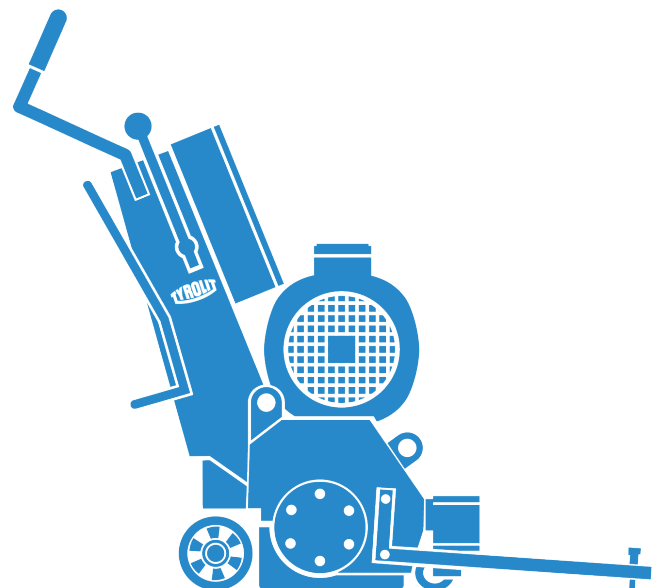




# **User Manual**

**Floor Planer / Scarifier FPE320 / FPE320LC**

**Index 000**



**Congratulations!**

You have chosen a tried and tested TYROLIT Hydrostress product which is made according to leading technological standards. Only original TYROLIT Hydrostress spare parts guarantee quality and interchangeability.

If the maintenance work is neglected or improperly carried out, we cannot fulfill our guarantee obligations. All repairs may only be carried out by trained specialists. Our customer service will be happy to help you keep your TYROLIT Hydrostress devices in perfect condition.

We wish you trouble-free and trouble-free work.

