# 5. Safety precautions

**WARNING**

Failure to observe the instructions listed below may lead to potentially fatal injury and serious damage to property or equipment.

## 5.1 Proper organization of the work area

**a)** Approval must be obtained from the site engineer or architect prior to beginning drilling or sawing work. Drilling or sawing work on buildings and other structures may influence the statics of the structure, especially when steel reinforcing bars or load-bearing components are cut through.

**b)** Ensure that the workplace is well lit.

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

**d)** Keep the workplace tidy. Objects which could cause injury should be removed from the working area. Untidiness at the workplace can lead to accidents.

**e)** In order to avoid injury and to prevent the diamond blade becoming trapped or jammed, steel wedges and/or supports must be used to prevent uncontrolled movement of parts of the structure being cut.

**f)** 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.

**g)** Never loiter in the vicinity of loads suspended by cranes.

**h)** 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 possibility of persons falling.

**i)** Wear personal protective equipment. Wear safety shoes or boots, protective gloves, a hard hat, ear protection and eye protection.

**j)** Wear respiratory protection if the work causes dust.

**k)** Dress properly for the work. Do not wear loose clothing or jewelry as it could be caught in moving parts. Contain long hair.

**l)** Keep children away. Keep other persons away from the working area.

**m)** Do not allow other persons to touch the machine or the extension cord.

**n)** Avoid unfavorable body positions. Make sure you work from a safe stance and stay in balance at all times.

**o)** To avoid presenting a tripping hazard, always ensure that cables and hoses leading to the machine are laid flat on the floor.

**p)** Keep cables and hoses away from rotating parts.

**q)** In cooperation with the site engineer or architect, ensure that no gas, water, electricity or other supply lines are located in the cutting area. Any supply pipes or cables located close to the cutting area present a serious hazard if damaged while the work is in progress. External metal parts of the machine could become live if, for example, an electric supply cable is damaged.

**r)** Ensure that the cooling water used is drained or extracted in a suitably controlled manner. Water that is allowed to drain away or spray around in an uncontrolled manner can lead to damage or accidents. The fact that water could drain away into internal, hidden cavities, e.g. in brickwork or masonry, must also be taken into account.

**s)** Do not work from a ladder.

**t) The machine is not intended for use by children, by debilitated persons or those who have received no instruction or training.**

**u) Children must be instructed not to play with the machine.**

**v)** Dust from material such as paint containing lead, some wood species, minerals and metal may be harmful. Contact with or inhalation of the dust may cause allergic reactions and/or respiratory diseases to the operator or bystanders.
Certain kinds of dust are classified as carcinogenic such as oak and beech dust especially in conjunction with additives for wood conditioning (chromate, wood pre-



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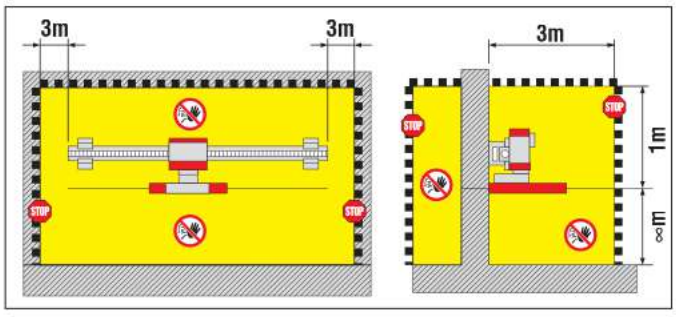
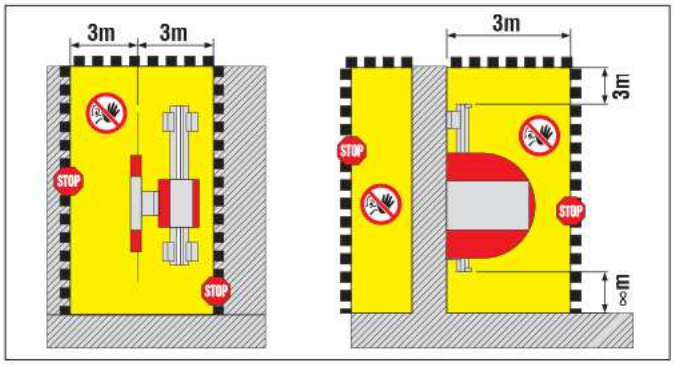
servative). Material containing asbestos must only be treated by specialists.
**Where the use of a dust extraction device is possible it shall be used. To achieve a high level of dust collection, use a suitable vacuum cleaner of the type recommended by Hilti for wood dust and/or mineral dust together with this tool. Ensure that the workplace is well ventilated. The use of a dust mask of filter class P2 is recommended. Follow national requirements for the materials you want to work with.**

