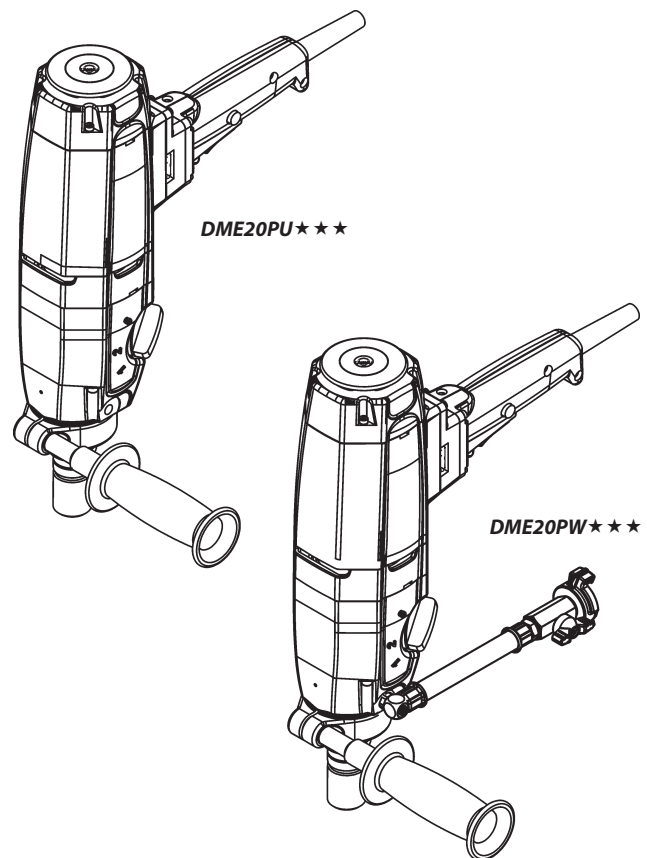


# Operating Instructions

---

**DME20PW\*\*\* / DME20PU\*\*\***

*Index 003*



## **Congratulations!**

With a Hydrostress unit from TYROLIT you have chosen a tried and tested piece of equipment designed and built to the highest technical standards. Only genuine TYROLIT Hydrostress replacement parts can guarantee quality and interchangeability. If maintenance work is neglected or carried out inexpertly we will be unable to honour our warranty obligations. Any repair work must be carried out by trained personnel only.

Our after-sales service is available to help ensure that 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

Copyright © TYROLIT Hydrostress

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

## Table of contents

	Page
1. Concerning these instructions .....	4
2. Safety .....	5
3. Product description.....	11
4. Design and Function.....	14
5. Assembly / Disassembly .....	16
6. Operation .....	18
7. Servicing and Maintenance .....	20
8. EC Declaration of Conformity .....	21

## 1. Concerning these instructions



These instructions are just one part of the documentation which is supplied together with the electric tool.

These instructions go together with the "Core Drills Safety Manual / System Description" to form a complete set of documentation.

These instructions, together with the "Core Drills Safety Manual / System Description", are a constituent 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**

Warning of danger, where failure to comply could lead to death or serious injury.



#### **WARNING**

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



#### **WARNING**

Warning - dangerous electrical voltage.

Before working in an area identified in this way, the installation or device must be fully disconnected from the power (voltage) and secured against being accidentally powered up again.



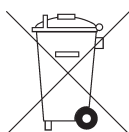
#### **INFORMATION**

Information for optimum use of equipment. Failure to take note of this information may mean that the performance information shown in the technical data can no longer be guaranteed.



#### **RECYCLING**

Take waste for recycling.



#### **DISPOSAL**

The normal national and regional rules and guidelines must be observed during disposal.

## 2. Safety



Core drilling systems may only be operated by authorised persons. Information about authorised persons can be found in the "Core Drills Safety Manual / System Description".

### 2.1 General safety precautions



#### **WARNING!**

**Read all safety precautions and instructions.** Failures in the compliance with these safety precautions and instructions can cause electric shock, fire and/or heavy injuries.

**Please keep these safety precautions and instructions for the future.**



The term "electric tool" used in the safety precautions corresponds to mains operated electric tools (with mains cord) and to battery operated electric tools (without mains cord).

#### 2.1.1 Security of employment

- **Keep your working area clean and well illuminated.** Disorder or unilluminated working areas can cause accidents.
- **Do not work in explosive ambiances with the electric tool, in which there are flammable liquid, gases or dusts.** Electric tools generate sparks which can inflame the dust or vapors.
- **Keep children and other persons away from the electric tool while using it.** When being distracted, you can lose the control on the device.

#### 2.1.2 Electrical safety

- **The mains plug of the electric tool must fit into the socket. The plug must not be changed in any kind. Do not use adapter plugs together with earthed electric tools.** Unmodified plugs and fitting sockets reduce the risk of electric shock.
- **Avoid body contact with earthed surfaces, like tubes, heatings, cookers and fridges.** There is a higher risk of electric shock when your body is earthed.
- **Keep your electric tool away from rain or wetness.** The infiltration of water into an electric tool increases the risk of an electric shock.
- **Do not divert the cord from its intended use from carrying or hanging up the electric tool, or for pulling the plugs from the socket. Keep the cord away from heat, oil, sharp edges or moving device parts.** Damaged or tangled cords increase the risk of an electric shock.
- **If you work outside with your electric tool, only use extension cords that are appropriate for outside use.** The use of a extension cord which is appropriate for outside use reduces the risk of an electric shock.
- **If the use of the electric tool in humid areas is inevitable, use a ground fault circuit interrupter (GFCI).** The use of a GFCI reduces the risk of an electric shock.

