KNECHT

Operating Instructions

B 500

Automatic Sharpening and Polishing Machine

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Operating Instructions

B 500 Automatic Sharpening and Polishing Machine

Manufacturer

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Documents for machine operator

Operating Instructions

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1. Important notes

1.1 Preface to the operating instructions

These operating instructions are intended to make it easy to learn how to use the automatic sharpening and polishing machine, hereafter referred to as the grinding machine, and to properly utilize its features.

These operating instructions contain important notes on how to operate the grinding machine safely, properly and efficiently. Observing these instructions helps to avoid hazards, reduce repair costs and downtimes, and to increase the reliability and service life of the grinding machine.

The operating instructions must be permanently available at the place of use of the grinding machine.

The operating instructions must be read and applied by every person tasked with working with the grinding machine, e.g.:

- transport, installation, commissioning
- operation, including error rectification during operation, as well as
- servicing (maintenance, repair).

Recognized technical standards for safe and professional work must be observed in addition to these operating instructions and the binding accident prevention regulations applicable in the country of use and at the place of use.

1.2 Warnings and symbols in the operating instructions

The operating instructions use the following symbols/designations that must be followed:

CAUTION

The hazard triangle with the signal word "CAUTION" serves as a work safety notice for all work for which there is a risk of personal injury or death.

In these cases, work should be done with special attention and care.

ATTENTION

"ATTENTION" is written in places where special attention must be paid to prevent damage or destruction of the grinding machine or its surroundings.

NOTE

"NOTICE" refers to user tips and especially useful informations.

1. Important notes

1.3 Warning and mandatory signs and their meaning

1.3.1 Warning and mandatory signs on / in the grinding machine

The following warnings and mandatory signs have been affixed on / in the grinding machine:

CAUTION! DANGEROUS ELECTRICAL VOLTAGE!
(Warning sign on the control cabinet)

The grinding machine carries life-threatening voltage when it is connected to the power supply.

Voltage-carrying device parts may only be opened by authorized personnel.

The grinding machine must be separated from the mains supply before carrying out servicing, maintenance and repair work on it.

CAUTION! RISK OF INJURY FROM KNIFE!
(Mandatory sign on the polishing unit)

Working with the grinding machine involves grinding knives that could cause serious cut injuries due to their sharpness.

Protective gloves must be worn during this work, especially when mounting the knives.

Caution when transporting knives! Use the protective equipment provided by the knife manufacturer. Protective gloves and safety shoes must be worn.

1. Important notes

1.4 Rating plate and machine serial number

Figure 1-1 Rating plate

The rating plate (1-1) is located on the right side of the machine.

Figure 1-2 Machine number

The machine serial number (1-2) is located on the rating plate (1-1) and at the top right on machine.

1.5 Figure and position numbers in the operating instructions

If the text makes a reference to a machine component depicted in a figure, the figure and position number will be given in brackets.

Example: (7-6/1) means picture number 7-6, position 1.

Figure 7-6 *Locking the knife*

Lock the knife using the clamping lever (7-6/1).

Close the protection hood.

2. Safety

2.1 Basic safety instructions

2.1.1 Observe notes in the operating instructions

The basic prerequisite for the safe handling and uninterrupted operation of this grinding machine is knowledge of the basic safety instructions and regulations.

- These operating instructions contain important notes on how to operate the grinding machine safely.
- All persons carrying out work on the grinding machine must follow these operating instructions, in particular the safety notices.
- In addition, the rules and regulations regarding accident prevention at the place of use are to be observed.

2.1.2 Obligation on the part of the operator

The operator is obliged to allow only those persons to work on the grinding machine, who

- are familiar with the occupational safety and accident prevention regulations and have received instruction in handling the grinding machine,
- have read and understood the operating instructions, in particular the section entitled "Safety" and the warning notes, and have provided signed confirmation of this.

The safety-awareness of the personnel at work will be monitored at regular intervals.

