the control panel



Set up the control panel only on a flat and solid surface.

When selecting the position for the control panel, make sure that the user cannot be hit by the escaping wire or by objects thrown off in the sawing process.

- ▶ Set up the control panel.



6.14 Connecting the electricity supply, water and compressed air

1. On the control panel, set all switches to **OFF** or **NEUTRAL** and press the **EMERGENCY STOP** switch.
2. Set up the control panel at a point outside the danger zone of wire-saw operations.
3. Connect the power supply cable to the socket of the control panel.
4. Connect the long compressed air hoses (supplied) between the drive unit and the control panel.
5. Connect the two cooling water hoses to the front of the drive unit (at the guide pulleys).

i Even when dry-sawing, cool the drive motors with water.
 If the supply of water is insufficient or if the cooling water is too warm, the motors shut down when the thermostatic switch trips (**Error** indicator lights up).

6. Pass the cooling water hoses to where the cut is being made and connect them to the **flexible water supply head** and to the **long water supply head**.
7. Set the main switch on the control panel to **ON**.
 - ▶ The indicator shows green.
 - ▶ The water valve closes
 - ▶ The **Error** indicator on the control panel continues to show red until the tension conditions are correct.
 - ▶ The **Error** indicator goes out when the tension conditions are correct.
8. Connect the air compressor to the electricity supply and switch on the air compressor.
 - ▶ The air compressor builds up pressure and switches itself off when the compressed-air reservoir is full.
9. When pressure has built up, use the short compressed-air hose to interconnect the air compressor and the control panel.
 - ▶ Pressure drops.
 - ▶ The air compressor restarts and builds up pressure.

i The air compressor will be unable to build up pressure if you connect the compressed air too soon, in other words before pressure has built up for the first time.

10. Connect the water supply to the drive unit.
11. Open the water valve on the jobsite.

i Water does not flow until the cooling water supply is switched on at the control panel.

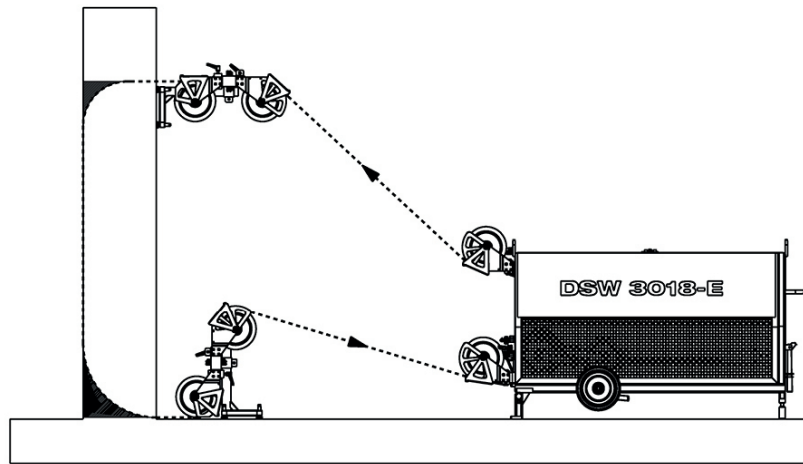
12. Set the main switch on the control panel to **OFF**.

6.15 Rigging, connecting and pulling the wire through by hand

1. Press the **EMERGENCY STOP** switch and set the main switch on the control panel to **OFF**.
2. First pass the sawing wire through the object to be cut and then round off any corners or edges in the path of the wire by pulling the wire back and forward manually until it can be moved easily by hand.

i Make sure that the direction of travel of the sawing wire matches the direction of rotation of the drive unit.





3. Round off the edges at the cut to make it easier for the saw to start the sawing wire.
4. Pass the sawing wire through the hollow axle of the pulley stand farther away from the drive unit.
5. Pass the sawing wire through the hole drilled in the structure.
6. To bed in the sawing wire, place one person at each side of the structure and have them pull the wire over the edge of the cut by hand.
7. Repeat this procedure until the wire is easy to move.

i If the edge of the cut is not adequately rounded off, the sawing wire in the storage system can work loose.

