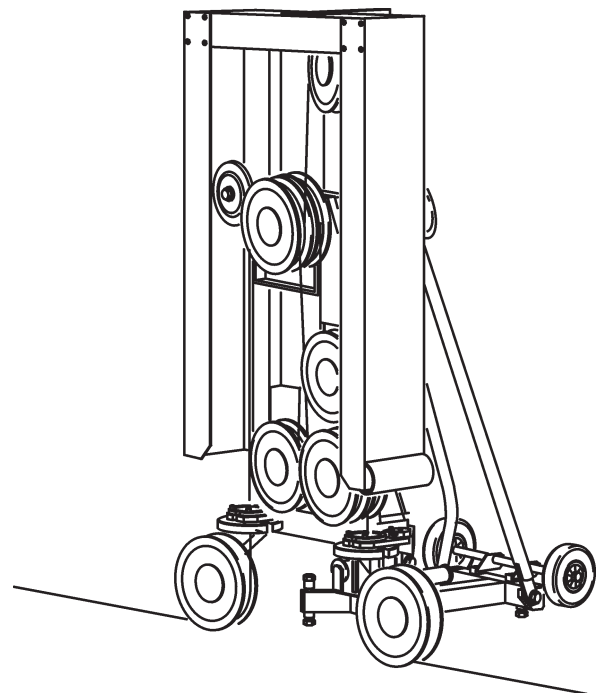


Operating Instructions

Wire saw WCE8★ ★ ★ / WCH8★ ★ ★

Index 003



Congratulations!

With a Hydrostress unit from TYROLIT, you have chosen a tried and tested piece of equipment which has been designed and built to leading technical standards. Only genuine TYROLIT Hydrostress replacement parts can guarantee quality and interchangeability. We are unable to fulfil our warranty obligations if maintenance work is neglected or carried out unprofessionally. Any repair work must be carried out by trained personnel only.

Our aftersales service is available to help ensure that your TYROLIT Hydrostress units remain in perfect working order.

We hope that you enjoy untroubled and fault-free working with your TYROLIT unit.

TYROLIT Hydrostress

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Witzbergstrasse 18
CH-8330 Pfäffikon
Switzerland
Tel. 0041 (0) 44 952 18 18
Fax 0041 (0) 44 952 18 00

1 Safety



These instructions are just one part of the documentation which is supplied together with the wire saw. These instructions go together with the «Safety Manual / System Description for Wire Saws» to form a complete set of documentation.

**DANGER**

Failure to comply with the safety instructions in the «Safety Manual / System Manual» may result in serious injury or even death.

- ▶ Please ensure that the «Safety Manual / System Description for Wire Saws» has been read and understood in full.

**DANGER****Cuts from the diamond wire.**

- ▶ Always wear protective gloves when working on the wire saw, particularly when working on the diamond wire.
- ▶ Only operate the wire saw with a guard.

**DANGER****Serious injury or material damage as a result of uncontrolled movements of the wire saw.**

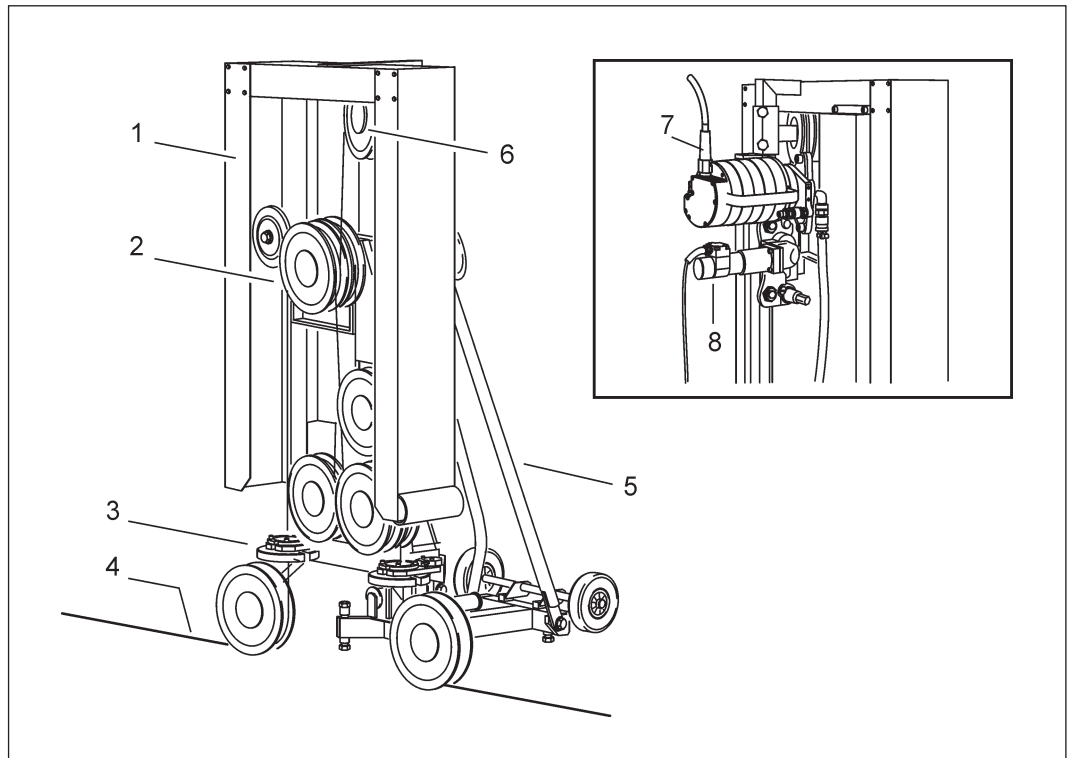
- ▶ Never connect or disconnect hoses or cables while the wire saw is running.

2 Description

2.1 Wire saw system

The functions of the wire saw systems are described in the «Safety Manual / System Description for Wire Saws».

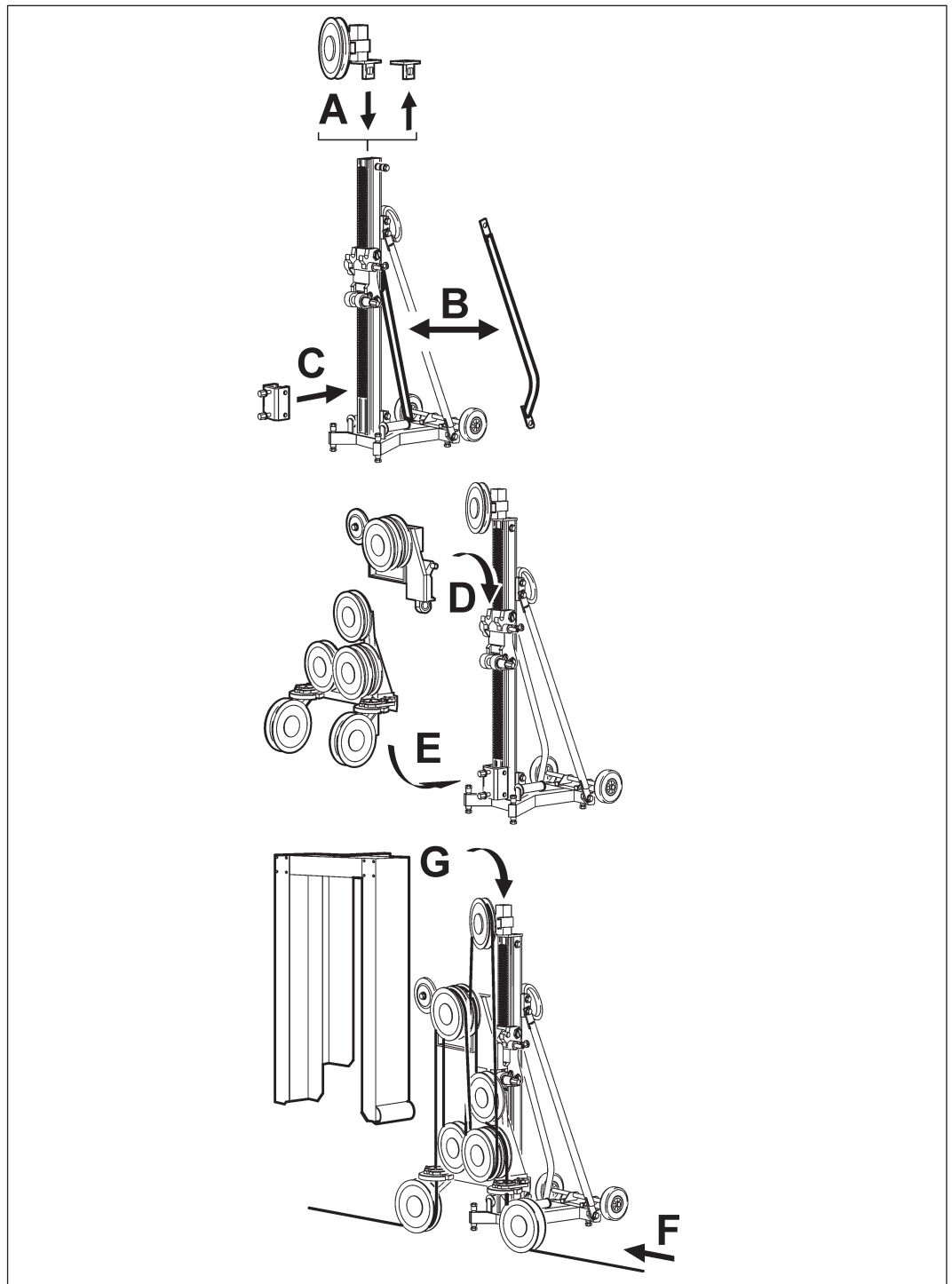
2.2 Wire saw



- | | | |
|----------------------|---------------|-----------|
| 1 Diamond wire guard | 7 Drive motor | |
| 2 Twin drive unit | WCH8★★★ ⇒ | hydraulic |
| 3 Diverter roll unit | WCE8★★★ ⇒ | electric |
| 4 Diamond wire | 8 Feed motor | |
| 5 Drill rig | WCH8★★★ ⇒ | hydraulic |
| 6 Storage roll unit | WCE8★★★ ⇒ | electric |