2.1.3 Obligation on the part of the personnel

All personnel working on the grinding machine shall be obliged, before starting work, to

- observe basic occupational safety and accident prevention regulations,
- read the operating instructions, particularly the section entitled "Safety" and the warning notes, and provide signed confirmation that they have understood them.

2.1.4 Hazards involved in handling the grinding machine

The grinding machine has been built to the latest technological standards and the recognized rules of technical safety. Nevertheless, its use may result in danger to life and limb of the user or third parties, or damage to the grinding machine or other property.

The grinding machine may be used only:

- for its intended purpose
- in a safe and secure condition.

Malfunctions that may impair safety are to be eliminated immediately.

2. Safety

2.1.5 Malfunctions

If safety-relevant malfunctions occur with the grinding machine, or if the processing behavior indicates that such malfunctions may have occurred, the grinding machine must be stopped immediately and until such time as the malfunction has been found and eliminated.

Allow only authorized trained personnel to eliminate the malfunctions.

2.2 Intended use

The grinding machine is only suitable for the automatic grinding, deburring and polishing of flat machine knives.

Before working on a knife, it must first be checked whether the knife fits on the knife holding fixture.

Any other use or use beyond this is not considered as intended. KNECHT Maschinenbau GmbH is not liable for any damage resulting from this. The risk is borne solely by the user.

Intended use also includes observing all instructions in the operating manual.

ATTENTION

Improper use of the grinding machine exists, for example, if:

- **fixtures are not properly attached.**
- **workpieces other than flat machine knives are ground.**

2.3 Warranty and liability

Warranty and liability claims in case of personal injury or property damage are excluded if such damage is attributable to one or more of the following causes:

- improper use of the grinding machine,
- improper transport, commissioning, operation, and maintenance of the grinding machine,
- operating the grinding machine with defective safety devices, or using improperly attached or malfunctioning safety and protective equipment,
- failure to observe the instructions with regard to transportation, commissioning, operation, maintenance and repair of the grinding machine,
- unauthorized structural alterations to the grinding machine,
- unauthorized modification, e.g. of the drive conditions (output and speed),

- failure to monitor machine parts that are subject to wear, and
- use of unapproved replacement and wear parts.

Use only original replacement and wear parts. If externally purchased parts are used, it is not guaranteed that they have been designed and manufactured to meet the requirements in terms of stress and safety.

2.4 Safety regulations

2.4.1 Organizational measures

Inspect all available safety devices regularly.

Observe prescribed intervals for recurring maintenance work or as specified in the operating instructions!

2.4.2 Protective equipment

Before every commissioning of the grinding machine, ensure that all protective equipment is properly mounted and in functional condition.

Protective equipment may be removed only after the grinding machine has stopped and has been secured against accidental restart.

When attaching spare parts, the protective equipment must be attached by the operator as stipulated.

2.4.3 Informal safety measures

The operating instructions must be permanently available at the place of use of the grinding machine. In addition to the operating instructions, the generally applicable as well as locally relevant accident prevention regulations must also be made available and observed.

All safety alert symbols and hazard warnings on the grinding machine must be complete and clearly legible.

2.4.4 Selection and qualification of personnel

Only trained and instructed personnel may work on the grinding machine. Observe the legally permitted minimum age!

The responsibilities of personnel with respect to commissioning, operation, maintenance, and repair must be clearly specified.

Personnel still undergoing training or instruction may only work on the grinding machine under the permanent supervision of an experienced person!

2.4.5 Machine control system

Under no circumstances make program changes to the software. Parameters that the operator can set himself are excluded from this (e.g. setting the number of cycles).

Only trained and instructed personnel are permitted to switch on and operate the machine.

2.4.6 Safety measures in normal operation

Do not operate the machine in any unsafe manner. Only operate the grinding machine if all the safety devices are installed and fully functional.

At least once per shift (or per day), check the grinding machine for externally visible damage and proper functioning of the safety devices.

Immediately report any changes present (including those of the operating behavior) to the responsible office or person. If necessary, immediately shut down the grinding machine and secure it against restart.

