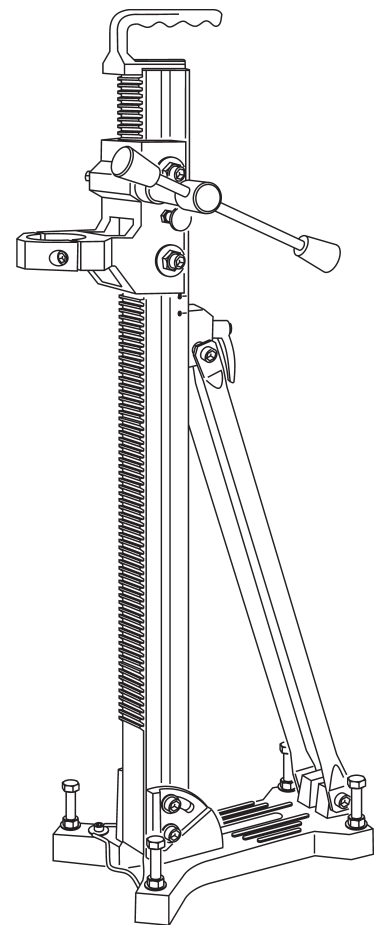


Operating Instructions

DRA150 ★★

Index 000



Congratulations!

You have decided to purchase a tried and tested TYROLIT Hydrostress appliance and have thus acquired a highly sophisticated and reliable state-of-the-art unit. 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. All 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

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1 Concerning these instructions

These instructions are a constituent of the unit. 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 Danger 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.



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.

2 Safety instructions

2.1 Please pay attention to the safety instructions

Do not work with the unit unless you have read and understood the safety instructions. The unit has been inspected before being shipped and is delivered in perfect condition. TYROLIT Hydrostress does not accept liability for damage caused by failing to follow these instructions. This applies in particular to the following damage:

- Damage caused by improper use and operator error
- Damage caused by failure to observe the safety-related information in these instructions or the warning signs on the unit
- Damage caused by substandard maintenance work

2.2 Use for correct purpose

The appliance is used by trained personnel for drilling holes in concrete, masonry and stone.

Incorrect use:

- Working without protective equipment or inadequate protective equipment
- Drilling other materials
- Removal of protective devices
- Drilling in potentially explosive areas
- Drilling loose parts
- Incorrect or absence of waste water disposal (drill sludge)

2.3 Target groups and responsibility

2.3.1 Authorised personnel

Work on or with machines or systems from TYROLIT Hydrostress may only be carried out by authorised persons. Personnel are considered to be authorised if they meet the necessary training and know-how requirements and they have been assigned an exact functional role.

2.3.2 Manufacturer

The following are considered to be manufacturers of products that are supplied by TYROLIT Hydrostress:

- TYROLIT Hydrostress
- A company explicitly nominated by TYROLIT Hydrostress

Within the context of an integrated quality assurance and safety control system, the manufacturer is entitled to request information about the products from the operator.

2.3.3 Operator

The operator named by TYROLIT Hydrostress is the primary, legal entity responsible for the correct use of the product and for the training and assignment of the authorised personnel. The operator sets out the skills and level of training of the authorised personnel.

Personnel qualifications

- A technically trained person in a management position
- Relevant experience in personnel management and risk assessment
- Has read and understood the safety instructions

2.3.4 Operator (user)

User is the term employed by TYROLIT Hydrostress to designate a person who independently performs the following work:

- Setting up the machines and systems of TYROLIT Hydrostress within the scope of correct purpose of use
- Independent performance and monitoring of work
- Localisation of faults and organisation of troubleshooting and independent fault remedying
- Servicing
- Testing the correct operation of safety equipment

Personnel qualifications

- Completed training as a concrete expert or relevant professional experience
- Introduction (basic training) to the operation of the unit by a service engineer

2.3.5 Service engineer

A service engineer is the term employed by TYROLIT Hydrostress to designate a person who independently performs the following work:

- Installs TYROLIT Hydrostress machines and systems
- Makes adjustments to machines and systems for which certain access rights are required
- Carries out complex service and repair work

Personnel qualifications

- Specialist professional training (mechanical / electrotechnical)
- Product-specific training at TYROLIT Hydrostress

2.4 Organisational measures

2.4.1 Product monitoring obligation

The unit may only be operated in perfect and undamaged condition. Operating personnel must notify changes in operational behaviour or safety-related components to a responsible person or the manufacturer, immediately.

The maintenance intervals must be adhered to. Faults that affect safety must be remedied immediately.

2.4.2 Location of these instructions

A copy of these instructions must be available to personnel at the place of use of the unit at all times.

2.4.3 Workplace

- ▶ Provide sufficient space to carry out work safely.
- ▶ Ensure that the workplace is sufficiently illuminated.
- ▶ Cordon off the danger area (chapter 2.6) in a clearly visible way so that no person can enter the danger area during drilling.

2.4.4 Protective devices

Protective devices may only be removed if the equipment has been switched off 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.

2.4.5 Spare parts and modifications

Only original spare parts from TYROLIT Hydrostress must be used. Otherwise damage may be caused to the unit or to other property and persons.

No additions or modifications must be made to the appliance without written permission from TYROLIT Hydrostress.

Safety clothing

Safety clothing			
			
			
			

2.5 Residual risks

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

2.5.1 Sharp edges

Risk of serious lacerations if the cutting tool is touched.

- ▶ Do not touch the cutting tool during operation.
- ▶ Always wear gloves when handling the stationary cutting tool.

2.5.2 Diamond segments flying off

- ▶ Do not start drilling if any other persons are in the danger zone (chapter 2.6).
- ▶ Ensure that a safety distance of 3 m is maintained from the drilling rig.
- ▶ Replace the drill bit if diamond segments start to break off.

2.5.3 Unintentional start-up

- ▶ Before starting up, please ensure that:
 - The on/off switch on the power tool is operating correctly.
 - There are no other persons in the danger zone.

2.5.4 Vibration

Vibration can cause circulation problems and/or nerve damage.

Consult a doctor in the event of symptoms.

Uncontrolled movements and vibration

- ▶ Always hold hand crank with both hands during operation. Thumbs and fingers must be closed around the handles.
- ▶ Keep handles of hand crank clean.
- ▶ Never stand on a ladder when drilling.

2.5.5 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.

2.5.6 Particles flying off

Flying particles can cause eye injuries.

- ▶ Wear safety goggles or a visor.
- ▶ Ensure that danger area (chapter 2.6) is properly safeguarded.

2.5.7 Falling parts

Falling parts can cause serious head and foot injuries.

- ▶ Wear helmet and safety shoes with steel toecaps.
- ▶ Drilling cores that have been cut loose must be secured against falling.
- ▶ Safeguard front, underneath and rear of drilling area from falling parts or sawing sludge. People must not be injured or equipment damaged.