### 2.1.3 Personal safety

- **Be attentive, pay attention to what you do and go to work with the electric tool with reason. Do not use an electric tool when you are tired or under the influence of drugs, alcohol or pharmaceuticals.** One moment of carelessness while using an electric tool kann cause serious injuries..
- **Wear personal protective equipment and always goggles.** The wearing of personal protective equipment, like dust mask, skid-proof shoes, protection helmet or hearing protection, depending on the kind and use of the electric tool reduces the risk of injuries.
- **Avoid unintended start up. Make sure that the electric tool is switched off before connecting it to the mains and/or the battery, picking it up or carrying it.** When you have your finger on the switch while carrying the electric tool or connect the device to the mains when it is switched on, this can cause accidents.
- **Remove adjusting tools or wrenches before switching on the electric tool.** A tool or wrench which is located on a turning device can cause injuries.
- **Avoid abnormal posture. Care for safe standing and keep the balance anytime. Do not work on a ladder.** Thus you can control the electric tool better in unexpected situations.
- **Wear suitable clothing. Do not wear wide clothing or jewelry. Keep hair, clothing and gloves away from moving parts.** Wide clothing, jewelry or long hair can be caught by moving parts.
- **If there is the possibility to assemble a dust exhauster and collecting device, make sure that these are connected and used correctly.** The use of a dust exhauster can reduce dangers by dust.

### 2.1.4 Use and handling of the electric tool

- **Do not overload the device. Use the appropriate electric tool for your work.** With the appropriate electric tool you work better and saver in the declared range of performance.
- **Do not use an electric tool whose switch is damaged.** An electric tool which can not be switched on and off is dangerous and has to be repaired.
- **Unplug the plug from the socket and/or remove the battery before carrying out instrument settings, exchanging accessories or put the device aside.** This safety measure avoids the unintended start of the electric tool.
- **Keep unused electric tools out of reach of children. Do not allow persons to use the device who are not familiar with it or have not read these instructions.** Electric tools are dangerous if they are used by inexperienced persons.
- **Maintain electric tools with care. Check if movable parts function correctly and do not jam, if parts are broken or damaged in that way, that the function of the electric tool affected. Have damaged parts repaired before using the device.** Many accidents originate from bad maintained electric tools.
- **Keep the cutting tool sharp and clean.** Carefully maintained cutting tools with sharp edges do jam less and are easier to guide.
- **Use electric tool, accessory, operation tools, etc. according to these instructions. Thereby consider the conditions of employment and the work to be done.** The use of electric tools for others than the intended task can result in dangerous situations.

### 2.1.5 Service

- **Have your tool only repaired by qualified personnel and only with original spare parts.** Thus it is assured that the safety of the electric tool is being obtained.

### 2.1.6 Safety precautions for drilling machines

- **Wear hearing protection while using drilling machines.** The effect of noise can cause hearing loss.
- **Use the additional handles that are supplied with the device.** The loss of control on the machine can cause injuries.
- **While drilling keep a sufficient big distance to the drill bit and do not touch rotating parts. Protect the danger zone and keep children and other persons away from it.** Falling or catapulted parts can cause injuries.

## 2.2 Protective devices and signs on the equipment

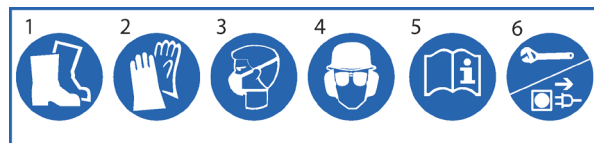
### Protective devices

Protective devices may only be removed if the equipment has been switched off, disconnected from the mains and is at a standstill. Safety components in particular should only be removed and refitted by authorised personnel.

Before switching the equipment back on again, check that the safety elements are operating correctly.

### 2.2.1 Signs on the equipment

#### Safety sign



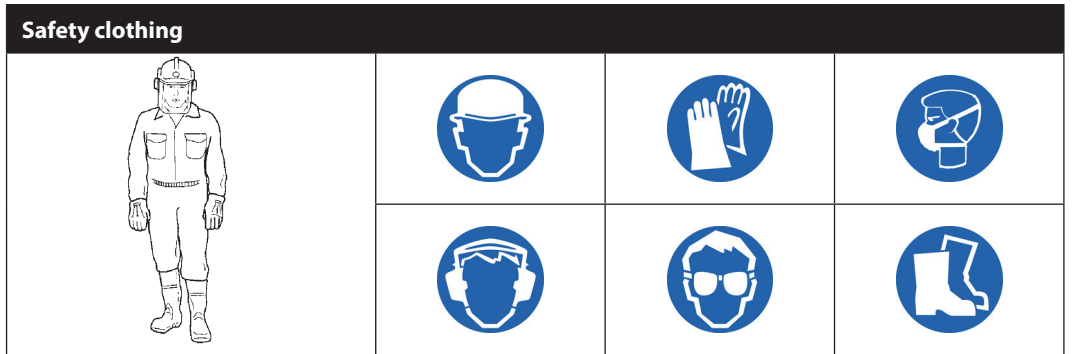
- |   |                   |   |   |   |  |
|---|-------------------|---|---|---|--|
| 1 | Wear safety shoes | 3 | Wear a breathing mask                         | 5 | Read the instructions                        |
| 2 | Wear gloves       | 4 | Wear a helmet, goggles and hearing protection | 6 | Before working on the equipment unplug mains |

#### Name plate

<b>TYROLIT</b>	<b>DME20PW★★★</b>				<b>CE</b>
HYDROSTRESS	2000W	13A			
	50-60Hz	230V 1~	RPM		
CH-8330 Pfäffikon ZH			Ø max.		