Before you switch on the grinding machine, ensure that no one can be injured by the start-up of the machine.

In the event of a malfunction, immediately stop the grinding machine and secure it against re-start. Rectify malfunctions immediately.

2.4.7 Hazards due to electrical power sources

The control cabinet must always be kept closed. Only authorized personnel must be allowed to access it.

Work on electrical systems or operating materials may only be performed by a qualified electrician, in accordance with electrical regulations.

Defects, such as damaged cables, cable connections, etc. must be immediately rectified by an authorized specialist.

The yellow power supply cable is electrically live even when the main switch is turned off.

2.4.8 Particular hazard areas

There is a hazard of pinching in the rear area of the machine due to the grinding belt moving into its working position. Suitable personal protective equipment must be worn.

2.4.9 Servicing (maintenance, repair) and fault rectification

Maintenance work is to be carried out on schedule by trained personnel. Inform operating personnel before beginning repair work. Designate a supervisor responsible for this.

For all service work, the grinding machine is to be disconnected from the current supply and secured against accidental restart. Remove power plug. Secure repair area as necessary.

After completing maintenance work and rectifying any faults, install all safety devices and verify that they are fully functional.

2.4.10 Structural alterations to the grinding machine

Do not make any changes, additions or conversions to the grinding machine without the approval of the manufacturer. This also applies to the installation and setup of safety devices.

Any conversion work requires the written permission from KNECHT Maschinenbau GmbH.

Immediately replace any machine parts that are not in a serviceable state.

Use only original replacement and wear parts. If externally purchased parts are used, it is not guaranteed that they have been designed and manufactured to meet the requirements in terms of stress and safety.

2.4.11 Cleaning the grinding machine

Properly handle any cleaning agents and materials used and dispose of them in an environmentally-friendly manner.

Dispose of the wear parts and replacement parts in a safe and environmentally-friendly manner.

2.4.12 Lubricants / oils and greases

When using oils and greases, follow the safety regulations applicable to the product. Comply with the special regulations for the food areas.

2.4.13 Relocation of the grinding machine

Disconnect the grinding machine from any external power supply, even in the event of a minor change of location. Before restarting the grinding machine, connect it properly to the power supply.

For loading work, use only lifting equipment and load-bearing devices with sufficient lifting capacity. Appoint a qualified instructor for the lifting operation.

No persons other than those designated for this work may be present in the loading and installation area.

2. Safety

Only lift the grinding machine correctly with a suspension device in accordance with the operating instructions (attachment points for load suspension devices, etc.). Only use a suitable transport vehicle with sufficient load-bearing capacity. Secure the load reliably. Use suitable attachment points.

When restarting the machine, proceed only in accordance with the operating instructions.

3. Description

3.1 Intended use

The B 500 Automatic Sharpening and Polishing Machine grinds, deburrs and polishes flat machine knives.

3.2 Technical specifications

Height	approx. 2030 mm
Width	approx. 1500 mm
Depth	approx. 1500 mm
Space requirement (WxDxH)	approx. 2200 x 2500 x 2200 mm
Weight	approx. 500 kg
Power supply*	3x 400 V
Mains frequency*	50/60 Hz
Output*	6.5 kW
Power consumption*	8 kW
Current consumption*	10.5 A
Back-up fuse*	16 A
Control voltage	24 V DC
Compressed air supply according ISO 8573-1:2010 [1:4:2]	6.5 bar (50 l/min)
Operating noise level (measured A-weighted emission sound pressure level at the workplace LpA)**	72 dB (A)
Wet-grinding belt	2200 x 60 mm
Speed wet-grinding belt*	1400 rpm
Deburring brushes	d.180 x 30 mm
Speed deburring brushes*	1360 rpm
Polishing brush	d.200 x 50 mm
Speed polishing brush*	2870 rpm
Water tray volume	50 liters

3. Description

*) This information may change depending on the electrical power supply.