8. From the rear of the structure, pass the sawing wire back through the second hole.
9. Pass the sawing wire through the hollow axle of the second pulley stand and round off the edge of the cut.
 - ▶ The sawing wire is difficult to pull pack and forth by hand.
 - ▶ Continue to bed in the wire or eliminate whatever is making the wire hard to move.
10. Pass the sawing wire from the pulley stand closer to the drive unit through the hollow axle of the bottom guide pulley of the drive unit.
11. Pass the sawing wire back through the hollow axle of the top guide pulley on the drive unit.
12. To ensure uniform wear, twist the sawing wire clockwise half a turn to one full turn for each meter of its length.



13. Connect the ends of the wire by fitting the pin.

i Comply with the manufacturer's installation instructions.

14. Release the clamping lever for the starting lock.

15. Set the main switch to **ON** and unlock the **EMERGENCY STOP** switch.

16. Set the advance pressure on the control panel to approx. 1 bar.

17. Tilt the advance lever to move the pulley packages in the drive unit closer together.

- ▶ Drive pulleys are as close together as possible.

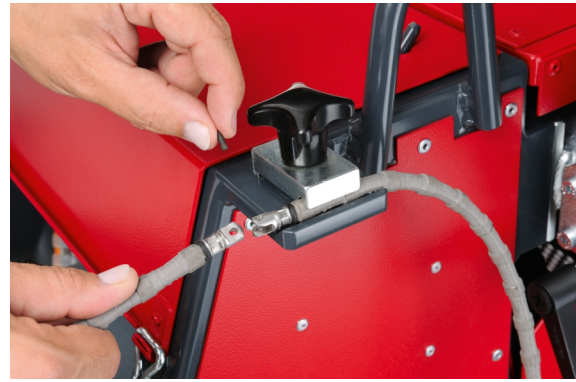
18. Starting at the top guide pulley, pass the wire round the drive pulleys.

19. Depending on how much length is slack, coil the sawing wire once to five times round the pulleys of the wire storage system.

- ▶ Not enough wire length available for the minimum number of lays in the storage unit.
 - ▶ Reposition the drive unit closer to the structure or use a longer sawing wire.
- ▶ The unused length of wire is too long.
 - ▶ Reposition the drive unit farther away from the structure or use a shorter wire.

i In order to utilize the full capacity of the wire storage unit, position the drive unit such that if possible, prior to the first step only the first wire storage level is occupied

20. Slip the bottom guide pulley on to the appropriate storage level and tighten the screw to secure the guide pulley.



21. Lay the wire into the grooves of the pulleys in such a way that you do not crush your fingers.
22. Set the advance pressure on the control panel to approx. 1 bar and operate the advance lever.
 - ▶ Tension is applied to the wire.
23. Adjust the relay pulleys on the drive unit and the pulley stands so that the sawing wire is centered in the guide grooves.
24. Check the routing of the wire and make sure that the sawing wire is neatly seated in the guide pulleys.
25. Check that all guide pulleys are correctly tightened.
26. To prevent the sawing wire from skipping out of the guide, push the starting lock all the way towards the compressed air cylinder and clamp the lock in position.
27. Disengage the starting lock to start the sawing process.



28. Secure the wire cover on the drive unit.

i The cover of the wire storage system has to be locked in order for the drive unit to start.

29. If necessary, install the wire covers and the tubular guards over the exposed lengths of wire.



6.16 Setting up the wire cooling system

1. Guide the **flexible water supply head** to the wire inlet point on the structure and use the wedge to secure the water cooling in position.
2. Guide the **flexible water supply head** to the rear of the structure.
3. Adjust the nozzles so that the water is drawn into the kerf by the wire.
4. Prevent dust formation by repositioning the nozzles as soon as the water is no longer carried into the kerf made by the sawing wire.

i When adjustments have to be made, on the control panel set the main drive to **OFF** and press the **EMERGENCY STOP** switch.

5. Once you have adjusted the nozzles you can resume sawing.



7 Types of work

WARNING

A damaged supply cord presents a hazard! Do not touch the supply cord or extension cord if damaged while working. Disconnect the supply cord plug from the power outlet.

- ▶ Check the appliance's supply cord at regular intervals and have it replaced by a qualified specialist if found to be damaged.

Check extension cords at regular intervals and replace them if found to be damaged.

7.1 Starting the saw and beginning sawing

Situation


- The main switch is in the **ON** position.
- The **ready** indicator shows green.
- The air compressor, i.e. the system, is at working pressure.
- The advance lever is in the tilted position and the sawing wire is tensioned.
- The water supply is connected.
- The main drive is **OFF**.
- The advance lock on the cylinder is locked.

