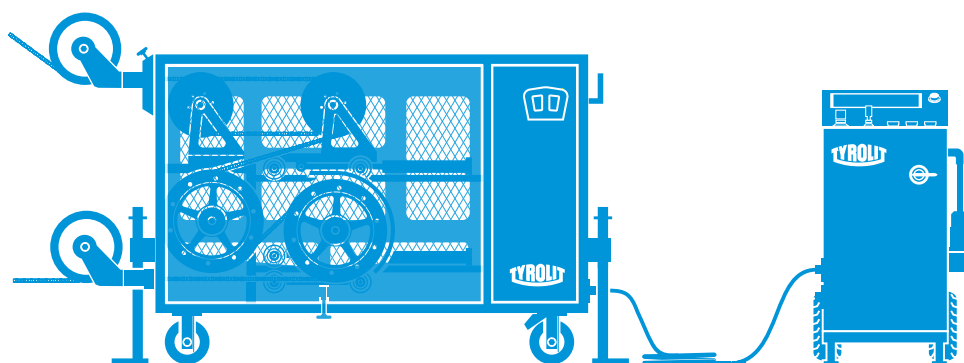




OPERATING INSTRUCTIONS

WCE30

Index 000



Congratulations!

You have decided to purchase a tried-and-tested TYROLIT Hydrostress unit, a highly sophisticated and reliable state-of-the-art device. Only genuine TYROLIT Hydrostress spare parts can guarantee quality and interchangeability. If maintenance work is neglected or carried out improperly, we will be unable to honour our warranty obligations. All repairs must be carried out by trained personnel only.

Our after-sales service is available to help make sure your TYROLIT Hydrostress units remain in perfect working order.

We hope that working with your TYROLIT unit will be a satisfying and fault-free experience.

TYROLIT Hydrostress

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1 Safety



These instructions are just one part of the documentation supplied together with the wire saw.

These instructions and the “Safety Manual for Wire Saws” form a complete set of documentation.

These instructions and the “Safety Manual for Wire Saws” are a part of the equipment. They describe how to use the equipment safely and properly in all phases of operation.

- Read the instructions carefully before use, particularly the safety instructions.
- Keep the instructions for the entire service life of the equipment.
- Ensure that the instructions are available to the operator and the service engineers at all times.
- Pass the instructions on to all subsequent owners or users of the equipment.
- Update instructions with all supplements received from the manufacturer.

1.1 Symbols in these instructions



DANGER

Warns of danger, where failure to comply could lead to death or serious injuries.



WARNING

Warns of danger, where failure to comply could lead to injuries or damage to property.



WARNING

Warns of dangerous electrical voltage.

Before working in an area identified in this way, the installation or device must be isolated from the power (voltage) and secured to prevent it being powered up again.



INFORMATION

Information for optimum use of equipment. Any failure to observe this information may mean that the performance information shown in the technical data cannot be guaranteed.



RECYCLING

Take waste for recycling.



DISPOSAL

Observe national and regional rules and guidelines regarding disposal.



INFORMATION

Do not allow unauthorized personnel to operate wire saw systems. Information about authorized personnel is available in the “Safety Manual for Wire Saws”.

1.2 Generally safety instructions



DANGER

Any failure to comply with the safety instructions in the “Safety Manual / System Handbook” may result in serious injury or death.

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



DANGER

Risk of cut injury from 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.



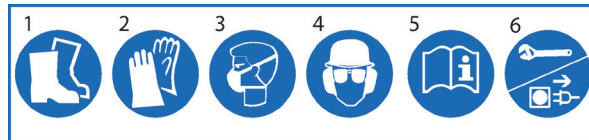
DANGER

Risk of 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.

1.2.1 Signs on the machine

Safety sign



- 1 Wear safety shoes
2 Wear gloves

- 3 Wear a breathing mask
4 Wear a helmet, goggles and hearing protection

- 5 Read the instructions
6 Before working on the unit Unplug mains connector

Name plate



1.2.2 Personal Protective Equipment

It is mandatory for anyone working with or on core drilling systems to wear personal protective equipment.

2 Description

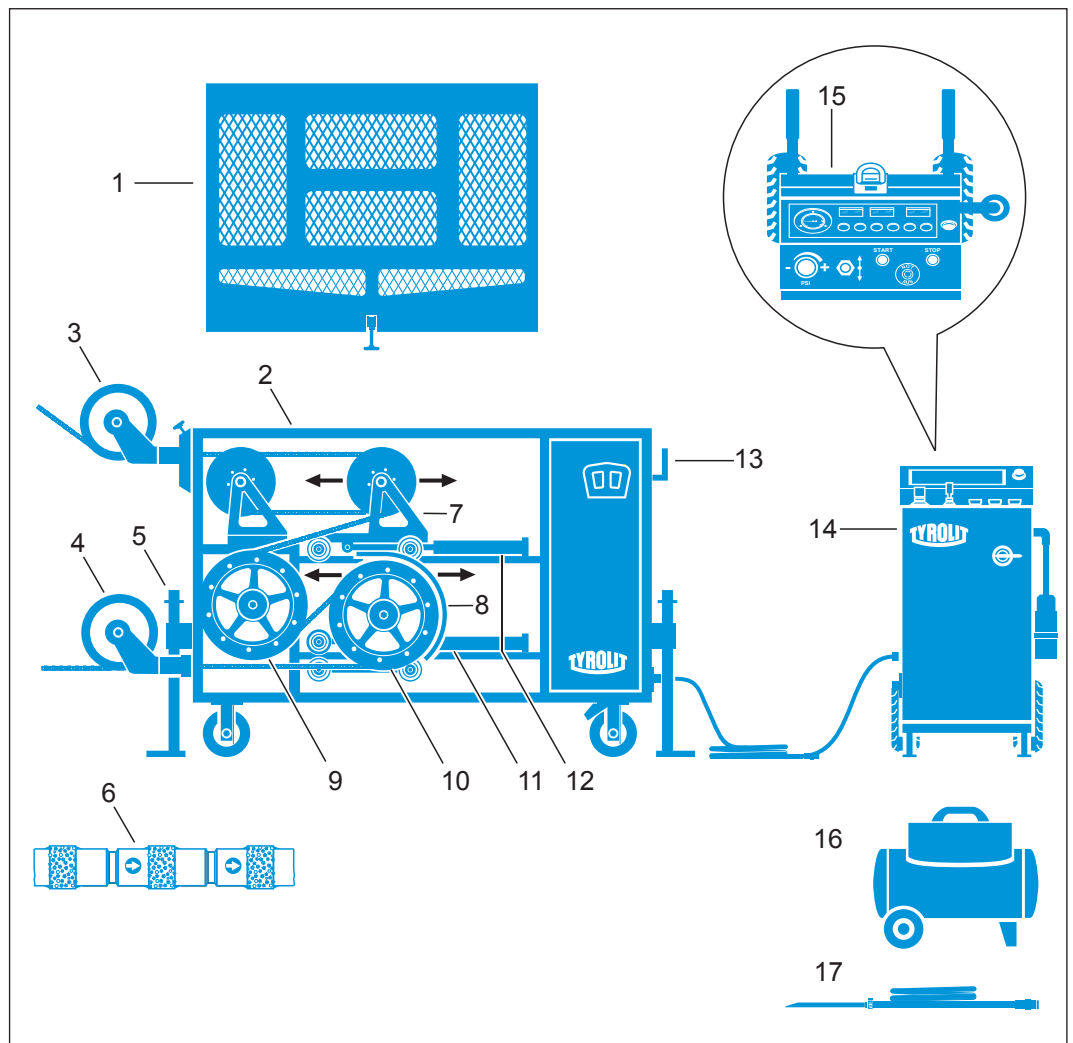
2.1 Wire saw system

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

2.2 Intended use

Transportable wire saw for use on construction sites, for cutting (reinforced) concrete, stone and masonry. Designed for industrial applications only.
Not suitable for use in potentially explosive atmospheres.