**) Two-digit sound emission value according to EN ISO 4871. Emission sound pressure level according to EN ISO 11201 (measurement uncertainty KpA. 3 dB(A)). A K24 cutter knife from KNECHT Maschinenbau GmbH was ground.

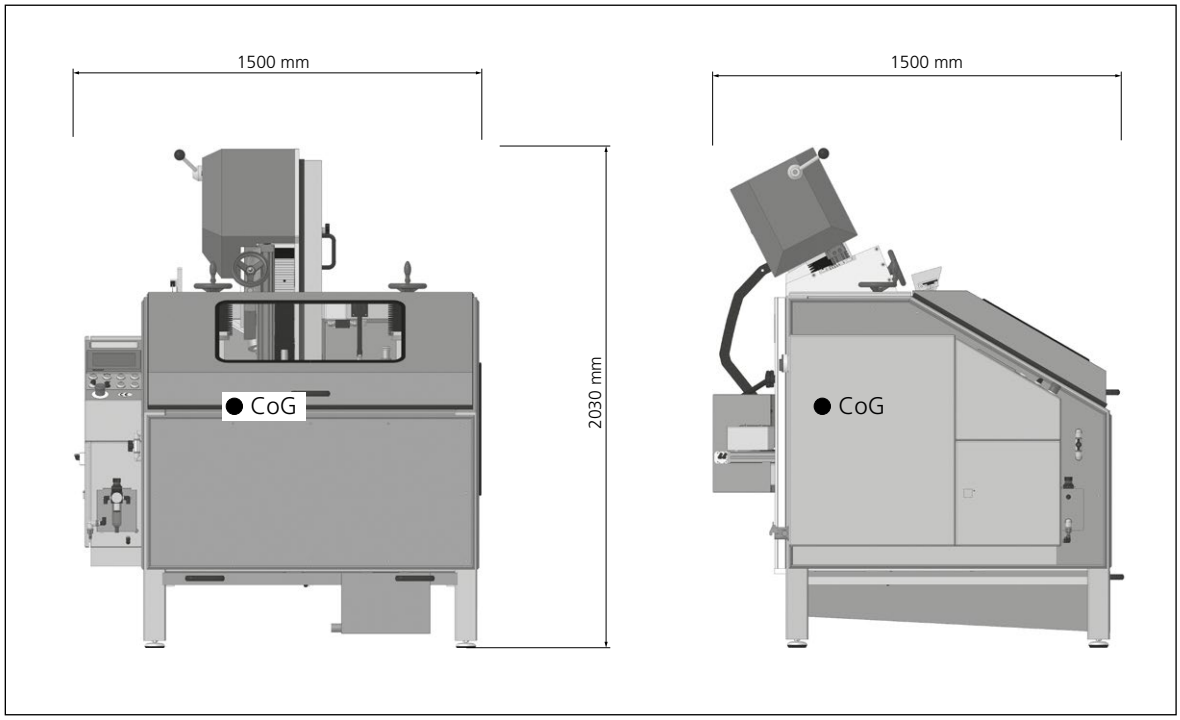

Figure 3-1 Dimensions in mm and center of gravity (CoG) of the machine

3.3 Functional description

The automatic grinding and polishing machine can be used to automatically grind, deburr, and polish linear and sickle-shaped flat machine knives. The maximum knife size is approx. 700 x 550 mm.

The knife is clamped on the SP 112 Copy Grinding Plate and guided along the wet-grinding belt and the deburring and polishing brushes according to its shape.

Grinding angles between 5° and 35° are steplessly adjusted on the grinding unit.

In the event of an emergency, the automatic sharpening and polishing machine can immediately be stopped by pressing the "Emergency Stop" button.