TYROLIT Hydrostress

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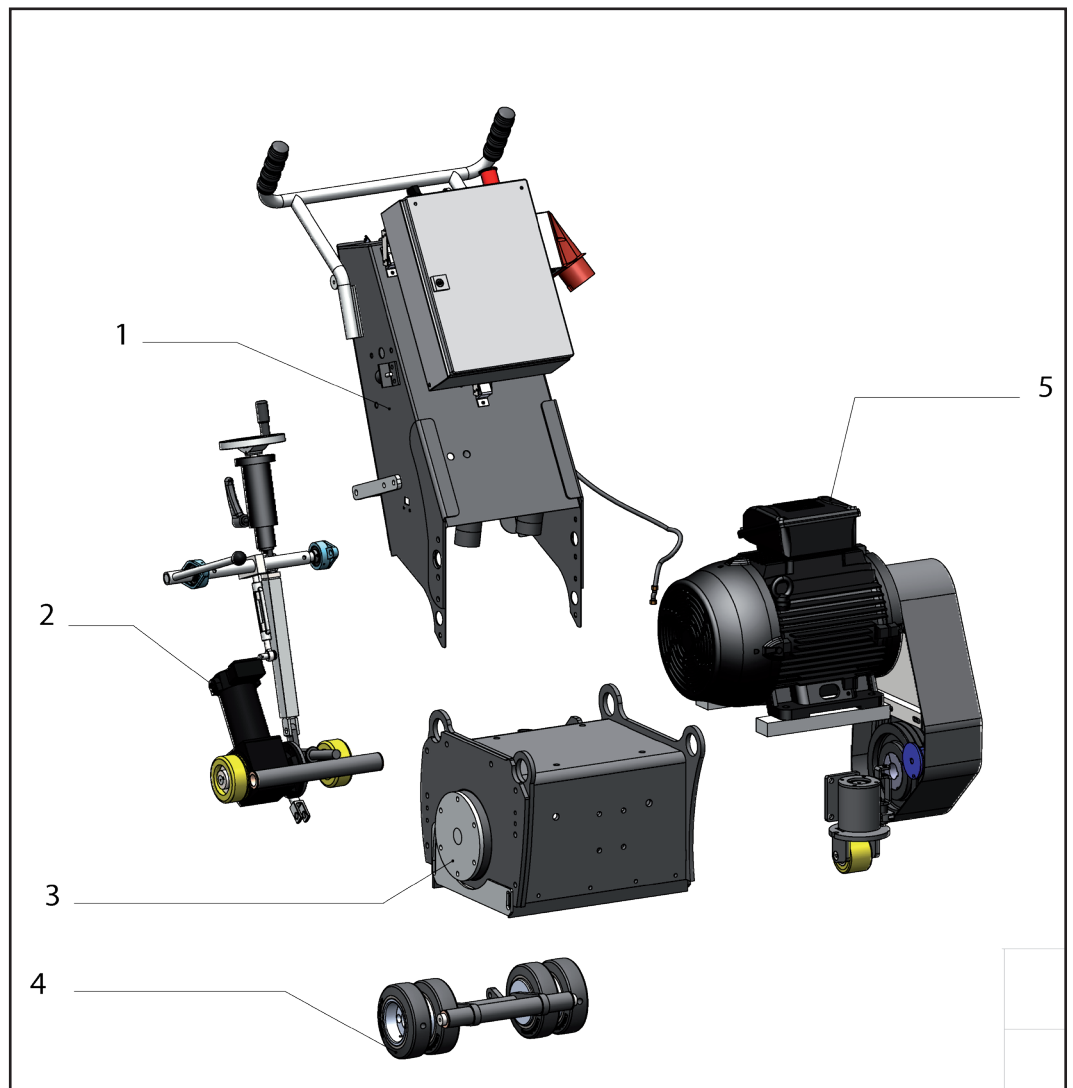
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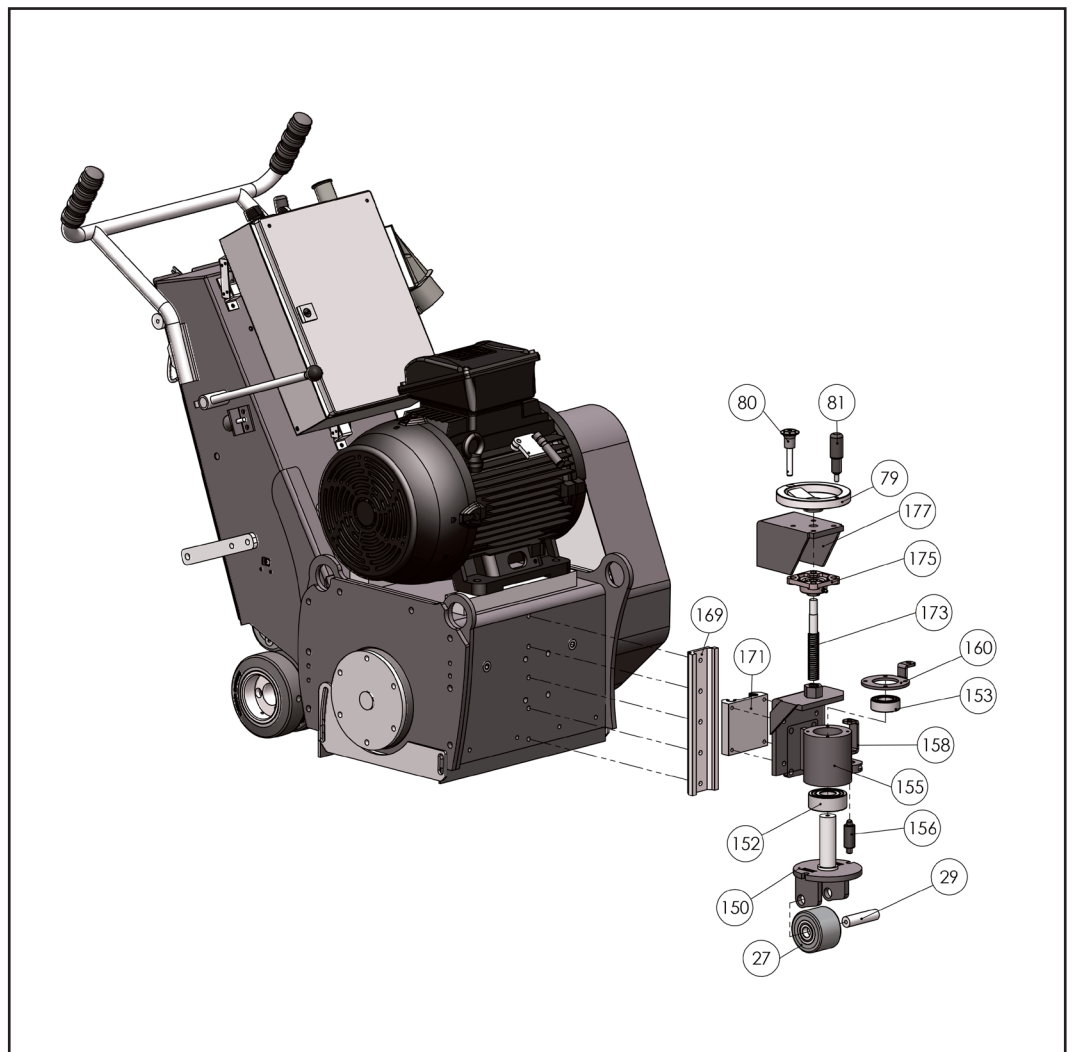
## Product Overview