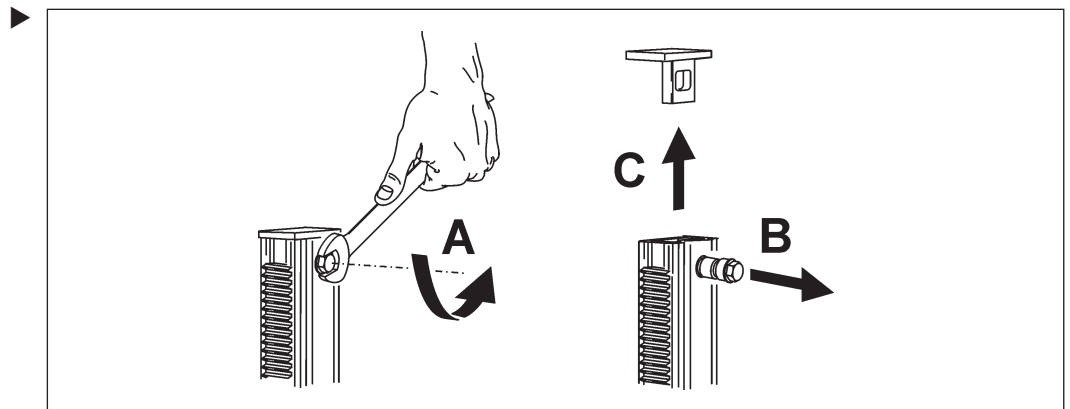
3 Assembly / disassembly

3.1 Assembly overview

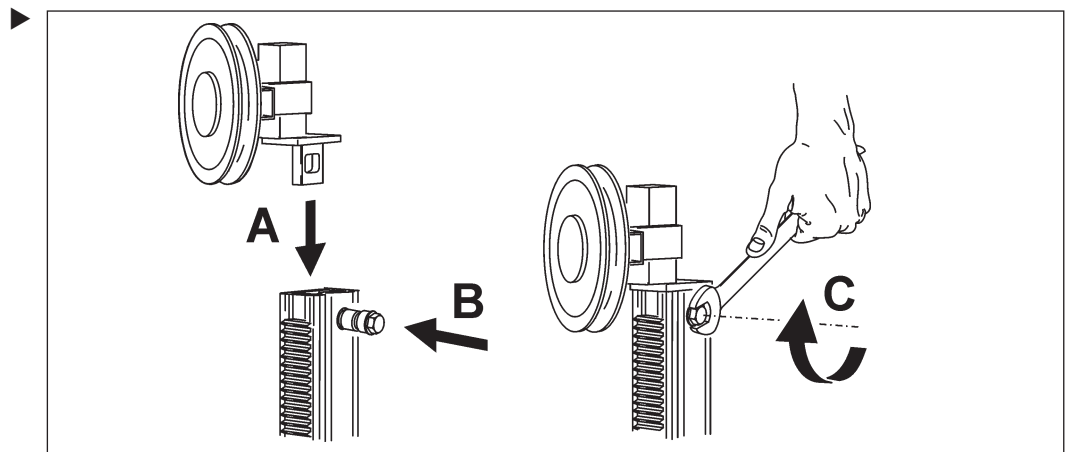


- | | | | |
|---|---------------------------------|---|------------------------------------|
| A | Disassembly of the cover | E | Mounting the diverting roller unit |
| | Mounting the storage roll unit | F | Drawing in the diamond wire |
| B | Replacement of the support rod | G | Mounting the diamond wire guard |
| C | Mounting the attachment bracket | | |
| D | Mounting the twin drive unit | | |
| | Mount the drive motor | | |
| | Mounting the feed motor | | |

3.2 Disassembly of the cover



3.3 Mounting the storage roll unit



3.4 Replacement of the support rod

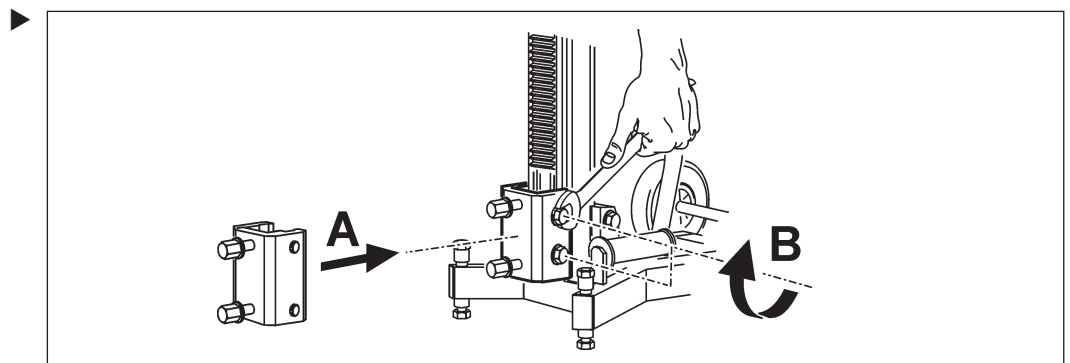


Replace the straight support rod with the curved support rod (see Assembly Overview 3.1). The curved support rod can also remain mounted on the drill rig for core bore holes.

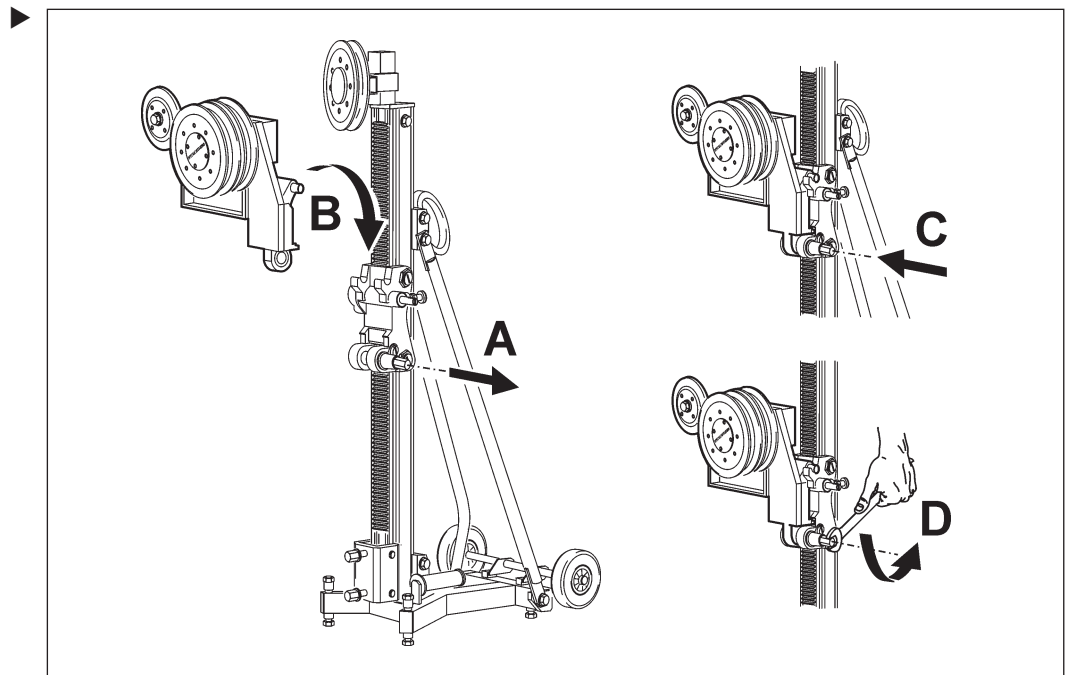
3.5 Mounting the attachment bracket



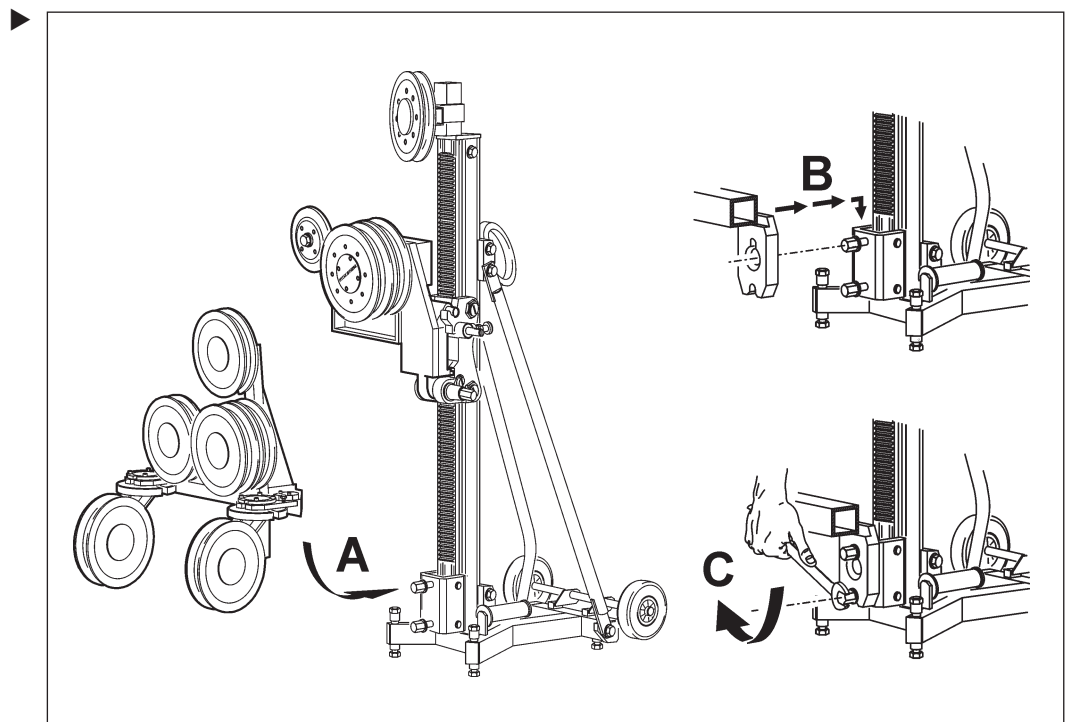
Mount the attachment bracket on the end of the guide rail.



3.6 Mounting the twin drive unit



3.7 Mounting the diverting roller unit



3.8 Mounting the drive motor and feed motor

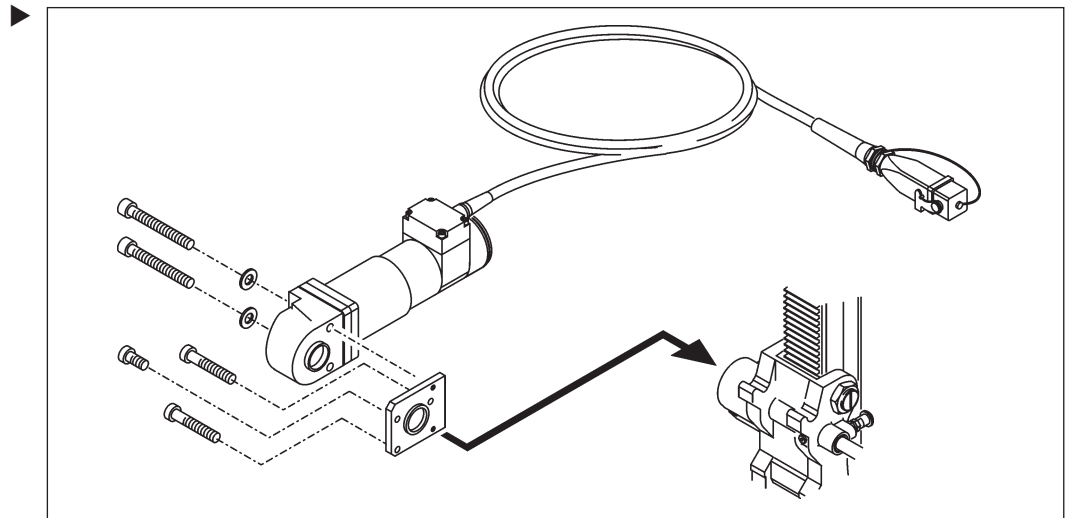


The wire saw can be operated both hydraulically and electrically.