2.5.8 Noise

Noise can damage the hearing.

- ▶ Wear hearing protection.

2.5.9 Hazardous vapours and aerosols

Inhaling hazardous 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.

2.5.10 Risk of slipping

- ▶ Do not work on uneven surfaces.
- ▶ Wear safety shoes with non-slip soles.
The sludge resulting from drilling is very slippery.
- ▶ Remove sludge or ensure that people cannot slip in it.

2.5.11 Risk of power tool restart in the event of an accident

- ▶ Ensure that the power tool can be stopped quickly.

2.5.12 Physical condition

- ▶ Do not work whilst under the influence of alcohol, drugs or medication.
- ▶ Do not work when you are overtired.
- ▶ Do not allow children or adolescents under the age of 18 to operate the appliance. Adolescents aged 16 and over are excepted from this ban if they are under the supervision of an expert for training purposes.

2.5.13 Damaged cutting tools

- ▶ Do not use damaged cutting tools.
- ▶ Check cutting tool for damage before installation.
- ▶ Do not equip cutting tool with new diamond segments.

2.5.14 Transport

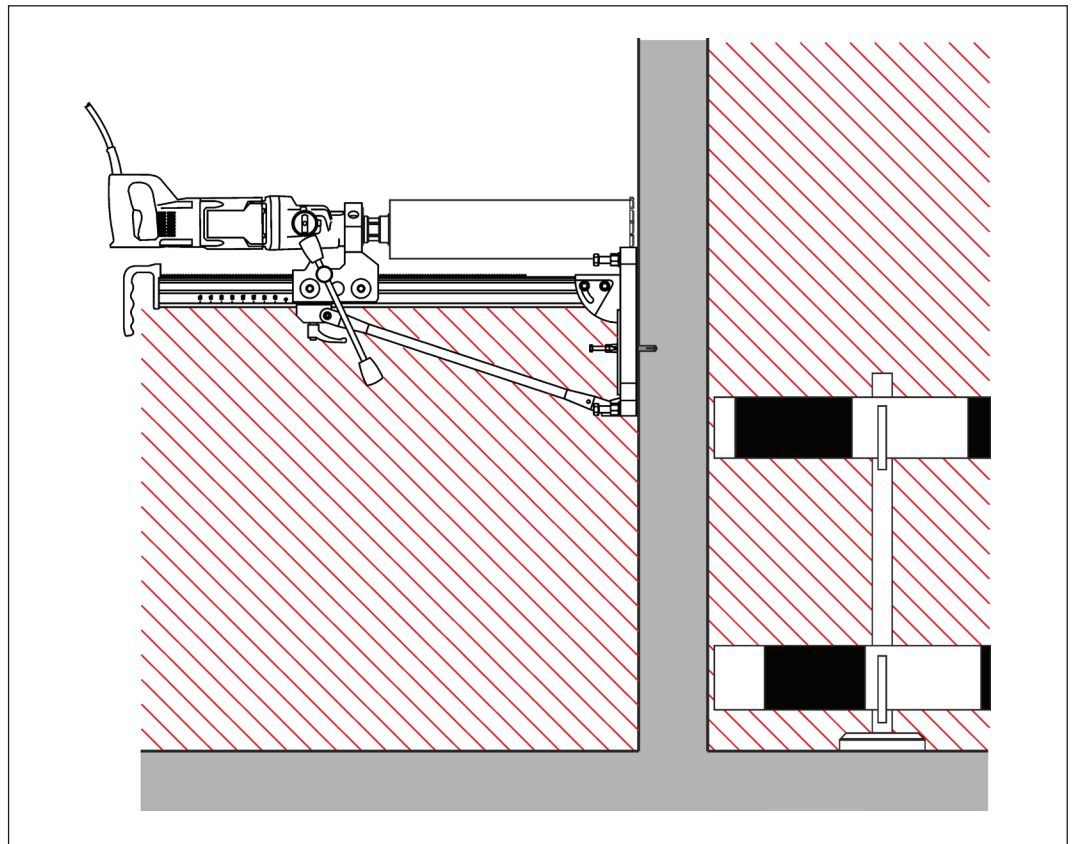
- ▶ Never transport the appliance whilst the power tool is operating!
- ▶ Always carry appliance with the bow-type handle.

2.6 Danger areas



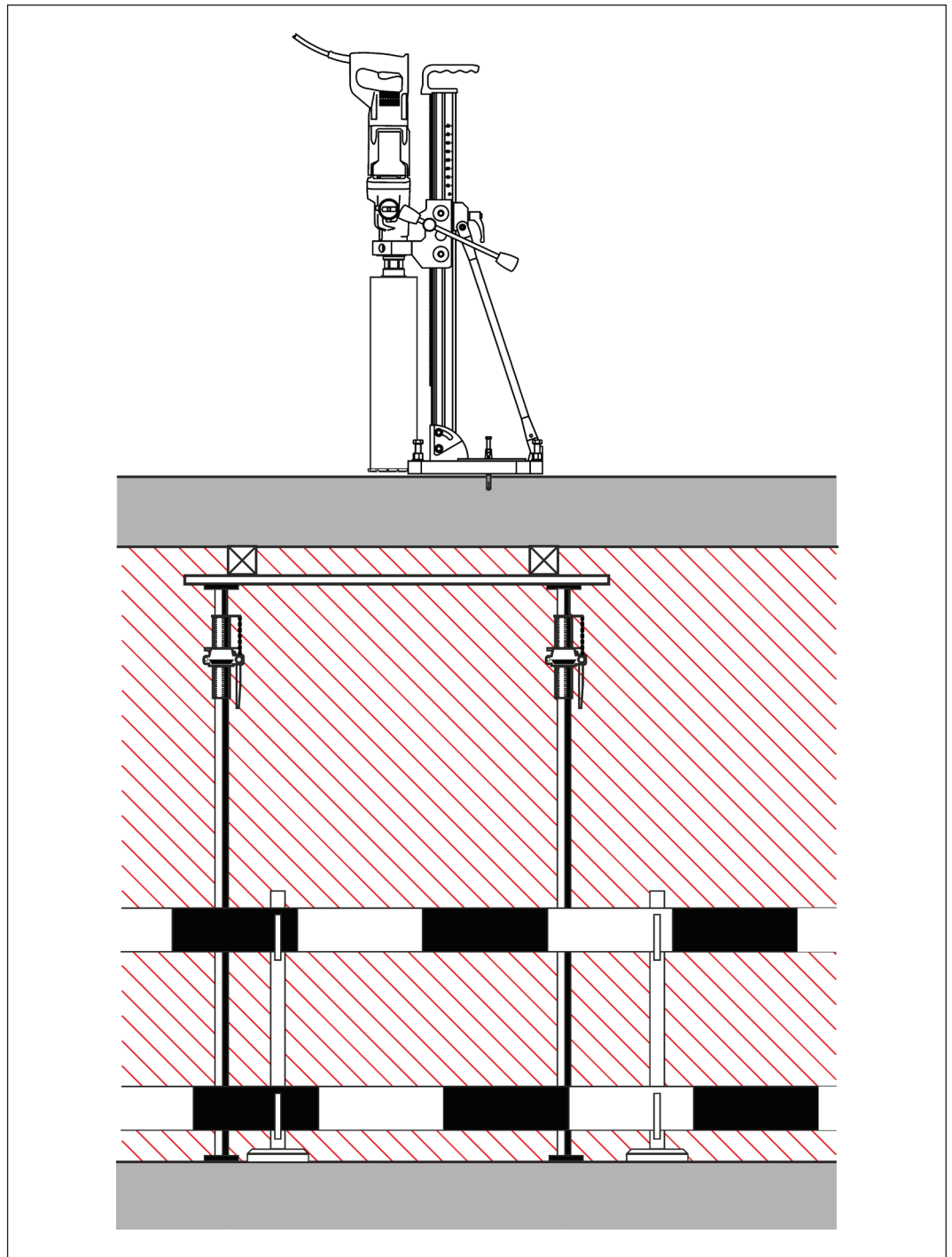
Clearly cordon off the danger area so that no person can enter the danger area during drilling.

