



**UNIMAX 3**  
**UNIMAX 3T**

**UNIMAX 3 TAP**  
**UNIMAX 3T TAP**

**CE**

**Machine type:** UNIMAX 3

**Machine number:** \_\_\_\_\_

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## EC Declaration of Conformity

in the sense of the EU Machinery Directive 2006/42/EC, annex II

We herewith declare that the drilling machines

- Machine type: **UNIMAX 3**
- Machine serial no.: \_\_\_\_\_

Conforms to all corresponding regulations of the EU – machine directive 2006/42/EG.

Furthermore, the machine conforms to the following applicable guidelines:

- Low Voltage directive 2014 / 35 / EU
- EMV-directive 2014 / 30 / EU

Applied national technical specifications, in particular

- DIN EN 349 \*
- EN ISO 13850 \*
- EN 12717 \*
- EN 61000-3-2 \*
- EN 55011 \*
- DIN EN ISO 12100 \*
- EN 1037 \*
- EN ISO 13857 \*
- EN 60204-1 \*
- EN 61000-3-3 \*
- EN 953 \*

\* in their respective most recent versions

Applied national technical specifications, in particular

- DIN45635
- DIN 8626
- DIN EN 50178

Name of the authorised representative: MAXION Jänsch & Ortlepp GmbH 07381 Pößneck Rosa-Luxemburg-Str. 5



Pößneck, 1. Nov. 2018

.....  
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### **Intended use**

- Only use the drill for drilling, reaming, thread cutting and, if necessary, milling.
- Only
  - Metal
  - Wood
  - Processing plastic.
- Any other use does not correspond to the intended use and is the responsibility of the machine operator

### **Qualified personnel**

- The machine may only be set up, maintained and repaired by personnel who are sufficiently qualified for these activities (skilled workers in the relevant profession)
- The machine may only be operated by personnel who are sufficiently qualified for these activities (skilled workers in the relevant profession) or who have been fully trained for this activity



Risk of serious injury if insufficiently trained personnel work on the machine

## Technical data

### UNIMAX 3T (TAP)

• Continuous drilling performance	25	mm*
• Normal drilling performance	30	mm*
• Tapping performance	M 20	
• Spindle	MT3	
• Drilling depth	125	mm
• Projection	260	mm
• Spindle/table	220 to 600	mm
• Table top	390 x 420	mm
• T-slots according to DIN 650	14	mm
• Max. table load	125	kg
• Column diameter	110	mm
• Total height	max. 1200	mm
• Weight	240	kg
• Motor pole-changing	0,8/1,5	kW
• Spindle speeds Range A	80-1440	1/min
• Spindle speeds Area B	180-3200	1/min
• Spindle speeds		stepless
• Operating voltage	400	V
• Frequency	50	Hz
• Mains fuse	10	A
• Noise level when idling at maximum possible spindle speed	<70	dB(A)
Workplace-related emission value according to DIN 45635 Part 1		

#### • Cross table standard type MF-3

- X-axis travel	350	mm
- Y-axis travel	160	mm
- Pitch trapezoidal spindle	4	mm
- Tolerance	± 0,030	mm
- Graduation on vernier	0,05	mm
- Table top	600x240	mm
- T-slots according to DIN 650	12	mm
- Distance T-slots	72	mm
- Distance spindle/cross table surface	max. 465	mm

\*Drilled into the full material based on St60.

**UNIMAX 3 (TAP)**

- Continuous drilling performance 25 mm\*
- Normal drilling performance 30 mm\*
  
- Tapping performance M 20
- Spindle MT3
- Drilling depth 125 mm
- Projection 260 mm
- Spindle/table 90 to 840 mm
- Table top 500x365 mm
- T-slots according to DIN 650 14 mm
- Max. table load 100 kg
- Column diameter 110 mm
- Total height 1855 mm
- Weight 250 kg
- Motor pole-changing 0,8/1,5 kW
- Spindle speeds Range A 80-1440 1/min
- Area B 180-3200 1/min
- Spindle speeds stepless
  
- Operating voltage 400 V
- Frequency 50 Hz
- Mains fuse 10 A
- Noise level when idling at maximum possible spindle speed <70 dB(A)
- Workplace-related emission value according to DIN 45635 Part 1

• **Cross table standard type MF-3**

- X-axis travel 350 mm
- Y-axis travel 160 mm
- Pitch trapezoidal spindle 4 mm
- Tolerance ± 0,030 mm
- Graduation on vernier 0,05 mm
- Table top 600x240 mm
- T-slots according to DIN 650 12 mm
- Distance T-slots 72 mm
- Distance spindle/cross table surface max. 705 mm

\*Drilled into the full material based on St60.

**Notes on safety**

- Wear safety goggles.



- Tie up long hair.



- Wear a hairnet for very long hair.



- Wear safety shoes.

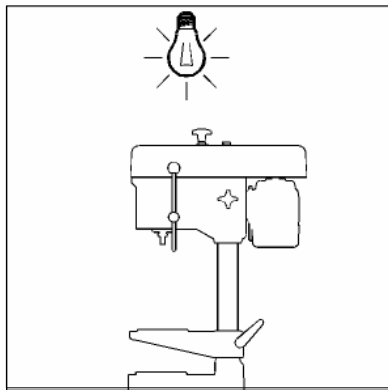




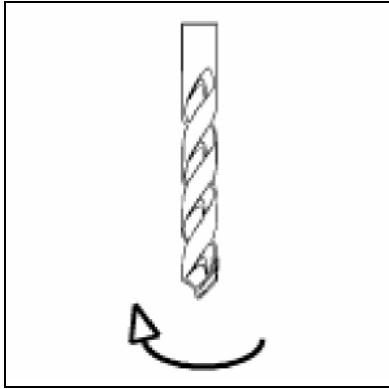
- Remove jewelry before starting work.



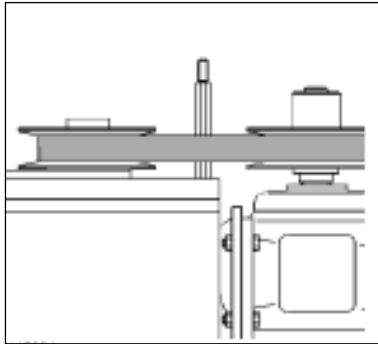
- Do not reach into the running spindle.



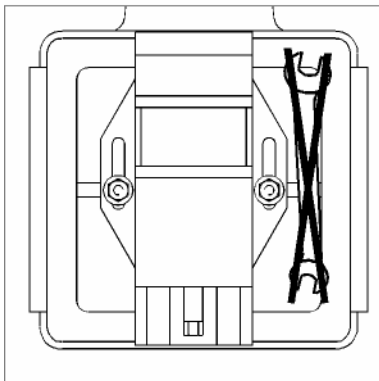
- Ensure adequate lighting.
- Operating elements must be easily accessible.



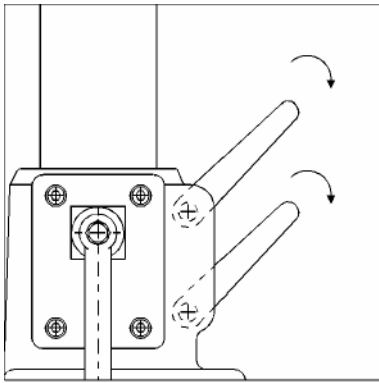
- Clockwise rotation



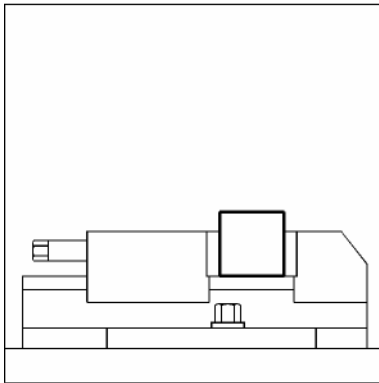
- Never turn on the machine without a protective cover.



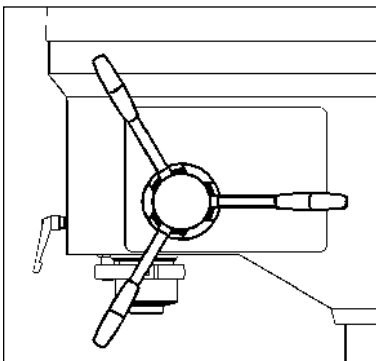
- Keep tools and measuring equipment outside the work area.



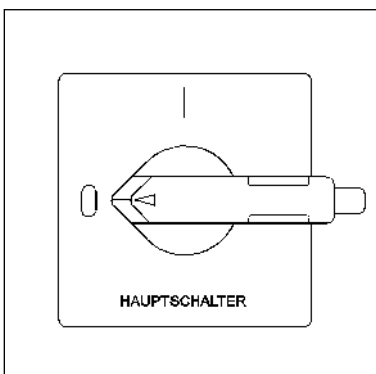
- Clamp the column or intermediate table before starting work.



- Ensure the workpiece is securely clamped

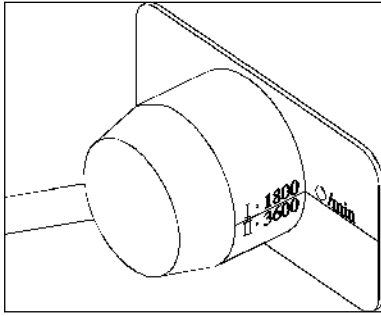


- Feed lever returns automatically.



Set the main switch to "0" during maintenance work and secure against unintentional start-up.

- Clean the spindle cone and tool taper before each tool installation.
- Use drill bits up to max. Ø 25 mm for continuous operation.

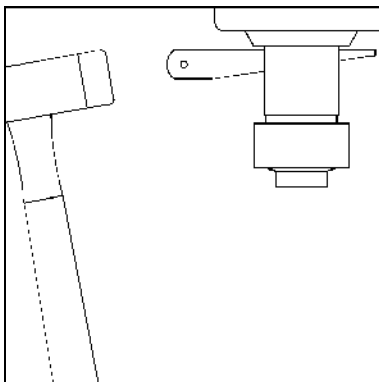


- Fully regulate the stepless drive once a day.
- Set the highest speed for longer shutdown periods.

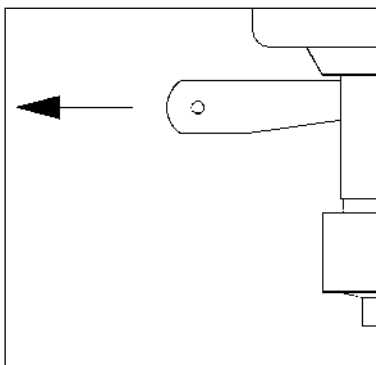


Keep magnets (e.g., dial gauge stands, chip collectors) away from the magnetic tape at the front of the sleeve.

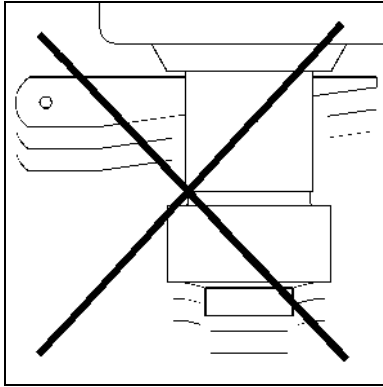
Magnetic interference may result in loss of function.



- Place a wooden plate on the machine table before each tool change.
- Use only a plastic hammer to insert the ejector.



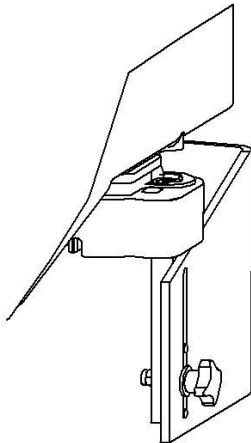
- Remove the ejector before turning on the machine.



- Never change tools by raising the sleeve with the ejector.
- Ensure sufficient distance from the machine head. Never knock the tip of the ejector into the machine head.

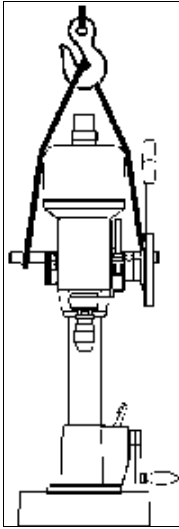


Component destruction



- Never operate the machine without drill protection

## Unpacking and transportation



- Compare the items on the delivery note with the delivery.