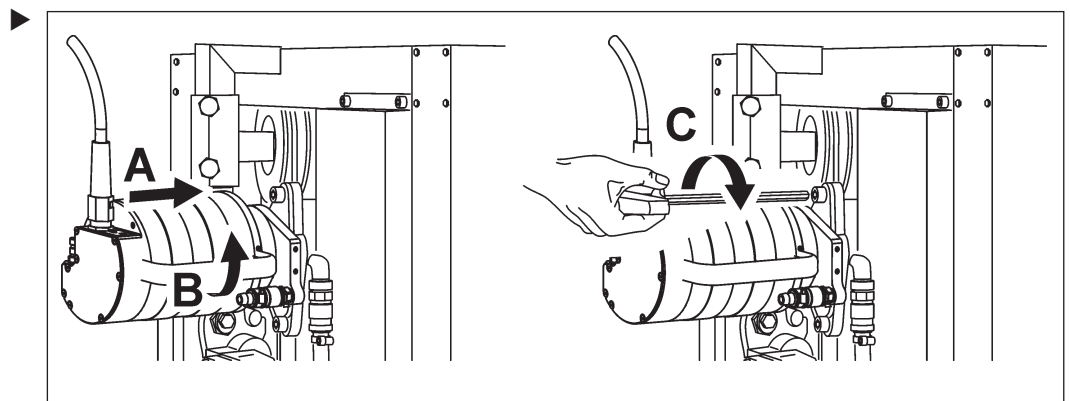
- Wire saw WCE8★★★ ⇨ Electric version
- Wire saw WCH8★★★ ⇨ Hydraulic version

Motor attachment WCE8★★★

Electric feed motor

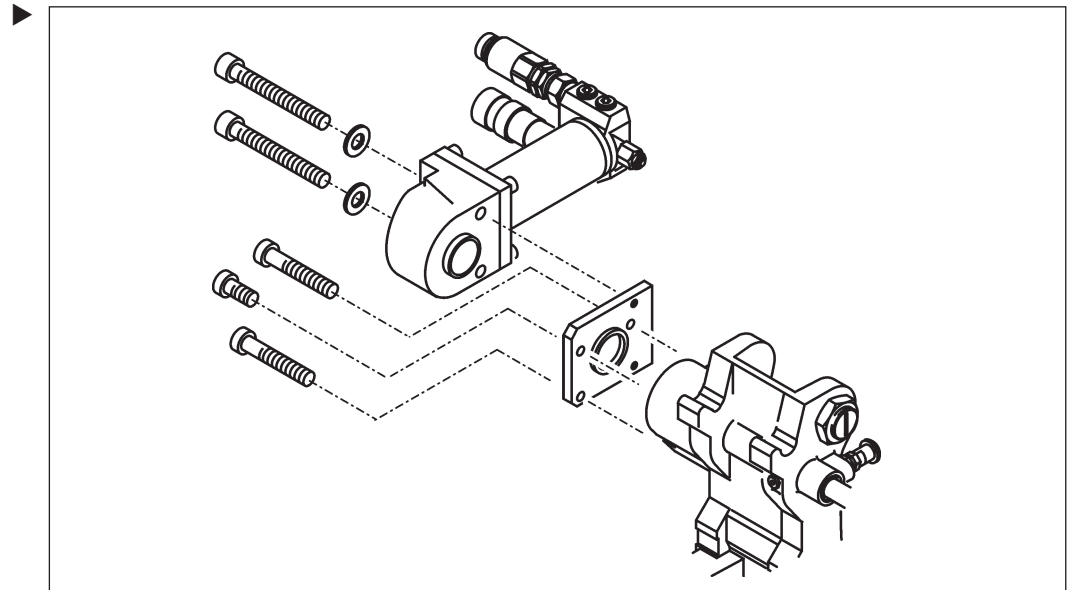


Main motor, electric

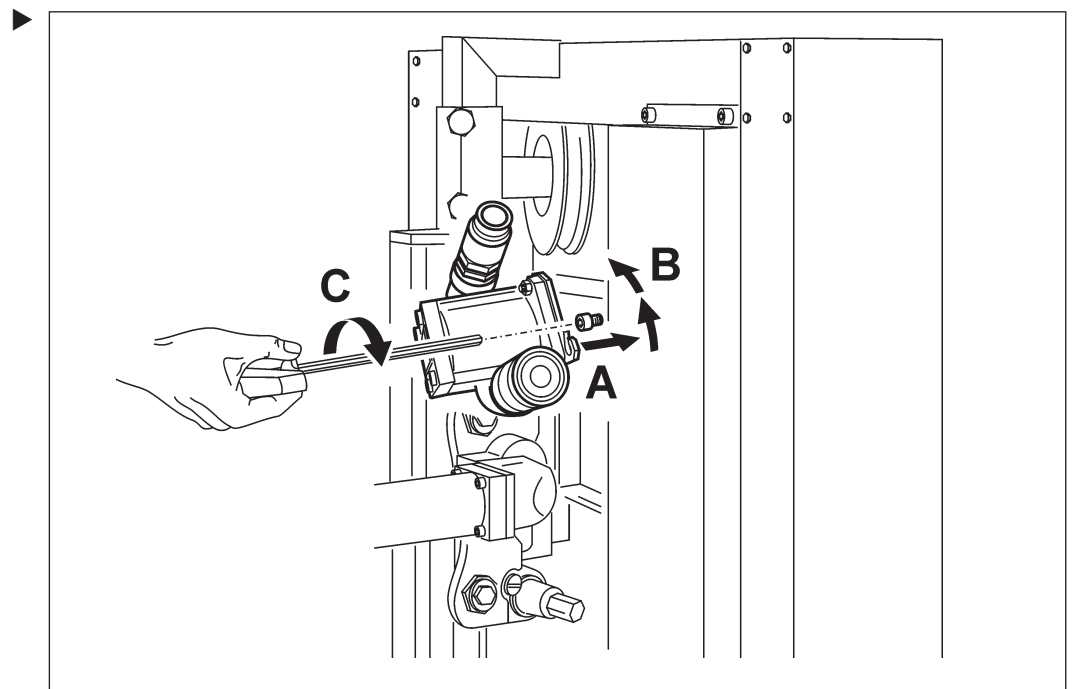


Motor attachment WCH8★★★

Hydraulic feed motor



Main motor, hydraulic

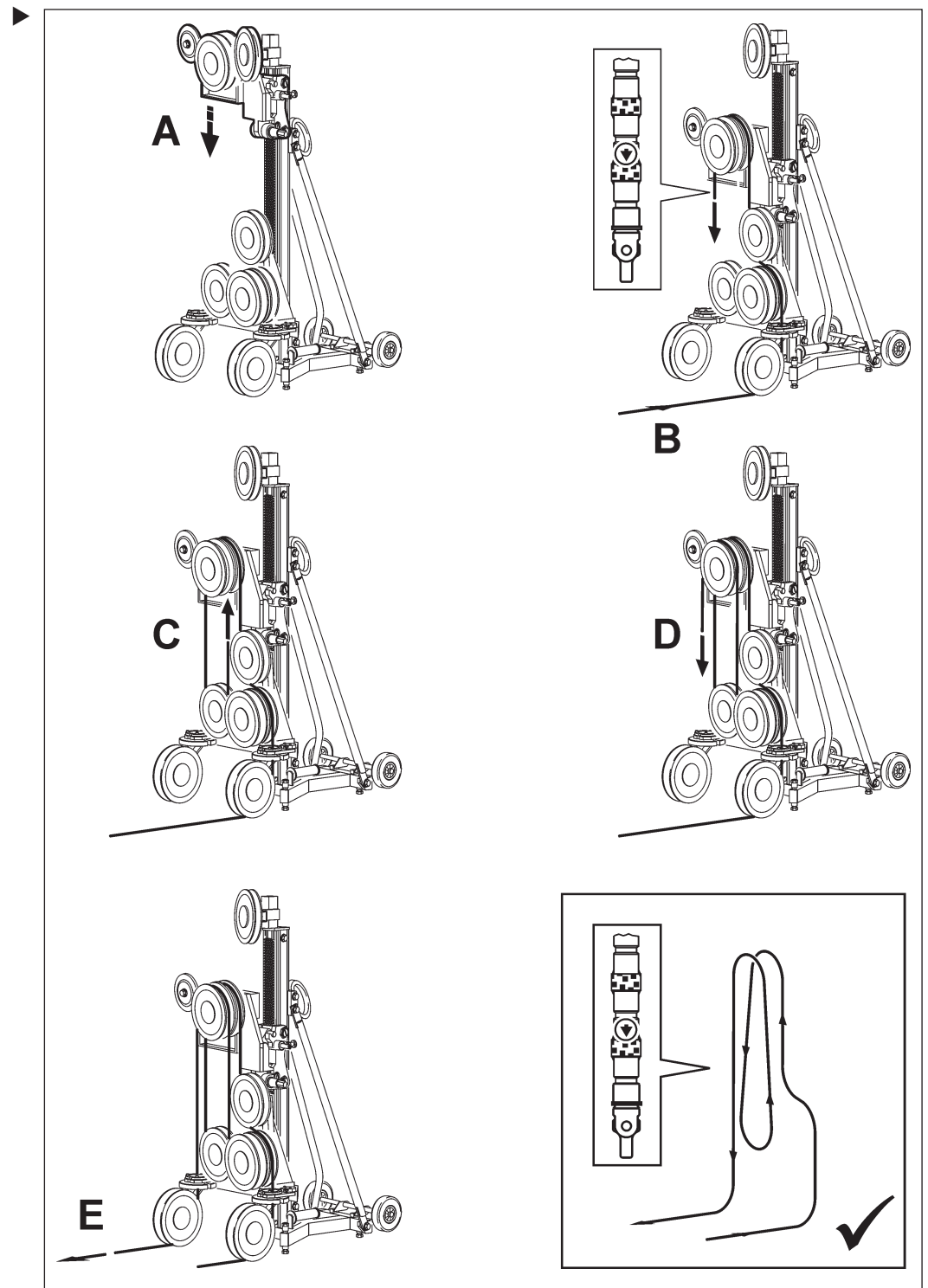


3.9 Drawing in the diamond wire



The TYROLIT diamond wire can be inserted open or closed into the wire saw. Information about the storage capacity of the single wire storage can be found in the technical data.