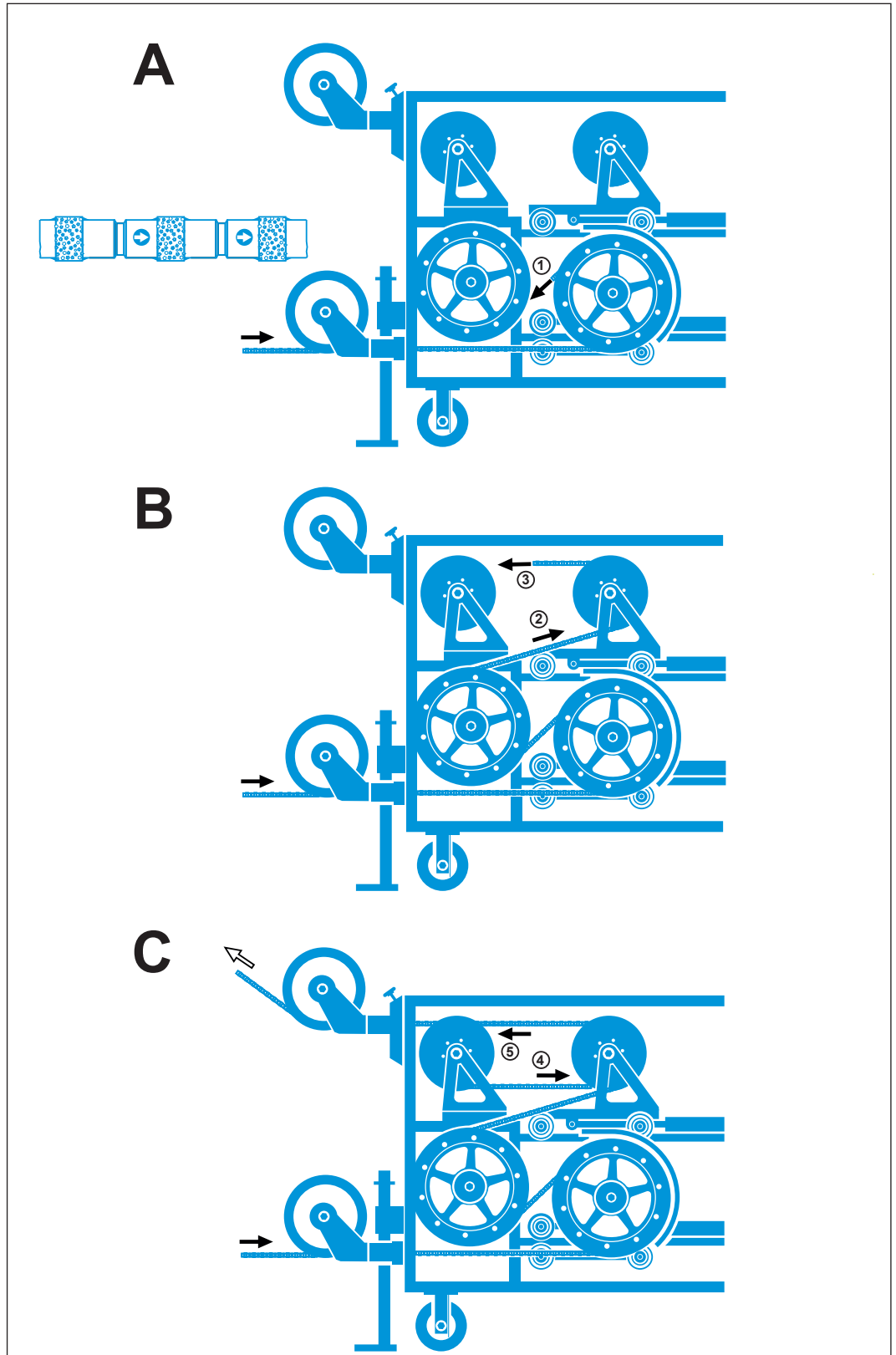
2.3 Wire saw



- | | |
|-------------------------------------|--|
| 1 Diamond wire guard | 10 Drive roll I |
| 2 Base frame | 11 Feed cylinder I |
| 3 Wire exit roller (slack side) | 12 Feed cylinder II |
| 4 Wire feed roller (tensioned side) | 13 Transport handle |
| 5 Support rod | 14 Electric controls with frequency inverter |
| 6 Diamond wire | 15 Control unit |
| 7 Wire store carriage | 16 Compressor (accessory) |
| 8 Diamond wire guard «Drive roll» | 17 Water lances (accessory) |
| 9 Drive roll II | |