**2.2.2 Safety clothing**

Anyone working with and on core drilling systems is strictly required to wear individual protective equipment.



Safety clothing

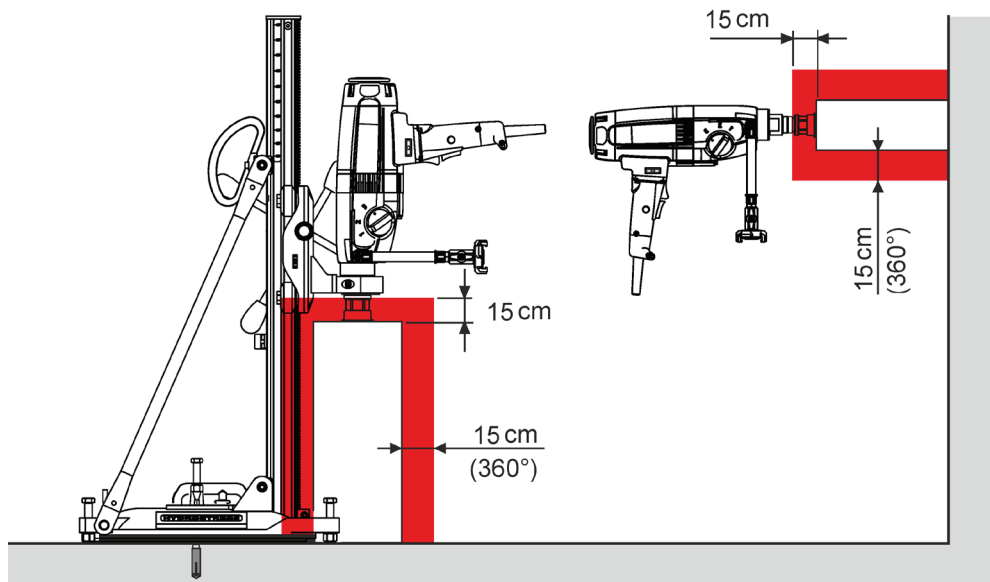
**2.3 Spare parts and modifications**

Only original spare parts from TYROLIT Hydrostress must be used. Otherwise damage may be caused to the equipment or to other property and persons. No additions or modifications must be made to the equipment without written permission from TYROLIT Hydrostress.

**2.4 Danger and working area**

**2.4.1 Danger zone at electrical tool**

The marked area on the drawing defines the danger zone of the electrical and cutting tool. The minimum clearance of 15 cm must be maintained during operation.



Danger zone at electrical tool

**2.3.2 Danger zone at workplace**



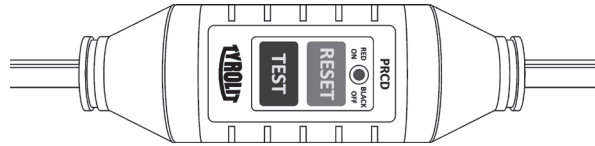
Information about the danger zone at the workplace can be found in the “Core Drills Safety Manual / System Manual”.



## 2.5 Product-specific dangers

### 2.5.1 Personal protection device (PRDC, GFCI)

Only ever work if a serviceable current-operated personal protection device is present (PRCD, GFCI).



Personal protection device



#### **DANGER**

Failure to comply will result in a risk of death or serious injuries

- ▶ Keep your electrical tool away from rain and moisture. Water penetrating an electrical tool increases the risk of electric shocks.

### 2.5.2 Overhead drilling

- ▶ Overhead drilling is not permitted in wet conditions.

## 2.6 Residual risks

Risk of serious injuries from the residual risks described in the chapters that follow.

### 2.6.1 Diamond segments flying off

- ▶ Do not start drilling if any other persons are in the danger zone.
- ▶ Ensure that a safety distance is maintained.
- ▶ Replace the diamond drill bit if diamond segments start to break off.

### 2.6.2 Uncontrolled movements and vibration

- ▶ Never connect or disconnect cables during operation.
- ▶ Always hold portable drilling machine by the handles with both hands during operation. Thumbs and fingers must be closed around the handles.
- ▶ Keep handles clean.

### 2.6.3 Vibration

Vibration can cause circulation problems and/or nerve damage.

- ▶ Consult a doctor in the event of symptoms.

### 2.6.4 Catching and winding in

Items of clothing or long hair can be caught by the rotating cutting tool.

- ▶ Do not wear loose items of clothing at work.
- ▶ Wear a hair net if you have long hair.

### 2.6.5 Damaging vapours and aerosols

Inhaling damaging vapours and/or aerosols can cause breathing problems. Breathing in the water fog that is created is a health hazard.