Single diamond wire storage

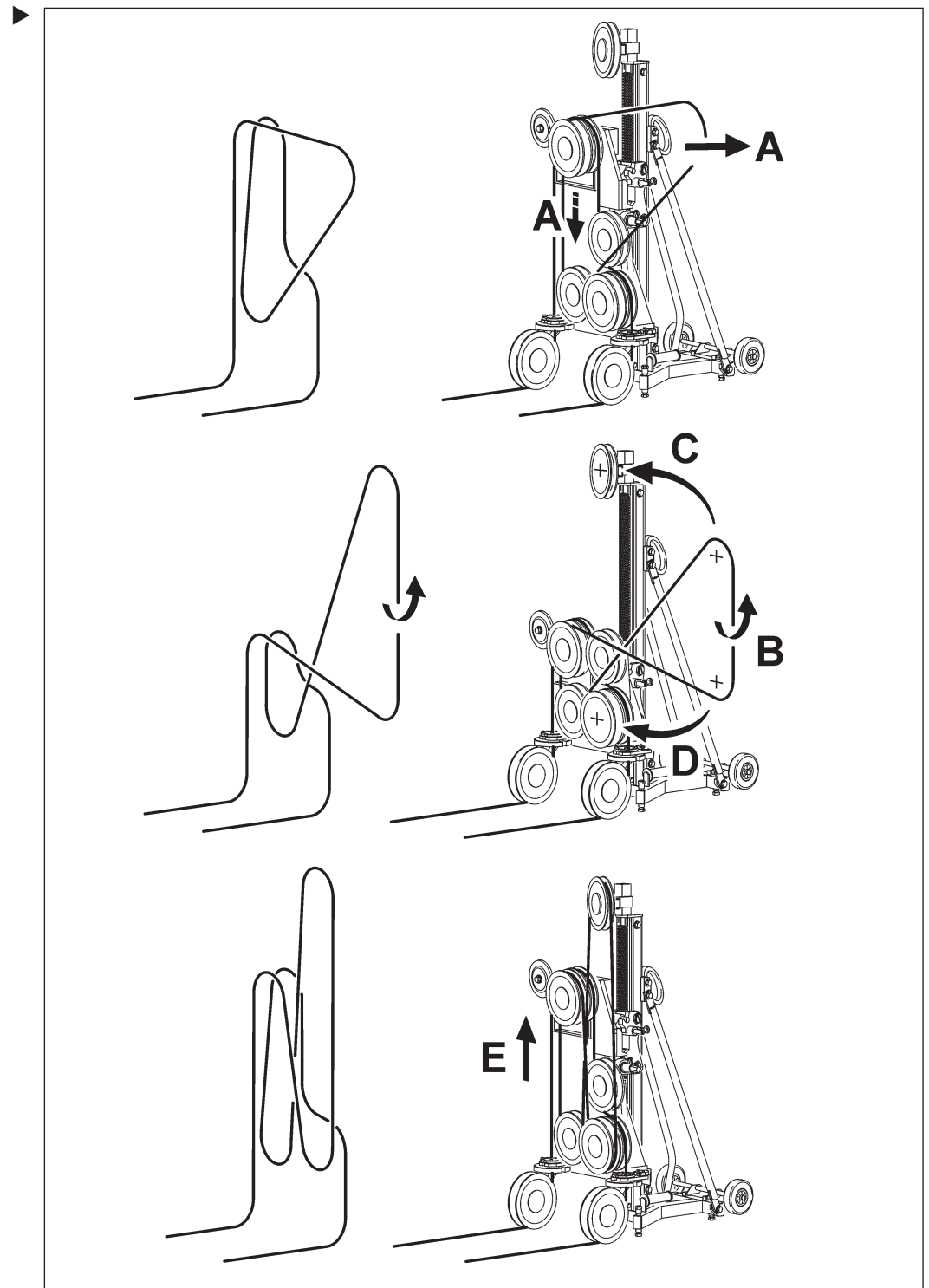




In order that the diverter rolls can be used for double diamond wire storage, the diamond wire must be pulled out of the wire saw and crossed over.

Information about the storage capacity of the double wire storage can be found in the technical data.

Double diamond wire storage



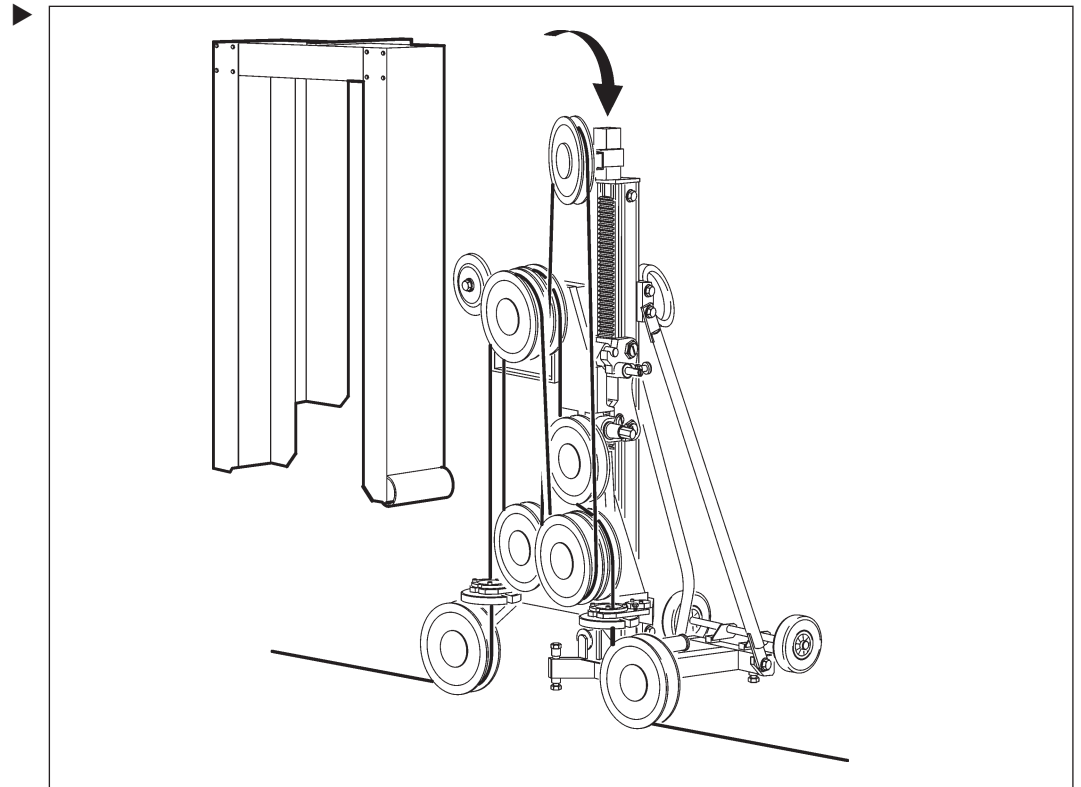
3.10 Mounting the diamond wire guard



DANGER

Death or serious injury as a result of the wire acting like a whip or diamond wire elements flying off.

- ▶ Always work with the diamond wire guard fitted.
- ▶ Make sure that you always stick to the defined safety distances and working areas.



3.11 Positioning and fastening the wire saw

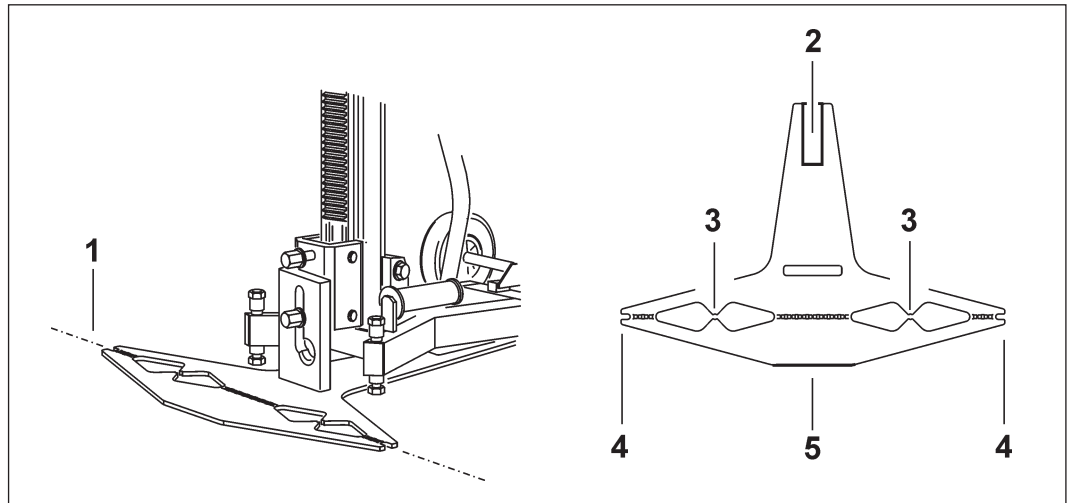


Auxiliary item: cutting gauge

The cutting gauge is a simple aid for aligning and positioning the wire saw.

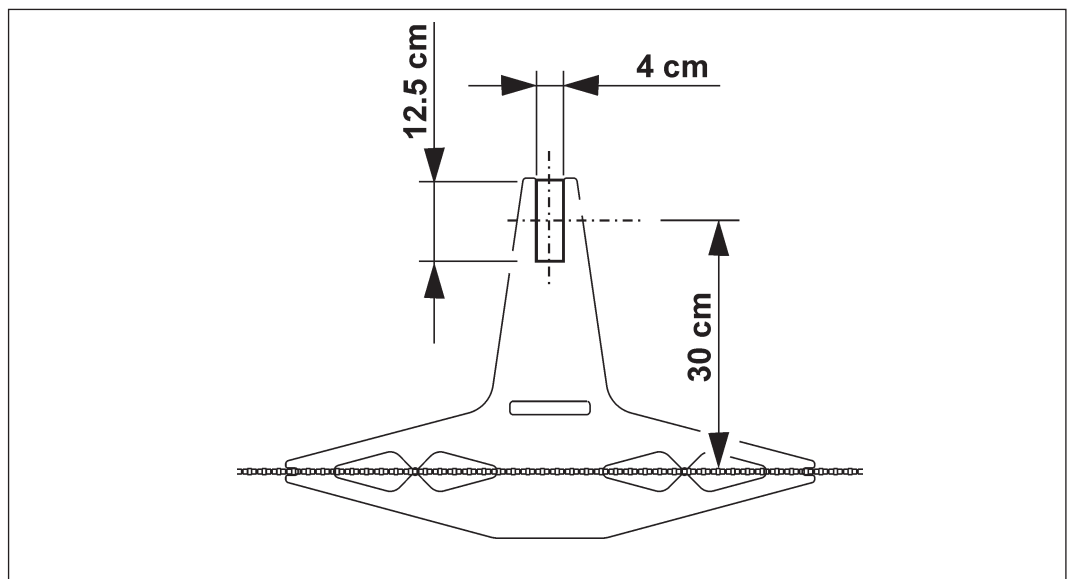
- ▶ Mount the cutting gauge onto the attachment bracket.
- ▶ Align the wire saw to the cut and mark the dowel space.