### Produktübersicht

- 1 Handle complete with control panel
- 2 Drive
- 3 Milling housing
- 4 Swing
- 5 Motor-Drive Belt for front wheel

## Product Overview FPE320LC (Low Chassis) Option



Produktübersicht FPE320LC (Low Chassis) Option

- 27 Front Wheel
- 29 Front Wheel Axis
- 79 Level Adjustment Wheel
- 80 Drive Pin
- 81 Knob for Handwheel
- 150 Shaft Front Wheel
- 152 Bearing
- 153 Bearing
- 155 Bearing Housing Front Wheel LC
- 156 Locking Pin
- 158 Clamping Yoke
- 160 Lid
- 169 Linear Rail
- 171 Linear Wagon
- 173 Handwheel Shaft LC
- 175 Bearing
- 177 Bracket

## General Safety Precautions

### 1.1 Safety rules for the operation of the Scarifiers/Planers



#### Information

The FPE320 rotary scarifier has been developed according to existing safety rules and regulations. The technical safety precautions must not be removed or changed under any circumstances. When operating the milling machine, the following points should also be observed:



#### Danger!

- The FPE320 floor planer / scarifier may only be operated with all protective safety covers and technical precautions.
- The power must be disconnected when transporting, cleaning, repairing or maintaining the machine. This also applies to tool changes.
- The operator should never leave the machine during operation.
- The tool must be removed before the machine is transported.
- Before leaving the machine all rotary parts should be brought to a stand still.
- The electric models must be disconnected from the mains. Make sure that the machine cannot roll or move by itself.
- After maintenance and adjustment all safety covers must be reattached.
- If unusual running noises or increased vibrations are registered during operation of the FPE320, the machine must be switched off immediately and the cause of the problem must be explored.
- After maintenance and repair work, the protective devices must be properly reinstalled.
- Noise protection equipment must be worn by the machinist.
- The machine operator must wear eye protection.
- The machinist must wear safety shoes with steel toecaps.
- If there is a lot of dust in closed rooms, the floor milling machine must be operated with an extraction system.

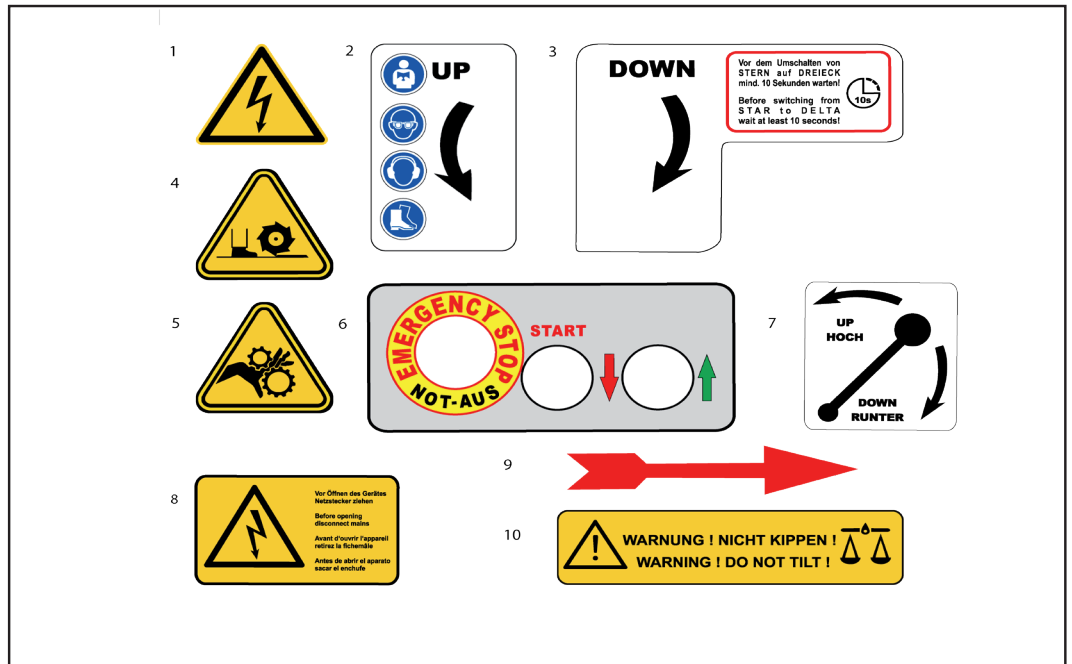


#### Attention!

Depending on the type of floor and coating, gases / dust can be released during milling. It is the responsibility of the user whether these generated gases / dust may contain dangerous substances and whether protective measures have to be taken.