3 Assembly

3.1 Diamond wire storage unit

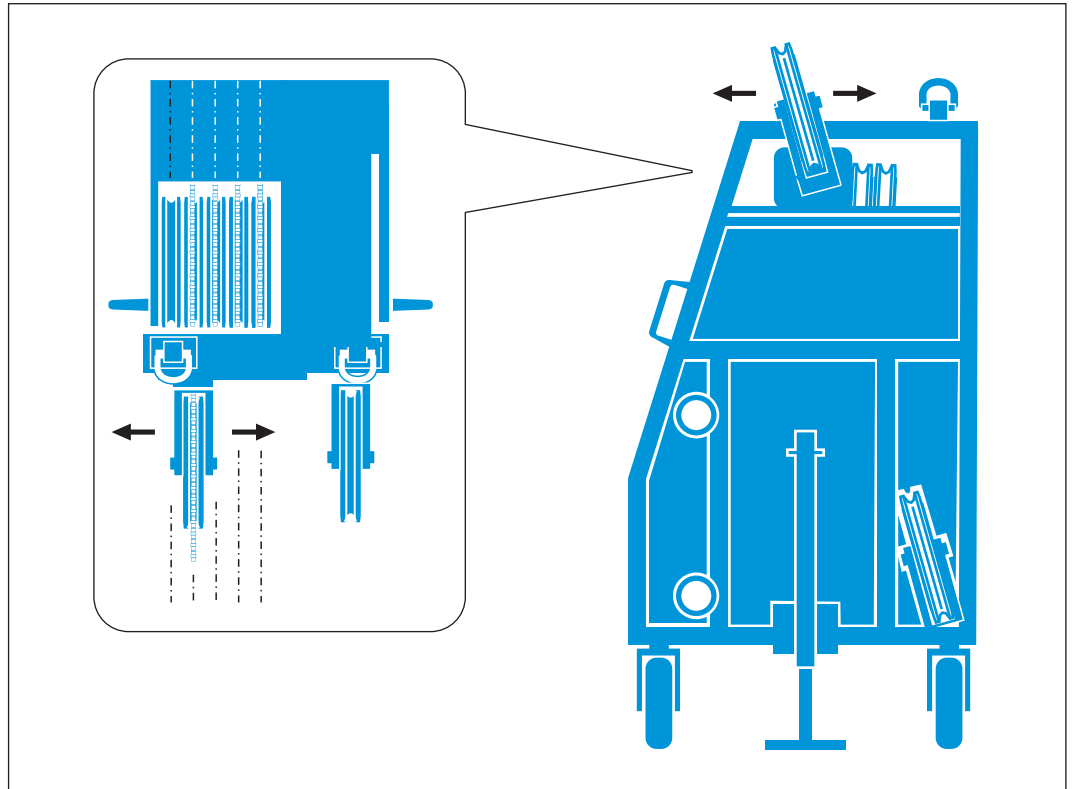


3.2 Restoring

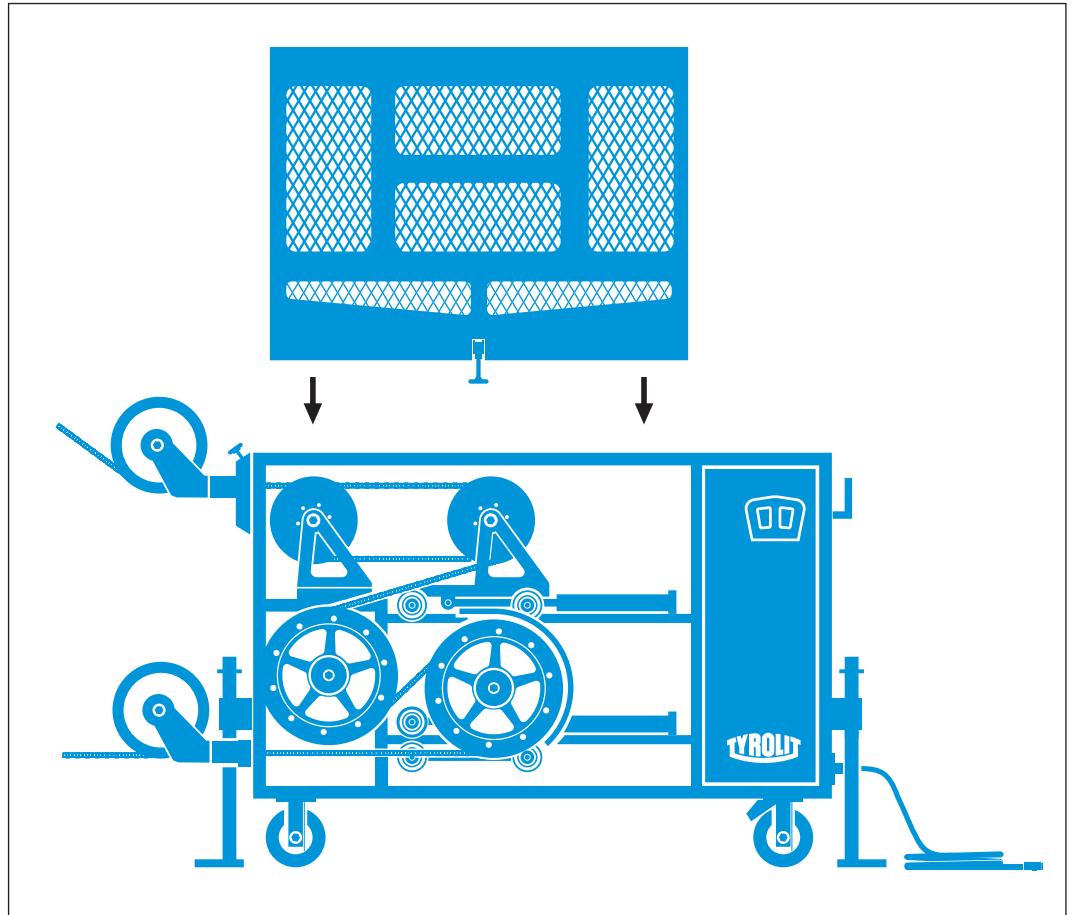


INFORMATION

Ensure when fitting a new wire store that the wire from the last storage roller to the exit roller is properly aligned.



3.3 Mounting the diamond wire guard

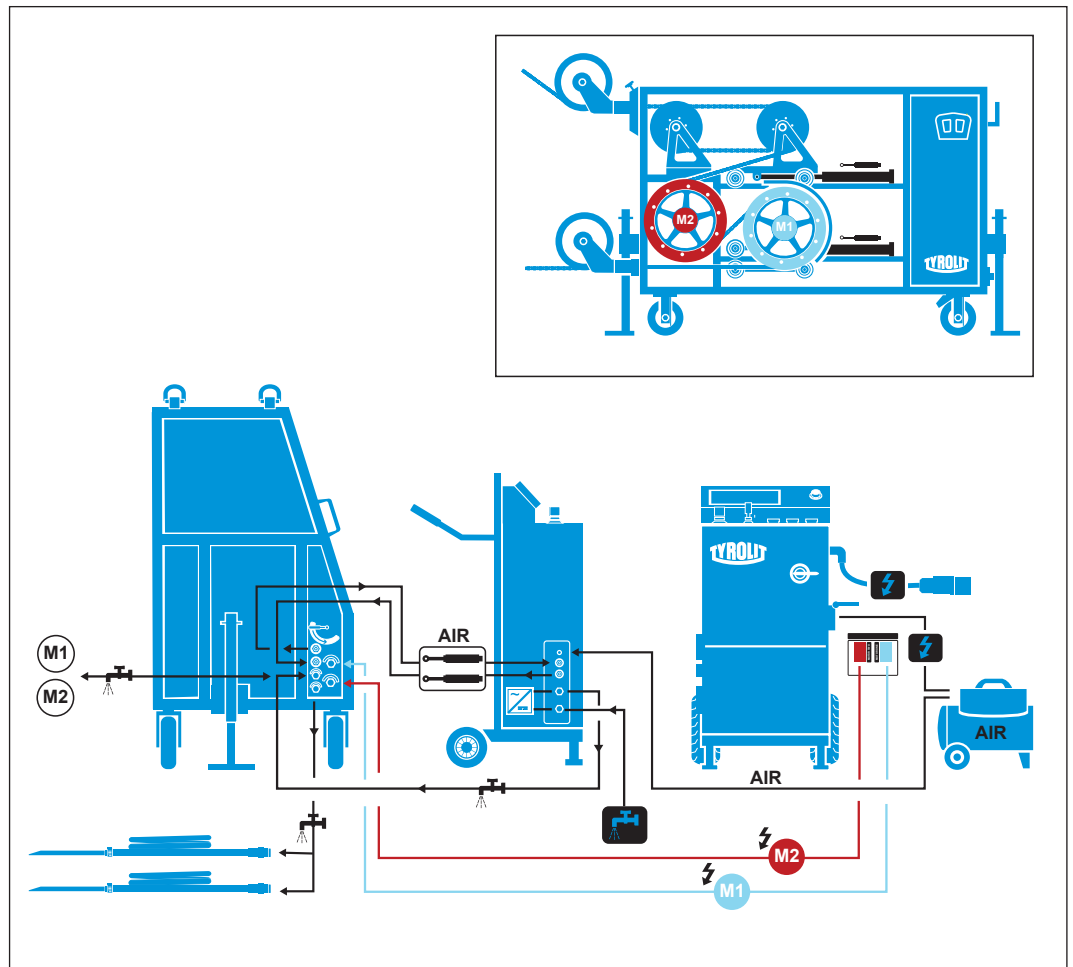
**DANGER**

Risk of death or serious injury due to a whipping action of the wire or diamond elements flying off the wire.

- ▶ Always work with the diamond wire guard fitted.
- ▶ Always maintain the defined safety distances and working areas.