- ▶ Wear a breathing mask.
- ▶ Provide adequate ventilation in confined spaces.

### 2.6.6 Physical condition

- ▶ Do not work whilst under the influence of alcohol, drugs or medication.
- ▶ Do not work when you are overtired.

### 2.6.7 Cutting tool quality

- ▶ Do not use damaged cutting tools.
- ▶ Check cutting tool for damage before installation.

### 2.6.8 Risk of cutting tool restart in the event of an accident

- ▶ Ensure that the electrical equipment can be stopped quickly.

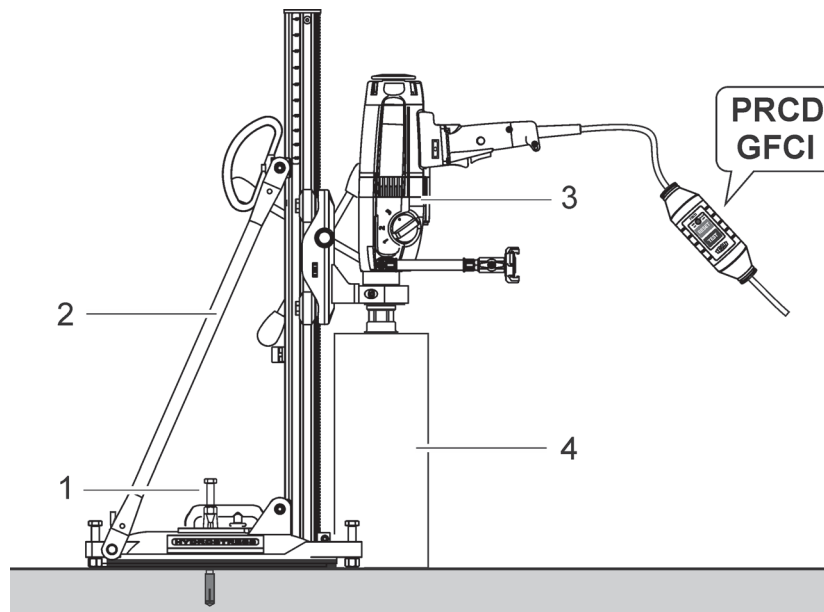


#### **DANGER**

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 "Core Drills Safety Manual / System Description" has been read and understood in full.

### 3. Product description



Core drilling system

- |                      |                   |
|----------------------|-------------------|
| 1 Fastening elements | 3 Electrical tool |
| 2 Drill rig          | 4 Cutting tool    |

#### 3.1 Core drilling system

This electrical tool forms a core drilling system in conjunction with suitable TYROLIT Hydrostress components.

#### 3.2 Use for correct purpose

The DME 20PW and DME 20PU★★★ electrical tools are intended for stand-controlled and manually controlled drilling into mineral subsurfaces using diamond drill bits. During stand-controlled operation a suitable drilling stand must be used and sufficient anchoring to the subsurface provided using dowels, a vacuum plate or a quick clamping support. Manipulation or modifications to the equipment, the drilling stand or the accessories are not permitted. Always use original TYROLIT Hydrostress accessories and suitable tools during use in order to prevent injuries.

#### 3.3 Scope of supply

- Drill motor
- Transport case
- WAF32 / WAF22 tool wrenches
- Water line adapter

### 3.4 Technical data and main dimensions

#### 3.4.1 Technical data

Drill motors	DME20PW★★★		DME20PU★★★	
Nominal voltage	230 V	110 V	230 V	110 V
Frequency	50 Hz	60 Hz	50 Hz	60 Hz
Drill diameter range	15 - 180 mm			
Nominal power	2.0 kW			
Nominal current	9.5 A	18 A	9.5 A	18 A
On-load speed	520/1250/2700 rpm			
Idle speed	1010/2400/5200 rpm			
Engine cooling	Air			
Tool fitting (external)	1¼" UNC			
Tool fitting (internal)	G ½"			
Operation	Manually controlled / drill rig-controlled			
Application	Wet		Wet / dry	
Electronic overload protection	Yes			
Mechanical overload protection	Yes			
PRCD protective switch	Yes			
Power display	Yes			
Service indicator	Yes			
Drill stand holder	Clamping collar 60 mm			
Weight	7.2 kg		7.4 kg	