Floors containing asbestos is especially dangerous and can cause health problems. Special masks must be worn which keep breathing air clean. A dust collector must be used and should be equipped with filters suitable for asbestos dust.

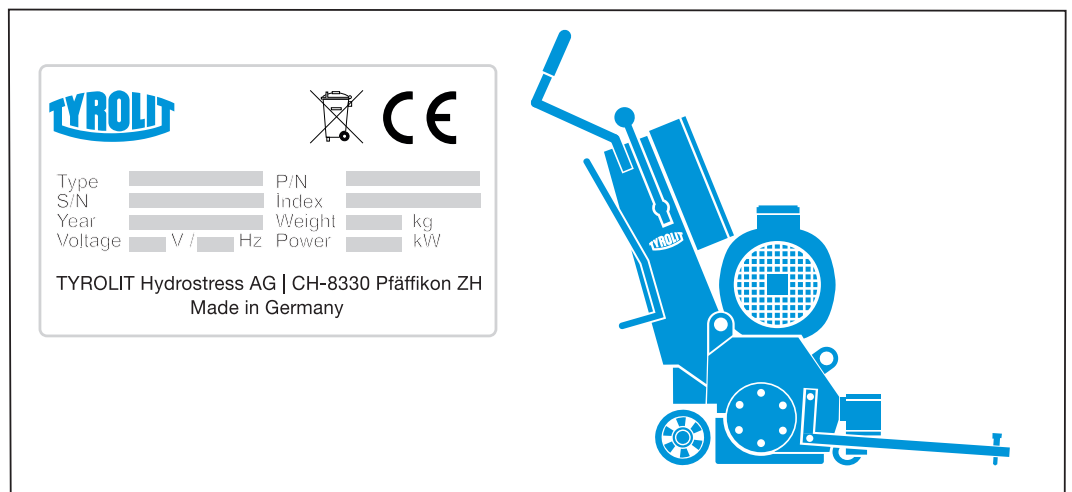
## 1.2 Labels on the FPE320 floor scarifier



Labels on the FPE320 floor scarifier

- 1 Warning - electrical voltage.
- 2 Read all information carefully. Safety goggles, earmuffs & shoes must be worn.  
UP - direction of lifting the tools from the ground.
- 3 DOWN - direction of lowering the tools to the ground.  
Wait! Before switching from STAR to DELTA - wait at least 10 seconds.
- 4 Warning! Rotating sharp objects - risk of cutting!
- 5 Warning! Risk of cuts!
- 6 EMERGENCY STOP switch! Arrows indicate the direction of travel. Green forwards, red backwards.
- 7 Lever direction for raising or lowering the tool drum.
- 8 Before opening the device, disconnect plug.
- 9 Arrow showing the direction of rotation of the drum.
- 10 Warning! Do not tilt - especially with the petrol version.

## 1.3 Machine type identification label FPE320



Machine type ID label FPE320

## 2. Operating the Machine

### 2.1 Range of applications of the FPE320



#### Information




The FPE320 is the largest and most aggressive milling machine from TYROLIT. It has been developed for the milling or scarifying of horizontal, dry floors such as concrete and steel surfaces with and without coatings and for asphalt using the milling tools offered exclusively by TYROLIT.

Specifically for use outside in dry weather. The operation is only permitted with a dust extraction system recommended by TYROLIT.

### 2.2 Operational function of the FPE320

The FPE320 creates a tremendous aggressiveness when removing concrete, asphalt, coatings and road markings. Cutting milling or diamond tools allow for easy removal of flexible plastic coatings, epoxy resins and road markings. Specially made diamond tools enable grooves in slatted floors and walkways which increase surefootedness and anti slipping (especially in concrete areas for dairy farming - (farmyard grooving). Variable cutting width enables joint renovation and / or full width for distance milling (shaving).

### 2.3 Application of the tools

Tools	Application
<b>TCT Cutters</b> 	Heavy duty, long life cutters for all concrete texturing, scabbling, planing and grooving applications. Also used for removal of road markings, roof chippings and brittle coatings
<b>Milling cutter</b> 	Primarily for the removal of thermoplastic road / runway markings. Tipped with tungsten carbide they are cost effective and highly efficient. A range of cutter dimensions are available
<b>Beam flails</b> 	Heat treated cutters for the removal of paint coatings and laitance from new concrete. Also for removing grease, dirt and ice deposits.