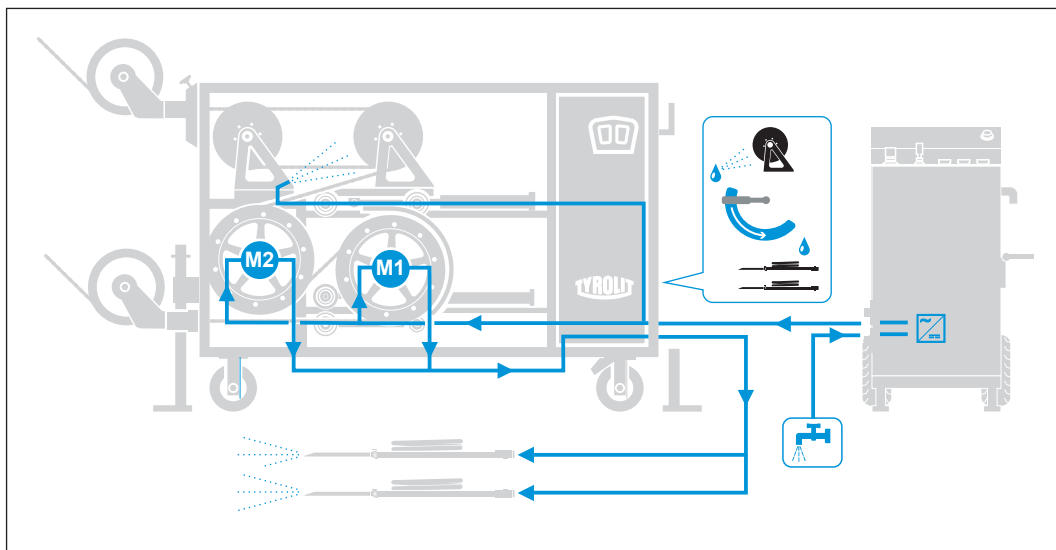
3.4 Connecting the water and power supplies

3.4.1 Connecting the power supply



Water supply

The cooling water of the saw system flows from the frequency inverter of the unit to the water distributor at the wire saw. The water is fed to cool the motors of the drive rollers on the one hand, and as spray water to the diverter rollers and to supply the water lances on the other.



Water connection

Pressure	Min. 1.5 bar to max. 6 bar
Quantity	Min. 4 l/min
Temperature	Max. 2-25 °C

4 Operation

4.1 Positioning and securing the wire saw



DANGER

Due to wire saw rolling away.

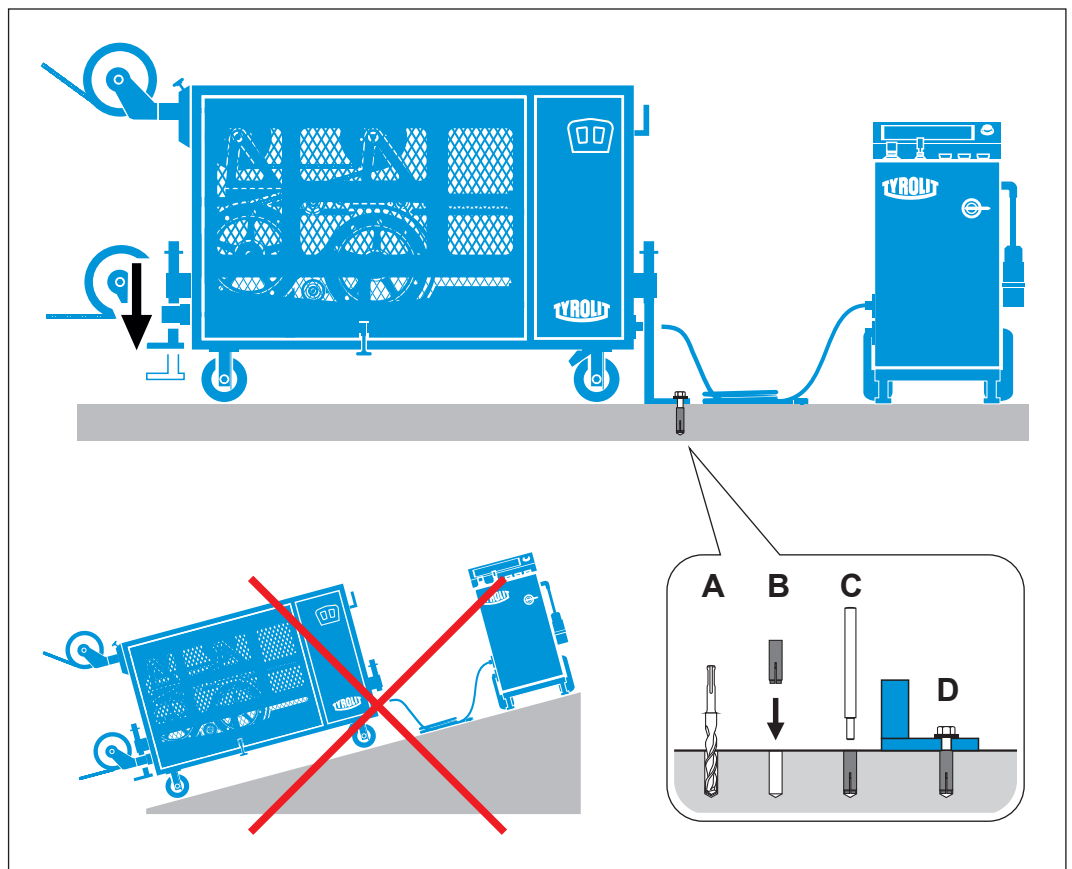
Switch on the wire saw only when it is level and upright. If it is on an inclined surface, secure the wire saw to prevent it rolling away.

The wire saw must be firmly secured to the floor by means of dowels and anchor bolts.



Auxiliary item support

To ensure the wire saw is secured in position, it is possible to extend a support mounted on the side of the unit and fastened appropriately.