## 5.2 Safety measures at the danger areas

Safety measures must be implemented in the area where sawing is taking place to ensure that operators and bystanders cannot be injured or property damaged by debris that may fly off or fall down (broken-off diamond segments, small stones, sawing slurry, etc.) while sawing is in progress. Safety measures must also be implemented in the area not directly visible to the operator, i.e. behind where sawing is taking place.

Persons must NEVER enter the danger area (3 meters in all directions from the line of the cut to be made) while the blade drive is switched on.




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

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

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.

## 5.3 General safety instructions

**a)** Use the machine only when you have read the operating instructions and you are familiar with the points described, and when you have received appropriate training from a Hilti specialist on safe operating procedures. All warnings and instructions must be observed.

**b)** Use the right machine for the job. Do not use the machine for purposes for which it was not intended. Use it only as directed and when in faultless condition.

**c)** Use the machine, accessories and saw blades etc., in accordance with these instructions and in the manner intended for the particular type of machine, taking into account the working conditions and the work to be performed. Use of this machine for operations other than those intended could result in hazardous situations.

**d)** Use only the genuine Hilti accessories or ancillary equipment listed in the operating instructions. Use of accessories or ancillary equipment not listed in the operating instructions may present a risk of personal injury.

**e)** Take the influences of the surrounding area into account. Do not use the machine where there is a risk of fire of explosion. Electric tools and machines generate sparks which may ignite dust or gas.

**f)** Keep the grips dry, clean and free from oil and grease.

**g)** Do not overload the machine. It will work more efficiently and more safely within its intended performance range.

**h)** Never leave the machine unattended.

**i)** Store machines in a secure place when not in use.



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When not in use, machines must be stored in a dry, high place or locked away out of reach of children.

**j)** Always disconnect the machine from the electric supply when it is not in use (e.g. during breaks between working), before making adjustments, before carrying out care and maintenance and before changing saw blades. This safety precaution prevents the machine starting unintentionally.

**k)** Remove any adjusting key or wrench before switching the machine on. A wrench or a key left attached to a rotating part of the machine may cause personal injury.

**l)** Before use, the machine, the saw blade and accessories must be checked carefully to ensure that all items function faultlessly and as intended. Check that moving parts function correctly without sticking and that no parts are damaged. All parts must be fitted correctly and fulfill all conditions necessary for correct operation of the machine. Damaged parts must be repaired or replaced properly by an authorized service center.

**m)** Avoid skin contact with drilling slurry.

**n)** Wear a protective mask during work that generates dust, e.g. dry cutting. Connect a dust removal system. Cutting materials hazardous to the health (e.g. asbestos) is not permissible.

**o)** Follow the instructions concerning care and maintenance.

## 5.4 Electrical safety

**a)** Take steps to avoid the risk of electric shock. Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.

**b)** Check the machine's supply cord at regular intervals and have it replaced by a qualified specialist if found to be damaged. Check extension cords at regular intervals and replace them if found to be damaged.

**c)** Check the condition of the machine and its accessories. Do not operate the machine and its accessories if damage is found, if the machine is incomplete or if its controls cannot be operated faultlessly.

**d)** Do not touch an electric cable that has been damaged while working. Switch off at the main switch and unplug the cable at the power outlet.

**e)** Damaged or faulty switches must be replaced at a Hilti service center. Do not use the machine if it cannot be switched on and off correctly.

**f)** Have the machine repaired only by a trained electrical specialist (Hilti service center) using genuine Hilti spare parts. Failure to observe this point may result in risk of accident to the user.

**g)** Do not use the supply cord for purposes for which it is not intended. Never carry the machine by the supply cord. Never pull the plug out of the power outlet by pulling the supply cord.