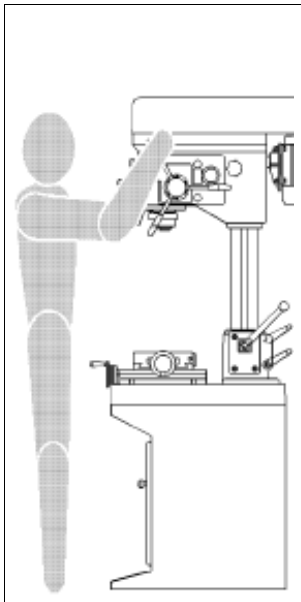
Observe the safety regulations for moving loads.

- Use crane for transportation. Attach ropes as shown.



- UNIMAX 3 (TAP) = 240 kg

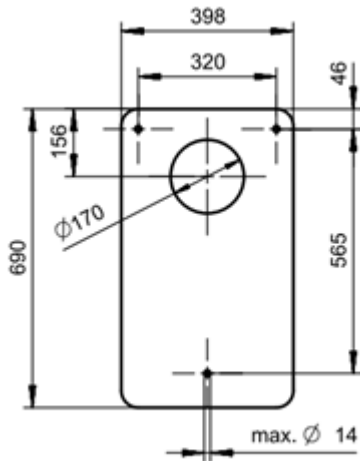
## Installation site



- Operating elements must be freely accessible.
- Ensure that the installation surface is level.
- Only mount the machine on a stable base or securely anchor.
- Ensure an appropriate working height.

**Set up and installation**

**UNIMAX 3 T (TAP)**



- **Drilling pattern for machine type UNIMAX 3 T on the worktable / substructure**

Worktops must be suitable for the machine weight (for machine type "T").

Insulating panels contribute to noise reduction and vibration damping.

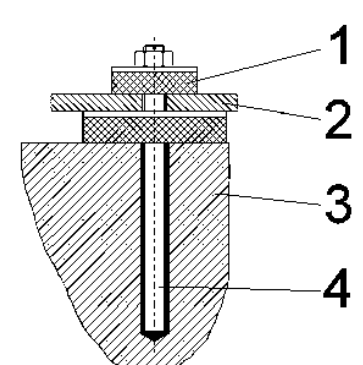
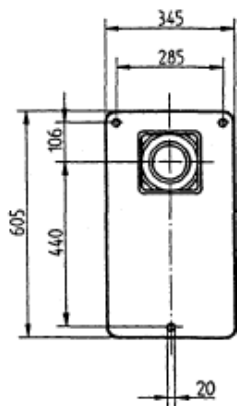
- Level out unevenness with sheet metal.

Do not tension the substructure.

**UNIMAX 3 (TAP)**

- **Drilling pattern for machine type UNIMAX 3**

- Mark and drill holes for heavy-duty anchors on the concrete floor.



- 1 insulating disc with washer,
- 2 Base plate of the machine substructure,
- 3 Hall floor,
- 4 heavy-duty dowels,

Insulating panels contribute to noise reduction and vibration damping.

- Level out uneven floors with sheet metal.

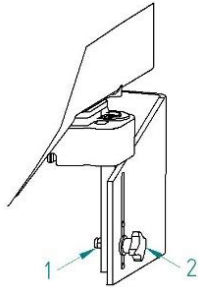
Do not tension the substructure.

- **Electrical connection**

- Electrical connection: CEE plug
- Clockwise rotating field.



Check clockwise rotation.  
Have an electrician swap the phases for anticlockwise rotation.

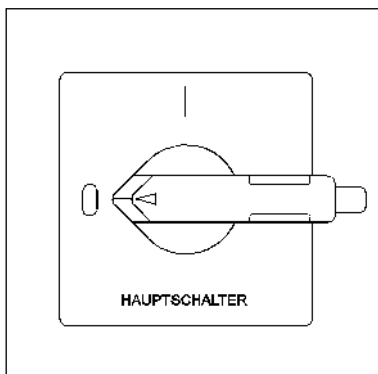


The drill protection shield must be fitted before initial commissioning and its functionality must be checked by a specialist!

1: DIN 982 M6 (lock nut must be fitted at a distance of approx. 2 mm)

2: Star screw M6x35

**First commissioning**

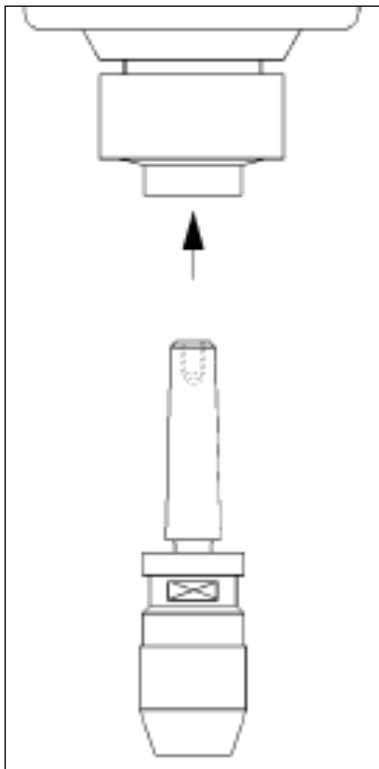


Set the main switch to "0" and secure against unintentional start-up.

- All "bare" machine parts, especially the drill chuck cone and spindle pin or Morse taper.
- Degrease the spindle pin or Morse taper.

- **Tool holder MT 3**

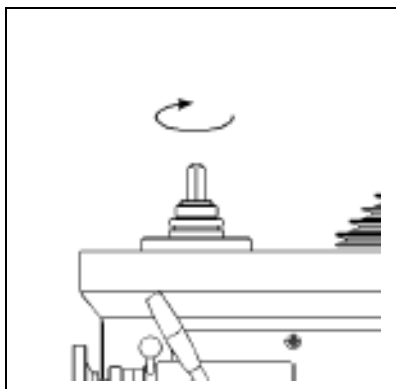
- Insert the drill chuck with a gentle tug.



Check tight fit.

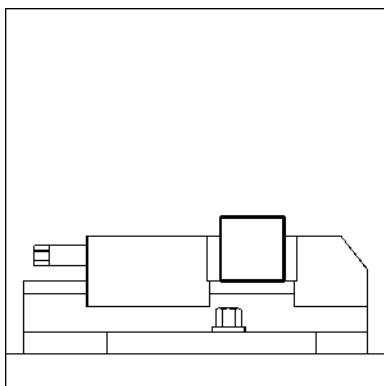
- **Tightening thread**

- Insert threaded drawbar and with tool holder  
Screw on MT 3.

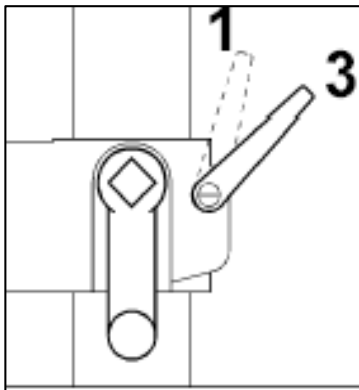


**Prepare the machine**

- Clamp the workpiece securely on the machine table.
- Use drill chuck with MT 3 spindle holder.
- Clamp the drill firmly.



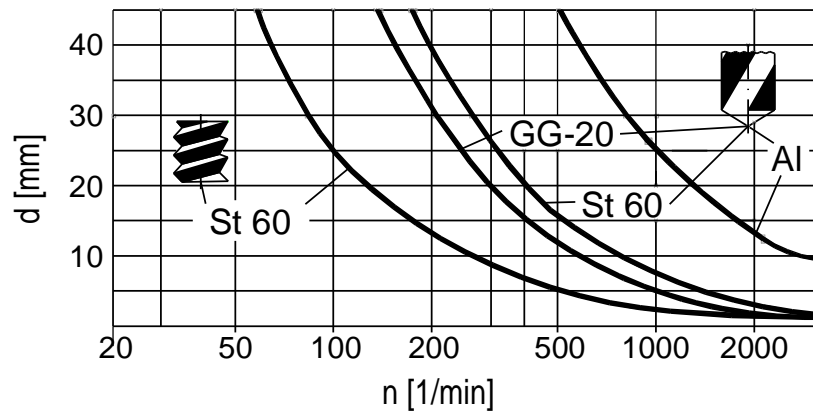
**Setting the distance between tool and workpiece**



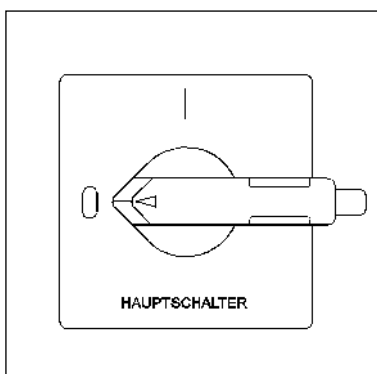
- 1 Release the clamping lever,
- 2 Move the table/upper section with the crank,  
(Swivel the table around the column if required),
- 3 Tighten the clamping lever.

**Set speed**

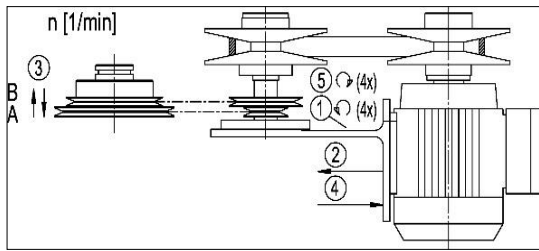
Determine speed according to material and tool.



**Set speed range: A or B**

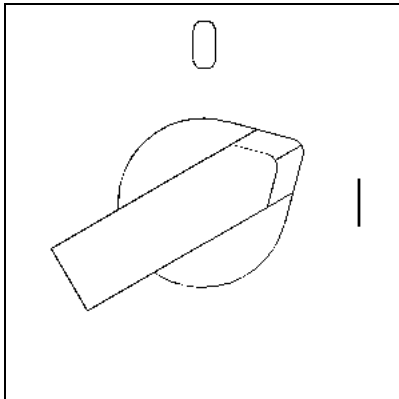


Set the main switch to "0" and secure against unintentional start-up.

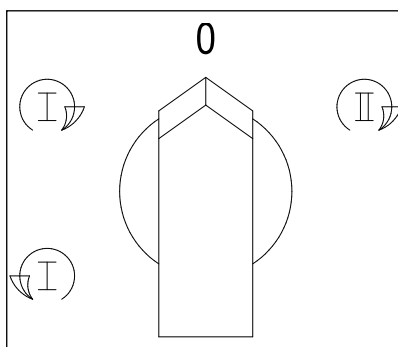


- Remove the protective cover
- SW17 clamping screw between the  
Loosen the machine head and the motor
- Loosen 4 fastening screws (1)
- Move drive unit (2)
- Reposition the V-belt: A or B (3)
- Move the drive unit to the starting position (4)
- and
- Tension the belt with the tensioning screw  
SW17
- Check belt tension, see chapter  
"Changing the V-belt"
- Tighten the fastening screws (5).
- Attaching the machine cover

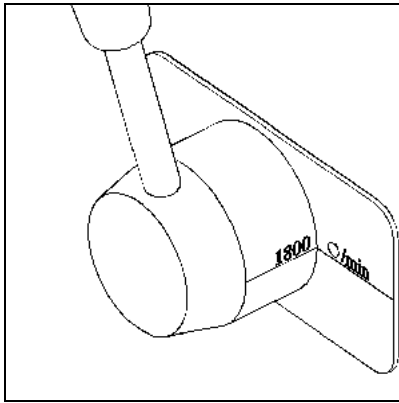
- Switch on the main switch,



- Switch speed to I or II using polarity switch



**Stepless speed adjustment**



- Set the speed selector lever to the desired speed.

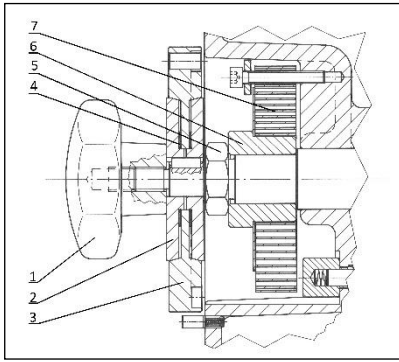


Adjust speeds only while the machine is running!