2.6.1 Danger areas when drilling walls



Danger areas when drilling walls

2.6.2 Danger area when drilling floors and ceilings



Danger area when drilling floors and ceilings

2.7 Risk of property damage

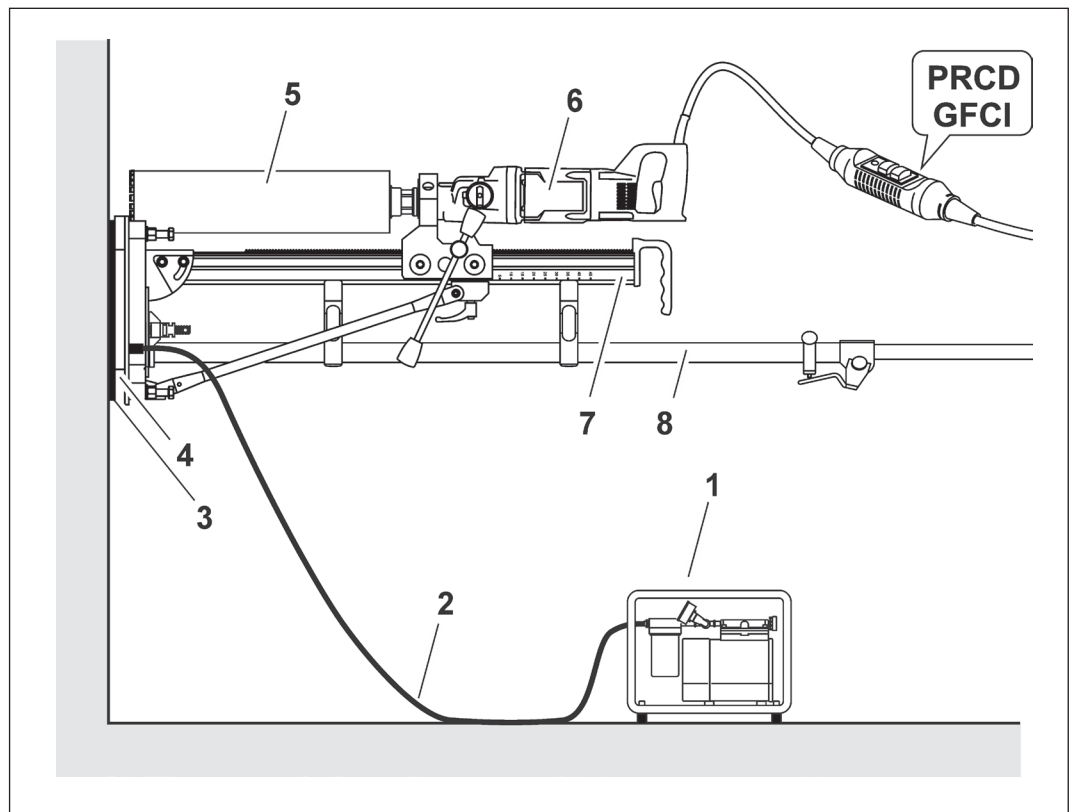
2.7.1 Storage

- ▶ Store the appliance securely in a dry room.
- ▶ The appliance must not be kept outdoors.
- ▶ Keep children away from the appliance.

3 Description

3.1 Core drilling system

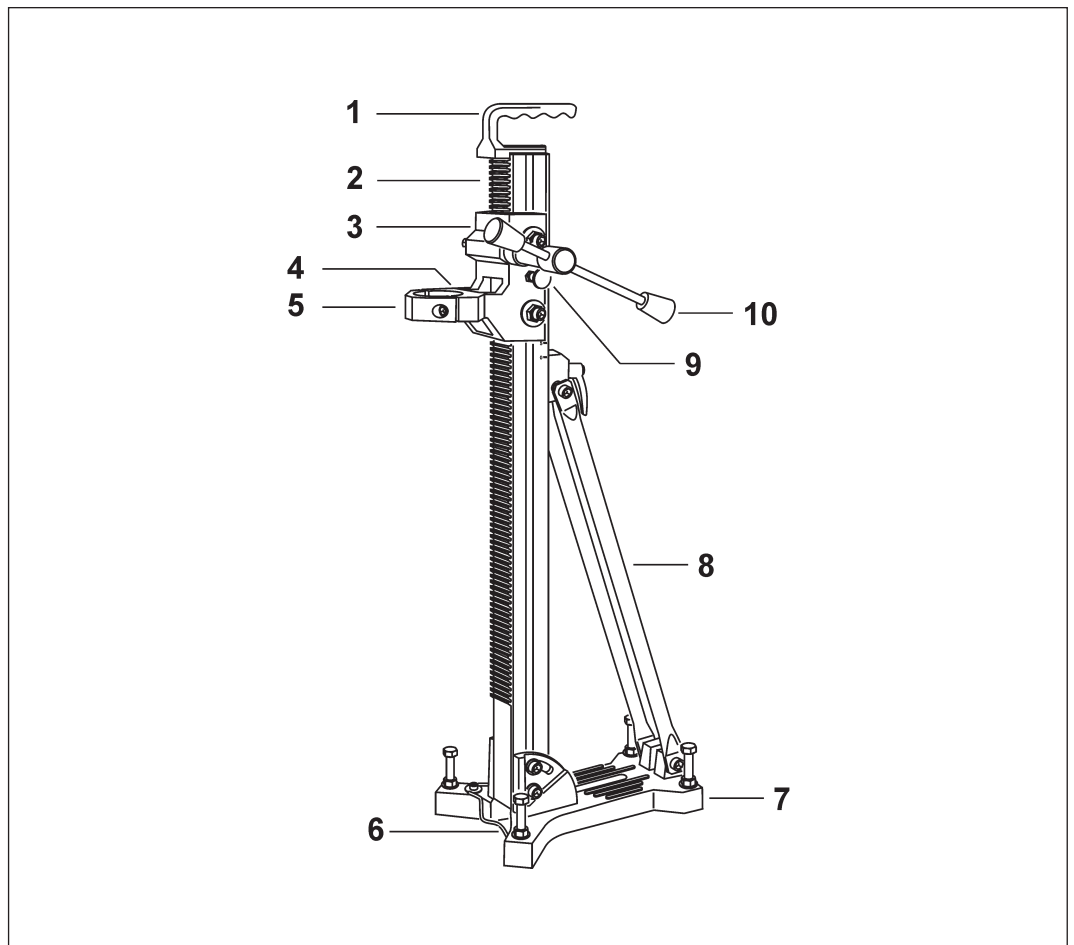
The DRA150★★ drill rig is part of core drill systems comprising the appropriate TYROLIT Hydrostress components.