The following information can be obtained from the cutting gauge:



- | | | | |
|---|--------------|---|--------------------------------------|
| 1 | Cutting line | 3 | 40 cm cut |
| 2 | Dowel space | 4 | 80 cm cut |
| | | 5 | Outer edge of the diamond wire guard |

Dowel dimension



3.12 Connecting the water supply



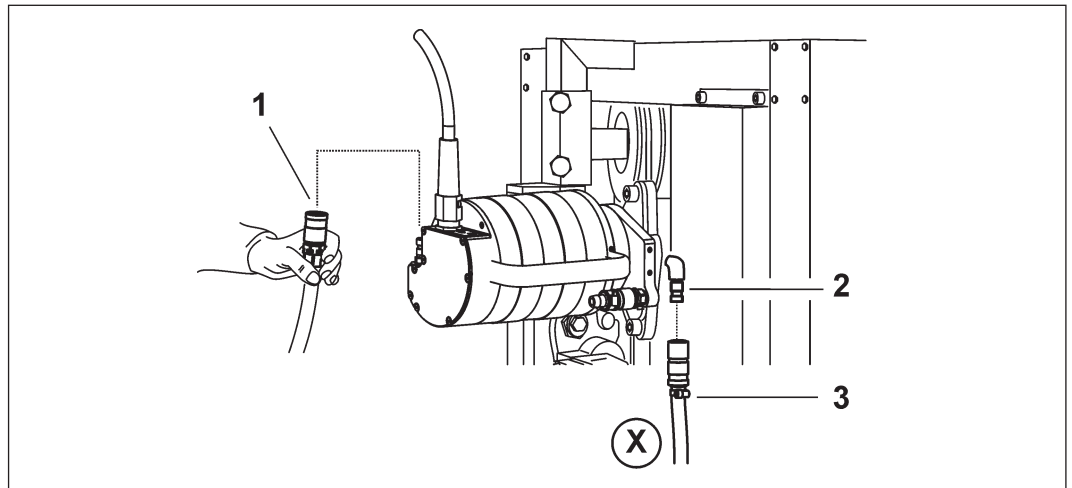
Water connection WCE8★★★

The cooling water of the saw system flows from the control unit via the drive motor to the water distribution on the diverting roller unit.

Water connection WCE8★★★

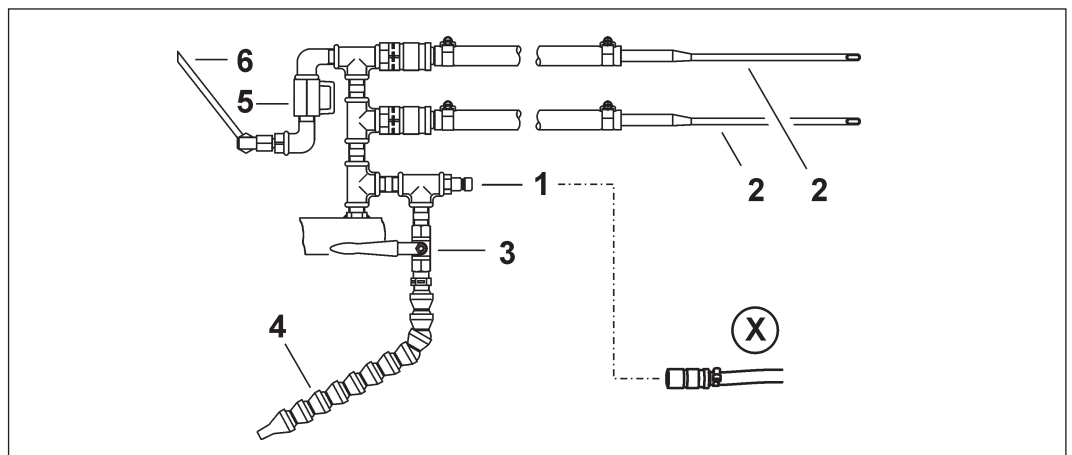
The cooling water of the saw system flows from the drive unit directly to the water distribution on the diverting roller unit.

Water connection on drive motor



- | | |
|----------------|----------------------------------|
| 1 Water inlet | 3 Connecting hose X |
| 2 Water outlet | Drive motor / water distribution |

Water distribution at the diverting roller unit



- | | |
|---|--------------------------------|
| 1 Water connection
(Connecting hose X) | 4 Water line to swivel roll |
| 2 Water lances | 5 Water valve |
| 3 Water valve | 6 Water line to diverter rolls |

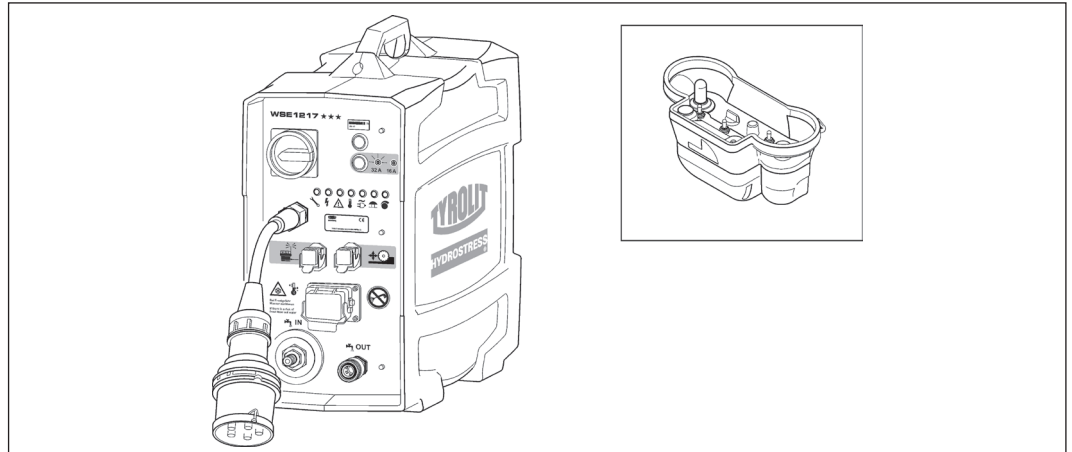
3.13 Connecting the wire saw to the power supply



Wire saw WCE8★★★

The WCE8★★★ wire saw is combined with the WSE1217★★★ control unit to form the wire sawing system. Information about the correct way to connect and operate these units can be found in the operating instructions for the WSE1217★★★ control unit.

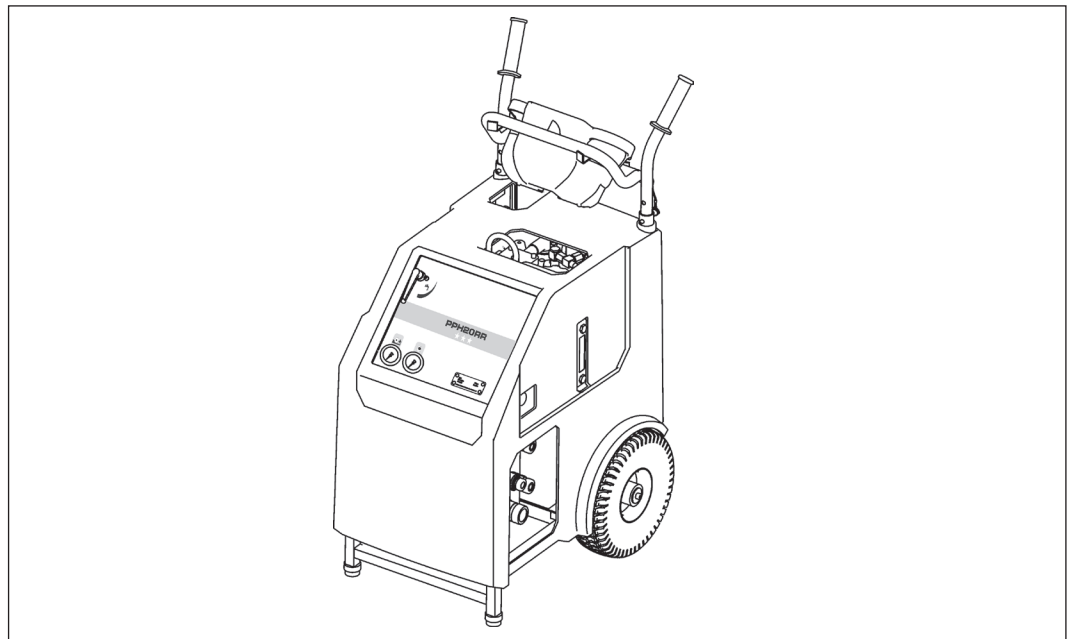
Control unit WSE1217★★★



Wire saw WCH8★★★

The WCH8★★★ wire saw is combined with a TYROLIT drive unit to form the wire sawing system. Information about the correct way to connect and operate these units can be found in the operating instructions for the drive unit.

Drive unit (20-25 kW)



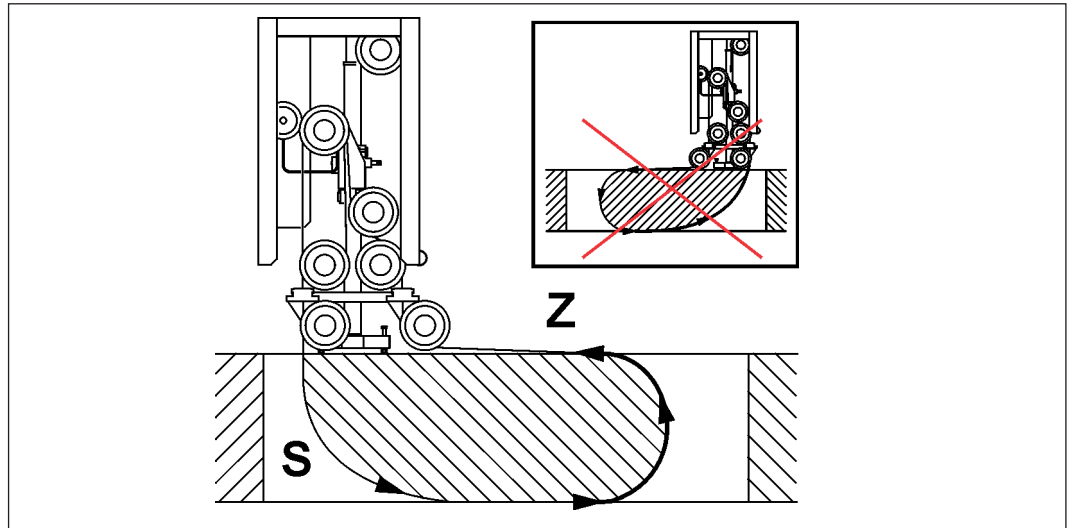
4 Application

4.1 Correct cutting direction



Tensioned side and slack side

The sawing cut should be performed with the tensioned side (Z) of the diamond wire, as this offers the best cutting conditions.