3. Description

3.4 Description of the assemblies

Figure 3-2 General view of grinding machine

1 Belt relief lever
2 Hand wheel for angle setting
3 Hand wheel for height adjustment “Deburring unit”
4 Control cabinet
5 Control panel
6 Pneumatic cabinet
7 Belt protection hood
8 Hand wheel for height adjustment “Polishing unit”
9 Protection hood
10 Water tray
11 Adjustable machine feet

3. Description

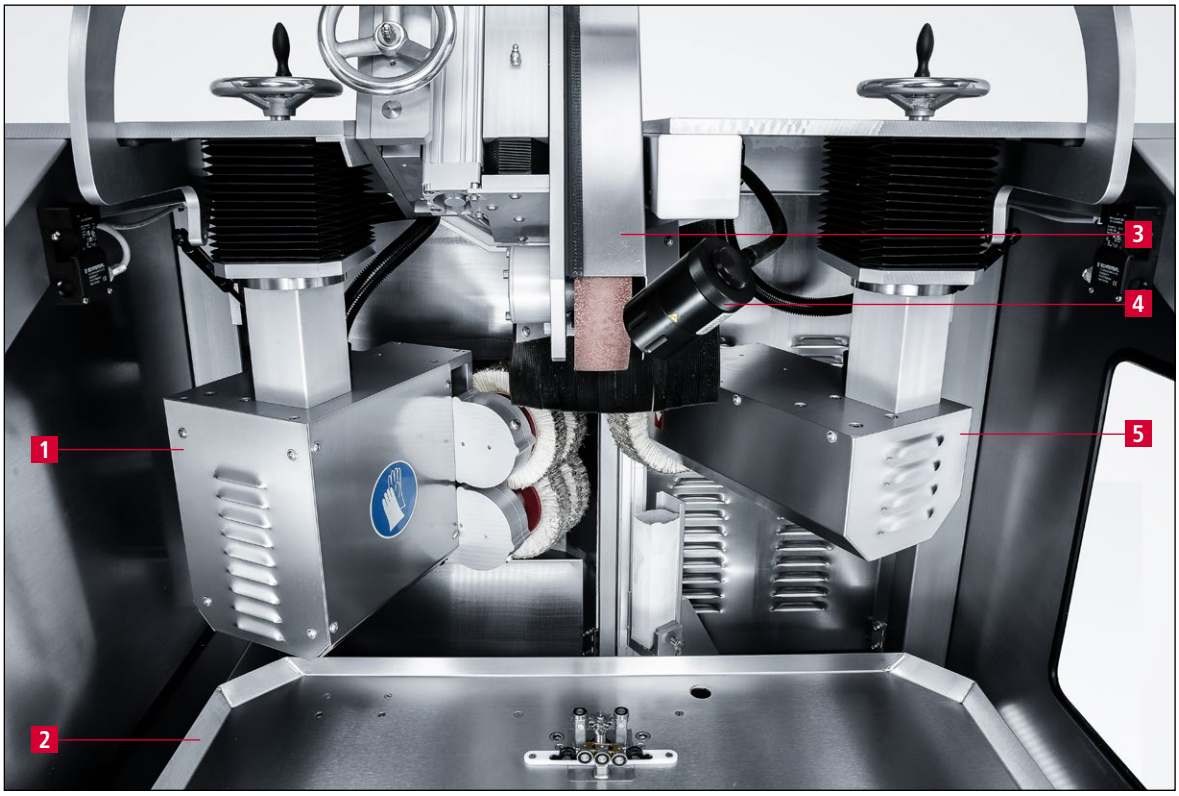

Figure 3-3 Interior

1 Deburring unit for the knife edge
2 Sliding plate
3 Grinding unit
4 LED working light
5 Polishing unit for the knife back