Core drilling system

- | | |
|----------------|--------------------------------|
| 1 Vacuum pump | 5 Cutting tool |
| 2 Vacuum hose | 6 Electrical tool |
| 3 Vacuum seal | 7 Drill rig |
| 4 Vacuum plate | 8 Quick-change clamping column |

3.2 Main components of the DRA150★★

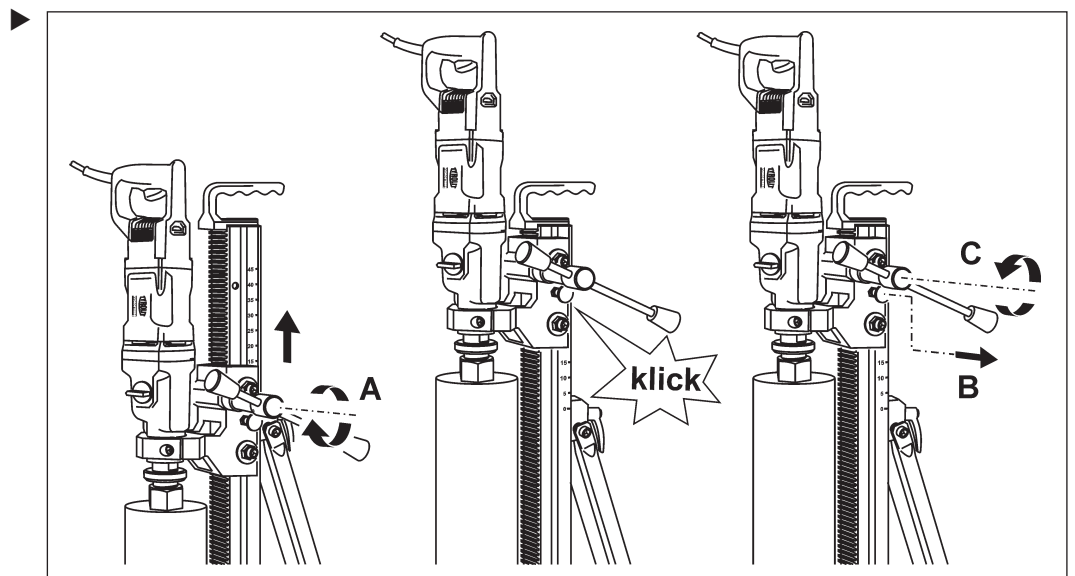


Main components of the DRA150★★

- | | |
|-------------------|--------------------|
| 1 Grip | 6 Centre indicator |
| 2 Guide rail | 7 Dowel foot |
| 3 Support | 8 Support rod |
| 4 Spirit levels | 9 Locking device |
| 5 Clamping collar | 10 Hand crank |

4 Assembly

4.1 Locking the support

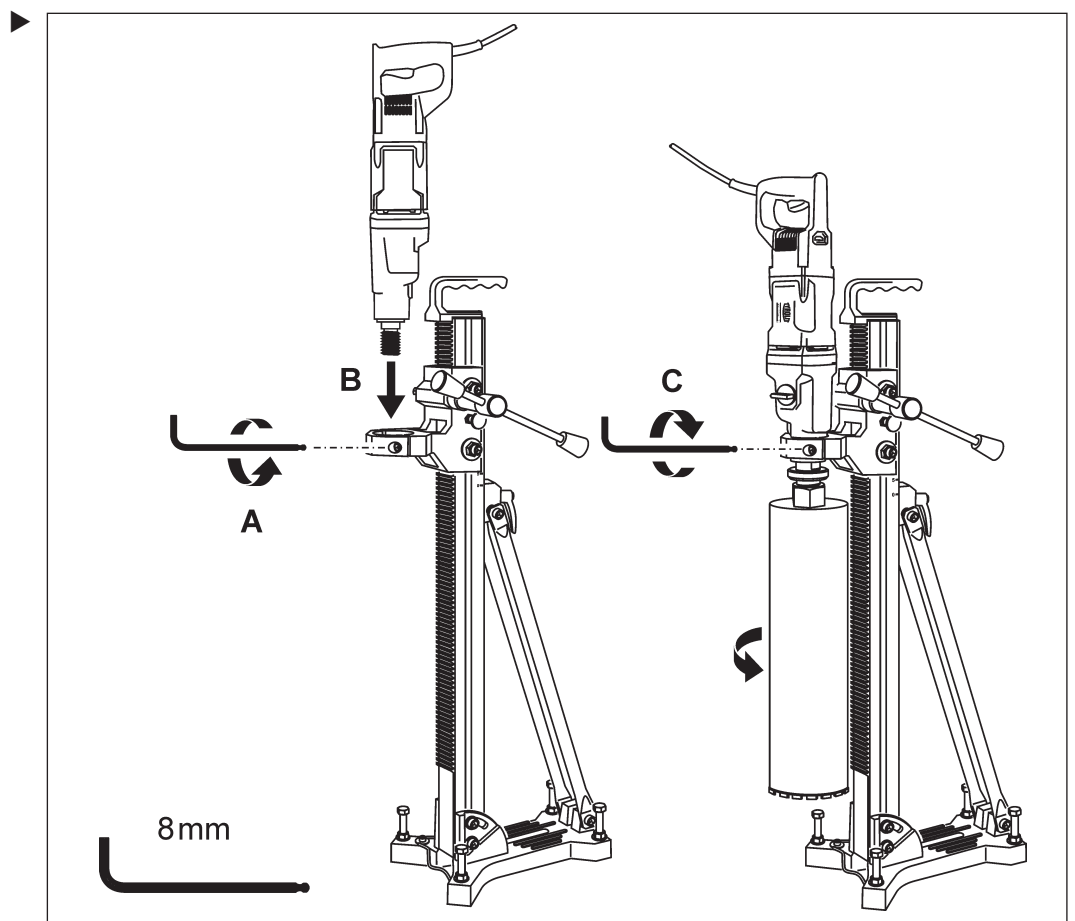


Locking the support

4.2 Power tool interface



Lock the support (chapter 4.1) before securing the power tool.