Adjusting speed at standstill can cause component damage!

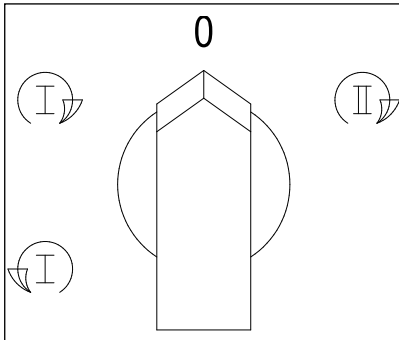
**Drilling**




Feed lever returns automatically.

- Loosen star knob **1** of the depth stop,
- Place the drill bit on the workpiece when stationary,
- Set the depth with dial **2**,
- Tighten star knob **1**,
- Switch on the speed and drill.

**Thread cutting (without TAP function)**




- Loosen the depth stop or set a depth that is greater than the required thread depth
- Turn on the spindle: Switch in position  = clockwise rotation,
- Place the tap on the core hole and cut the thread, move the feed lever by hand



Risk of tool breakage and injury!  
Fix the tool clamping device.

The thread is machined.

- When the thread depth is reached, switch to  = counterclockwise rotation.

Spindle stop in case of emergency



- switch the spindle back to clockwise rotation for the next thread

**Thread cutting (with TAP function)**

- Loosen the depth stop or set a depth that is greater than the required thread depth



- Lower the spindle until the depth indicator shows the desired thread depth  
 - Accept the thread depth with the "Drilling / thread depth" button, the programmed thread depth appears at the bottom left of the display

**- The thread depth must always be specified with a negative sign!**

RESET


- The programmed thread depth can be deleted again with RESET

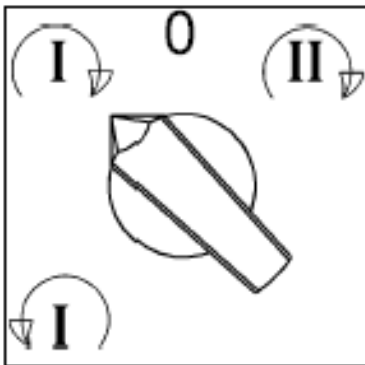


- Clamping the workpiece  
 - Place the tap on the workpiece surface or into the core hole  
 - Accept zero point using the zero point button

**NOTE:**

- Lead-in length of the tap reduces the usable thread length  
 - Run-out at the thread root increases the usable thread length  
 - Provide a sufficiently deep core hole for blind holes


- Turn on the spindle: Switch in position  = clockwise rotation,  
 - Place the tap on the core hole and cut the thread, move the feed lever by hand



Risk of tool breakage and injury!  
 Fix the tool clamping device.


- the thread is machined  
 - When the programmed thread depth is reached, the device switches to counterclockwise rotation  
 - When the spindle reaches the upper end position, it switches to clockwise rotation

**- Only carry out thread machining in pole position !!**

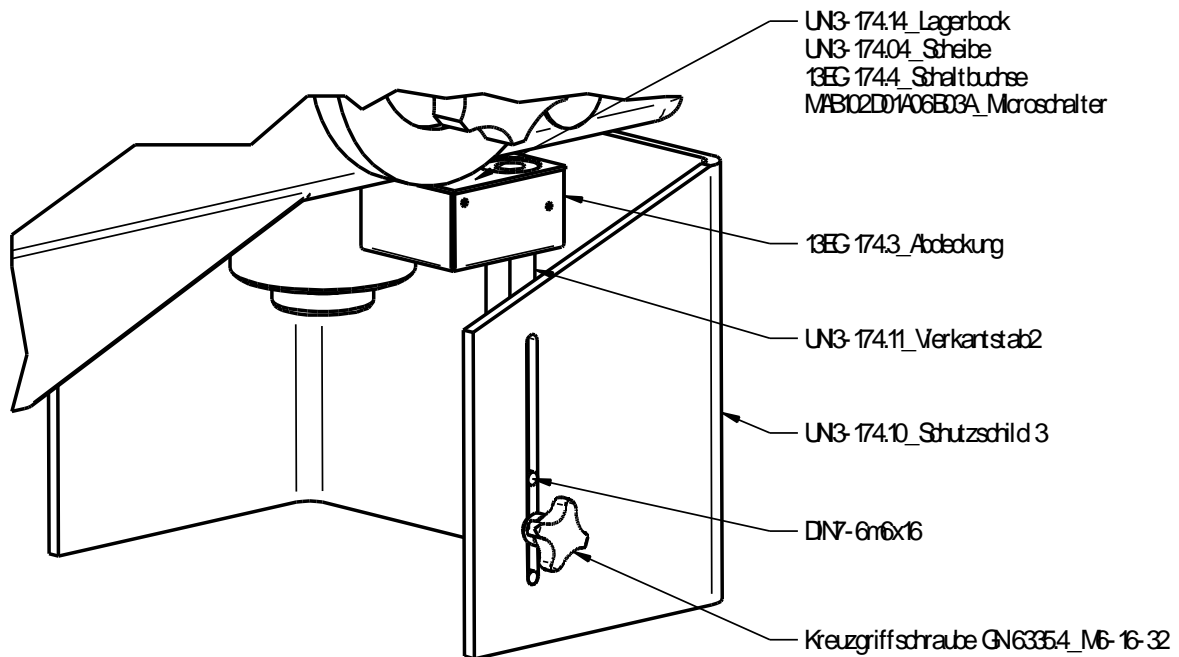
- Left-hand threads can be produced with the pole tap-changer set to  = anticlockwise rotation



- Correction of the thread depth: Lower the spindle to a correspondingly greater or lesser final depth and accept the new value using the "Drilling / thread depth" button

-Spindle stop in an emergency 

## Drill protection



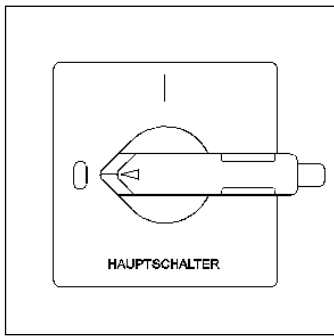
### **Function:**

#### A-tool change

- Turn the protective shield to the left (clockwise):  
Spindle is turned off (main switch safety shutdown)
- Change tool
- Turn the protective shield to the right (counterclockwise)  
Main switch can be switched on again  
(You can feel the drill guard engage and hear a click)

#### B-height adjustment of the protective shield

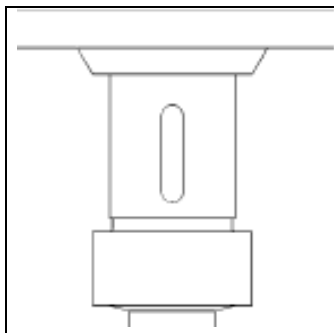
- Loosen the star knob screw (counterclockwise)
- Slide the protective shield in the slotted hole to the desired position
- Tighten the star knob screw firmly (clockwise)



**Tool change**

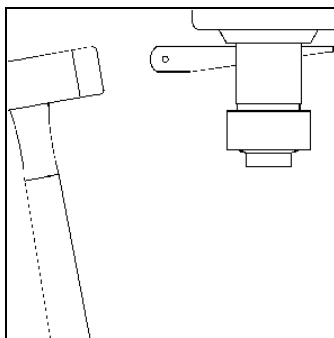


Set the main switch to "0" and secure against unintentional start-up.



**Tool change MT tool with expulsion flap**

- Place a wooden base on the machine table,
- Move the sleeve downwards until the expulsion slot is exposed,
- Hold position,
- The sleeve can be fixed in the extended position using the drilling depth stop: Lower the spindle, loosen the drilling depth stop, turn counterclockwise to the stop and



- Insert the ejector into the ejector slot,
- Tap in the ejector with a plastic hammer,



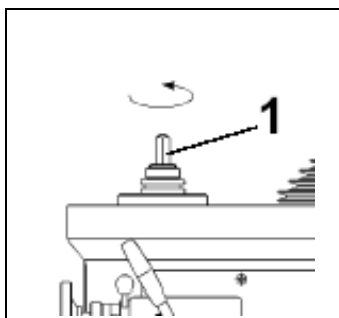
Ensure sufficient distance to the machine head!  
Never knock into the machine head with the ejector! Component destruction!



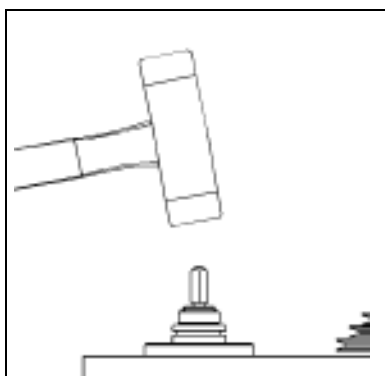
Clean the spindle cone and tool taper.

- Change tool.

**Tool change MT tool with tightening thread**



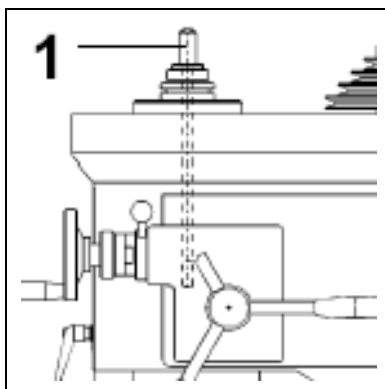
- Spindle cone and tool taper before each tool installation clean.
- Place a wooden plate on the machine table,
- Loosen the threaded pull rod **1**,



- Tool holder by means of threaded drawbar as pictured.



Use a plastic hammer.



Always work with the threaded tightening rod **1 installed.**



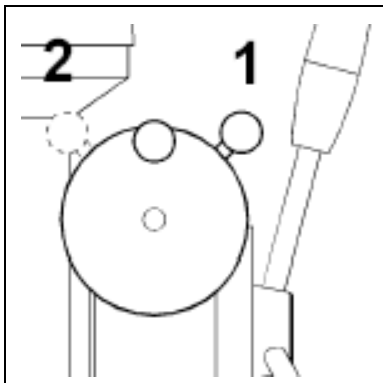
Risk of injury due to tool breakage.

**Accessories**

**Minimum quantity cooling lubrication (TAP only)**

- Switch on minimum quantity lubrication at the switch box
- Each time the zero point is passed in the downward direction, a spray burst occurs

**Fine feed**



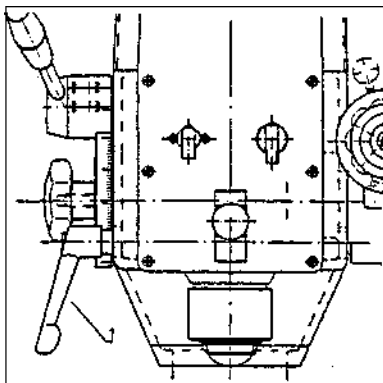
- **1** Fine feed on,



Lever must engage.

- Approach workpiece with handwheel,
- Set the scale ring of the handwheel to "0",
- drive to depth with fine feed,
- **2** Fine feed off.

**Milling**



Do not use hard metal tools.

- Position the workpiece with the cross table,
- Approach the workpiece with fine feed of the sleeve,
- Set the scale rings to "0",
- adjust height

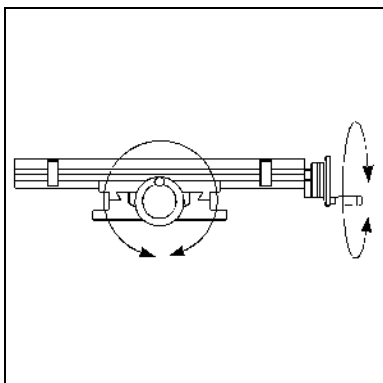


Only extend the sleeve and pillar as far as necessary.



For milling work with a fixed sleeve, tighten clamping lever **1**.