3. Description

3.4.1 Pneumatics

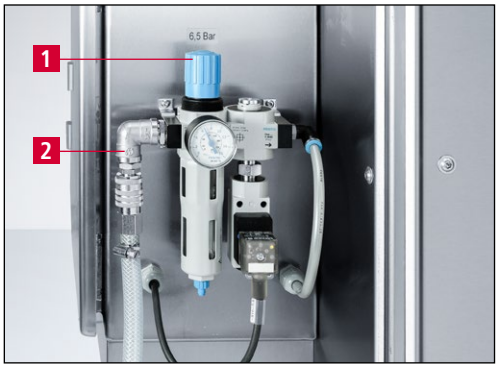

Figure 3-4 Pneumatics

1 Control knob for pressure regulation
2 Compressed air connection (6.5 bar)

3.4.2 SP 112 Copy grinding plate

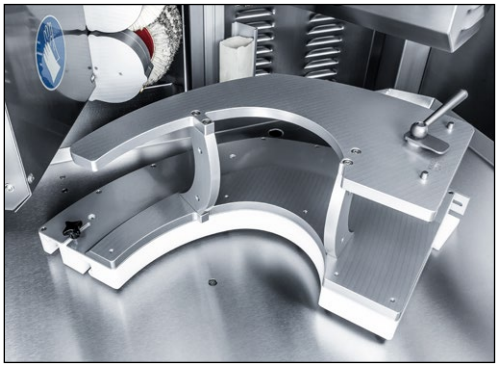

Figure 3-5 SP 112 Copy grinding plate

For machining, the knives are clamped onto an SP 112 copy grinding plate.

A suitable SP 112 copy grinding plate is required for each knife shape and size.

SP 112 copy grinding plates for new knife types are available on request from KNECHT Maschinenbau GmbH.

3.4.3 Coolant pump

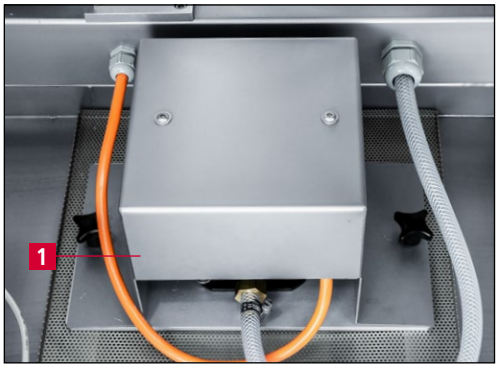

Figure 3-6 Coolant pump

1 Coolant pump with cover

3.4.4 Flow monitor

Figure 3-7 Flow monitor

The flow monitor (3-7/1) is located on the left in the interior and controls the coolant flow. If there is insufficient coolant, it sends a signal to shut down the automatic process.

3.4.5 Doors polishing and deburring unit

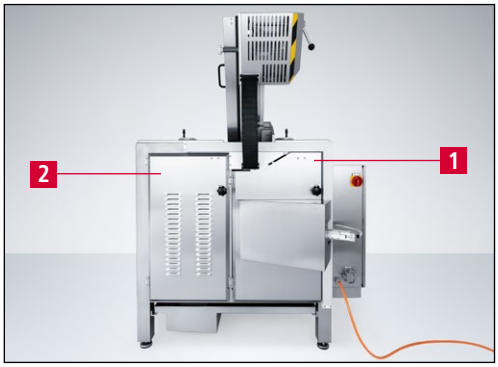

Figure 3-8 Doors polishing and deburring unit

1 Door deburring unit
2 Door polishing unit

3.4.6 Switching the grinding machine on / off

Figure 3-9 Main switch

The main switch (3-9/1) is located on the rear of the control cabinet.

Turning the main switch to position "1 ON" activates the grinding machine ready for operation.

Turning the main switch to position "0 OFF" disconnects the grinding machine from the power supply.

3. Description

3.4.7 Control panel

Figure 3-10 Control panel

1 "Control ON" button: activate control (when button flashes)
2 "Start/Stop" button: start/stop the grinding program
3 „Change copy grinding plate" button
4 „Table forward" button: move the table forward in 1 mm steps
5 "Setup mode" key switch: position "1" for setup mode
6 "Contact pressure wet-grinding belt" rotary control
7 "Coolant pump on/off" button: switch coolant pump on/off
8 „Table back" button: move the table backward in 1 mm steps
9 "Emergency stop" button