### 2.4 Operating and scarifying

After mounting the appropriate tools the operation of the scarifier / planer can begin.

- ▶ The height adjustment lever (see chapter 1.2 labels on the FPE320 No. 7) must be in the upper position before the motor is switched on. In addition, the handwheel of the machine must be turned anti-clockwise as far as it will go.
- ▶ Switch on the motor.
- ▶ Lower the tiller by pushing the quick height adjustment lever down.
- ▶ Adjust the working depth with the handwheel of the height adjustment until the tools are lowered to the floor and until the required finish is achieved.
- ▶ Heavy dust formation can be avoided by connecting an extraction system.
- ▶ The damping of the operator's grip enables almost vibration-free work

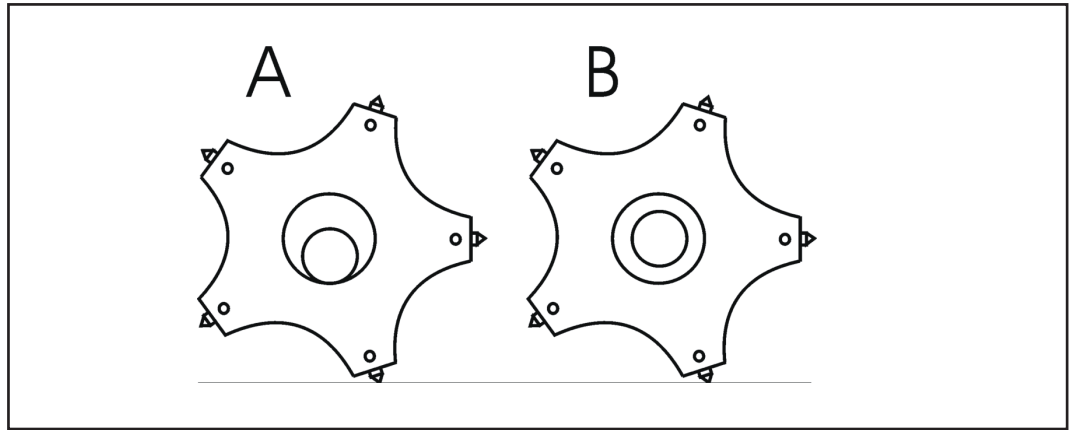


## 2.5 Correct position of the cutters in the drum



### Danger!

Excessive depth adjustment will jam the cutters between the drum shaft and the surface (A). The consequence is the destruction of the cutters, drum shafts and the drum. If the machine has to be lowered, always make sure that the tools can still turn freely on the drum shafts (B).



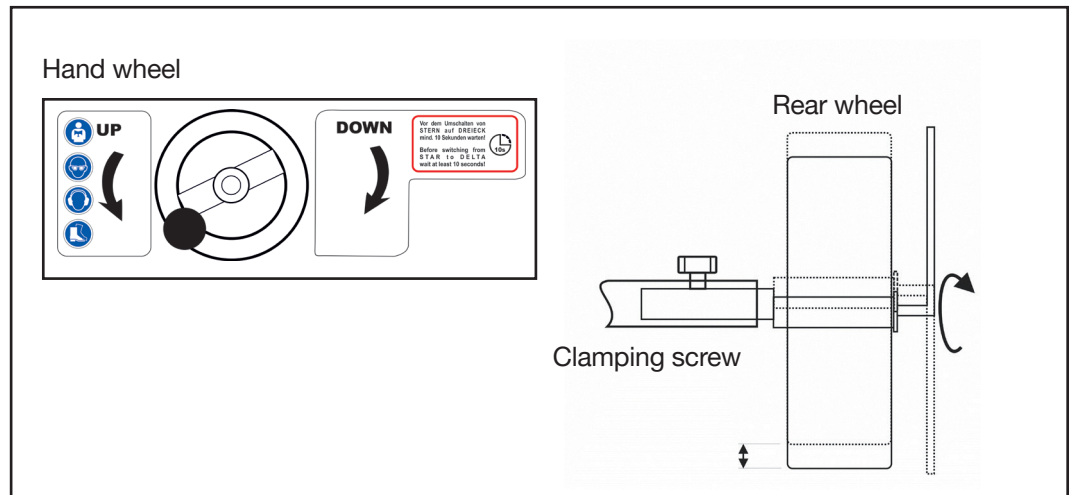
Cutters Position A und B.



### Danger!

Excessive depth setting reduces the power of the tools and does not improve performance.

## 2.6 Adjusting the tool drum



Adjusting the tool drum

During the operation of the FPE320 floor planer or after a drum has been changed or replaced, the drum shaft and the rear wheel axis can fall out of alignment. This is noticeable through an uneven milling pattern.