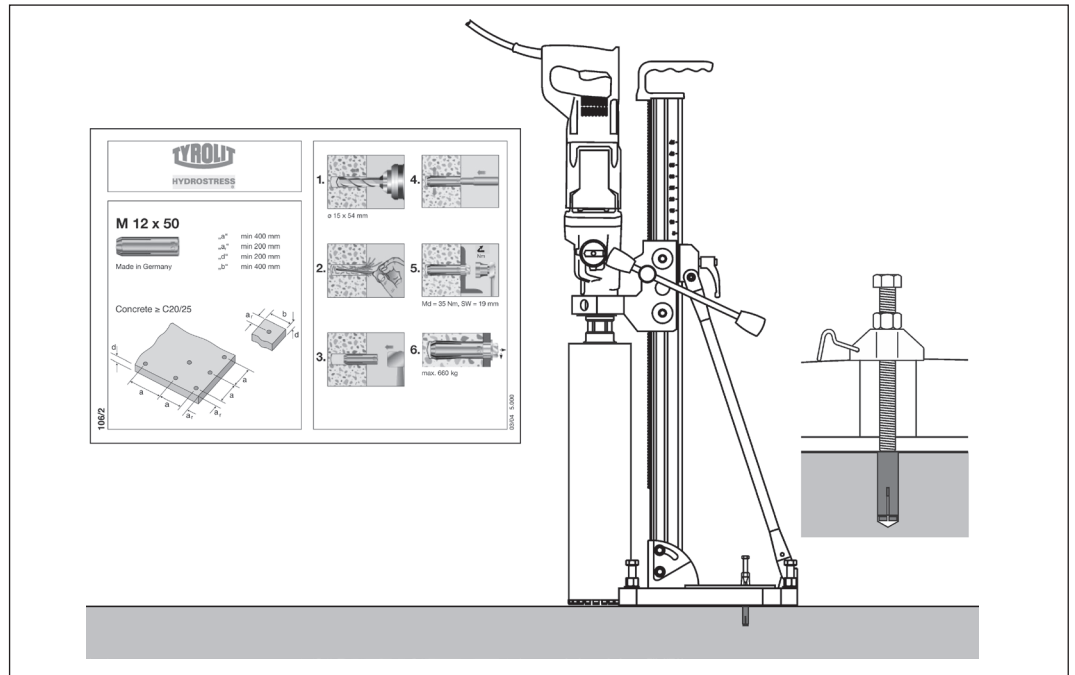


Power tool interface

4.3 Surface interface

4.3.1 Dowel anchoring

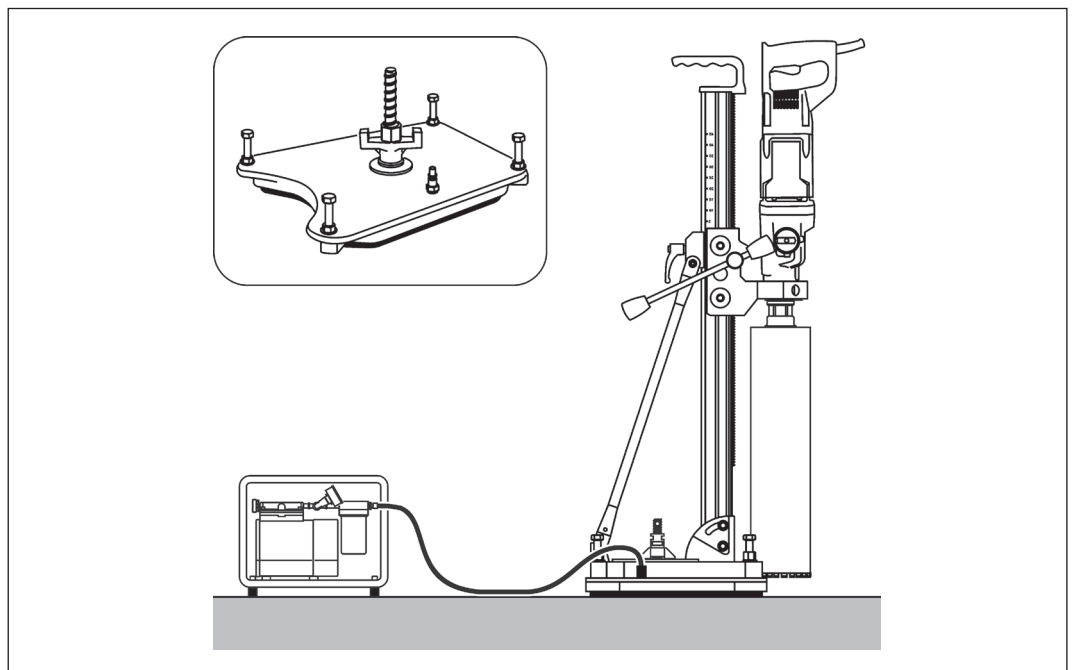
Subsurface-specific anchoring elements must be used to secure the DRA150 drill rig ★★. When positioning the dowels the installation instructions of the dowel manufacturer must be followed.



Dowel anchoring

4.3.2 Vacuum anchoring (optional)

The DRA150 ★★ drill rig can be securely attached to the surface with the appropriate TYROLIT Hydrostress components.