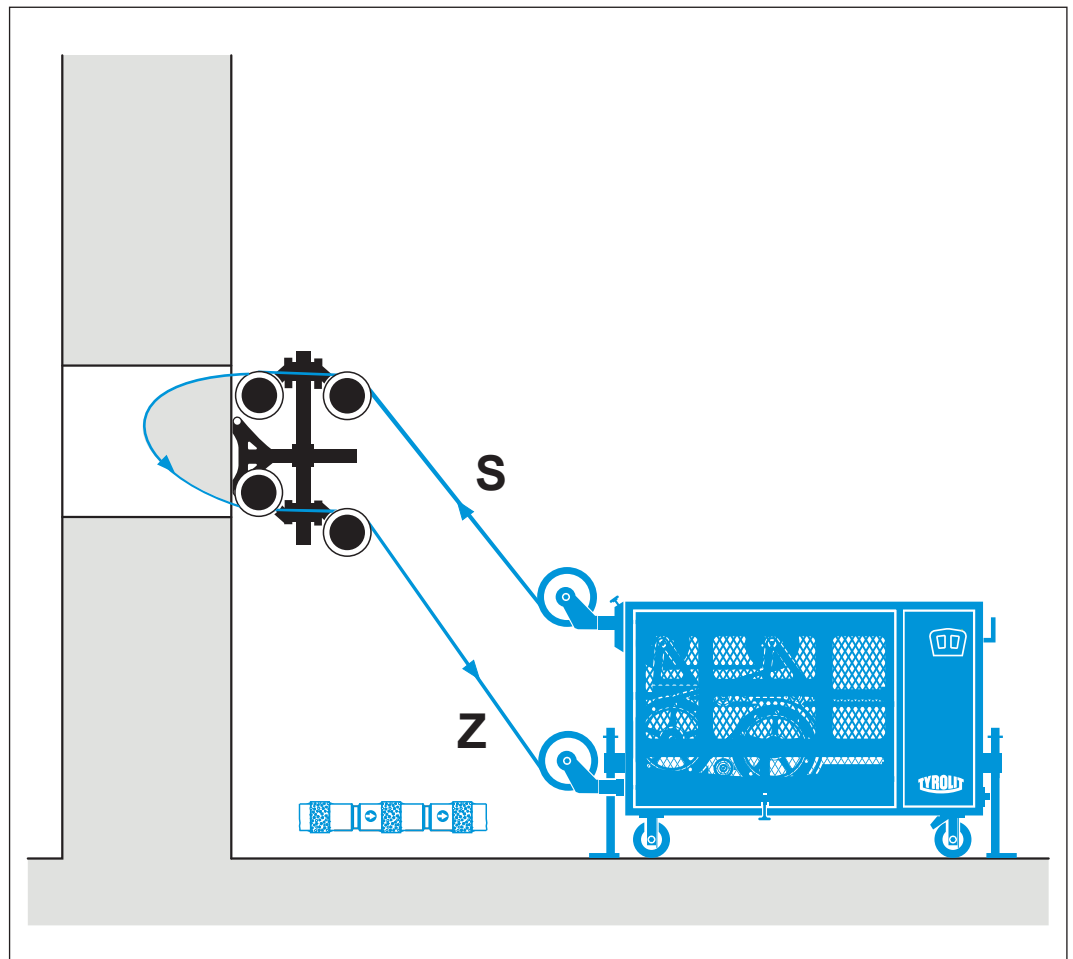


4.2 Correct cutting direction

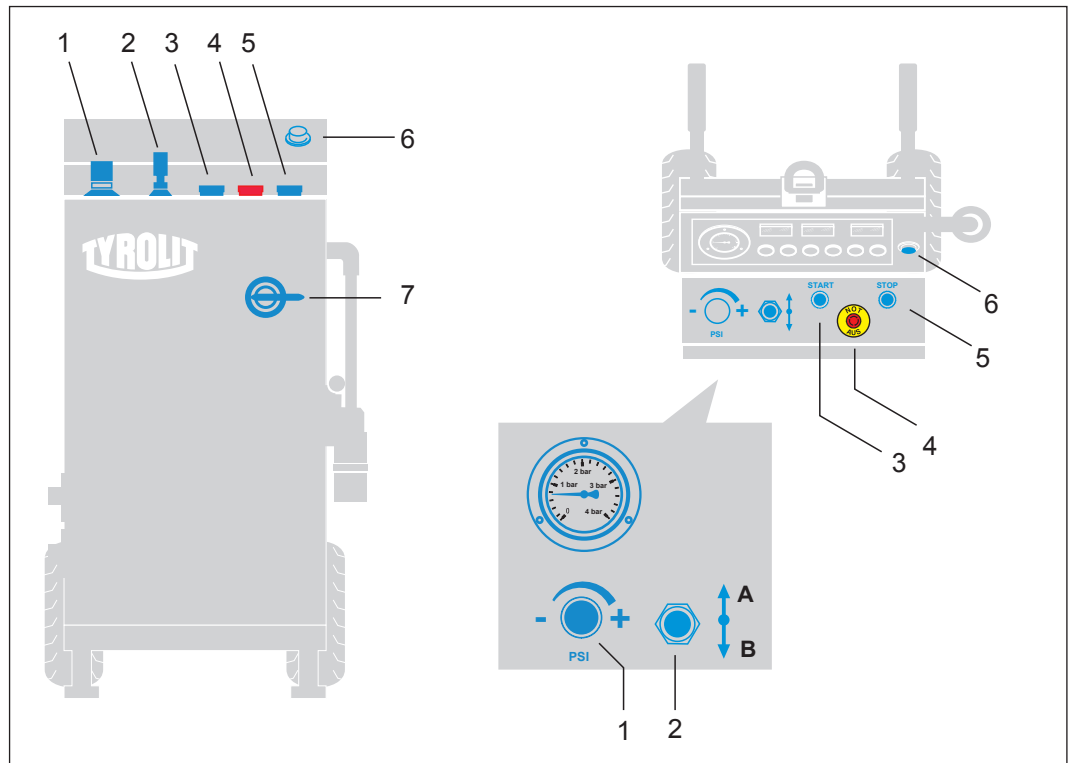


Tensioned side and slack side

The saw cut should be made with the tensioned side (Z) of the diamond wire, because this provides the best conditions for cutting.