#### Noise emission and vibration

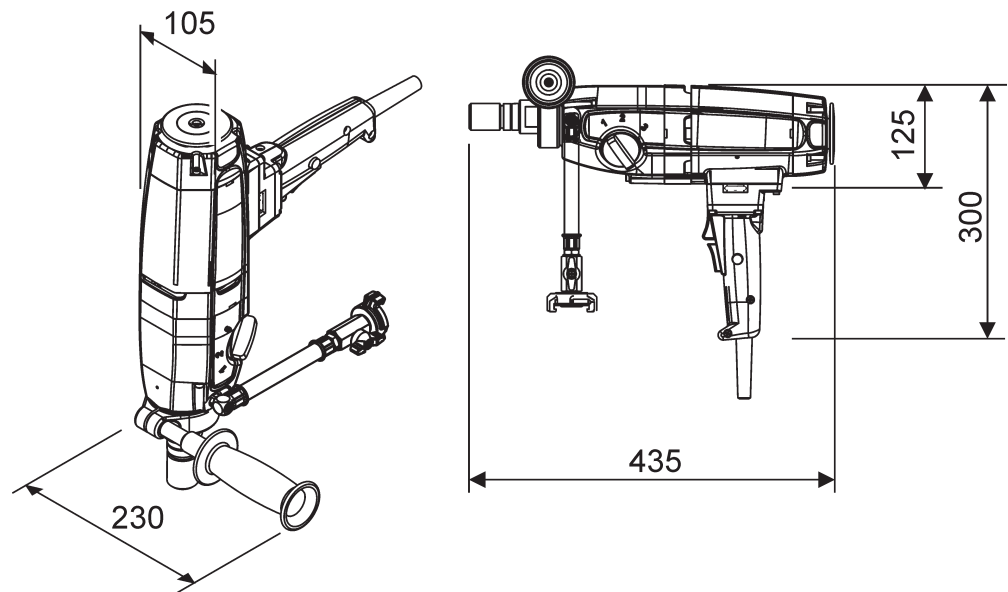
Noise data according to ISO 3744	
Parameter	Value
Sound pressure level $L_{pA}$	78.1 dB (A) *
Maximum sound pressure level $L_{pCpeak}$	107.5 dB (A)
Sound power level $L_{WA}$	98.1 dB (A) *

Conditions for the measurement:

\* Without cutting tool Ø100 mm in operation

Vibration (EN ISO 5349)	
Parameter	Value
Total vibration value $a_{hv}$	< 2.5 m/s <sup>2</sup>

### 3.4.2 Measurements



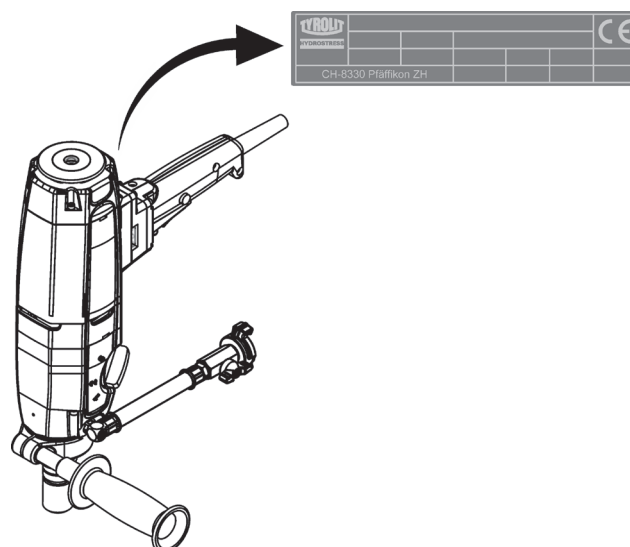
Measurements in mm

### 3.7 Lubricants, fluids

Lubricants, fluids and sealants	
Parameter	Value
Gear oil	ISO 100 (TYROLIT No. 10996358/350ml)

### 3.8 Name plate

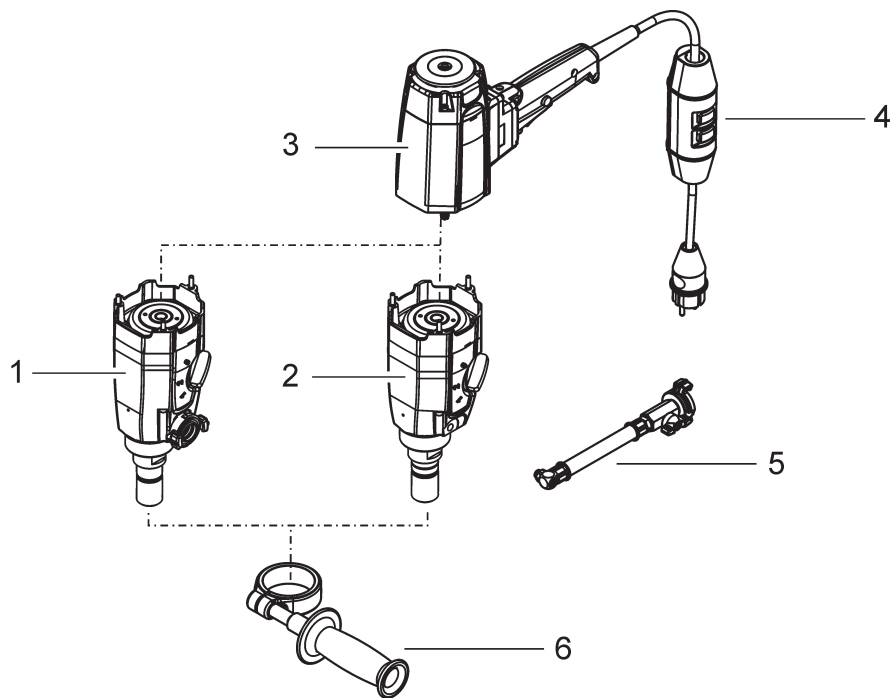
The type designation and serial number are marked on the name plate of your electrical tool.