**h)** Do not expose supply cords to heat, oil or sharp edges.

**i)** Connect the machine and its ancillary equipment only to a power source equipped with an earth/ground conductor and ground fault circuit breaker (PRCD). Check that these items are in perfect working order before operating the equipment. Install an earth/ground rod if a generator is used or if no earth/ground conductor is present in the on-site electric supply. Operation of the machine without an earth/ground connection is not permissible under any circumstances. With no earth/ground connection, faulty insulation on a part of the machine or inadvertently sawing into a live cable presents a risk of fatal accident.

**j)** Make sure that the mains voltage corresponds to the specification given on the type plate.

**k)** Electric cables and their plug connectors must be kept dry. When not in use, close power outlets with the cover provided.

**l)** Use only extension cables which have an adequate conductor cross-section and are approved for the intended field of use. Do not work with extension cables when they are rolled up. This can result in a drop in output at the equipment and may cause the cable to overheat.

**m)** Disconnect the power cable before beginning cleaning and maintenance work or in the event of a lengthy interruption between periods of operation.

**n)** Please note that certain components of the power converter retain an extremely dangerous (potentially fatal) high voltage for up to 10 minutes after disconnection from the electric supply.



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## 5.5 Requirements to be met by users

**a)** The machine may be operated only by specialists trained in concrete cutting techniques, referred to in the following as "operators". These persons must be familiar with the content of these operating instructions and must have been trained in their safe application by a Hilti specialist.

**b)** Stay alert, watch what you are doing and use common sense when working. Do not use the equipment when you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating the equipment could result in serious injury.

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

## 5.6 Safety during operation

Check that the wall saw and its components, the saw blade and all accessories are in good condition and in perfect working order before use. Any damage or malfunctions must be rectified in a PROFESSIONAL manner before operation commences.

Position the electric power unit outside the danger area.

Sawing may begin only once the wall saw system (rail supports) have been fastened securely to a solid surface and the other parts of the system have been assembled or installed correctly (all bolts tightened, the saw head positioned securely on the rail, locking levers closed, end stops fitted). A falling object could result in serious personal injury or damage to property or equipment.

NEVER stand in the direction of radial flight of a running saw blade. Always use the appropriate blade guard (DS-BG for normal cutting, DS-BGF for flush cutting).

Always operate the machine from the closed side of the blade guard, i.e. the protected side, when corner cuts are made with the blade guard in the partly open position. The operator must take additional precautions (fit a cover, plank of wood, boards etc.) where necessary.

Never enter the danger area (e.g. to change the saw blade, remove the blade guard side section, hammer in wedges, etc.) before the blade drive is switched off and the blade has come to a standstill. Press the EMERGENCY STOP button before entering the danger area.

Do not touch rotating parts.

Observe the permissible drive unit parameters, blade rotation speed and advance speed while sawing.

Use only saw blades that comply with the requirements of EN 13236. Fit the blades the right way round (observe correct direction of rotation).

Use of blades with laser-welded segments can reduce the risk of segments breaking and flying off.

Check the blade mounting flange and blade for damage (e.g. cracks in the steel disc) and degrease the blade mount each time before operating the wall saw.

Always put on gloves before touching the saw blade as it can get hot.

Use only fastening materials of adequate size (anchors, bolts, etc.) to fasten the rail supports.

Use only the accessories recommended in these operating instructions. Use of other accessories may result in personal injury or damage.

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.

The operator must take measures to ensure that no persons enter or loiter in the danger area at any time while the saw is in operation. 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 an eye on the cooling water system and the area surrounding the workplace. Do not operate the machine if your full attention is not on the job.

No modifications may be made to the saw system. Modification of the factory-set drive parameters is strictly prohibited.



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### 5.7 Safety instructions for transporting the equipment

Avoid lifting and carrying heavy objects. Use suitable lifting equipment and means of transport and share heavy loads between several people.

Use the handles provided for transportation. Always keep the handles clean and free of grease.

Bear in mind that the machine could fall over. Stand it only on a solid, level surface.

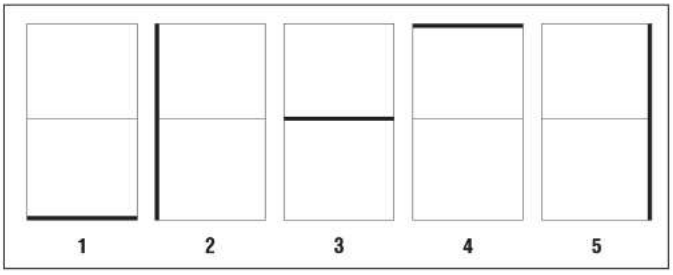
Make sure that the saw system and its components cannot move about or fall over during transportation.