The milling machine touches down earlier on one side than on the other and thus removes more material on one side. The rear wheels of the milling machine are mounted on an eccentric shaft. (see picture above - adjusting the tool drum)

If the milling pattern needs to be set, proceed as follows:

- ▶ Place the planer on an even floor.
- ▶ Lift the machine with the height adjustment hand wheel, until all the tools are well clear of the floor.

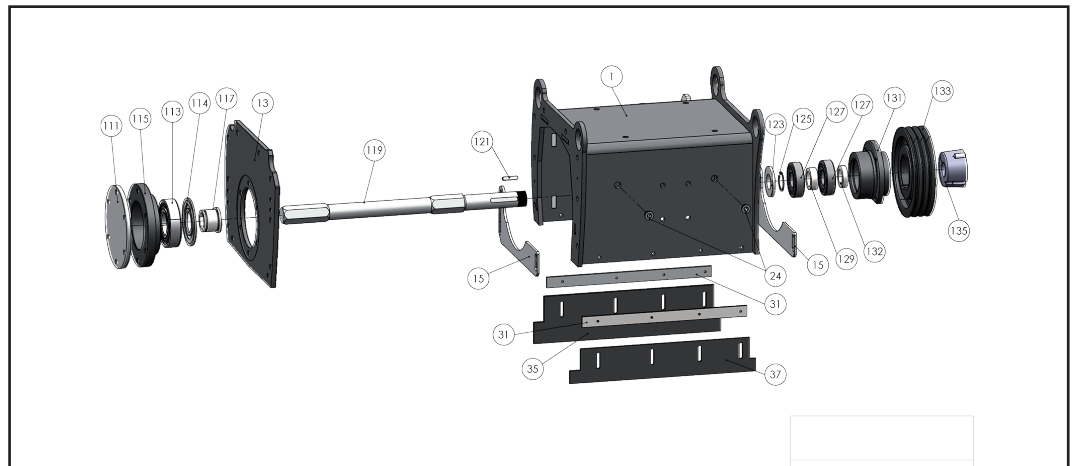
- ▶ Loosen the clamping screw of the eccentric shaft.
- ▶ On the other side of the rear wheel is a screw which keeps the wheel on the shaft.
- ▶ Turning the screw will also turn the eccentric shaft.
- ▶ The floor planer moves up and down on one side.
- ▶ Always turn the screw clockwise. Anti clockwise will loosen the screw.
- ▶ Keep turning until all the tools on the drum are the same distance to the floor.
- ▶ Tighten the clamping screw again

## 2.7 Changing the tool drum



**Before any maintenance, the machine must be brought to a complete stand still. Always disconnect the machine if it is an electric model.**

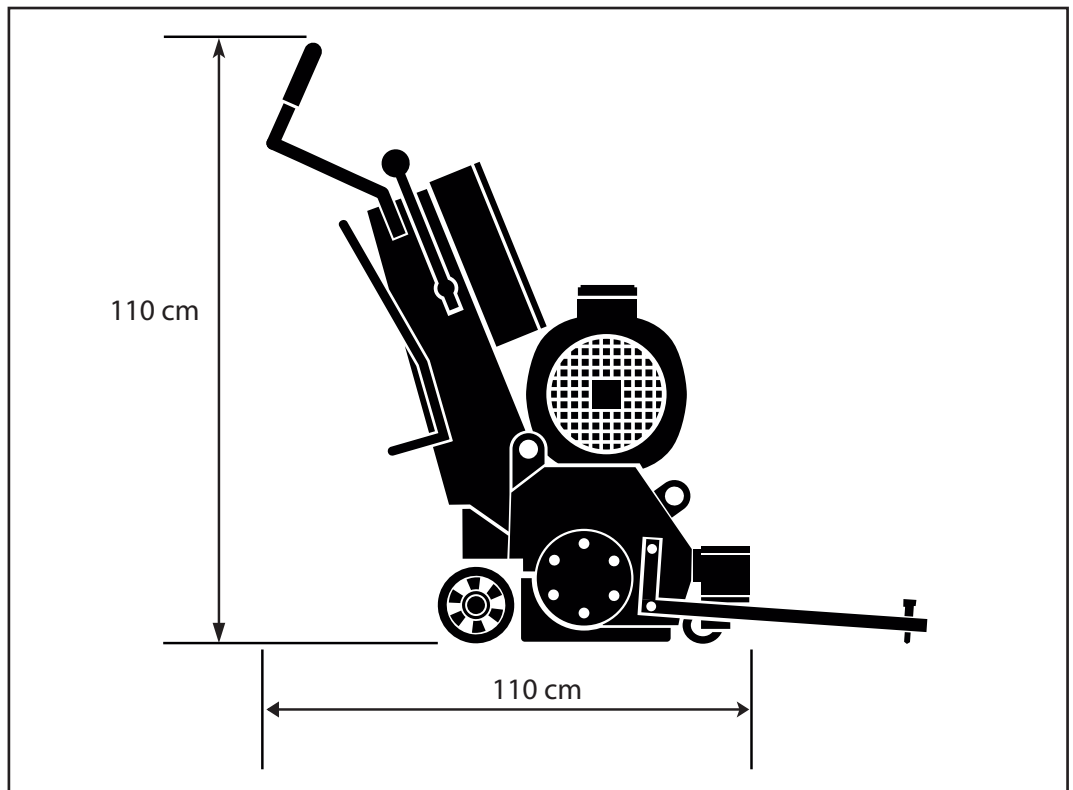
- ▶ Lift the machine with the lever so that the tools are well clear of the floor.
- ▶ Unscrew the screws on the right side plate (M10, Key width 17 mm)
- ▶ Carefully remove the side plate.
- ▶ Take out the drum. Remove worn out tools.
- ▶ Check shafts and drums for wear and tear. If necessary replace new tools on the drum.
- ▶ Push drum on freshly greased shaft.
- ▶ Reconnect side plate.