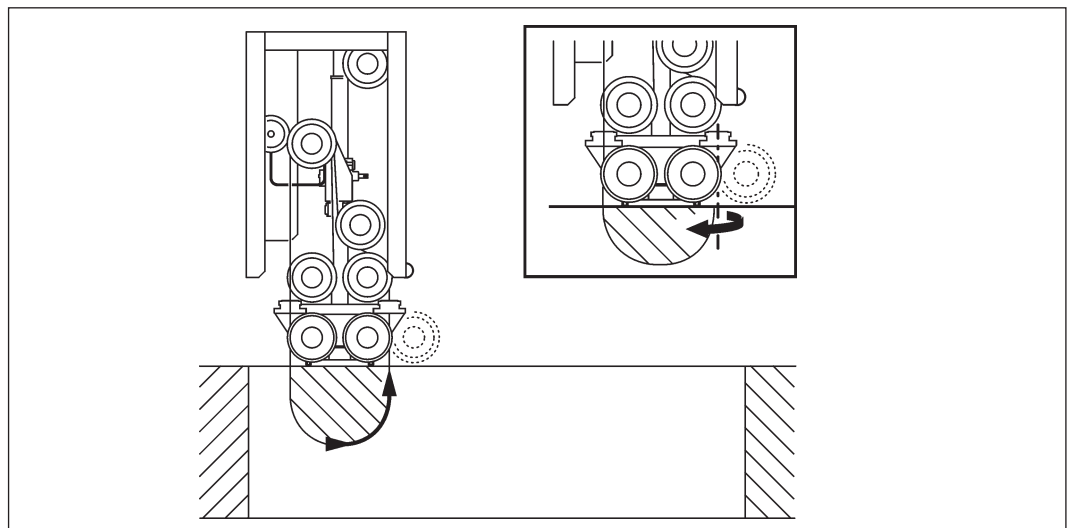


4.2 Finishing the cut



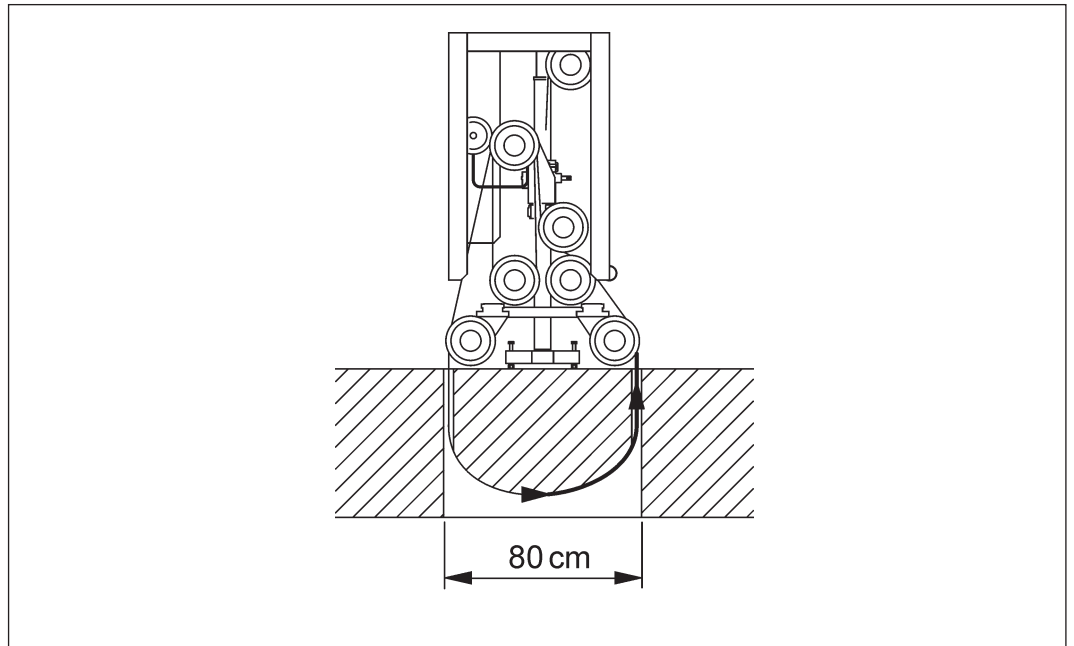
During the finishing cut the swivel roll must be swivelled inwards.

Reduced feed force should be used when approaching the end of a cut. This measure makes it possible for the swivel rolls to catch the diamond wire perfectly upon the exit of the diamond wire.



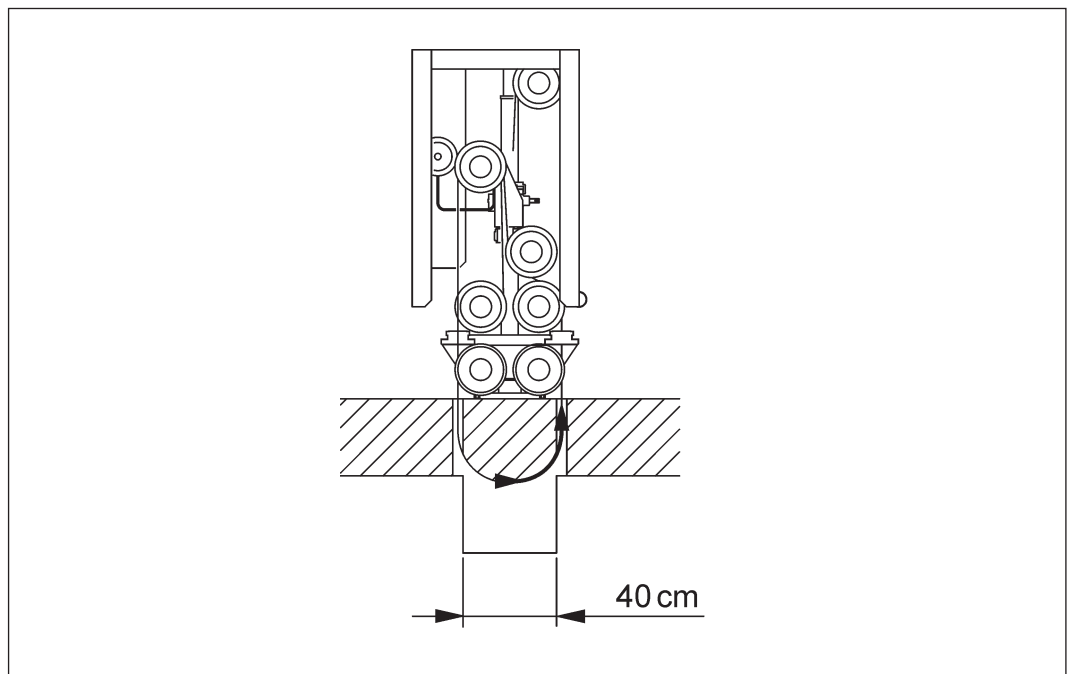
4.3 Standard application

e.g. door cut-out

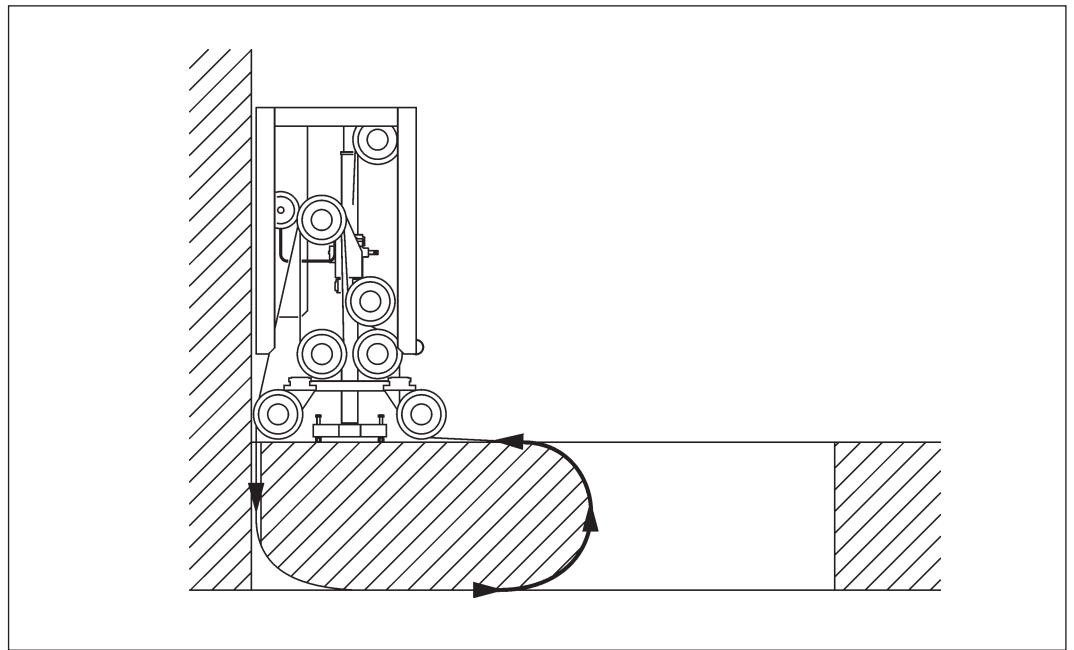


4.4 Smallest cutting option

e.g. 40 cm beams



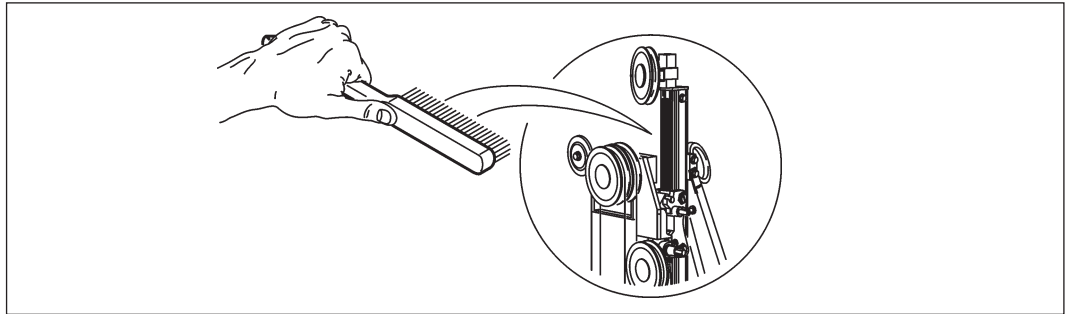
4.5 Wall flush cut



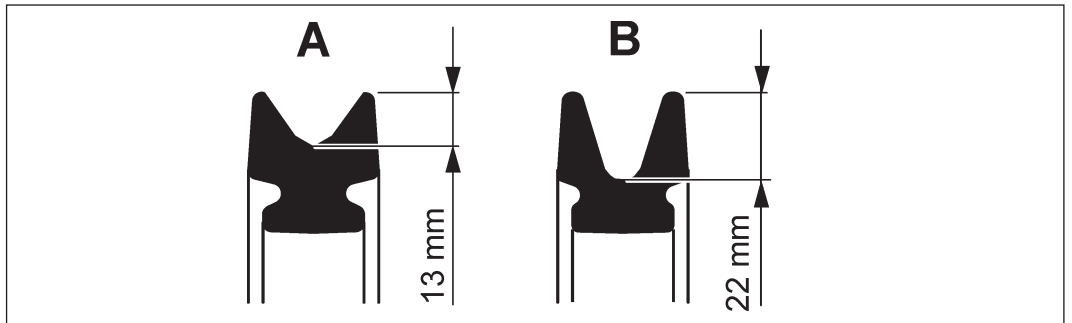
5 Servicing and maintenance

Maintenance and servicing table		Before every commissioning	At end of work	Weekly	Yearly	After faults	After damage
Wire saw	▶ Retighten loose screws and nuts			X		X	X
Guide support	▶ Check the wear and adjustment of the guide elements	X	X			X	X
	▶ Lubrication			X		X	X
Guide rail	▶ Clean the toothed rack and guide grooves, see 5.1		X			X	X
Drive rolls and guide rolls	▶ Check the bandages for wear, see 5.2	X	X			X	X
	▶ Check bearings			X		X	X
	▶ Clean	X	X				X
Feed motor	▶ Check for cleanliness / damage	X	X			X	X
Drive motor	▶ Check for cleanliness / damage	X	X			X	X
Connectors, cables, Couplings	▶ Check for cleanliness / damage	X	X			X	X
Water economy	▶ Check the water line for cleanliness and leak-tightness	X				X	X
	▶ Blow out water		X				
Diamond wire	▶ Clean with water		X				
	▶ Check for wear	X	X			X	X
Service	▶ To be performed by TYROLIT Hydrostress AG or an authorised workshop	After 100 / 300 / 500 / 700 hours					