7.2 Starting

WARNING

Caution Switch off the drive if the sawing wire slips.

- ▶ Switch the main drive off right away if the wire doesn't move immediately after starting. Slippage of the sawing wire causes damage to the drive wheel.


1. Open the water valves on the drive unit.
2. Pull up the knob for advance pressure and set a starting pressure of approx. 1 bar.
3. Set the water supply to **ON**.
 - ▶ The **water flowing** indicator shows white.
4. Press the green button for main drive **ON**.
5. Slowly turn the speed regulator, gradually increasing the speed of the sawing wire. As soon as the wire is running at low speed (cutting speed approximately 3-10 m/s), wait a few seconds for the wire to bed itself into the kerf. Check that the wire is running correctly on all guide pulleys.
6. Increase the advance pressure and the cutting speed. Keep to the specified guide values.
Cutting speed guide values  35
7. Set the advance pressure so that current input is 50-63 A.
8. After sawing for a short time, use the "OFF" button to stop the drive and press "EMERGENCY STOP".
9. Check the wire guidance system and adjust the water supply.
10. Release the locking ring on the compressed air cylinder.



Cutting speed guide values

	DSW 3018-E
Wet cutting	20 m/s ... 35 m/s (66 ft/s ... 115 ft/s)
Dry cutting	10 m/s ... 20 m/s (33 ft/s ... 66 ft/s)

7.3 Sawing

1. Unlock the "EMERGENCY STOP" and start the drive unit.
2. The wire speed and advance pressure settings previously made remain unchanged and do not require to be readjusted.
3. The wire saw then cuts automatically.
4. Closely observe the danger zone. Continuously check the wire guidance system, the sawing parameters (current input, advance pressure and wire speed) on the control panel. In particular, make sure that the water cooling of the sawing wire is adequate. When sawing wet, adjust the water supply as soon as dust starts to develop.
Cooling of the wire  36
5. If the sawing wire oscillates excessively, check the alignment of the guide pulley. If necessary, adjust wire speed and advance pressure.
6. Always remain at the control panel while sawing is in progress, monitor the operation and keep the danger area under observation.
7. If the following conditions are met, also take this action:

Conditions: Wire storage system is full

- ▶ If the **storage full** indicator shows yellow and the machine shuts down, press the main drive **OFF** button and the **EMERGENCY STOP**.
- ▶ Press the water supply **OFF** button to shut off the flow of cooling water.
- ▶ Set the advance pressure to 1 bar.
- ▶ Push the advance lever in the opposite direction.
 - ▶ The pulley stacks move toward each other.
- ▶ Open the catch and remove the wire storage system cover.
- ▶ Coil the freed length of wire round the empty storage-level pulleys. Position the hollow axle of the taut-side guide pulley in alignment with the wire inlet into the storage unit and tighten the screw to secure the hollow axle in this position.
- ▶ Check that the wire is correctly seated in the grooves of the wire storage pulleys. Retension the wire.
- ▶ Fit the wire store cover and close the catch.
- ▶ If wire storage capacity is inadequate, reposition the drive unit farther away and re-anchor it securely. Alternatively, shorten the wire.
- ▶ Check and, if necessary, adjust alignment of the guide pulleys.
- ▶ Set the advance pressure to the value last used and switch the water supply on again.
- ▶ Unlock the **EMERGENCY STOP**, set the drive unit to **ON** and then again use the speed regulator to increase speed slowly to the desired or optimum cutting speed. The wire saw again saws automatically.



Cooling of the wire

Sawing technique	Cooling	Comment
Wet cutting	Approx. 5 liters (1.3 gal) of water per minute	Adjust the water supply to suit the volume of dust produced by sawing.
Dry cutting	Air cooling, long wire	Use vacuum dust removal as necessary.

7.4 Ending the sawing operation

1. Stop sawing.
2. Adjust the guide pulleys on the pulley stands so that the wire, when it is released after cutting through the object, will subsequently lie in the guide groove in the pulleys.
3. Reduce cutting speed and advance pressure and cut through the last centimeters of the structure.
4. Switch off the drive unit when the structure has been cut through and press "EMERGENCY STOP".
5. Immediately after each cut, clean the pulley stands and the drive unit.