Name plate

## 4. Design and function

### 4.1 Design



#### Design

- |                       |                                    |
|-----------------------|------------------------------------|
| 1 Gearbox DME20PU ★★★ | 4 Residual current circuit breaker |
| 2 Gearbox DME20PW ★★★ | 5 Water connection                 |
| 3 Motor               | 6 Handle                           |

### 4.2 Function

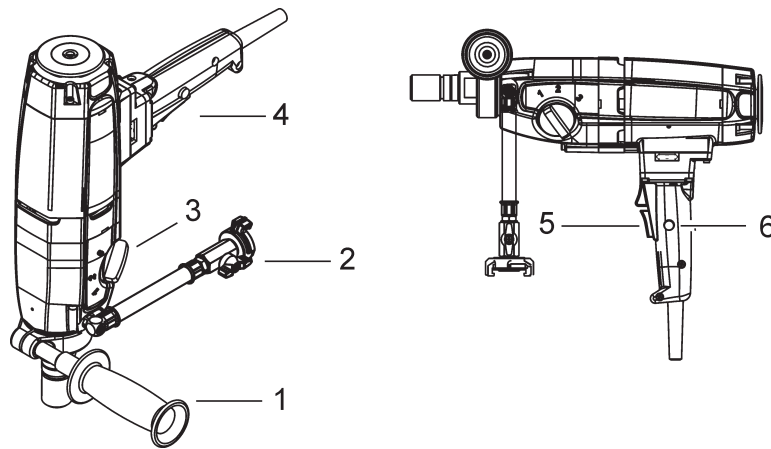
#### 4.2.1 Functional description

The drilling spindle of the electrical tool is powered by an electric motor via a mechanical manual gearbox. The optimum speed of the cutting tool is set using the gears of the gearbox. The electric motor is air-cooled.

Working with the electrical tool is protected by a current-operated personal protection device (PRDC, GFCI).

### 4.3 Operating elements and displays

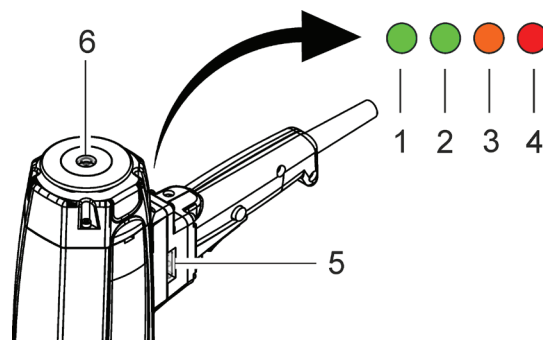
#### 4.3.1 Controls



Operating elements

- |                                  |                    |
|----------------------------------|--------------------|
| 1 Handle                         | 4 Operating handle |
| 2 Main water valve On/Off switch | 5 Start switch     |
| 3 Rotary switch / gear           | 6 Locking button   |

#### 4.3.2 Displays



Displays

- |              |                |
|--------------|----------------|
| 1 Green LED  | 4 Red LED      |
| 2 Green LED  | 5 Level        |
| 3 Orange LED | 6 Spirit level |

#### Power display when at standstill

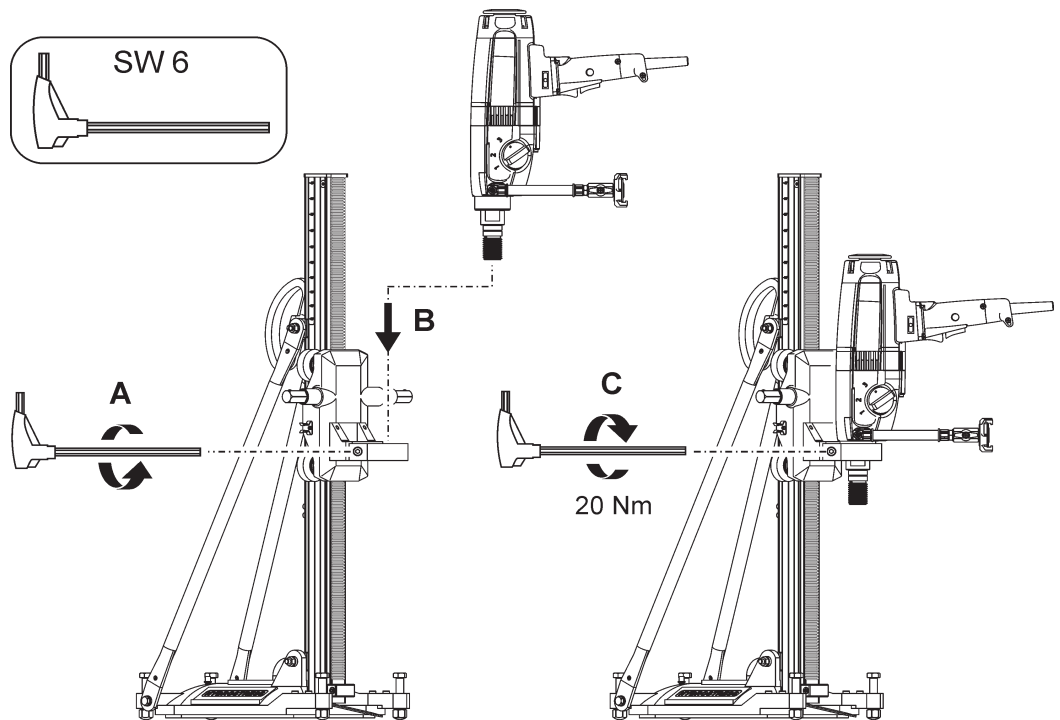
LED 1 illuminates in green	Electrical tool is ready
LED 3 flashes in orange	Electrical tool requires service