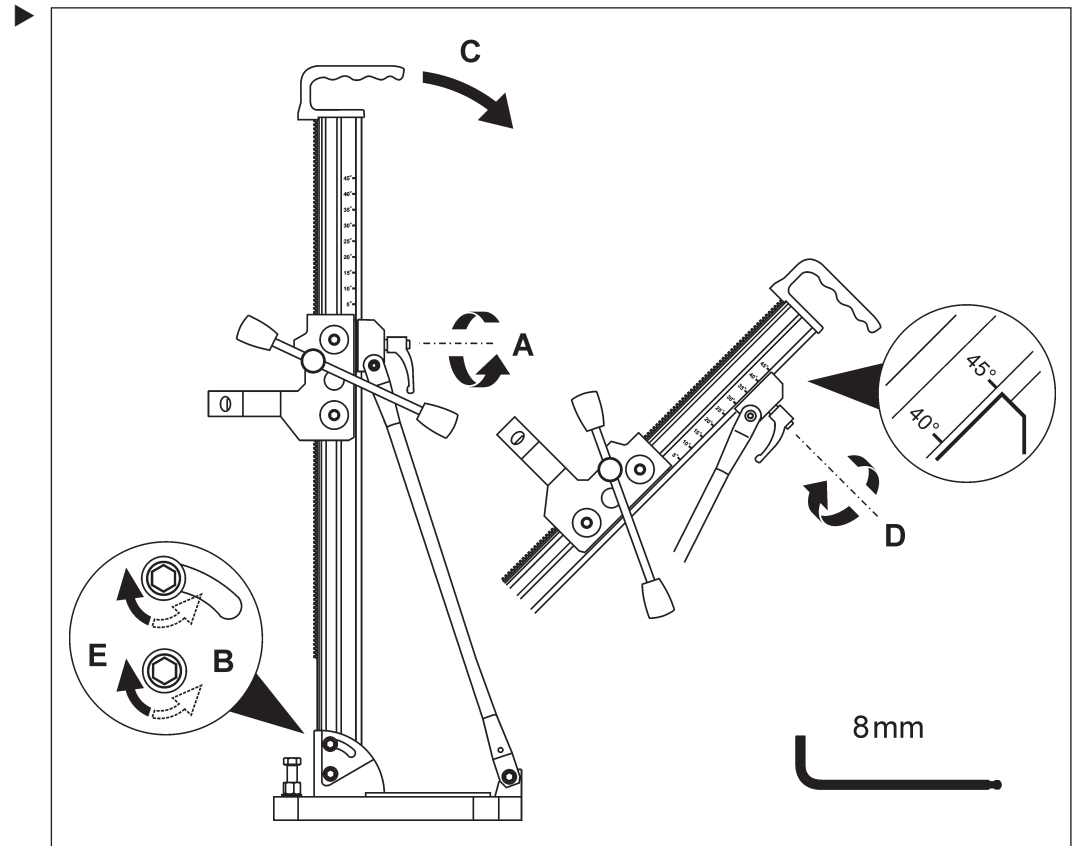


Vacuum fixing

5 Settings

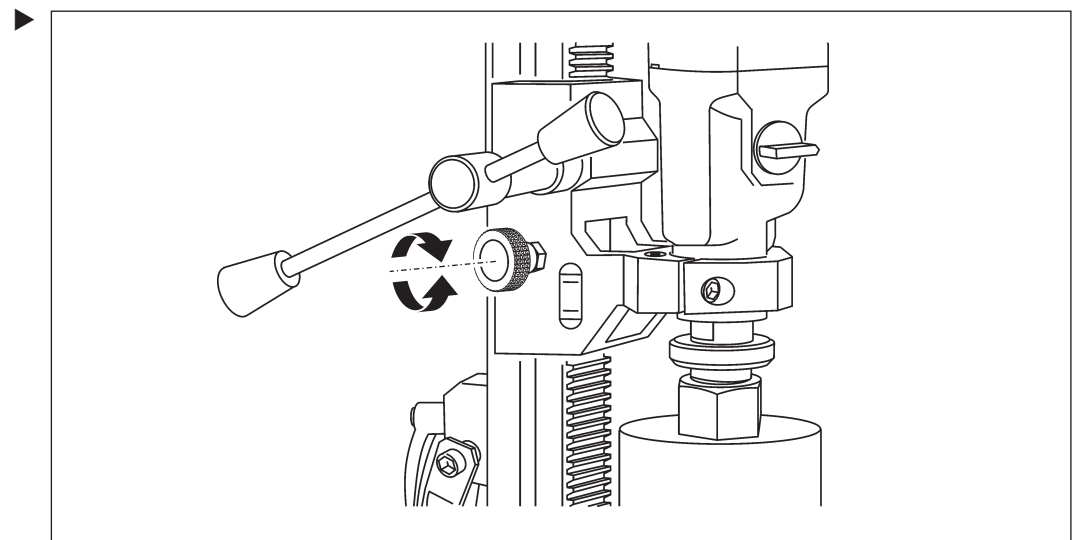
5.1 Angled position

With an angled position of 45° the maximum cutting tool diameter is 122 mm.