8 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 stubborn dirt from the tool.
- Clean the air vents carefully with a dry brush.
- Use only a slightly damp cloth to clean the casing. Do not use cleaning agents containing silicone as they can attack the plastic 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, fit all guards or protective devices and check 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**.



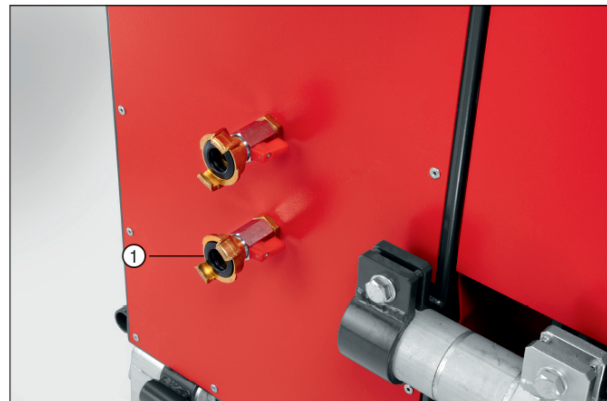
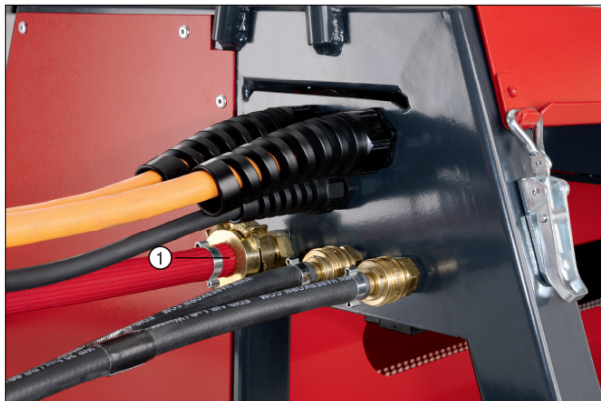
8.1 Cleaning the wire saw

i Do not use running water to clean the control panel, air compressor and plug connections.

To prevent damage, spray from a distance of at least 30 cm. Do not direct the jet at bearings, seals or electrical components.

1. Between the individual cuts, wipe the worst deposits of foreign matter off the wire saw and the pulley stands.
2. Disconnect the electricity supply to the control panel and air compressor.
3. On the control panel, press main switch **OFF** and press the **EMERGENCY STOP** switch.
4. Set all controls to **OFF** or **NEUTRAL**.
5. Unplug the supply cord from the main electric supply.
6. Remove the wire store cover from the drive unit and remove the concrete slurry with water and a brush.
7. After cleaning, visually inspect all parts of the device (check for defects and check ease of movement).
8. To prevent accidents and consequential damage or injury, have all damaged parts and parts that are not in full working order replaced immediately.

8.2 Blowing motor clear



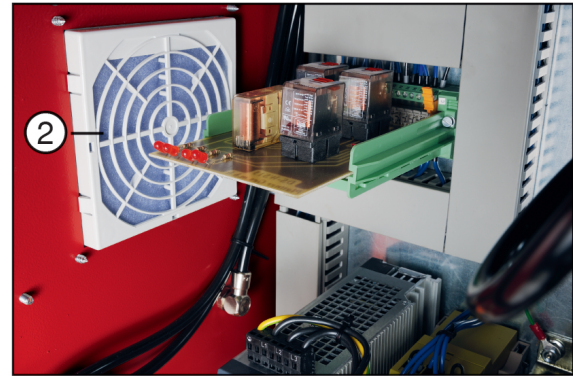
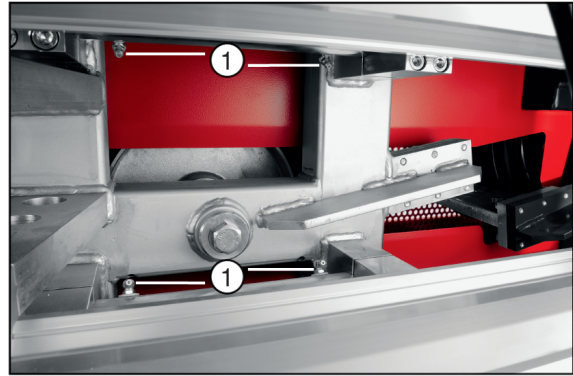
1. When there is a risk of frost ($< 4^{\circ}\text{C}$), blow the water out of the motors before work breaks, after finishing work or after cleaning.
2. Disconnect the water supply and drainage hoses from the drive unit.
3. Open the water valve at the water exit.
4. Blow compressed air into the water supply connection on the drive unit until water stops emerging at the water valve.