The machine may be lifted by crane only at the lifting points provided using tested and approved lifting gear. Before lifting, check that all removable items of equipment are securely attached to the two transport trolleys or locked in position. Never loiter under loads suspended by crane.

# 6. Preparations at the workplace

### 6.1 Planning the cutting sequence, marking the cutting line and fastening points

1. The parts to be cut out are usually marked by the client. A rational cutting sequence can be followed when the rail supports are cleverly positioned.
2. If necessary, adjust the size and weight of the concrete blocks to the prevailing conditions by making dividing cuts (i.e. depending on the work order, the means of handling the blocks, the crane or the maximum floor loading capacity and size of doors).
3. Use steel wedges and supports, as necessary, to secure the sections of concrete while sawing.




### 6.2 Clarifying the situation and securing the workplace

Have you made sure there are no hazardous pipes or cables (gas, water, electricity etc.) in the cutting area?

Have the effects of the cutting work on the stability of the structure been clarified and are the supports in place 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?

Have safety measures been implemented to ensure that no persons can be injured or property and equipment damaged by falling objects or debris that may fly off during the sawing operation?

Can the parts of the structure that are to be sawn out be removed safely in a controlled operation and subsequently disposed of?

Does the electric supply and water supply available for use meet the specified requirements?

Is the required equipment in the correct specification available for use?

Has the work to be carried out been approved in full by the site engineer or architect?



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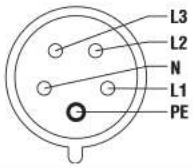
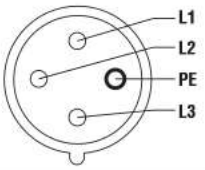
## 6.3 Electric power supply / fuse rating

**CAUTION**

Irrespective of whether using mains power or generator power, always check that an earth/ground conductor and ground fault circuit breaker are present in the electric supply and that these are connected. If suspected that the electric supply is not earthed/grounded, the power unit must be earthed/grounded by way of the earth/ground terminal provided.

| Voltage version | 3 × 400 V | 3 × 200 V |
|---|---|---|
| Minimum fuse rating | 16 A | 32 A |
| Maximum fuse rating | 32 A | 63 A |
| Ground fault circuit breaker (FI) | Type A 30 mA | |

## 6.4 Electric power connection / power cable plugs

| Voltage version | 3 × 380–480 V | 3 × 200–280 V |
|---|---|---|
| Pin assignment | 3P + N* + PE 32A 6h | 3P + PE 63A 9h |
| Pin-assignment |  |  |





L1 = phase 1, L2 = phase 2, L3 = phase 3, N = neutral conductor, PE = earth / ground

* The 230 V outlet on the power unit functions only when the neutral conductor (N) is connected.

The CEE connector supplied, if required, should be fitted to your power cable by an authorized electrician.

The remote control unit indicates the voltage and shows an error in the event of any one of the phases (L1, L2, L3) providing no power.

## 6.5 Extension cables / conductor cross section

- Use only extension cables which are approved for the intended field of use and with conductors of adequate cross section.
- In accordance with EN 61029-1, conductors must have at least the following cross sections: 1.5 mm² for 16 A, 4 mm² for 32 A and 10 mm² for 63 A (conductor cross section = cross-sectional area of individual conductors).
- Inadequate conductor cross sections and long cables result in a drop in voltage and may cause the cable to overheat.
- Extension cables must be fully unrolled before the wall saw is put into operation.

## 6.6 Cooling water supply

1. When the cooling water has a temperature of 18°C, a flow rate of approx. 4 l/min is required for cooling the power unit and saw head.
2. Use only clean cooling water.
3. For dry sawing applications (e.g. masonry), the excess water can be drained away by using the bypass function at the saw head.
4. The machine's automatic cut-out will be activated in the event of inadequate cooling.
5. 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.

**NOTE**

In order to prevent damage to the seals, a small quantity of water is allowed to reach the saw blade by way of the drive spindle even when the bypass valve is fully closed.



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