FPE320 Frasgehäuse

1	Drum Housing complete	115	Bearing Housing	132	Spacer
13	Side Plate right	117	Hexagon Ring	133	Drum Pulley
15	Sealing Slide	119	Drum Shaft	135	Taperlock
24	Plug Brass	121	Key		
31	Bracket Rubber Sealing front/back	123	Spacer		
35	Rubber Sealing rear	125	Circlip		
37	Rubber Sealing front	127	Bearing		
111	Bearing Housing Lid	129	Spacer		
113	Bearing	131	Bearing Housing		
114	Sealing				

### 3 Technical Data



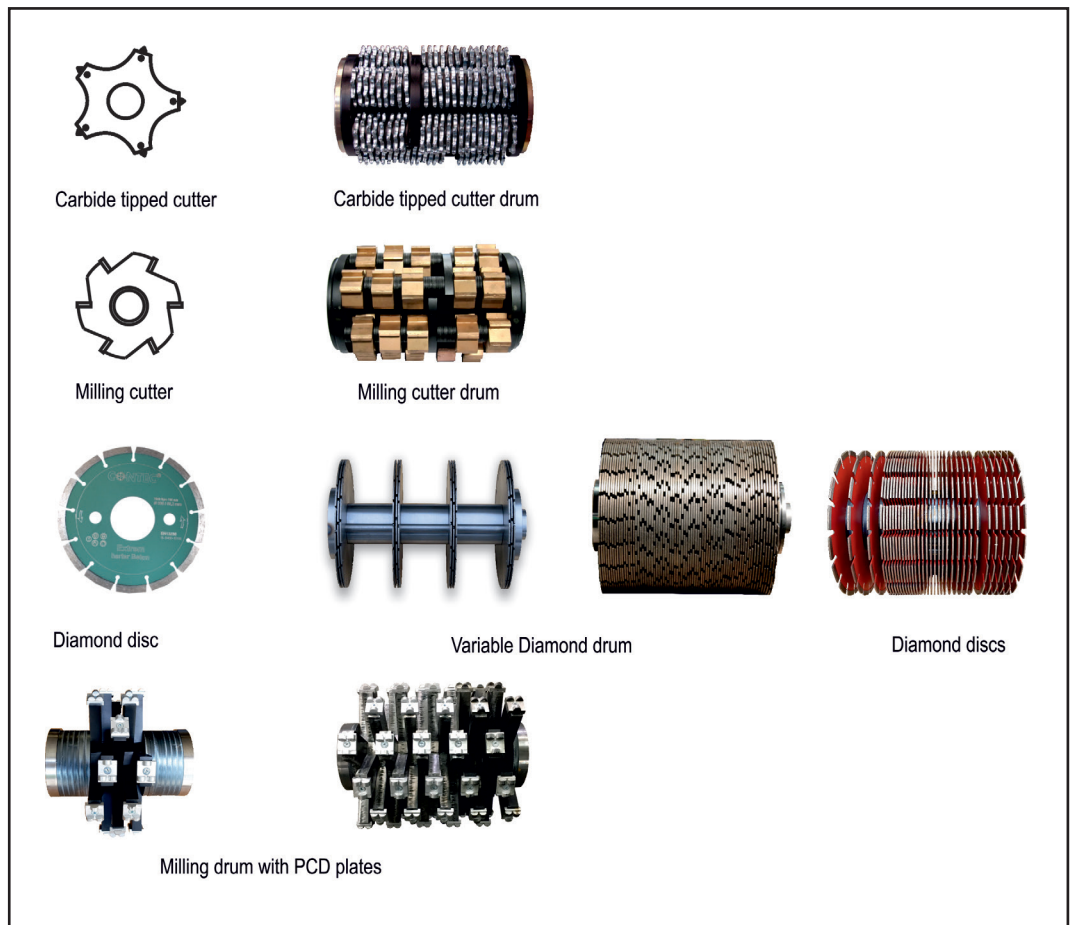
Technical Data for the FPE320	
Parameter	Value
Width of cut	32 cm (12.5 in)
Machinenbreite	61 cm (24 in)
Width of machine	110 cm (43 in)
Width of machine	110 cm (43 in)
Weight with drum	230 kg (507 lbs)
Dust port Ø	7 cm (2.86 in)
Height adjustment	Handrad mit Hebel
Vibration damped handle	Rubber block on handle bracket
Electric motor	Europe: 400 V, 11-18.5 kW USA: 460 V, 17.3 kW, (23.5 hp) 60 Hz
Average value of acceleration $a_{hv}^*$	8,6 m/s <sup>2</sup>
Noise level $L_{wa}^*$	109 dB(A)
Noise level $L_{eq}^*$	87 dB(A)