8.3 Upkeep and maintenance

1. Clean and oil all moving parts after use.
2. Use a grease gun to pack the four grease nipples **(1)** for the bearings of the guide on the guide rods with grease.

3. Check the top and bottom air filters in control panel **(2)**; clean or replace the air filters as necessary.



9 Transport and storage

- Do not transport electric tools with accessory tools fitted.
- Always unplug the supply cord before storing an electric tool or appliance.
- Store tools and appliances in a dry place where they cannot be accessed by children or unauthorized persons.
- Check electric tools or appliances for damage after long periods of transport or storage.

9.1 Transporting the system

i The drive unit is easier to move when the carriage of the wire storage system is in the rear limit position.

- ▶ Transport the drive unit only with the wheels raised. Secure the drive, control panel and other components with ratchet straps so that nothing can slip or topple.
- ▶ Use suitable lifting equipment for loading and unloading (e.g. forklift or crane, or winching gear).
- ▶ In preparation for transport, remove the air compressor from the fold-out shelf of the control panel.
- ▶ In preparation for rolling the drive into position, extend the wheels and retract the supporting feet.



9.1.1 Bring the wheels into the transport position (left and right)

1. Insert the bar into the pivot mechanism (the bar is located on the frame on the cylinder side).
2. Release the catch and use the bar to pivot the wheel down into position.
3. Allow the catch to re-engage.



9.1.2 Folding up supporting feet (left and right)

1. Remove the retaining pin and pull the bolt out.
2. Fold up the supporting feet, re-insert the studs and secure each supporting foot with a retaining pin.



10 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.

10.1 Troubleshooting table

Trouble or fault	Possible cause	Action to be taken
The wire saw doesn't start.	Edges of the structure are too sharp.	▶ Use a suitable tool to round off the edges of the structure and manually bed the sawing wire into the material to be cut.
	A new sawing wire jams in a kerf made by a worn sawing wire.	▶ Complete the cut with the worn sawing wire or use a thinner sawing wire. ▶ Drill another hole that can be used to draw the new sawing wire into position.
	Sawing-wire-to-concrete contact length is excessive.	▶ Install more guide pulleys or release pulleys.
	Tension on the wire is too high.	▶ Reduce tension on the wire by adjusting the pneumatic control valve.
	Sawing wire installed wrong way round.	▶ Check the sawing wire is installed for the correct direction of travel.



Trouble or fault	Possible cause	Action to be taken
The wire saw doesn't start.	The wire is defective.	▶ Replace the sawing wire.
The drive pulley slips / the wire is not driven by the pulley.	Insufficient wire tension.	▶ Use the pneumatic control valve to increase wire tension.
	The drive pulley is too badly worn.	▶ Replace the drive pulley.
The wire jumps off the drive wheel or guide pulley when starting the saw.	The starting lock was not used.	▶ Use the starting lock (lock the sleeve directly at the air cylinder).
	Sawing wire installed wrong way round.	▶ Check the sawing wire is installed for the correct direction of travel.
Uneven / one-sided wear of the sawing wire.	The diamond wire was not twisted before connecting the ends together.	▶ For each meter of length, twist the sawing wire approximately 0.5-1 turns the counter-clockwise, looking toward the join. After each major cut, retwist the sawing wire with a different number of turns.
Wire breakage right beside the connector.	The 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 sawing wire due to excessively long usage and aging.	▶ Use a new sawing wire.
	Material fatigue of the sawing wire due to excessive bending at the connector.	▶ Reduce bending of the wire with articulated connectors.
The sawing wire is pulled out of the connector.	Insufficient pressure applied to the crimping pliers.	▶ Use a press crimping tool rated for at least 7 t.
	Incorrect or worn crimping jaws.	▶ Check and, if necessary, replace the crimping jaws.
	Sawing wire was not pushed far enough into the connector.	▶ Push the sawing wire into the connector all the way to the front stop. ▶ Cut the sawing wire to length correctly and cleanly.
Sawing wire jumps and oscillates severely.	Insufficient wire tension.	▶ Use the pneumatic control valve to increase wire tension.