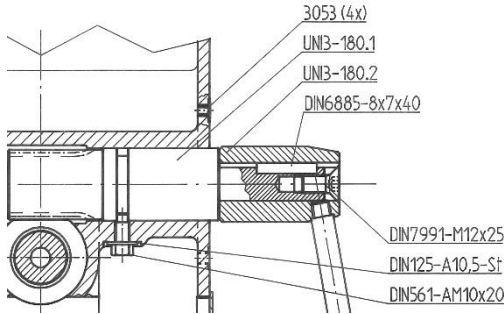
- Cross table with manual feed (4 mm/rev) via handwheels.



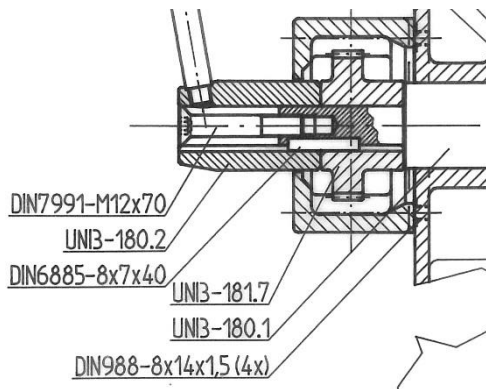
**Retrofitting fine feed / sleeve clamping**



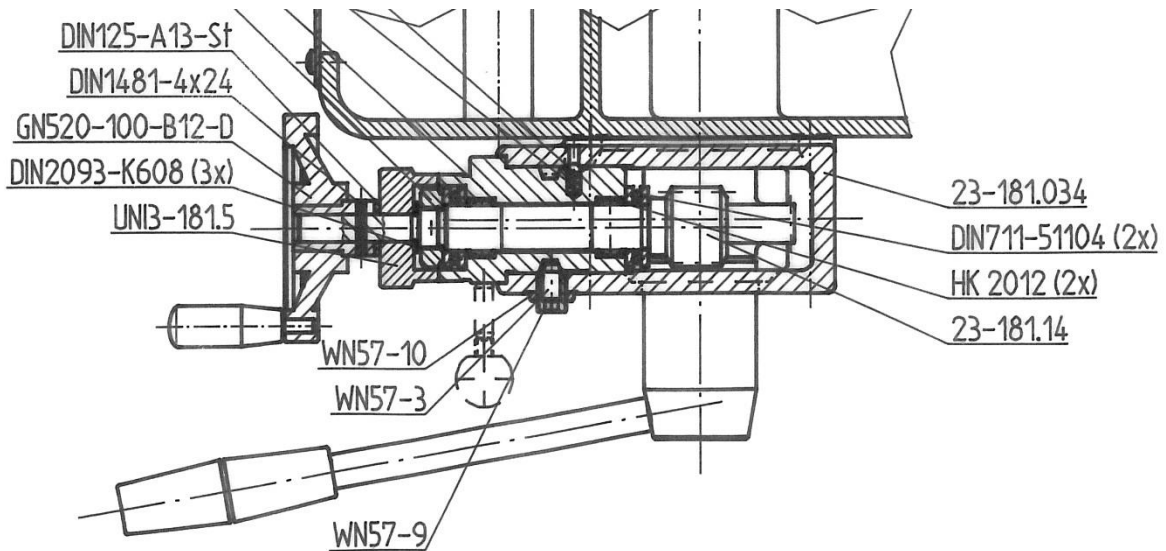
Switch off the main switch



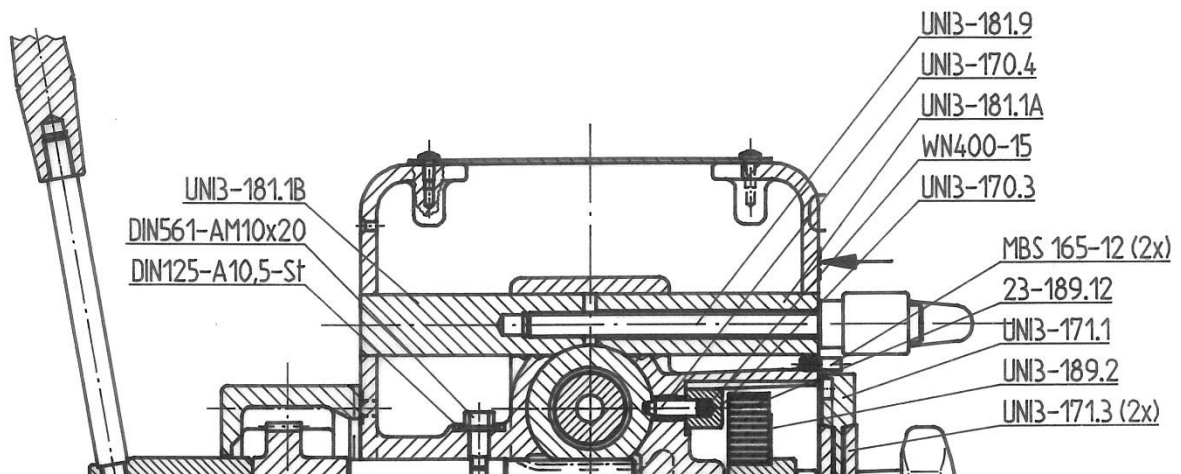
- Removing the countersunk screw M12x25
- Removing the lever holder UNI3-180.2 (incl. lever) from the feed bolt



- Push the UNI3-181.7 gearwheel onto the feed bolt, the longer collar must point towards the machine
- Greasing the gear wheel



- Insert 4 spacers DIN988-8x14x1.5 into the cut-outs in the machine head (assembly aid: fix washers with grease)
- Attaching the pre-assembled gearbox housing 23-181.034
- Screw on the gearbox with 4 DIN912-M8x70 screws
- Attaching the lever holder UNI3-180.2
- Screw on lever holder with countersunk screw M12x70



- Remove 2 black covers in the upper section
- Inserting the clamping pieces UN13-181.1A and B (optionally for the clamping lever on the right or left side)



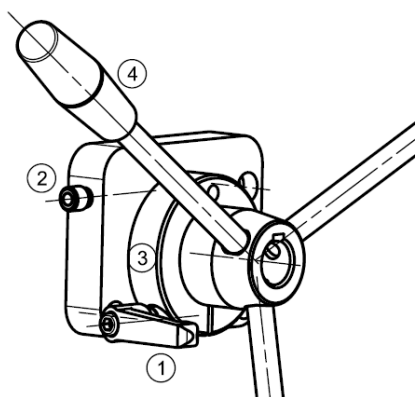
Align the clamping pieces with the large radii to the sleeve

- Screw the clamping lever with threaded rod into the clamping pieces, grease the thread in advance



**Functional test:**

- Loosen the sleeve clamp and check that the sleeve moves smoothly
- Engage the fine feed with the ball handle (note the locking points)
- Check the ease of movement of the sleeve feed
- If necessary, correct the position of the gearbox on the machine head: loosen 4 screws and move the gearbox, reattach the screws



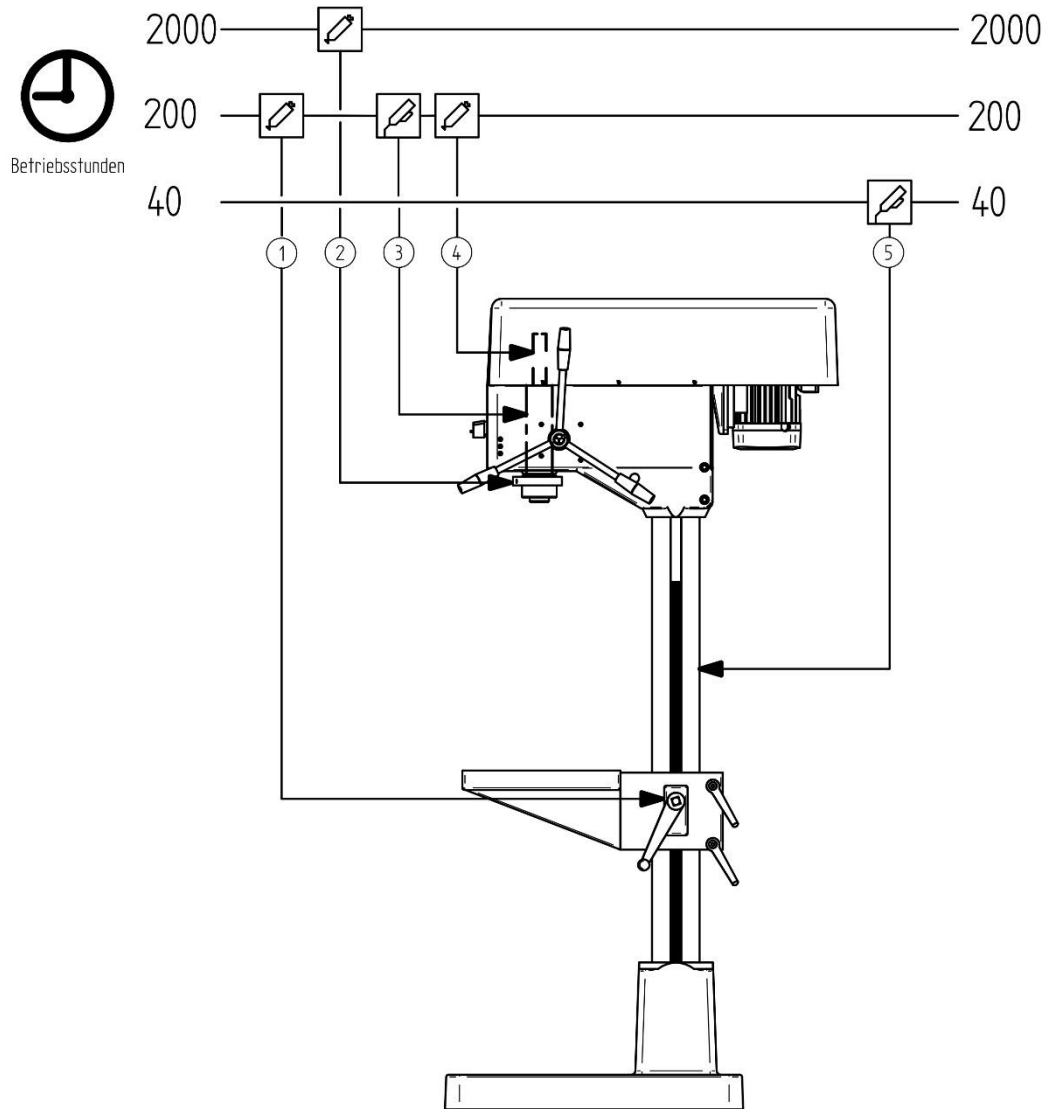
### Drilling depth fine stop

- Loosen the star knob on the scale ring on the left
- Release clamping lever 1
- Pull down feed lever 4 to drilling depth and hold
- Turn the clamping ring 3 to the position shown (to the stop) and tighten the clamping lever 1
- Finely adjust the drilling depth with the knurled screw 2, check the adjustment using the digital depth display, on the scale ring or on the workpiece
- Do not retighten the scale ring if the drilling depth fine stop is used!

**Maintenance**

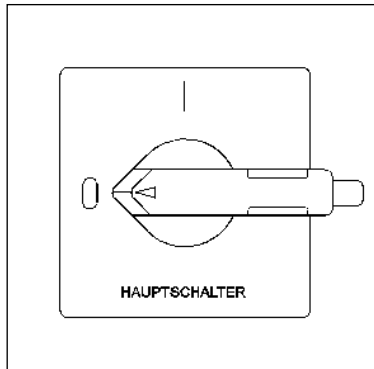
**Lubrication instructions**

- for machine type: **UNIMAX 3**

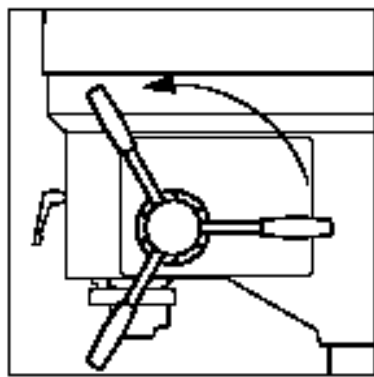


1	Hubeinrichtung	K 2 k-30	-	Fett
2	Pinolenlager	K 2 k-30	-	Fett
3	Pinole	DIN 51502 CG	-	Gleitbahnöl
4	Spindelkeilwelle	46MR401	-	Klüberpaste
5	Säule	DIN 51502 CG	-	Gleitbahnöl

**Adjusting the return spring**

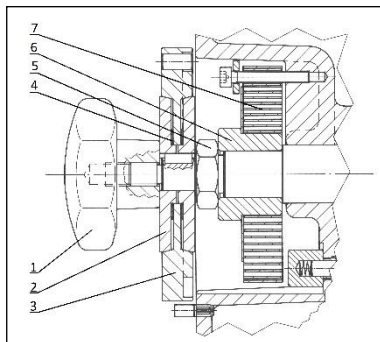


Set the main switch to "0" and secure against unintentional start-up.