#### Power display during operation

LED 1/2 illuminates in green	Motor operating in optimum power range
LED 3 illuminates in orange	Motor operating at power limit
LED 4 illuminates in red	Motor running at overload and will shut off after 3 seconds

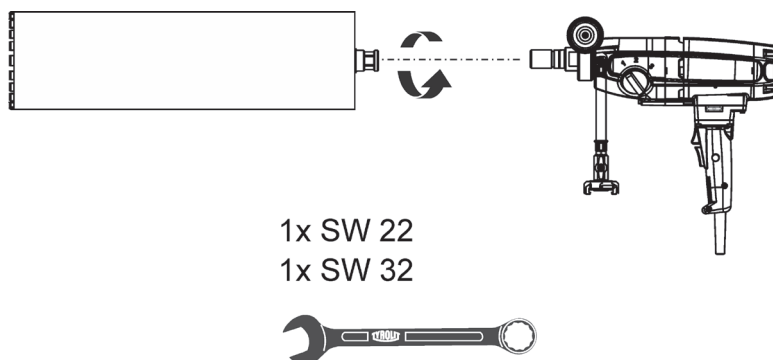
## 5. Assembly / Disassembly

### 5.1 Drill rig interface



Drill rig interface

### 5.2 Cutting tool interface



Cutting tool interface



### 5.3 Power supply



#### INFORMATION

- The power supply must correspond with the information on the type plate.
- Protect the connecting cables from heat, oil and sharp edges.
- Do not use connecting cables for unsuitable purposes.
- Never carry the electrical tool using the connecting cable.
- Do not use the connecting cable to pull the plug out of the socket.
- In the event of power failure: switch of electrical tool, pull out the plug.

#### Extension cable



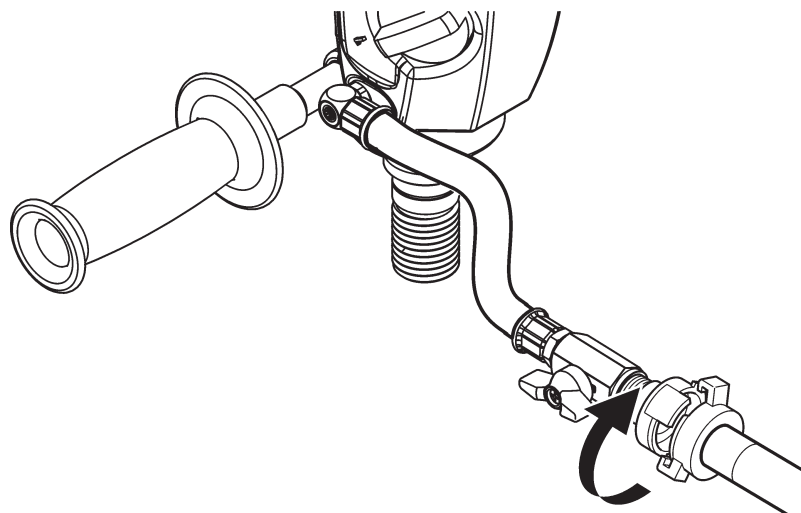
- Only use approved and appropriately marked extension cables outdoors.
- Extension cables with multiple sockets and simultaneous use of multiple devices must be avoided.

Always use an extension cable that is approved for the usage area with a sufficient cross-section.

Do not use an extension cable with a conductor cross section of 1.25mm<sup>2</sup> and 16 AWG.

Recommended minimum cross-sections and maximum cable lengths					
Cross section mm <sup>2</sup>	1.5	2.0	2.5	3.5	4.0
110 V	not permitted	not permitted	not permitted	20 m	20 m
220 V-240 V	20 m	-	40 m	50 m	60 m

### 5.4 Water connection



Water connection

## 6. Operation



### DANGER

- Never work without suitable safety equipment.
- Always wear hearing protection.
- Remove adjusting and installation tools before switching the electrical tool on.
- Never work on ladders.
- Keep children away from the electrical tool and the working area.
- Avoid abnormal postures.
- Ensure that you have firm footing, and keep your balance at all times.
- Avoid body contact with earthed surfaces such as pipes, heaters, ovens and refrigerators.  
There is an increased risk of electric shock if your body is earthed.

### 6.1 Settings

#### 6.1.1 Gears

Position the selector switch in accordance with the required drilling diameter. Never use force to move the switch, and only move it if the electrical device is slowing down or stopped.

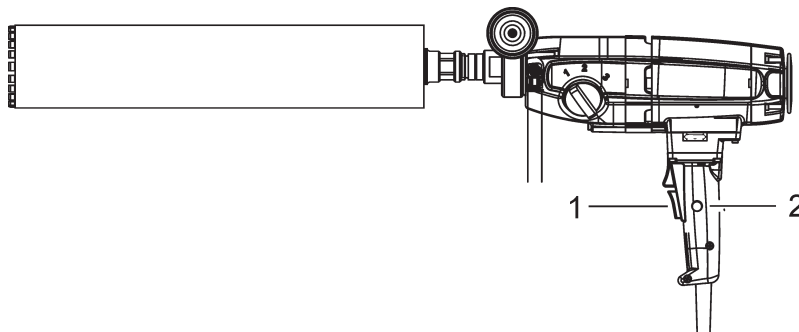
#### 6.1.2 Water supply

Ensure that water supply is provided.