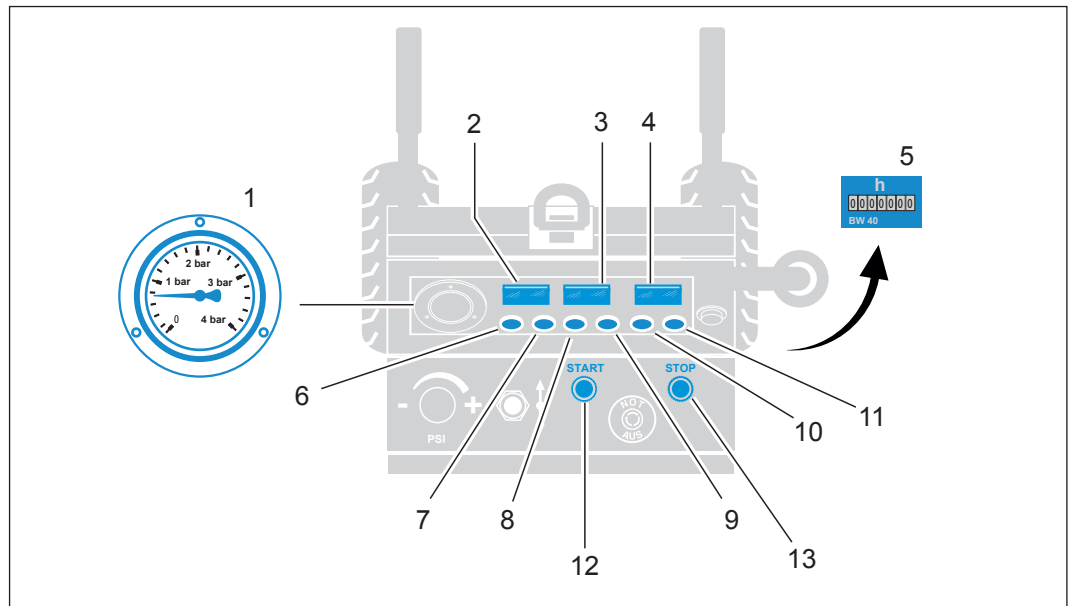


4.3 Overview of operating elements



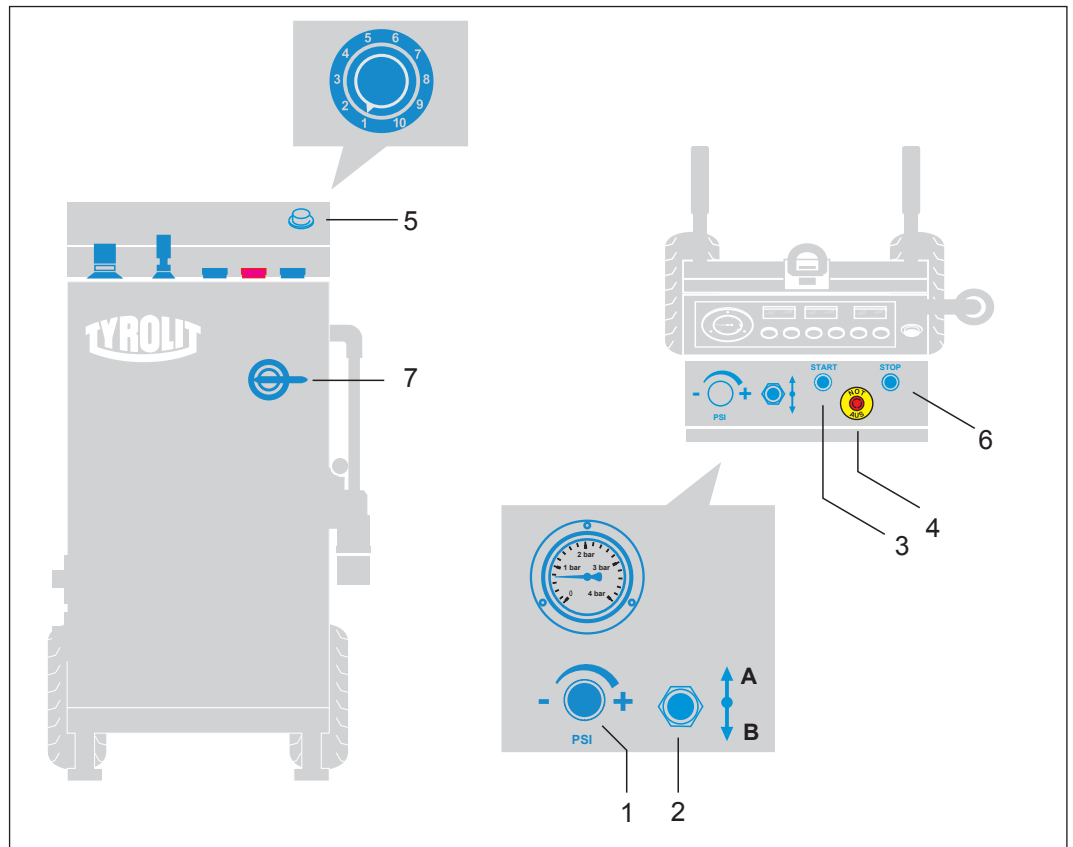
- | | |
|--|----------------------------|
| 1 Rotary valve compressed air (wire tension) | 5 Off push-button (red) |
| 2 Lever valve compressed air | 6 Potentiometer wire speed |
| 3 Start push-button (green) | 7 Main switch |
| 4 EMERGENCY STOP | |

4.4 Overview display elements



- | | |
|--------------------------------------|-----------------------------------|
| 1 Compressed air gauge | 8 Motor temperature Motor II |
| 2 LCD display motor current Motor I | 9 Motor fault lamp Motor II |
| 3 LCD display motor current Motor II | 10 Max. cylinder stroke lamp |
| 4 LCD display wire speed | 11 Not assigned |
| 5 Hour counter | 12 Lamp green (start push-button) |
| 6 Motor temperature Motor I | 13 Lamp red (off push-button) |
| 7 Motor fault lamp Motor I | |

4.5 Starting the wire saw



Proceed as follows:

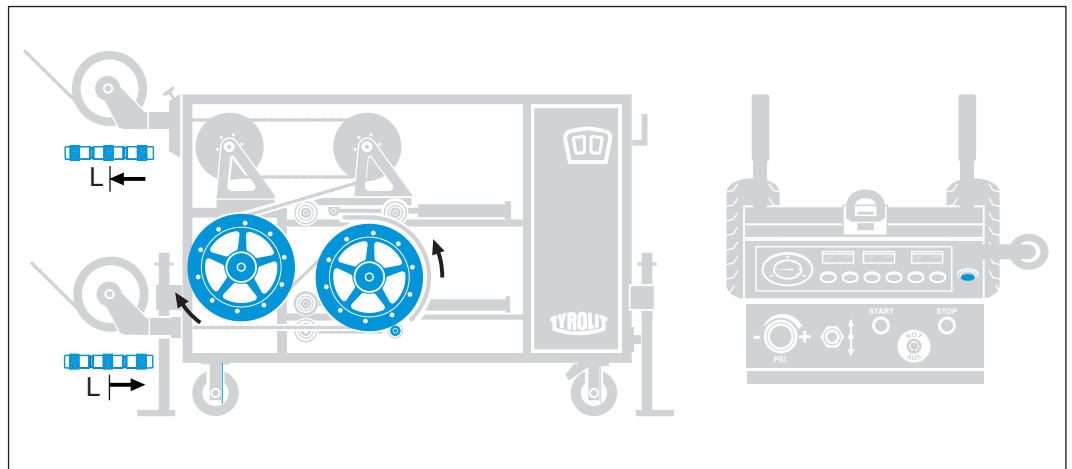
- ✓ Diamond wire is mounted
 - ✓ The control unit is connected to the mains and the water supply.
 - ✓ The wire saw is connected to the control unit.
 - ✓ The compressor is connected to the control unit.
 - ✓ The EMERGENCY OFF control unit is deactivated.
 - ✓ The pneumatic valve is in position B.
 - ✓ The pressure regulator is set to 1 bar.
 - ✓ The potentiometer is set to position 2.
- ▶ Press the start push-button (lamp lights up green).
 - ▶ Check the direction the saw wire is running while at a low wire speed. When the wire is turning in the correct direction, the wire will be drawn over the lower swivel roller.
 - ▶ Let the wire run at low speed for 1 to 2 minutes.
 - ▶ Once the wire is tensioned, it is possible to increase the wire speed to 20-22 m/s.
 - ▶ Increase the working pressure via the pneumatic valve until the display on the main motor indicates 25-35 A.



INFORMATION

The machine will cut automatically when the load and wire speed have been set to an optimum. The wire is taken up in the wire store until the stroke is completed and the machine is turned off automatically via the safety switch. This safety function prevents the wire tension dropping, the wire dropping out of the rollers and the machine becoming jammed due to a lack of attention.

4.6 Diamond wire drive



Cutting speed



INFORMATION

The cutting speed must be selected according to the nature of the material.

The recommended speeds in m/sec.

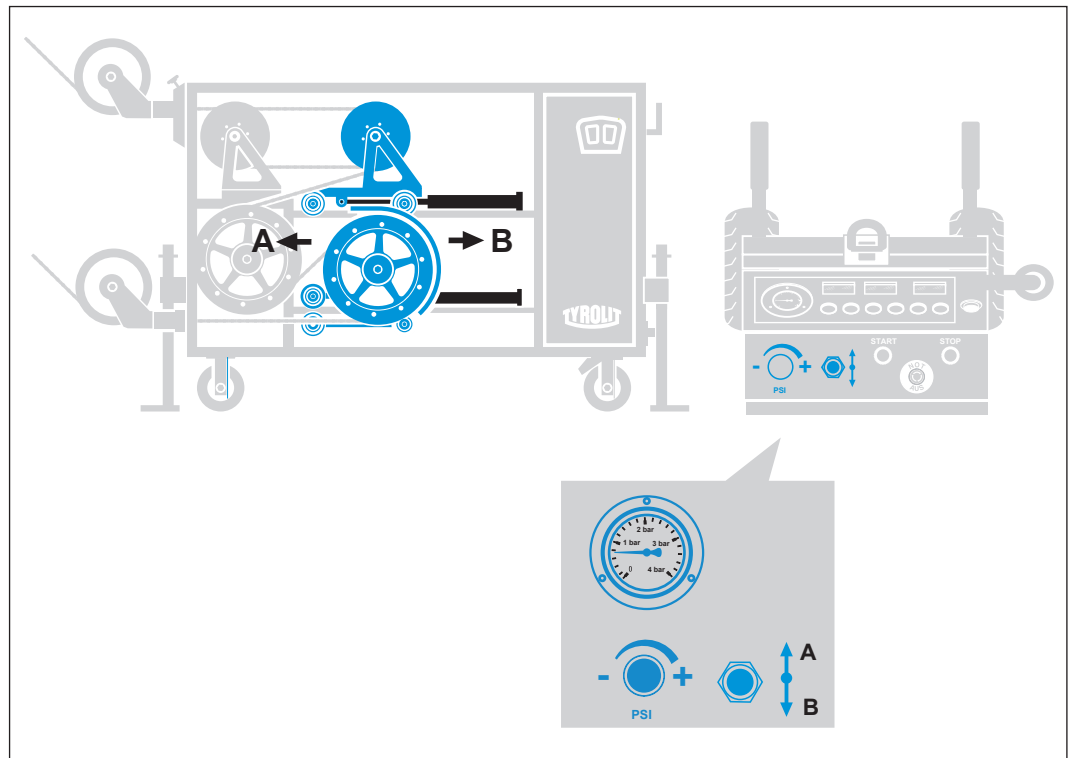
Granite, aged concrete with or without reinforcement 20-25 m/s