Feed lever must return slowly but steadily.

- Move the sleeve all the way up.



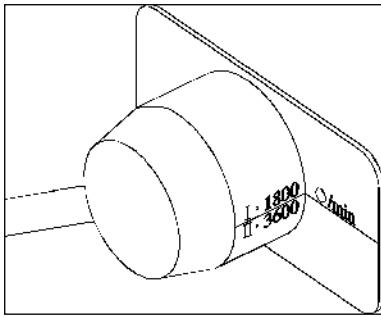
- Remove star grip **1**,
  - Remove washers **2**, scale ring **3** and disk springs **4**,
  - Hold the clamping bush **6** in place,
  - Loosen nut **5**,
  - Tension spring **7** with clamping bush **6**,
  - Tighten nut **5**,
  - Washers **2**, scale ring **3** and disk springs **4** on
- Set the feed bolt,
- Screw on star grip **1**.



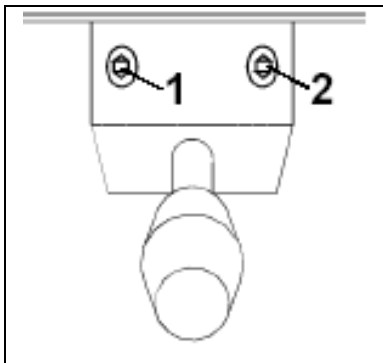
Tension the return spring just enough so that the sleeve does not extend by itself.



Check the return stroke of the feed lever.

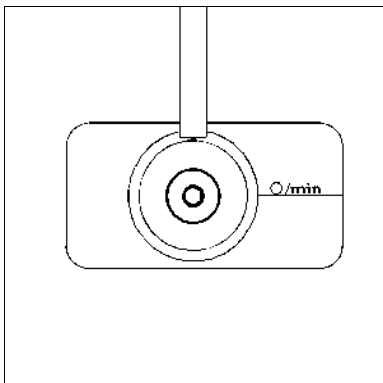


- Fully regulate the stepless drive once a day.
- Set the highest speed for longer shutdown periods.

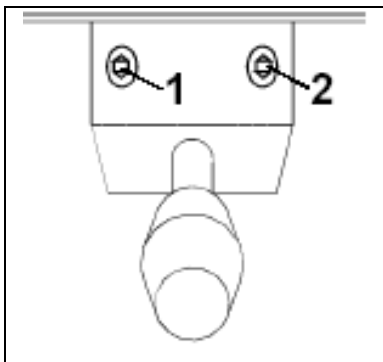


**Readjusting the speed selector lever return stop**

- Loosen grub screws **1** and **2**,

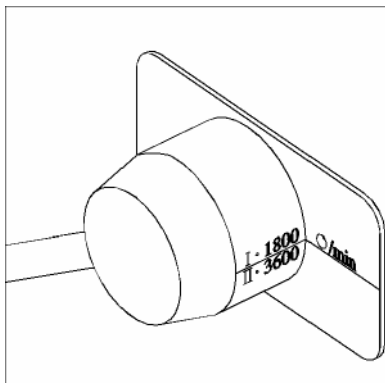


- Adjust the countersunk screw,

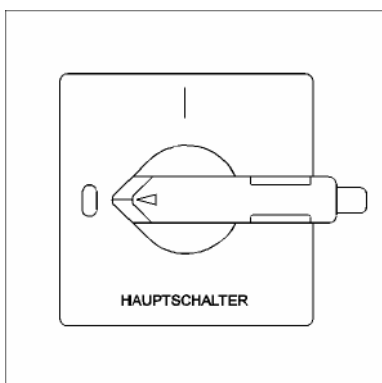


- Tighten grub screw **2**,
- Unscrew grub screw **1**,
- Drill centering for grub screw **1** with drill Ø 5,
- Screw in grub screw **1** and tighten.

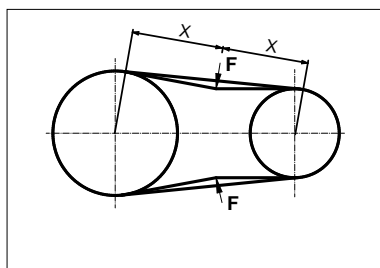
**Changing the wide V-belt**



- Turn on the spindle and set the lowest speed,
- Turn off the spindle.



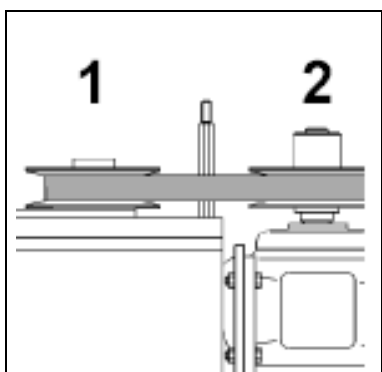
Set the main switch to "0" and secure against unintentional start-up.



- Remove the protective cover,
- Set the highest speed at standstill,
- Carefully press the wide V-belt together.



Wide V-belt is loose.



- First remove the wide V-belt from the motor pulley 2, then from the countershaft pulley 1.



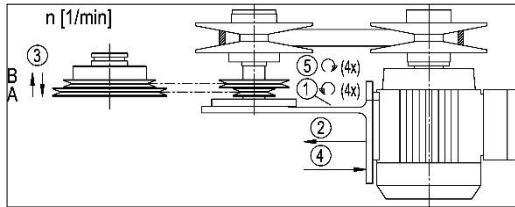
Crushing hazard due to collapsing Motor control pulleys.

- First place the new wide V-belt on the idler pulley 1, then onto the motor pulley 2.
- Tension the wide V-belt by turning the motor, V-belt and tighten.
- Attach the protective cover.



Switch on machine briefly, wide V-belt tensions.

**Changing the V-belt**



- Remove the protective cover.
- Remove the wide V-belt.



Crushing hazard due to collapsing Motor control pulleys.

- Loosen 4 fastening screws.

- - Remove the V-belt first from the spindle pulley, then from the intermediate pulley.



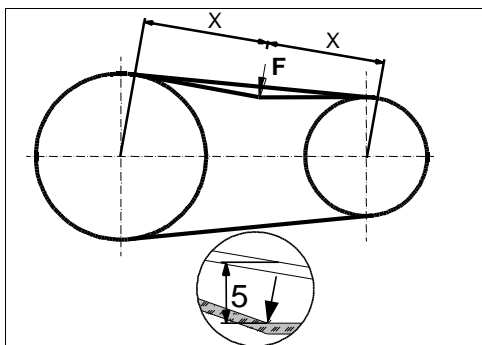
Move the drive unit.

- First place the new V-belt on the intermediate pulley, then onto the spindle pulley.



Move the drive unit to the starting position.  
V-belt tightens.

- Tighten the 4 fixing screws.



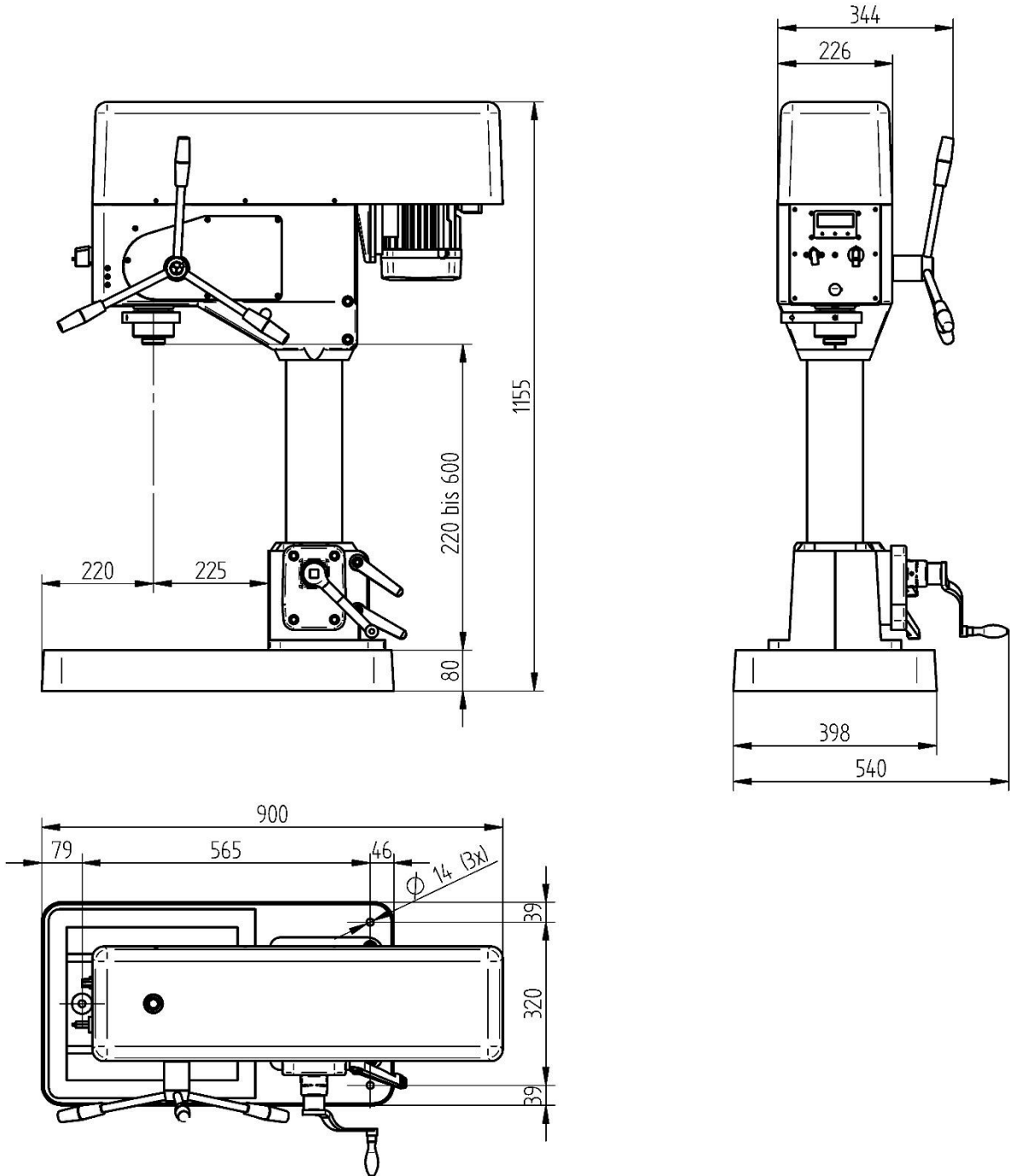
- Check belt tension.
- Fit the wide V-belt,
- Attach the protective cover.