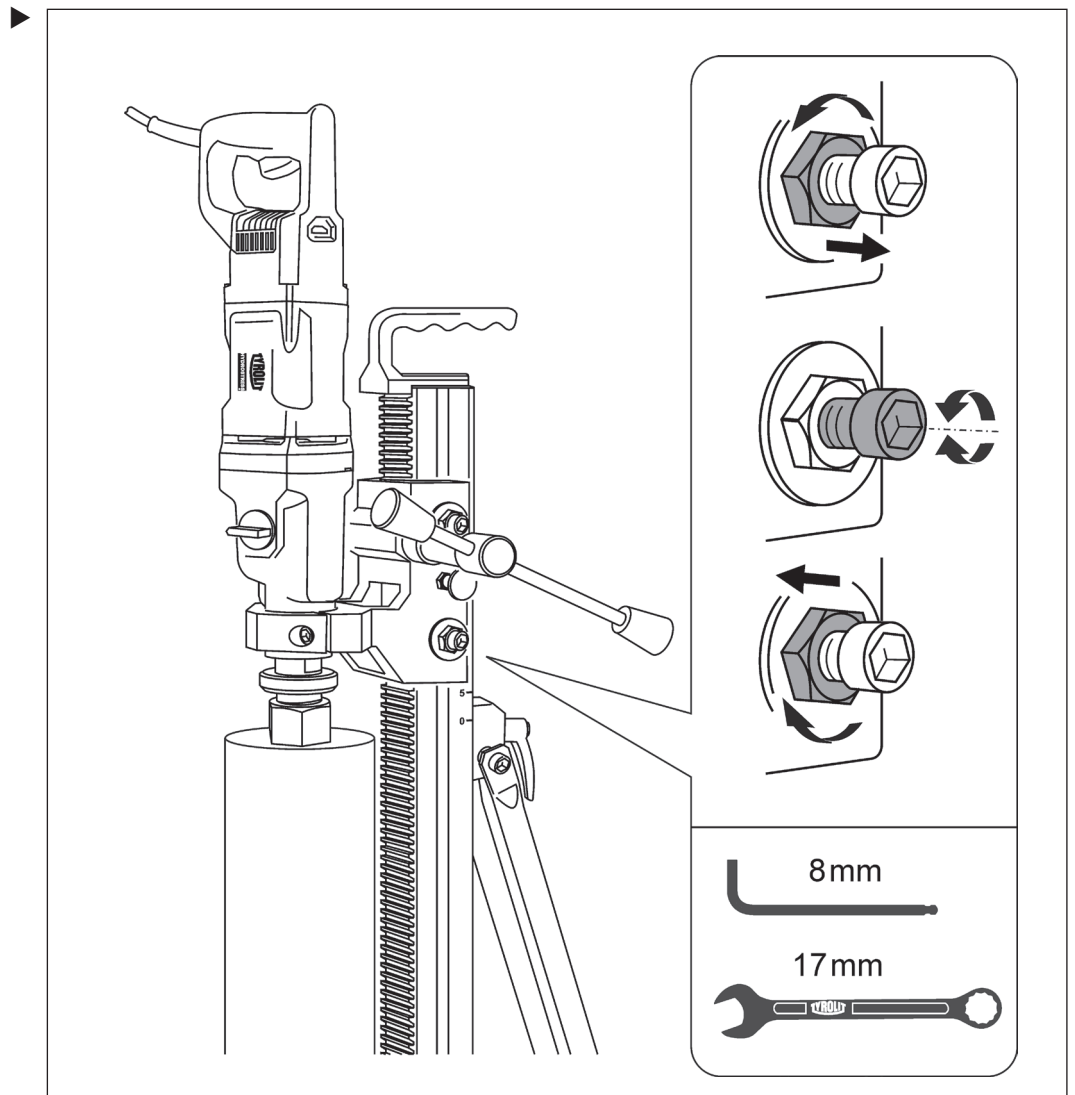
Angled position

5.2 Brake



Brake

5.3 Sliding guide setting



Sliding guide setting

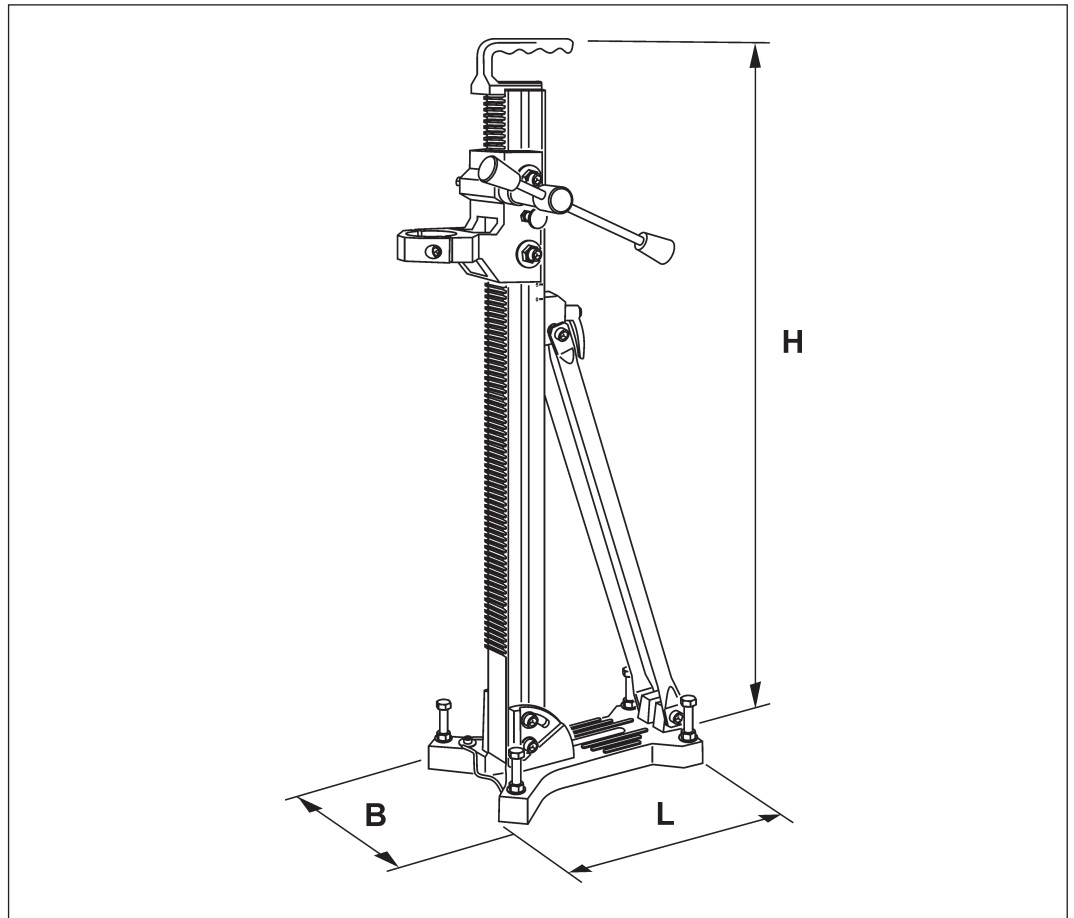
6 Servicing and maintenance

Servicing and maintenance table							
		Before starting up	On finishing work	Weekly	Yearly	After faults	After damage
Drill rig	▶ Wash down with water		X			X	X
	▶ Lubricate threads of adjustable feet			X		X	X
	▶ Tighten loose screws and nuts	X					
	▶ Clean and lubricate teeth of guide column		X			X	
Support	▶ Tighten loose screws and nuts	X				X	X
	▶ Check sliding guide and adjust if necessary (chapter 5.3)	X				X	
	▶ Replace sliding guide						X

7 Faults

Faults		
Fault	Possible cause	Remedy
Diamond drill bit jams	Diamond drill bit off centre due to inadequate anchoring of guide rail or drill rig foot	▶ Loosen and extract diamond drill bit. Break up drilling core and correct drill rig anchoring
	Diamond drill bit drifts due to excessive play in the sliding guides	▶ Loosen drill rig and readjust sliding guides
	Drill segments are worn (no free cutting)	▶ Replace drill bit
Major wear on the drill bit tube	Diamond drill bit not properly guided in the drill hole	▶ Adjust sliding guides
	Defective drill motor bearings	▶ Replace drill motor ▶ Contact TYROLIT Hydrostress AG customer service
Feed jams along the whole length of the guide rail	Locking device on the sliding guides is too tight	▶ Adjust sliding guide clamping
Feed jams at one point on the guide rail	Guide rail bent or damaged	▶ Contact TYROLIT Hydrostress AG aftersales
Difficulty in centring drill bit	Diamond drill bit off centre due to poor anchoring of the drill rig	▶ Correct drill rig anchoring
	Diamond drill bit drifts due to excessive play in the sliding guides	▶ Adjust sliding guides
	Poor concentricity of drill bit	▶ Replace drill bit ▶ Use TYROLIT diamond tool
Difficult or impossible to twist the foot adjustment screw	Thread not lubricated	▶ Lubricate thread
	Feet distorted	▶ Contact TYROLIT Hydrostress AG aftersales
Difficult or impossible to incline the drill rig	Guide rail bent or damaged	▶ Contact TYROLIT Hydrostress AG customer service
Vacuum cannot be generated (optional equipment)	Defective vacuum seal on vacuum foot	▶ Replace vacuum seal
	Defective vacuum foot vacuum valve	▶ Replace vacuum valve
	Defective vacuum pump or hose	▶ Replace vacuum pump or hose
	Surface not suitable for vacuum anchoring	▶ Choose another type of anchoring