### 6.2 Start / switch on electrical tool

- ✓ The electrical tool is correctly fitted to the drilling stand.
- ✓ The cutting tool is firmly screwed to the electrical tool.
- ✓ The electrical tool is correctly attached to the power supply.
- ✓ The power supply is monitored by the PRCD residual current circuit breaker.
- ✓ The water supply is attached, and the cutting tool is being supplied with water.

- ▶ Start motor using the On/Off switch.
- ▶ The switch position can be locked using the locking button.



Start the electric tool

- 1 Start switch
- 2 Locking button

## 6.3 Monitoring, checking

### 6.3.1 Residual current circuit breaker

- ▶ Switch on and check PRCD residual current circuit breaker

#### Checking procedure:

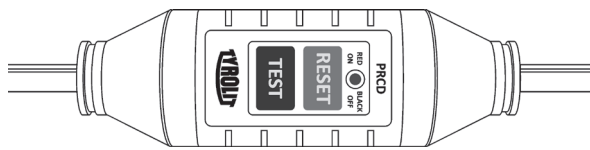
- ▶ Plug the electrical tool into a socket with an earth connection.
- ▶ Press the Reset button on the PRCD residual current circuit breaker (indicator must illuminate).
- ▶ Press the Test button on the PRCD residual current circuit breaker (indicator must go off).



#### DANGER

If the indicator does not go off, the device must not be used. The electrical tool must be repaired by qualified experts using original spare parts.

- ▶ Press the Reset button on the PRCD residual current circuit breaker (indicator must illuminate).



Residual current circuit breaker

## 6.4 Malfunctions

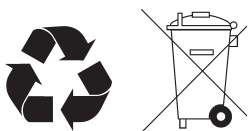
Malfunctions		
Malfunction	Possible cause	Remedy
The electrical tool cannot be started	Mains cable is defective	▶ Contact TYROLIT Hydrostress AG aftersales
	Faulty power supply	▶ Check power supply
	Electric motor or electronics faulty	▶ Contact TYROLIT Hydrostress AG aftersales
Electrical tool starts up and then switches off again	Fuse of building site power supply trips	▶ Fuse too weak, replace power supply
Motor running but drill bit not rotating	Gear speed selector	▶ Check position
	Defective gears	▶ Contact TYROLIT Hydrostress AG aftersales
Unable to fit cutting tool	Thread dirty	▶ Clean and grease thread
	Thread defective	▶ Contact TYROLIT Hydrostress AG aftersales
Water coming out of housing (relief drilling)	Shaft sealing ring defective	▶ Contact TYROLIT Hydrostress AG aftersales
Water coming out of housing (relief drilling)	Shaft sealing ring defective	▶ Contact TYROLIT Hydrostress AG aftersales
No water emerging	Water valve on feed line is closed	▶ Open water valve
	Water line is blocked	▶ Clean the water line
	Defective water valve	▶ Contact TYROLIT Hydrostress AG aftersales
	Insufficient water pressure	▶ Check water circuit

## 7. Servicing and maintenance

Unplug the equipment before carrying out maintenance or repair work.

Servicing and maintenance table		Before each use	At end of work	Weekly	Yearly	After faults	After damage
Drive motor	<ul style="list-style-type: none"> <li>▶ Tighten loose screws and nuts</li> <li>▶ Check cleanliness</li> </ul>	X				X	X
Drill bit thread	▶ Grease			X			
	<ul style="list-style-type: none"> <li>▶ Check for damage</li> <li>▶ Check cleanliness</li> </ul>	X	X			X	X
Drilling spindle	▶ Oil			X			
Cables, switches, plug-in devices	<ul style="list-style-type: none"> <li>▶ Check for damage</li> <li>▶ Check cleanliness</li> </ul>	X	X			X	X
Water economy	▶ Check the water line for cleanliness and leak-tightness.	X				X	X
	▶ Blow out water		X				
Service	▶ To be performed by TYROLIT Hydrostress AG or an authorised workshop.	After service indication (orange LED flashing) (Service interval 150 / 300 / 450 / 600 hours)					

### 7.1 Take waste for recycling



TYROLIT Hydrostress tools are manufactured using a high proportion of recyclable materials. A prerequisite for recycling is proper material separation. In many countries, TYROLIT is already prepared for taking back your used equipment for recycling. Contact TYROLIT customer service or your sales adviser.

## 8. EC Declaration of Conformity

Description	Electric drill motor
Type designation	DME20PW / DME20PU★★★
Year of construction	2012

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

### Applied directions

2006/42/EC	17.05.2006
2014/30/EU	26.02.2014
2012/19/EU	04.07.2012

### Applied standards

EN ISO 12100:2010  
 EN ISO 60745-1:2009  
 EN ISO 60745-2-1:2010  
 EN 55014-1/A1 :2009  
 EN 55014-2/A2 :2008  
 EN 61000-3-2/A2 :2009  
 EN ISO 61000-3-3:2008

**TYROLIT Hydrostress AG**  
 Witzbergstrasse 18  
 CH-8330 Pfäffikon  
 Switzerland

Pfäffikon, 02.03.2016



Pascal Schmid  
 Development Manager