**Fault table**

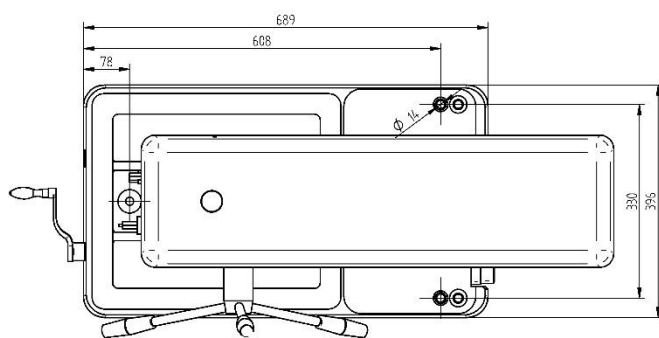
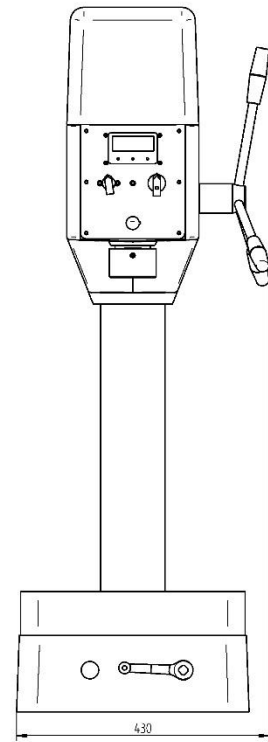
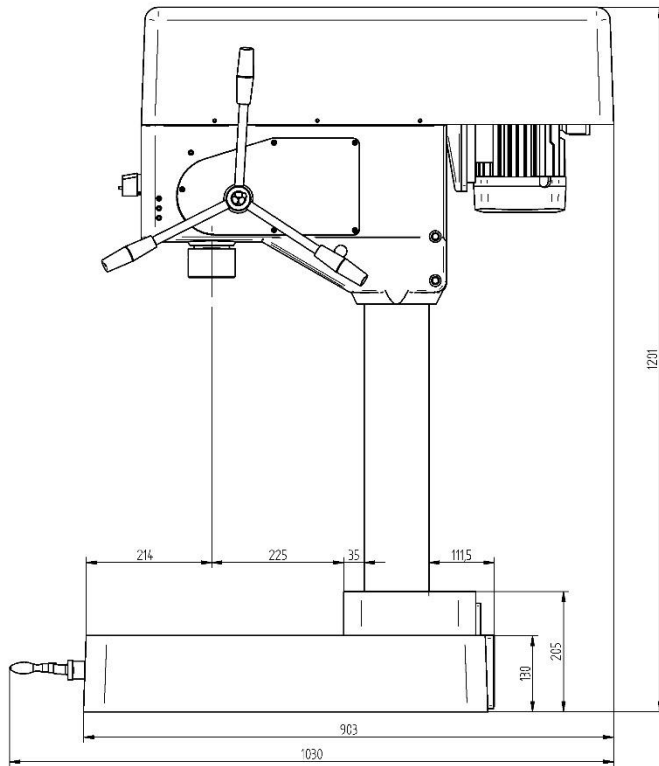
<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
- Spindle does not start	- Main switch off - Torn belt - Loose straps - Power supply interrupted	- Main switch on - Replace belt - Tensioning the belt - Check power supply
- Machine vibrates	- Machine stands on uneven ground - Tool does not run centrally	- Machine on level Anchoring the substrate - clamp Tool centric
- Feed lever cannot be move  - Feed lever can only be difficult to move	- Drilling depth stop is clamped - sleeve clamp fixed - Interlocking of the sleeve is damaged - Sleeve clamp fixed	- Loosening the drilling depth stop - Loosening the sleeve clamp - Have the sleeve replaced  - Loosening the pinole clamp
- Feed lever does not move all the way back	- Return spring is not sufficiently taut - Defective return spring	- Tensioning the return spring  - Replacing the return spring
- grinding noises in the Spindle	- Bearing damage spindle bearing - Bearing damage in the Driving sleeve	- Have bearings replaced - Have bearings replaced
- Drill turns, but does not drill	- Blunt drill bit - Drill turns left	- Grinding drill bits - Have the rotating field changed
- Display shows "Power down Error"	- Unexpected shutdown of the display	- Delete with the left button on the display