\* Measured values / data: VÜA Verein zur Überwachung technischer Anlagen e.V.

### 3.1 Tools for the drum

Tools for the FPE320	
Parameter	Value
Drum diameter	22.5 cm
Cutter shaft diameter	2 cm
Number of shafts	6
TCT cutter	80/8
Milling cutter	80/20
Cutter diameter	8 cm
Max No. of TCT cutters	128
Max. No. of milling cutters	36
cutters	

### 3.2 Example of tools



Example of tools

## 4 Trouble Shooting

Trouble Shooting		
Problem	Possible cause	Solution
Machine does not run	<ul style="list-style-type: none"> <li>– Power supply interrupted</li> <li>– Defective fuse cable or plug defective</li> <li>– Star-delta switch not at zero position</li> <li>– Wrong direction of rotation</li> </ul>	<ul style="list-style-type: none"> <li>– Check the network supply</li> <li>– Eliminate the fault by a specialist or replace parts</li> <li>– Turn switch to zero</li> <li>– Turn the Phase in the plug</li> </ul>
High dust development during operation	<ul style="list-style-type: none"> <li>– Connection to the dust collection system interrupted</li> <li>– Extraction system not switched on</li> <li>– Milling area sealing defective</li> </ul>	<ul style="list-style-type: none"> <li>– Check dust port connection</li> <li>– Turn on or restart dust collector</li> <li>– Replace sealings</li> </ul>
High vibration	<ul style="list-style-type: none"> <li>– Wear &amp; tear parts are worn out</li> </ul>	<ul style="list-style-type: none"> <li>– Check all tools and the correct assembly of drum and replace if required</li> </ul>

## 5 Maintenance and cleaning

Maintenance and cleaning	
<b>Bearings</b>	<ul style="list-style-type: none"> <li>– All bearings are greased for their life time.</li> </ul>
<b>Height adjustment and joints</b>	<ul style="list-style-type: none"> <li>– All joints have to be greased periodically with a standard machine grease.</li> </ul>
<b>Belt drive</b>	<ul style="list-style-type: none"> <li>– Check the belts after approximately every 30 hours of operation. The belt is tensioned automatically by a tensioner wheel underneath the belt cover.</li> </ul>
<b>Cleaning</b>	<ul style="list-style-type: none"> <li>– Regular cleaning of the machine increases the life of all components and tools of the planer.</li> </ul>

## 6 EU-Declaration of Conformity

**Machine function** Floor planer / scarifier  
**Type of machine** FPE320

We hereby certify that the machine described here in its conception, construction and form and placed into circulation by TYROLIT, is done so in accordance with all the relevant essential health and safety requirements of the EU Machinery Directive 2006/42/EEC as amended and the national laws and regulations adopting this directive.

This declaration is no longer valid if the machine is modified without our consent.

**The agreement with further valid guidelines/regulations for the products is explained in the following:**

2006/42/EG vom 17. May 2006  
2004/108/EG vom 15. December 2004

**Other applied harmonized standards and specifications in particular:**

EN ISO 12100 : 2010  
EN 60204 -1 : 2018  
EN IEC 61000-6-2 : 2019  
EN IEC 61000-6-4 : 2019

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