Abrasive materials, fresh concrete, asphalt, sandstone, etc. ~ 25 m/s

Wire lengths L

Storage level	min. [m]	max. [m]
0	5.1	8.5
1	6.9	12.1
2	8.7	15.7
3	10.5	19.3
4	12.3	22.9
5	14.1	26.5
6	15.9	30.1

4.7 Feed



Feed control



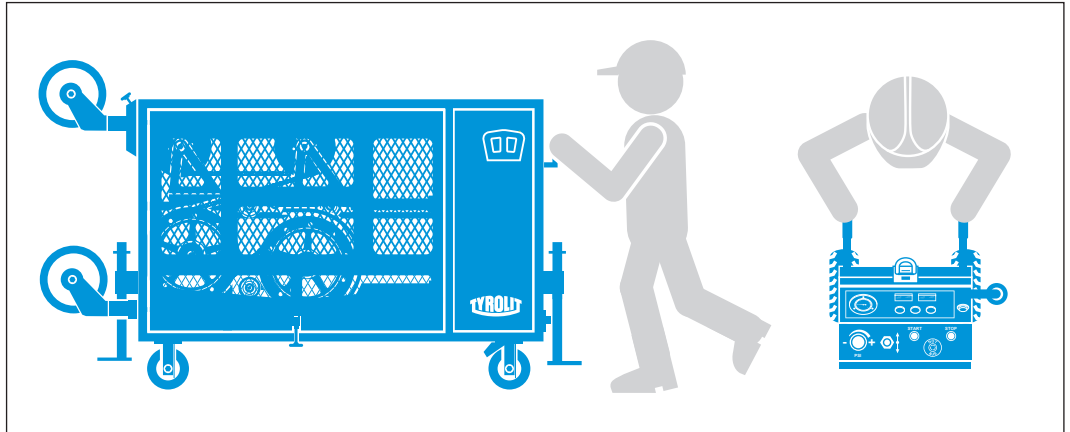
INFORMATION

The feed cylinder pressure (wire tension) is regulated by the “rotary switch compressed air”.

4.8 Transport



The wire saw and electric control unit are fitted with wheels, so they can be moved by just one person.



Crane transport

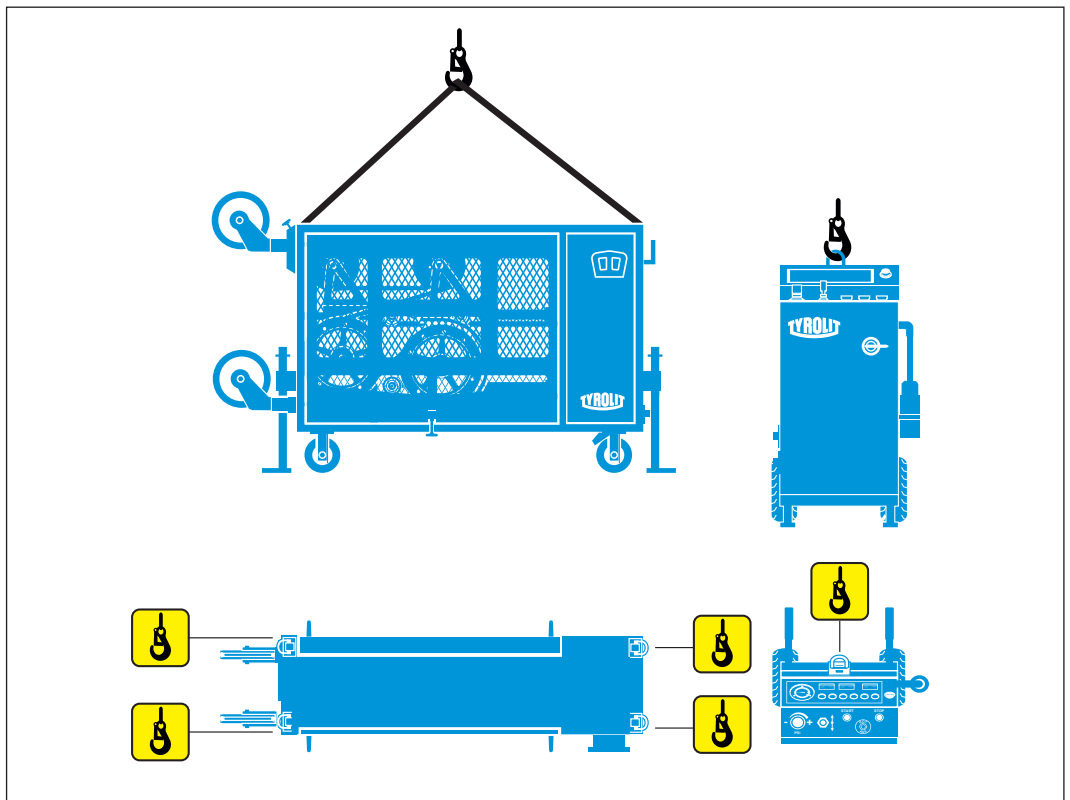


Danger

Risk of accidents if incorrectly transported by crane.

You must use the eyebolts provided to transport the feed unit.

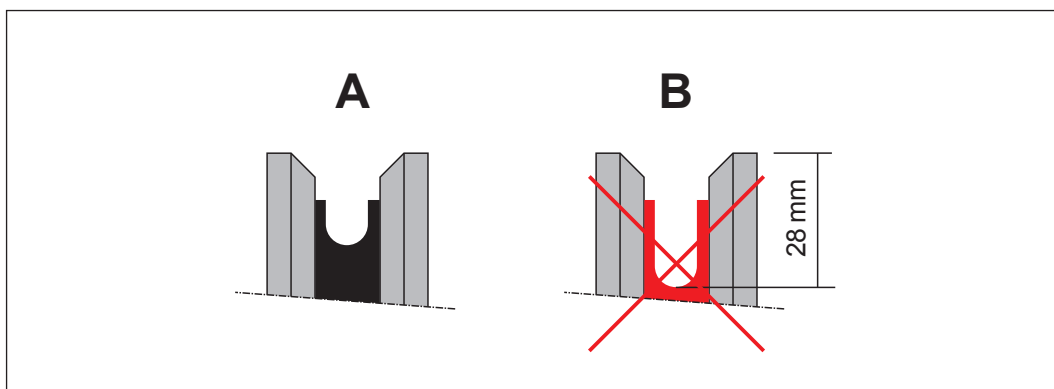
Use a conventional construction crane or mobile crane to transport the unit by crane.