5.1 Cleaning the toothed rack



5.2 Checking bandages for wear

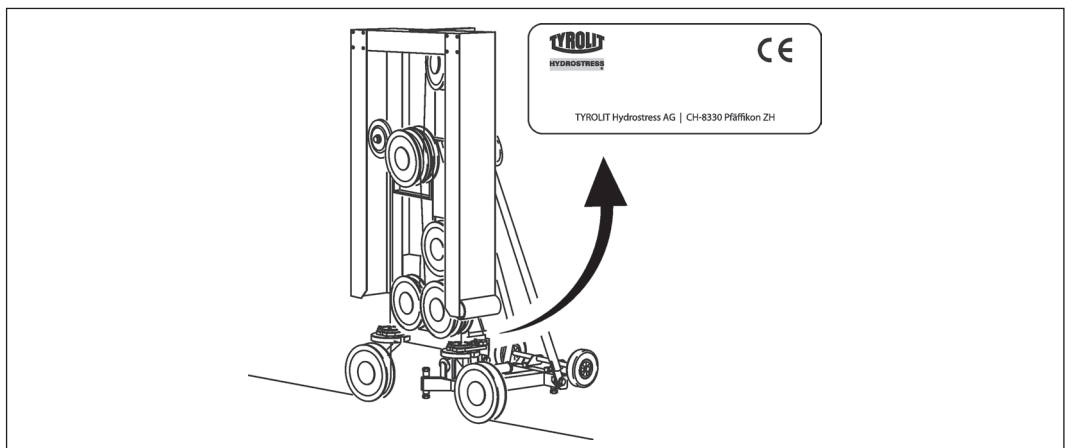


- A New bandage
- B Worn bandage

5.3 Troubleshooting

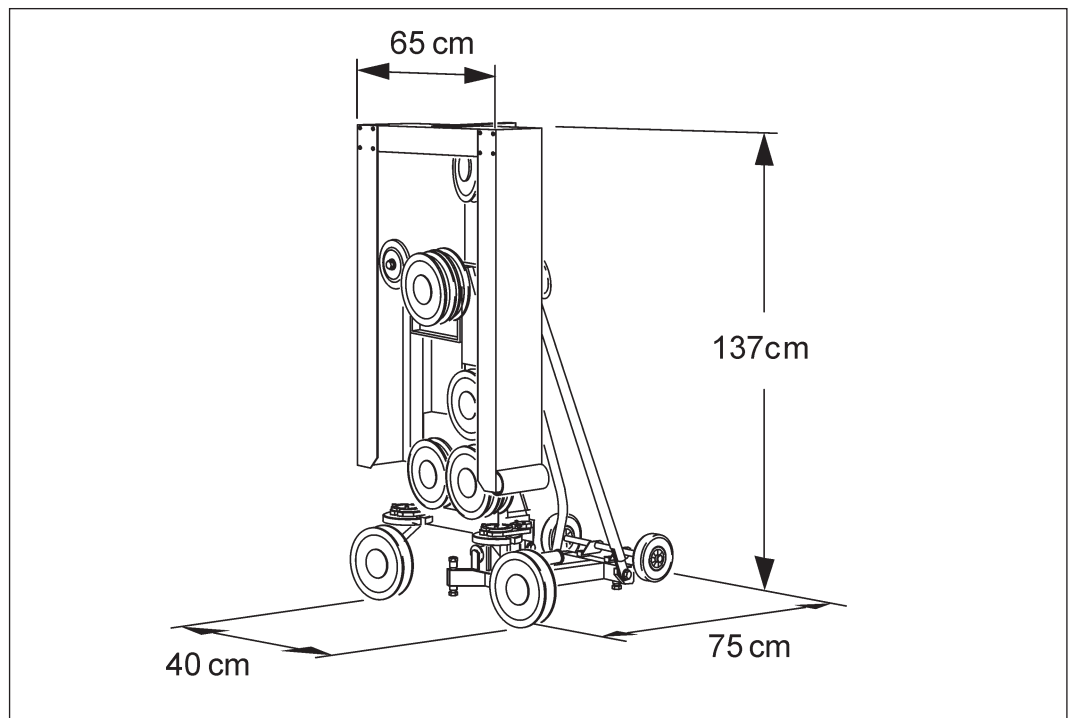
To guarantee a rapid and professional solution to the problem, it is important that you have prepared as follows before calling:

- Try to describe the fault as precisely as possible.
- Make a note of the type and index description (refer to the name plate).
- Have the Operating Instructions close to hand.

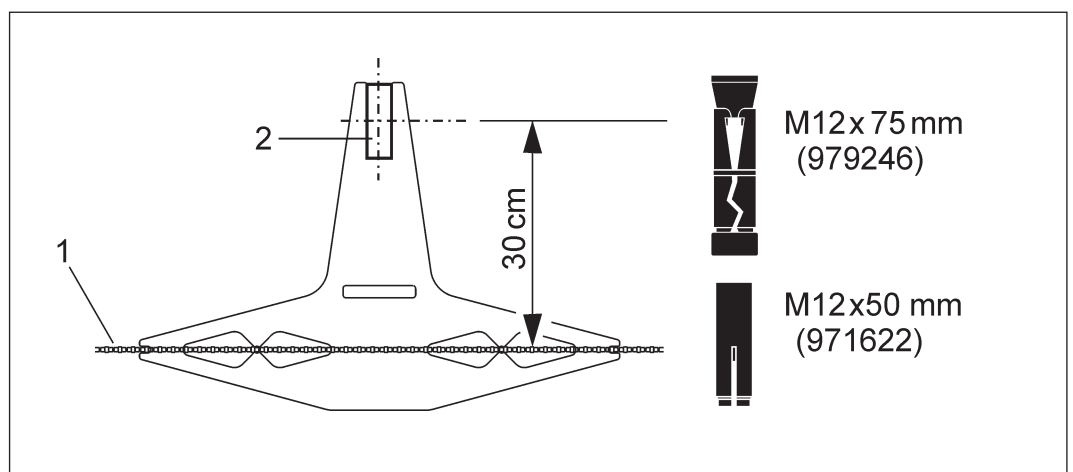


6 Technical data

6.1 Dimensions

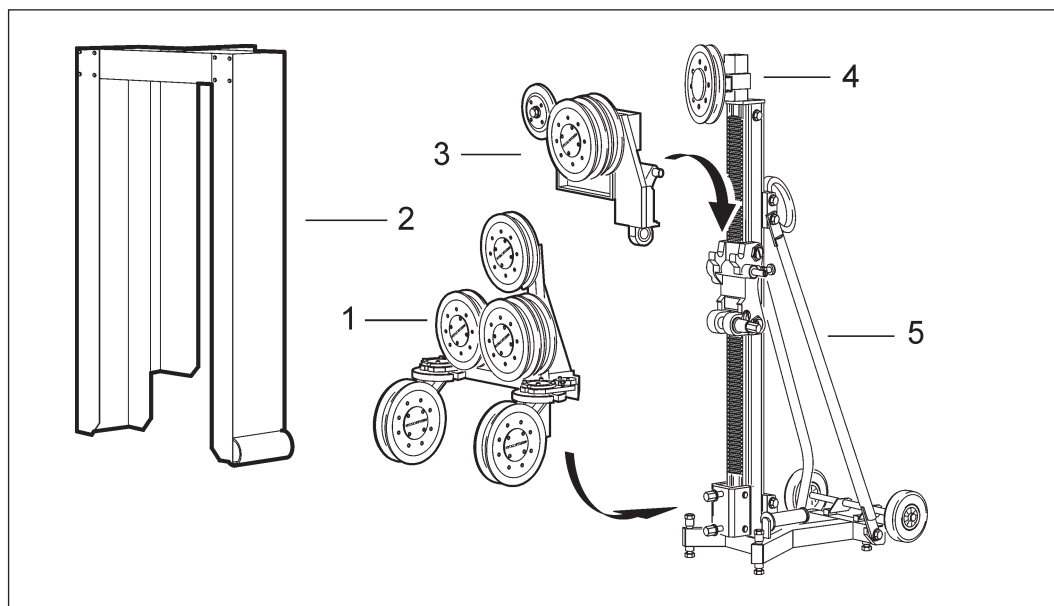


6.2 Dowel dimension



- 1 Cutting line
- 2 Dowel space

6.3 Weights



1 Diverting roller unit	28 kg
2 Guard	16 kg
3 Twin drive unit	11 kg
4 Storage roll unit	4.3 kg
5 Drill rig	23 kg

Noise exposure (noise level)

6.4



You must wear ear protection while working with the wire saw.