3. Description

3.4.8 Layout of user interface (main screen)

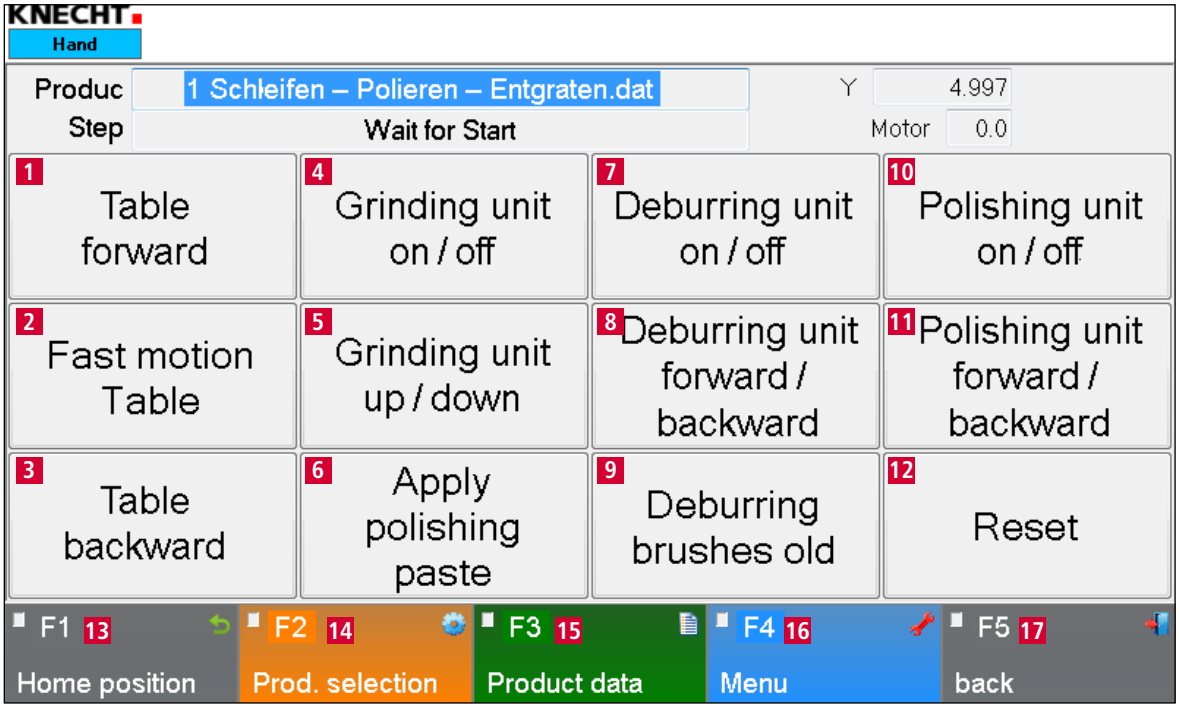

Figure 3-11 Main screen

1 **"Table forward"**: move the table forward in 1 mm steps

2 **"Fast motion table"**: If the fast motion is highlighted in green, the table moves without interruption when "Table forward" (8-1/1) or "Table back" (8-1/3) is pressed

3 **"Table backward"**: move the table backward in 1 mm steps

4 **"Grinding unit on / off"**: switch the wet-grinding belt on/off

5 **"Grinding unit up / down"**: raise/lower the wet-grinding belt

6 **"Apply polishing paste"**: pulse for applying the polishing paste on the polishing and deburring brushes (in addition to the automatic cycle) ´

7 **"Deburring unit on / off"**: switch the deburring unit on/off

8 **"Deburring unit forward / backward"**: move the deburring unit forward/ backward

9 **"Deburring brushes old"**: activate the touch panel field if brushes are worn out, slide automatically moves 10 mm further

10 **"Polishing unit on / off"**: switch the polishing unit on/off

11 **"Polishing unit forward / backward"**: move the polishing unit forward/backward

12 **"Reset"**: delete temporary fault messages

13 **"Home position"**: move the table to the base position

14 **"Prod. selection"**: select the product files

15 **"Product data"**: change the parameters of the product data

16 **"Menu"**: manage the settings and language of the user interface

17 **"Back"**: return to previous screen

3. Description

ATTENTION

Fast motion highlighted in green: Table moves continuously without interruption.