Trouble or fault	Possible cause	Action to be taken
Sawing wire jumps and oscillates severely.	The guide pulleys are too far apart (unsupported length of wire is too long).	<ul style="list-style-type: none"> ▶ Install additional pulley stands to reduce unsupported wire length. ▶ Position the wire saw closer to where the cut is being made. ▶ Install a shorter sawing wire.
	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.
	Flat spot on a guide pulley or drive roller.	▶ Replace as appropriate.
Sawing wire vibrates very strongly at a high frequency.	Wire tension too high in relation to length of cut.	<ul style="list-style-type: none"> ▶ Increase the length of cut. ▶ Reduce tension on the wire.
	Wrong speed.	▶ Set the correct 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 sawing wire.	▶ Make sure that sufficient water is reaching the cut.
	Cutting or contact length too short.	▶ Increase the contact or cutting length.
	Wire tension too high in relation to length of cut.	<ul style="list-style-type: none"> ▶ Increase the length of cut. ▶ Reduce tension on the wire.
	Very abrasive material.	▶ Use different sawing wire specifications.

10.2 Troubleshooting the electrical system

Trouble or fault	Possible cause	Action to be taken
The drive unit cannot be switched on.	Main switch OFF .	<p>Main switch is in the OFF position. Green indicator does not show.</p> <ul style="list-style-type: none"> ▶ Set the main switch to ON.
	No power or no connection to power supply.	<p>Green indicator does not show.</p> <ul style="list-style-type: none"> ▶ Check all three phases of the power supply. ▶ Check the plug connector. ▶ Check fuse on the site distributor or the generator.




Trouble or fault	Possible cause	Action to be taken
The drive unit cannot be switched on.	Automatic fuse has tripped.	No indication. <ul style="list-style-type: none"> ▶ Eliminate the fault and reset the automatic circuit breaker.
	Fuse in the fuse box is defective.	Green indicator does not show. <ul style="list-style-type: none"> ▶ Replace the fuse.
	The drive unit's power cable or control cable is not plugged in to the control panel.	Green indicator shows. Error shows. <ul style="list-style-type: none"> ▶ Connect the power cable and control cable and secure the plugs.
	Cover not installed or not correctly closed.	Green indicator shows. Error shows. <ul style="list-style-type: none"> ▶ Place the cover in position and latch it correctly.
	The safety cut-out has been activated due to overloading of the motors.	Green indicator shows. Error shows. <ul style="list-style-type: none"> ▶ Allow the motor to cool down. ▶ Increase the supply and use colder cooling water.
	The safety cut-out has been activated due to overloading of the converter.	Green indicator shows. Error shows. <ul style="list-style-type: none"> ▶ Reduce the load on the tool. Current draw in operation should not be more than 60 amps. ▶ To improve cooling, replace the air extraction filter. ▶ Do not set up the control panel where it will be exposed to the sun.
	Relay number 2 is defective.	Green indicator shows. Error shows. Diode 2 does not show. <ul style="list-style-type: none"> ▶ Replace the printed circuit board of the control panel.
	Fault in the converter.	Green indicator shows. Error shows. <ul style="list-style-type: none"> ▶ Cancel the fault message at the converter. Set the main switch to OFF, wait for one minute and then set the switch to ON.



Trouble or fault	Possible cause	Action to be taken
The drive unit cannot be switched on.	Emergency stop pressed.	Green indicator shows. Error shows. ▶ Unlock and disengage the emergency stop.
	Relay is defective.	Green indicator shows. Error shows. Diode 1 shows. ▶ Replace relay 1.
The drive unit cuts out during operation and refuses to restart.	The wire storage carriage has reached the end position.	Yellow indicator shows. Green indicator shows. ▶ Move the carriage forward and lay a free length of wire in the wire storage unit.
230 V connection is dead.	Automatic fuse has tripped.	No indication. ▶ Eliminate the fault and reset the automatic circuit breaker.
	No neutral connection in the mains supply.	No indication. ▶ Connect a neutral conductor.
Current draw on startup or in operation is more than 60 amps.	Excessive resistance of sawing wire.	No indication. ▶ Reduce the advance pressure. ▶ Round off the edges of the cut.
	Fault in the power supply (missing phase).	No indication. ▶ Check the electricity supply. ▶ Rectify obvious faults.

11 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.

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.

12 Manufacturer's warranty

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





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