**Dimensional and spare parts drawings**

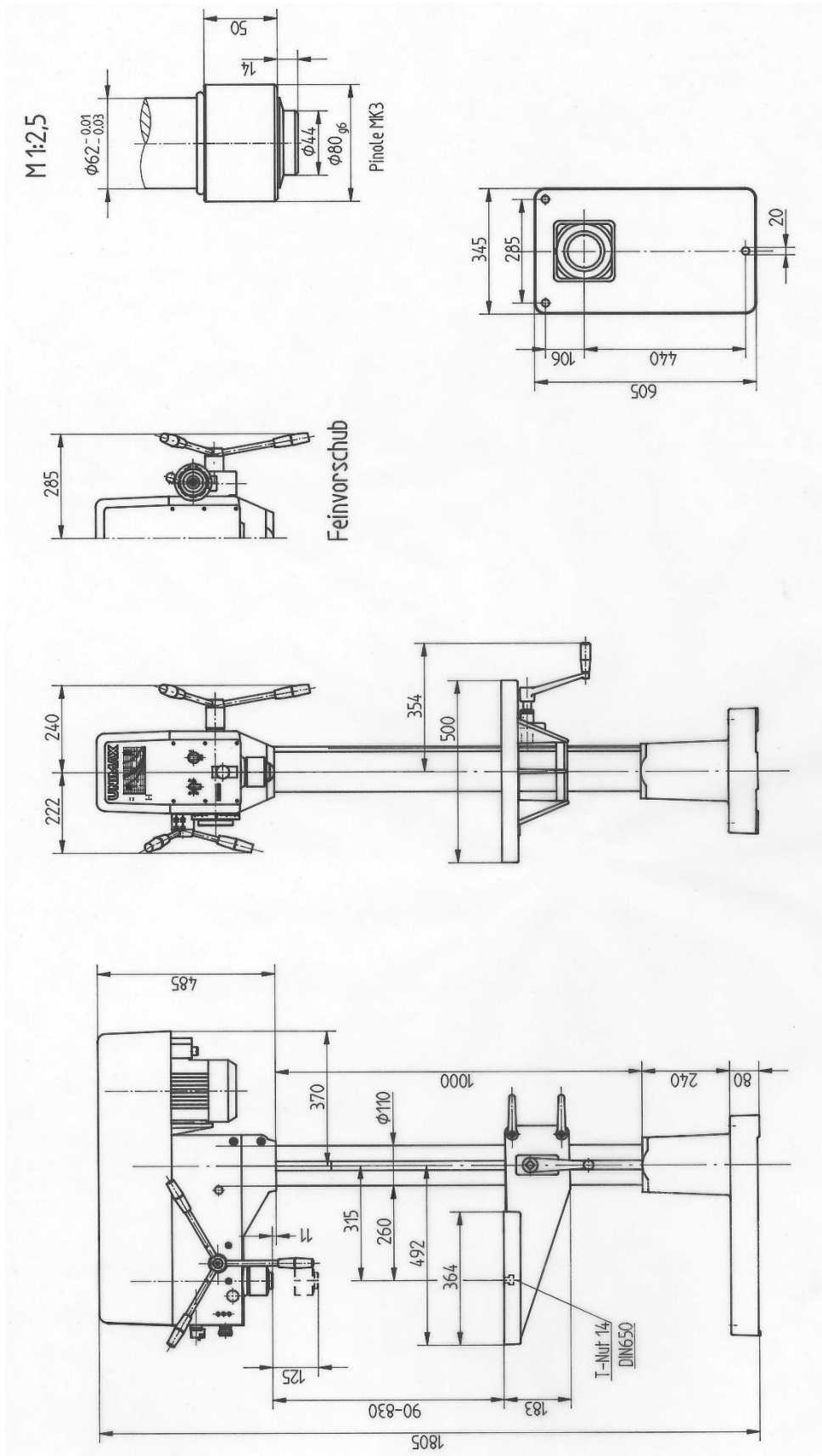
**Dimension sheet UNIMAX 3T**



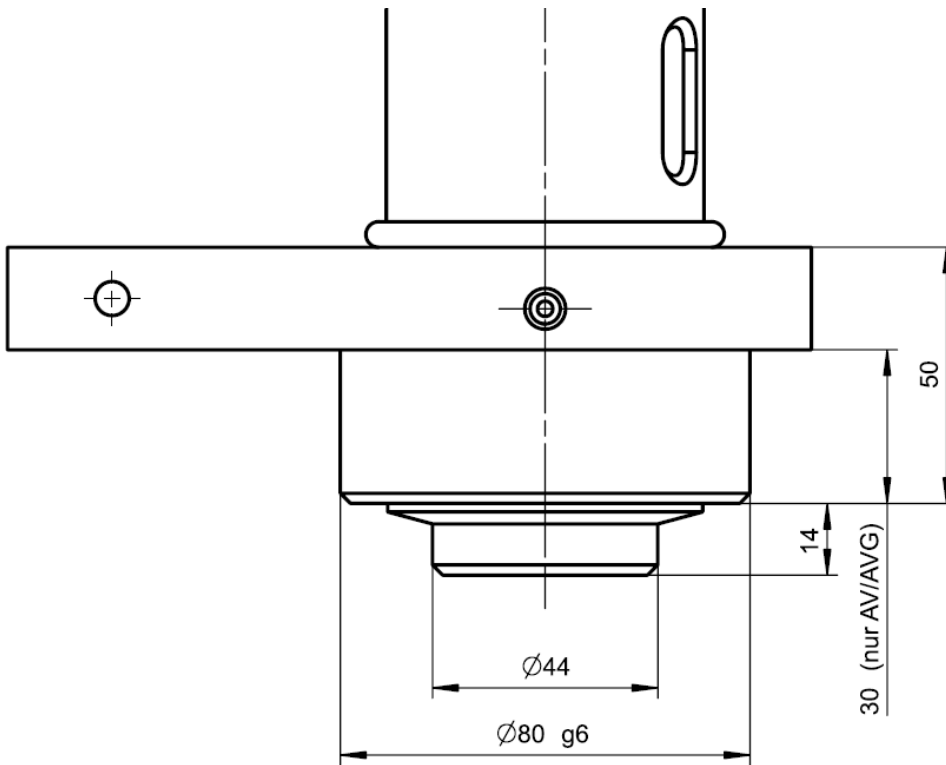
**Dimension sheet UNIMAX 3T-TVV**



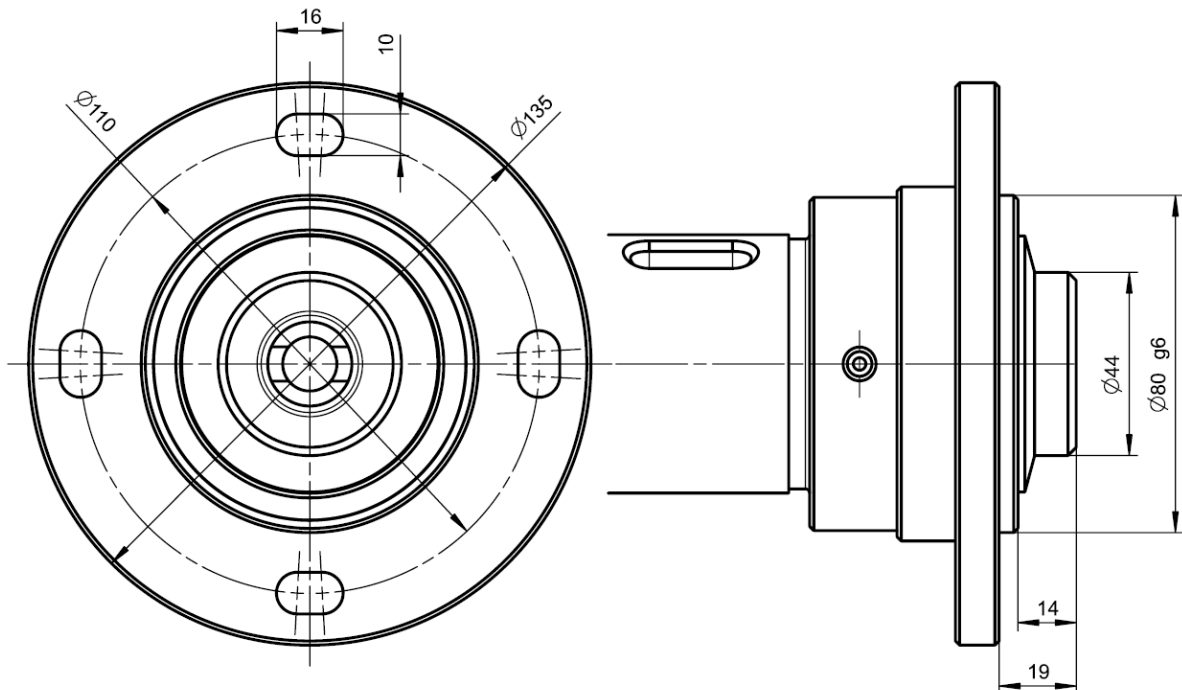
Dimension sheet UNIMAX 3



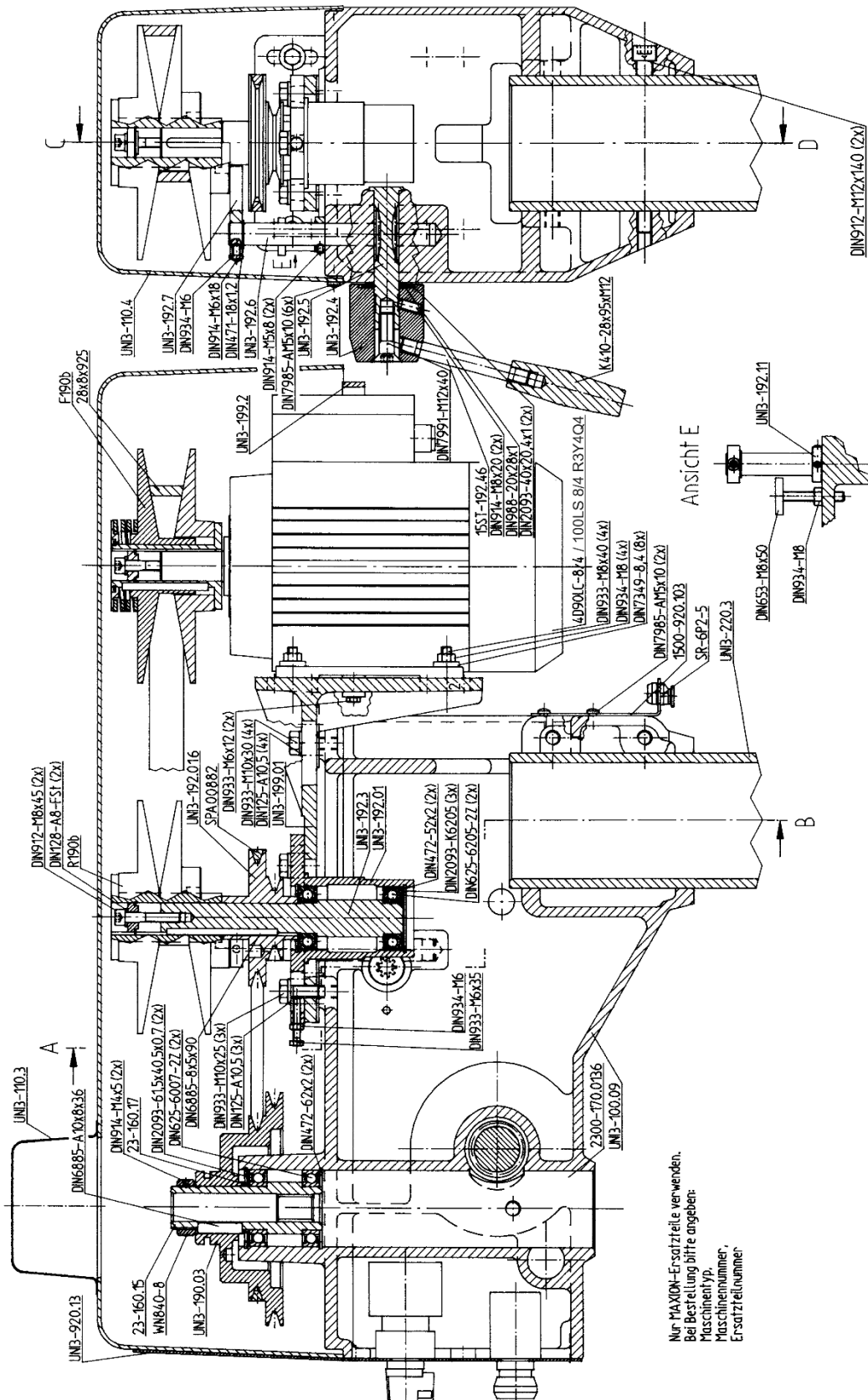
**Connection dimensions sleeve MT3**



**Connection dimensions flange sleeve MT3**

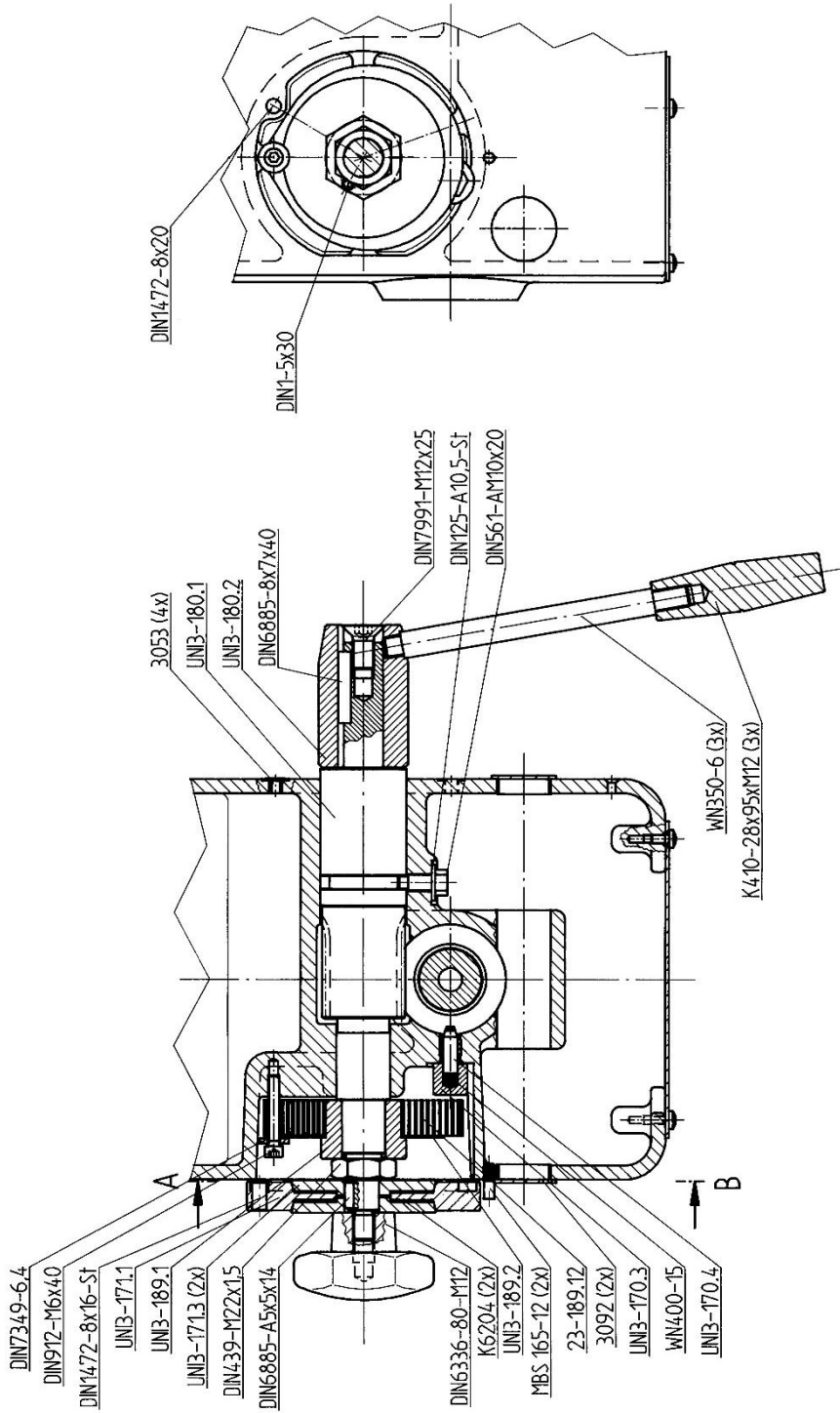


Machine head



Nur MAXION-Ersatzteile verwenden.  
Bei Bestellung bitte angeben:  
Maschinenyp.  
Maschinennummer,  
Ersatzteilnummer.

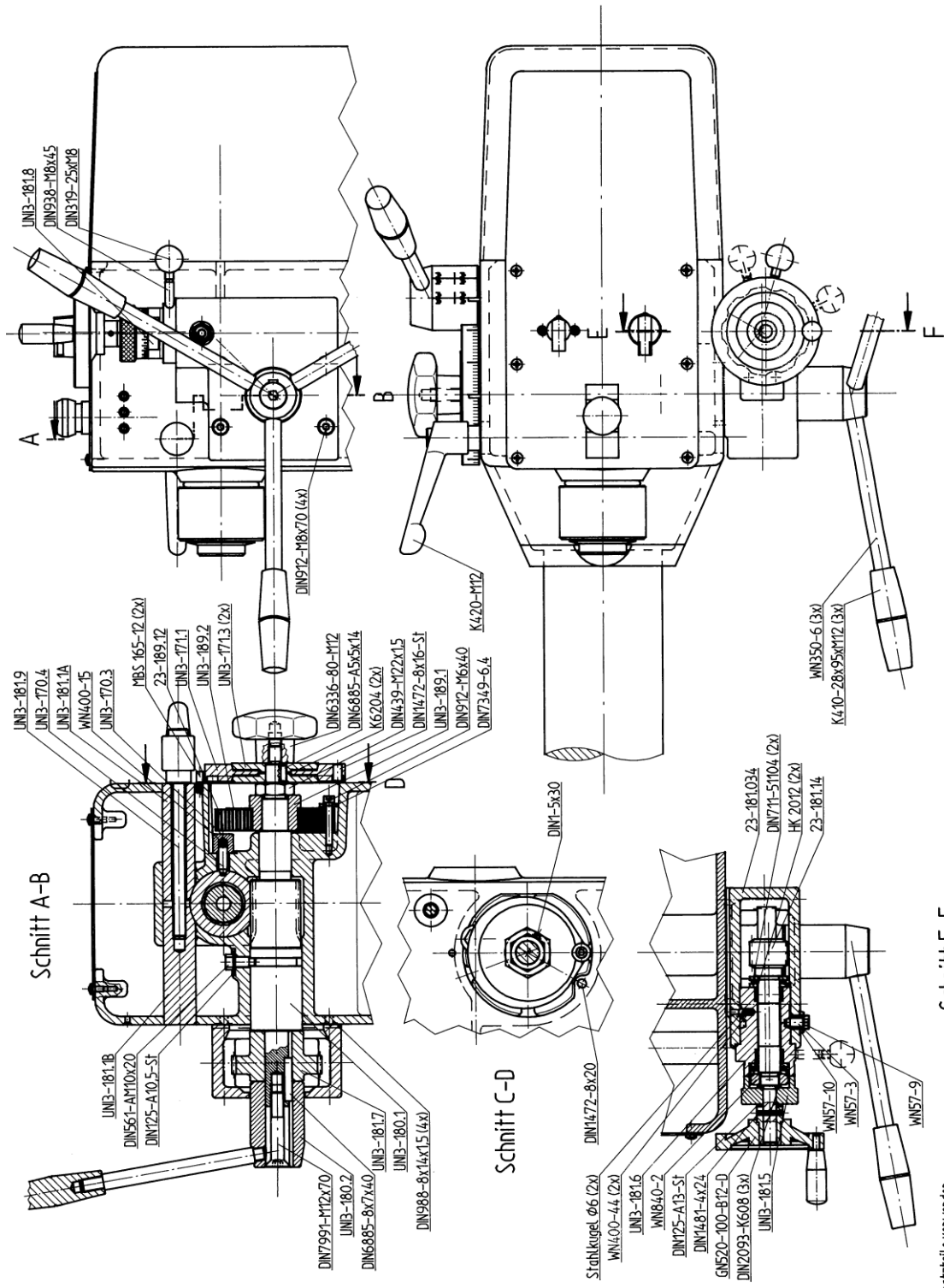
**Feed rate**



Nur MAXION-Ersatzteile verwenden.  
 Bei Bestellung bitte angeben:  
 Maschinentyp,  
 Maschinennummer,  
 Ersatzteilnummer