5 Servicing and maintenance

Maintenance and servicing table							
		Before starting up	On finishing work	Weekly	Annually	If faults occur	If damage occurs
Wire saw	<ul style="list-style-type: none"> Tighten loose screws and nuts 			X		X	X
Guide rail	<ul style="list-style-type: none"> Clean guide bearing surface 		X			X	X
Drive and guide rollers	<ul style="list-style-type: none"> Check rollers for wear 	X	X			X	X
	<ul style="list-style-type: none"> Check bandages for wear 	X	X			X	X
	<ul style="list-style-type: none"> Check bearings 			X		X	X
	<ul style="list-style-type: none"> Clean 	X	X				X
Feed cylinder	<ul style="list-style-type: none"> Check for cleanliness / damage 	X	X			X	X
Drive motor	<ul style="list-style-type: none"> Check for cleanliness / damage 	X	X			X	X
Connectors, cables, couplings	<ul style="list-style-type: none"> Check for cleanliness / damage 	X	X			X	X
Water economy	<ul style="list-style-type: none"> Check the water pipes/hoses are clean and for leaks 	X				X	X
	<ul style="list-style-type: none"> Blowing out water 		X				
Diamond wire	<ul style="list-style-type: none"> Clean with water 		X				
	<ul style="list-style-type: none"> Check for wear 	X	X			X	X
Service	<ul style="list-style-type: none"> To be performed by TYROLIT Hydrostress AG or an authorized workshop 	After 100/300/500/700 hours					

5.1 Check bandages for wear

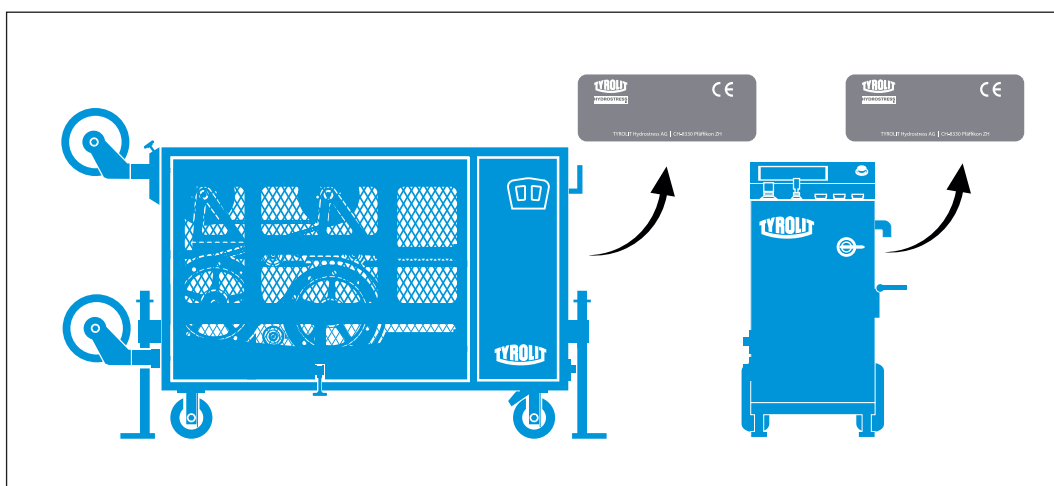


- A New bandage
B Worn bandage

5.2 Troubleshooting

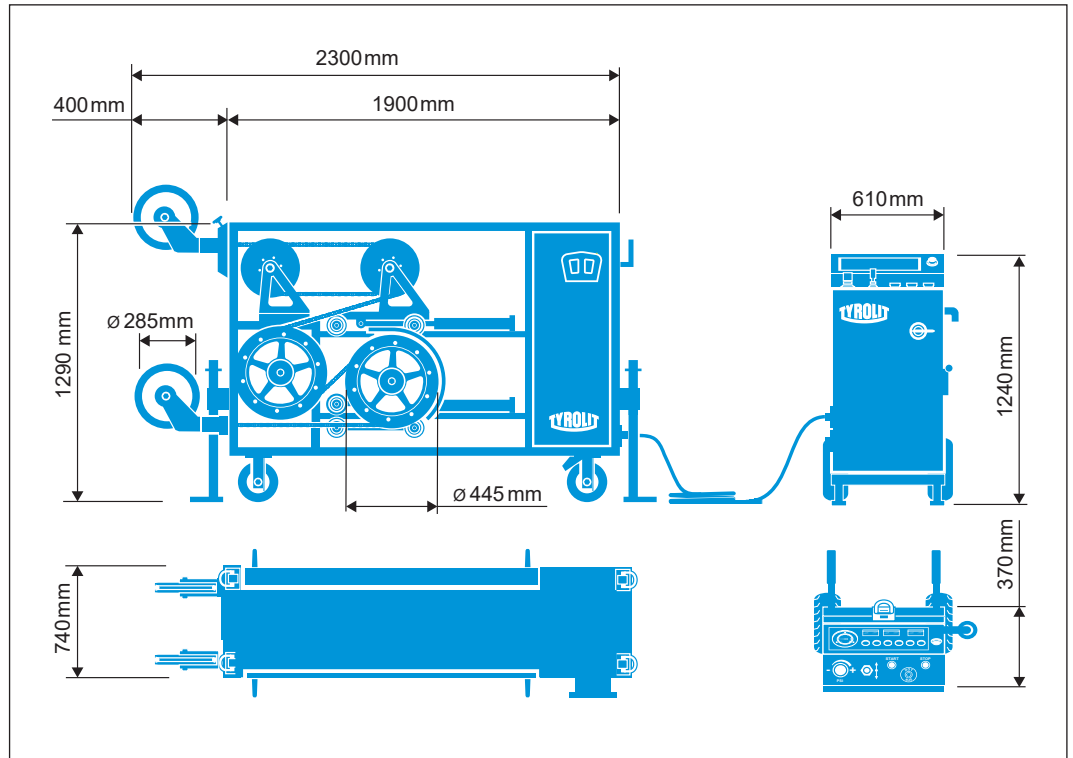
To guarantee fast and professional solution to the problem, it is important that you have the following information available when calling:

- 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 Weights

Electric controls	113kg
Wire saw	544kg

6.3 Water connection

Pressure	Min. 1.5 bar to max. 6 bar
Quantity	Min. 4 l/min
Temperature	Max. 2-25 °C

6.4 Electric controls

Electric controls	
Voltage	400V / 50-60Hz 3~
Power rating	43.6 kW
Current	63 A
Nominal speed	20000 U/min
Speed downstream of gear train	1200 U/min
Cooling	Water
Length of motor cable	12 m
Protection class	IP55

Recommended minimum cross-sections and maximum cable lengths			
Cross section mm ²	≤ 10	10.0	16.0
380 V - 420 V	Not permitted	60 m	100 m

6.5 Pneumatics

Feed cylinders	
Pressure	1.5 - 13.7 bar
Piston Ø	101.6mm
Stroke	762 mm
Compressor (not included in scope of supply)	
Pressure	8 bar
Tank	Min. 5 litre

6.6 Diamond wire lengths



The total diamond wire storage capacity of the WCE30 wire saw is 30.1 m.

Min. wire length	5.1 m
Working wire length	25,0 m
Total storage length L1 + L2	30.1m

6.7 Noise level data to ISO 3744



Hearing protection must be worn at all times when working with the WCE30 wire saw.



Parameter	Value WCE30
Workplace sound pressure level (LPA)	86 dB
Sound power level to ISO 3744 (LwA)	107 dB

7 EC Declaration of Conformity

Description Wire saw
Type designation WCE30

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

Applied directive

2006/42/EU from 17. May 2006
2012/19/EU from 04. July 2012

Applied standards

EN ISO 12100:2010
EN 15027:2007+A1:2009

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