Noise level measurement

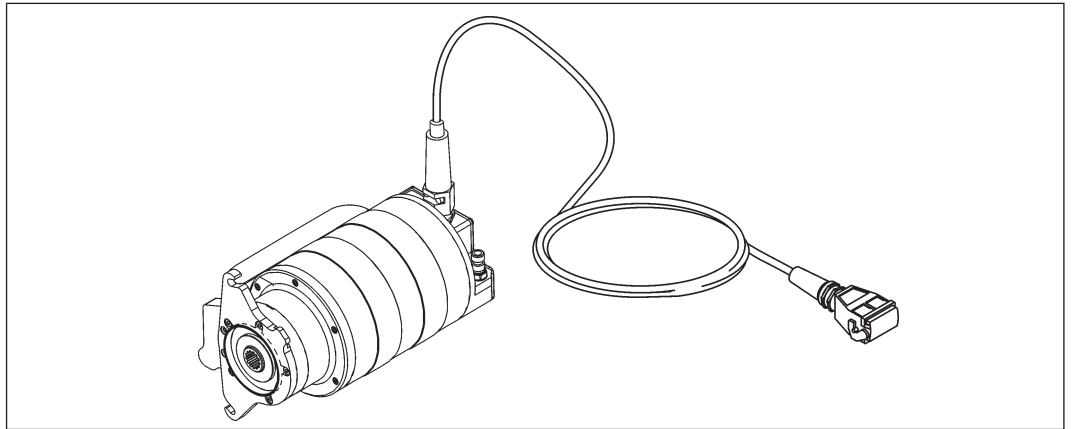
Noise data according to ISO 3744	
Parameter	Value
Sound pressure level L_{pA} dB (A) *
Highest value of sound pressure L_{pCpeak} dB
Acoustic power level L_{WA} dB (A) *

6.5 Water connection

Pressure	1 bar (min.) to 6 bar (max.)
Quantity	At least 4 l/min
Temperature	max. 25°C

6.6 Motors

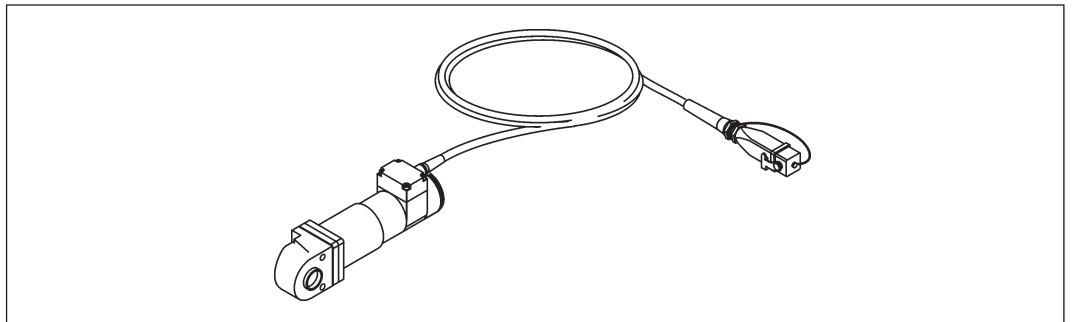
Drive motor, electric



Electric motor (high frequency, water-cooled)

Output at 16 A	8 kW
Output at 32 A	17 kW
Weight	22 kg

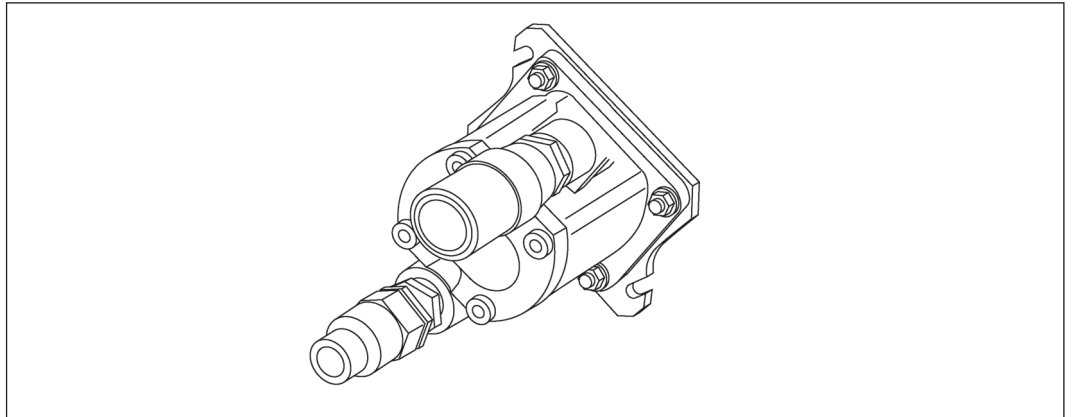
Electric Feed motor



Electric feed motor with gears and brake

Gear reduction	1:100
Voltage	48 V
Feed	Toothed wheel on rail
Weight	4.1 kg

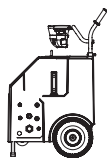

Drive motor, hydraulic



Hydraulic motors	
Speed	1100 to 3333 rpm.
Size	2
Absorption volume	12 ccm ³ to 30 ccm ³
Transmission ratio	1:1
Operating pressure	max. 260 bar
Type	External geared motor

Rotational speeds

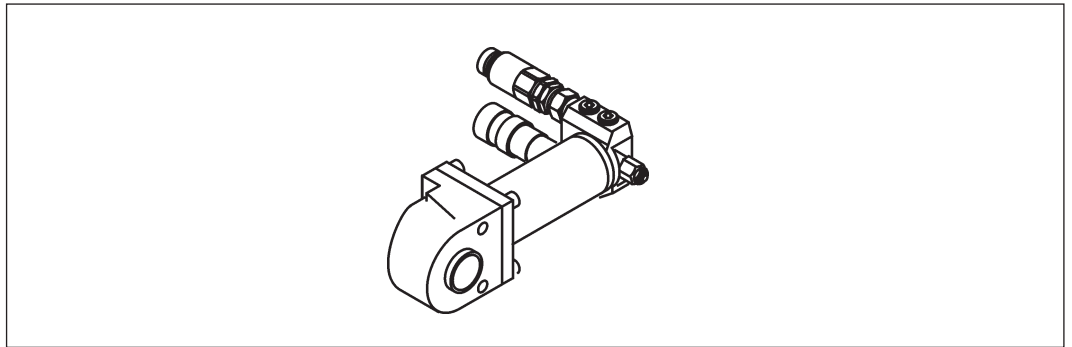
Hydraulic motor, wire saw WCH8 ★★★

Rotational speeds, hydraulic motors for wall saws							
							
		cm ³ 12	cm ³ 16	cm ³ 18	cm ³ 22	cm ³ 26	cm ³ 30
l/min	33	2750	2063	1833	1500	1269	1100
l/min	40	3333	2500	2222	1818	1538	1333
l/min	45	3750	2813	2500	2045	1731	1500
l/min	50	4167	3125	2778	2273	1923	1667
l/min	60	5000	3750	3333	2727	2308	2000
l/min	70	5833	4375	3889	3182	2692	2333

 Operation possible

 Operation not possible

Hydraulic feed motor



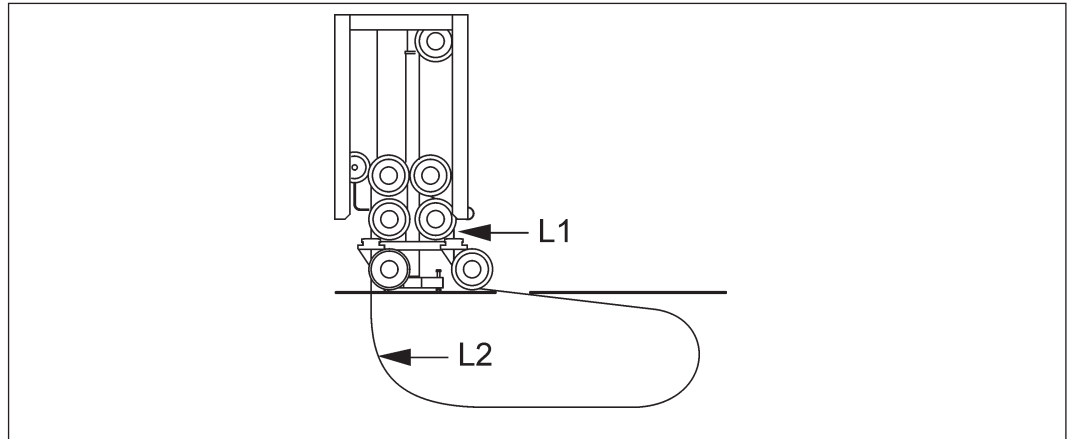
Hydraulic motors	
Speed	187 rpm
Type	Gerotor
Operating pressure	max. 120 bar
Rated torque	50 Nm
Feed force	6000 N
Feed	Toothed wheel on rail

6.7 Diamond wire lengths



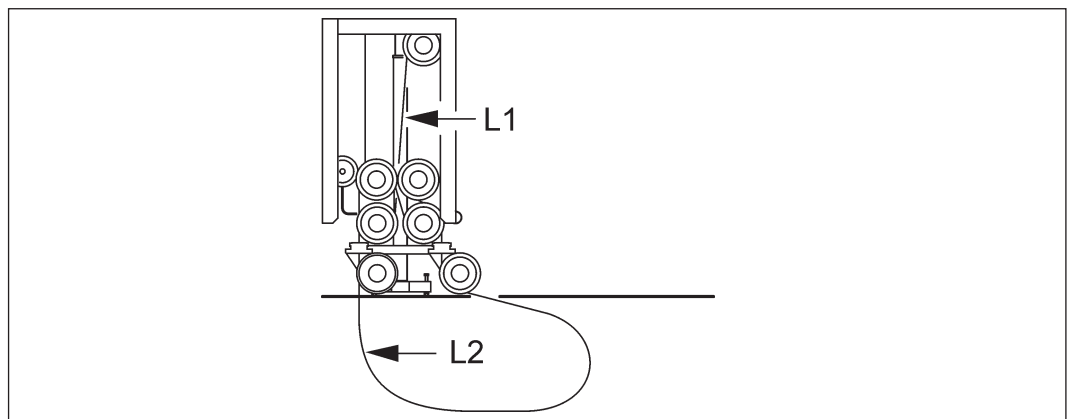
The complete diamond wire storage volume of the wire saw is 7.5 m. Wire storage can be expanded by integrating the storage roll unit.

Single diamond wire storage



L1 Diamond wire length in the machine	2.50 m
L2 Diamond wire length outside the machine	5.00 m
Total storage length	7.50 m

Double diamond wire storage



L1 Diamond wire length in the machine	4.75 m
L2 Diamond wire length outside the machine	2.75 m
Total storage length	7.50 m

EC declaration of conformity

Description	Wire saw
Type designation	WCE8★★★
Year of construction	2011

We declare under our sole responsibility that this product complies with the following directives and standards:

Applied directives

2006/42/EG	17.05.2006
2004/108/EG	15.12.20004
2002/96/EG	27.01.2003
1999/5/EG	09.03.1999

Applied standards

EN 15027/A1:2009
EN ISO 12100:2010
EN 60204-1/A1:2009
EN 61000-3-11:2000
EN 61000-3-12:2005

TYROLIT Hydrostress AG

Witzbergstrasse 18
CH-8330 Pfäffikon
Switzerland

Pfäffikon, 01.09.2011



Pascal Schmid
Leiter Entwicklung



EC declaration of conformity

Description	Wire saw
Type designation	WCH8★★★
Year of construction	2011

We declare under our sole responsibility that this product complies with the following directives and standards:

Applied directives

2006/42/EG	17.05.2006
------------	------------

Applied standards

EN 15027/A1:2009
EN ISO 12100:2010

TYROLIT Hydrostress AG
Witzbergstrasse 18
CH-8330 Pfäffikon
Switzerland

Pfäffikon, 01.09.2011



Pascal Schmid
Leiter Entwicklung