Ersatzteilzeichnung- Vorschub UNIMAX 3

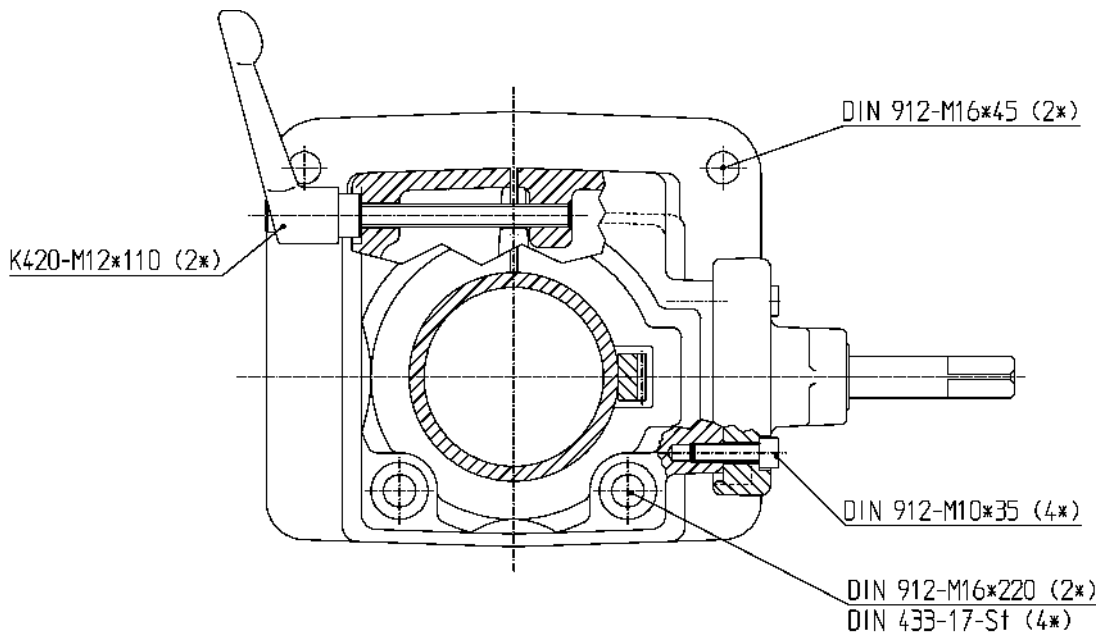
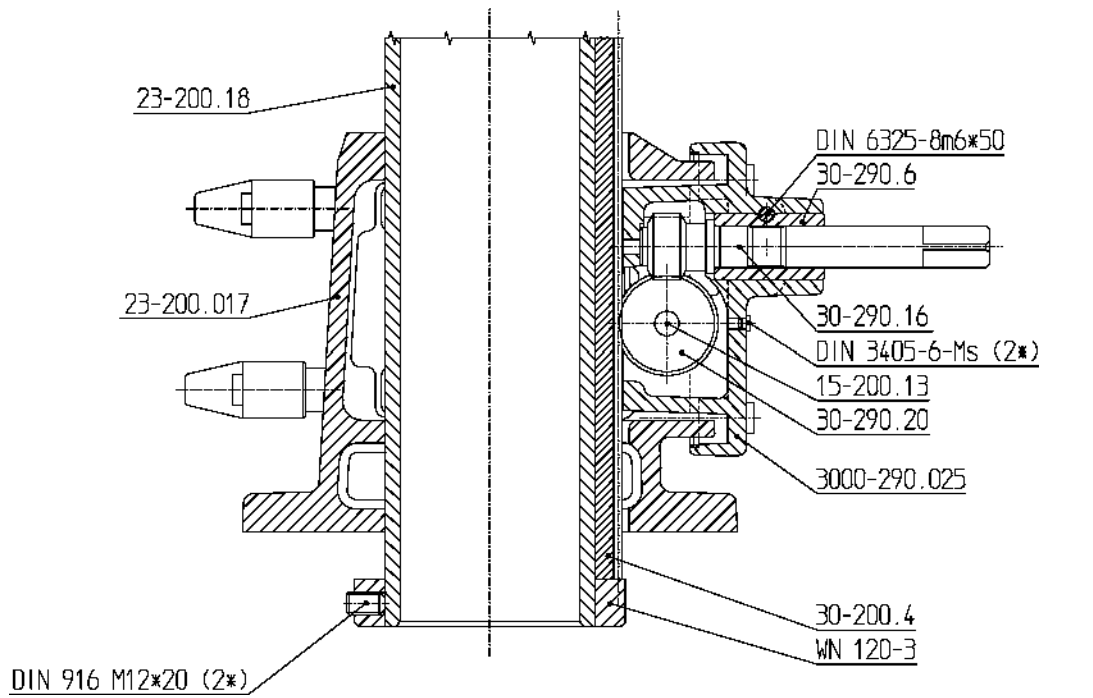
**Fine feed UNIMAX 3**



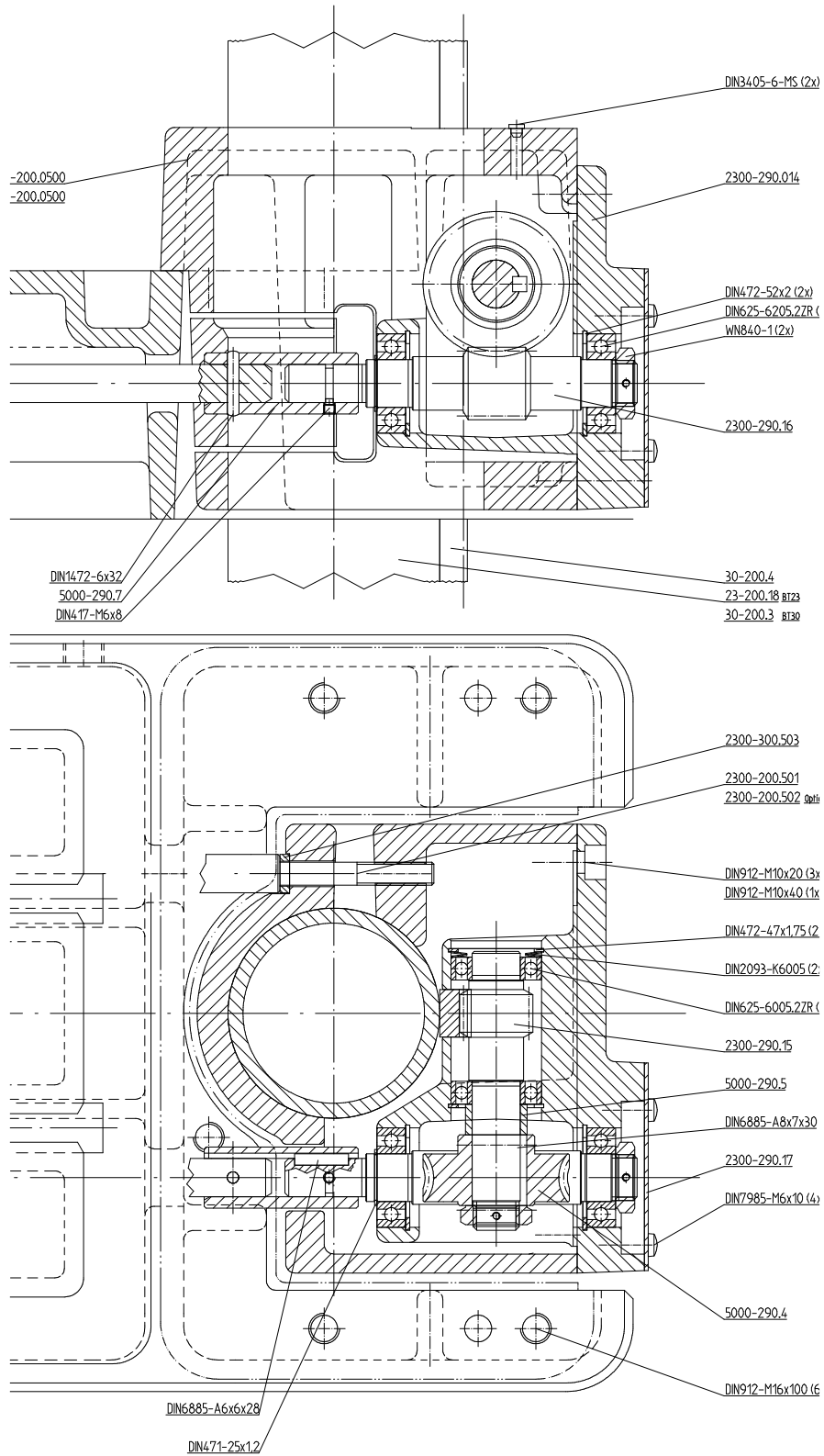
Ersatzteilzeichnung- Feinvorschub UNIMAX 3

Nur MAXION-Ersatzteile verwenden.  
Bei Bestellung bitte angeben:  
Maschinentyp,  
Maschinennummer,  
Ersatzteilnummer

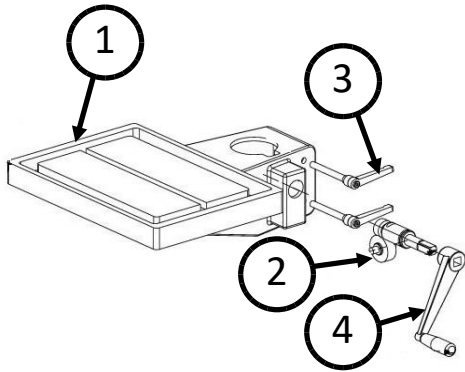
**Screw jack BT**



**BT lifting device with height adjustment from the front (HVV)**



**Intermediate table BS**



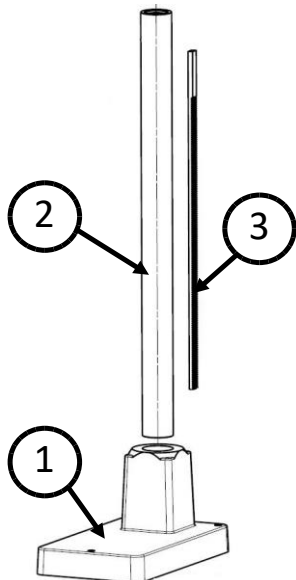
- [1] UNI3-300.001
- [2] 18EC-030.001
- [3] K420-M12x110
- [4] WN160-K440

**Article:**

**Naming:**

- Drilling table
- Gear set
- Clamping lever
- Crank handle

**Base frame BS**



- [1] UNI3-220.01
- [2] UNI3-220.3
- [3] UNI2-220.2

**Article:**

**Article:**

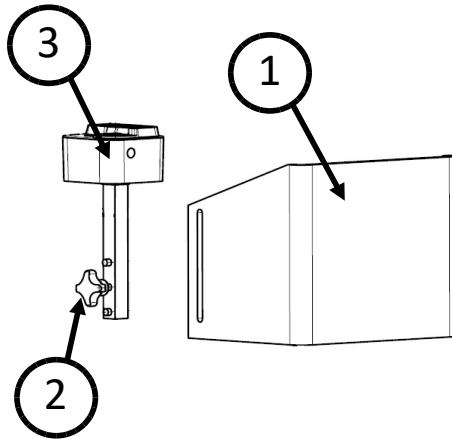
- Base plate
- Pillar
- Toothed rack

Only use **Maxion spare parts.**

Please specify when ordering:

- Machine type
- Machine number
- Spare part number

## Drill protection



[1]	UNI3-174.10
[2]	GN6335.4-32-M6X35
[3]	18EC-010.37

**Article:****Naming:**

Protective shield  
Cross grip  
Housing

**Function:**

## A - Tool exchange

- Turn off spindle
- Rotation of the protective shield by 90° to the left (clockwise)
- Change tool (twist drill / reamer / tap)
- Rotation of the protective shield by 90° to the right (counterclockwise)  
(You can feel the drill guard engage and hear a click)

## B - Height adjustment of the protective shield

- Loosen the star knob screw (counterclockwise)
- Slide the protective shield in the slotted hole to the desired position
- Tighten the star knob screw firmly (clockwise)

**Only use MAXION spare parts.**

Please specify when ordering:

- Machine type
- Machine number
- Spare part number