8 Technical data



Dimensions

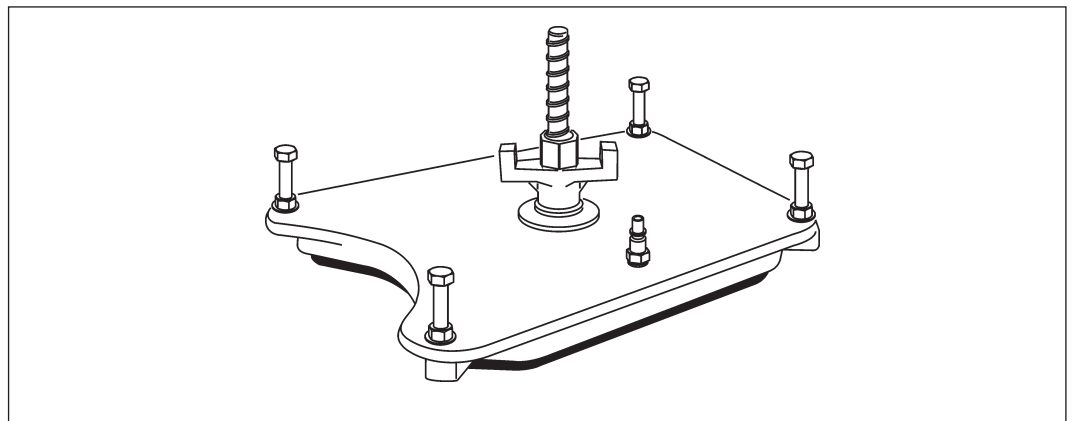
Dimensions	
DRA150★★	
Length L	330 mm
Width B	240 mm
Height H	950 mm

Weights	
DRA150★★	
Weight (without hand crank)	9.5 kg

Drill bits	
DRA150 ★ ★	
Drill diameter range with dowel anchoring	Ø 20 mm to Ø 152 mm
Drill diameter range with vacuum anchoring	Ø 20 mm to Ø 152 mm
Max. drilling diameter with 45° angled position	Ø 122 mm
Max. drill bit length	550 mm

Design	
DRA150 ★ ★	
Foot	Aluminium dowel foot
Feed	by hand crank
Angular adjustment	90°-45° with angle display
Centre indicator	Indicator retractable
Adjustable feet	M12 bolt
Drill motor mount	Clamping collar
Support guide	Adjustable interchangeable sliding guide
Guide rail	Depth and angle scale

Accessories: Vacuum plate



TYROLIT vacuum plate no.10993961

9 EC Declaration of Conformity

Description	Drill rig
Type designation	DRA150★★

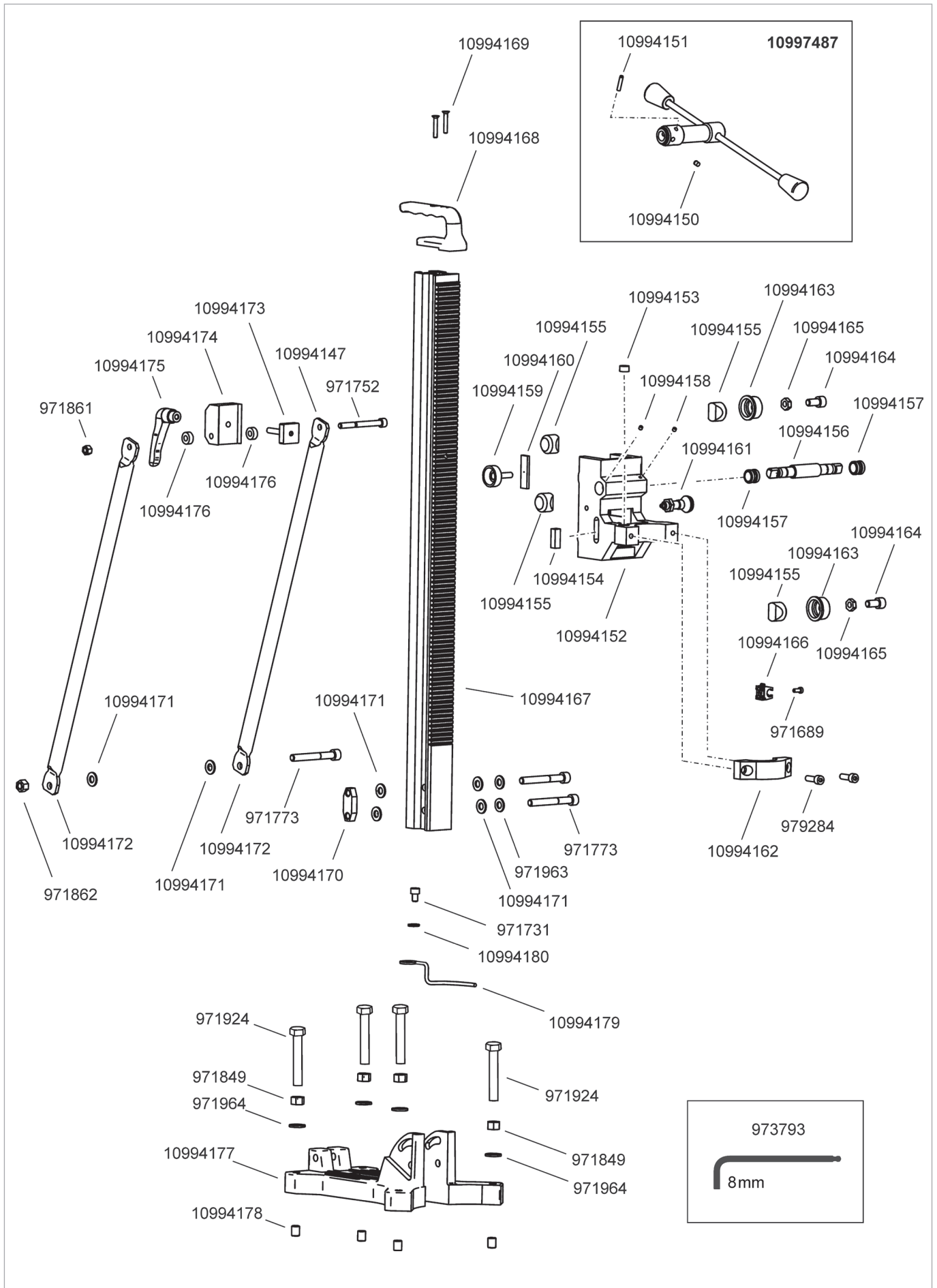
We declare under our sole responsibility that this product complies with the following directives and standards:

Directive applied

Machinery Directives 2006/42/EC

Applied standards

EN 12100	Safety of machinery, general design guidelines - risk assessment and risk minimisation
EN 12348	Core drilling machines on stands - Safety



Notes