Fast motion highlighted in gray: Table moves a predefined distance.

4. Transport

When transporting, observe the local applicable safety and accident prevention regulations.

Only transport the grinding machine with the machine feet facing downwards.

ATTENTION

There are protruding components on the underside of the machine that can be easily damaged. Before transporting, pull out the water tray (3-2/10). The water must be drained beforehand.

4.1 Transport aids

For transporting and for setting up of the grinding machine, only use adequately dimensioned transport aids e.g. truck, forklift or hydraulic lifting truck.

When using a forklift or a lifting truck, move the fork under the grinding machine.

Note the machine's center of gravity when transporting. The center of gravity (CoG) is shown in Figure 3-1.

4.2 Transport damage

If damage is detected during acceptance of the delivery, immediately inform KNECHT Maschinenbau GmbH and the forwarding agent. If necessary, an independent expert must be called in immediately.

Remove packaging and fastening straps. Remove the shipping straps on the grinding machine. Dispose of packaging in an environment-friendly manner.

4.3 Transport to another installation site

For transport to another installation site, ensure that the space requirements are fulfilled (see Chapter 3.2).

A permitted electrical connection, pneumatic connection and network connection must be available at the new installation site. The grinding machine must stand firmly and securely.

The machine feet must be adjusted so that there is a slight decline towards the rear.

4. Transport

Work on the electrical and pneumatic unit is only to be carried out by an authorized specialist.

Observe the locally applicable safety and accident prevention regulations.

5. Installation

5.1 Selection of qualified personnel

We recommend having installation work on the grinding machine carried out by the trained KNECHT personnel.

We are not liable for any damage resulting from improper installation.

5.2 Installation site

When determining the installation site, bear in mind the space required for installation as well as maintenance and repair work on the grinding machine (see Chapter 3.2).

5.3 Supply connections

The grinding machine is provided ready to connect with the corresponding connection cable.

Have the power supply installed on site by a qualified electrician.

The compressed air supply and the network connection must be installed on site by a qualified technician.

Ensure that the compressed air supply is connected correctly.

If connected incorrectly, escaping compressed air and flying parts can cause injuries.

Ensure that the power supply is connected correctly.

5.4 Settings

KNECHT Maschinenbau GmbH will configure the various components as well as the electrical system before delivery.

ATTENTION

Unauthorized alterations to the preset values are not permitted and can damage the grinding machine.

The control parameters may only be changed by qualified personnel. This personnel must be familiar with the machine functions and the meaning of the parameters. Otherwise, damage to the machine may occur.

5. Installation

5.5 Initial start-up of the grinding machine

Place the grinding machine at the installation site on a level base.

Compensate uneven floors by turning the machine feet (3-2/11) with an AF 17 mm open-end wrench. Set a slight decline to the rear and align the machine using a spirit level on the machine frame.

Dismantle all transport devices on the machine.

Have the power supply installed on site by a qualified electrician.

The compressed air supply and the network connection must be installed on site by a qualified technician.

Completely install and inspect the protective equipment before commissioning.

Have all protective equipment checked for proper functioning by authorized trained personnel before commissioning the machine.

6. Commissioning

CAUTION

All work may only be carried out by authorized specialist personnel.

Observe the locally applicable safety and accident prevention regulations.

Only connect compressed air when the doors are closed.

Figure 6-1 Water tray

Place the water tray (6-1/1) on the L-rails underneath the machine from the front and carefully slide it in.

Then position the coolant pump and cover on the two setscrews and secure them with the star handles.

Fill the water tray (6-1/1) with approx. 50 liters of water up to 3 cm below the rim.

ATTENTION

Only fill with cold water! Hot water will cause the flow monitor to malfunction.

NOTE

The use of a coolant additive is not intended.

Connect the power plug to the socket provided on site (3x 400 V, 16 A).

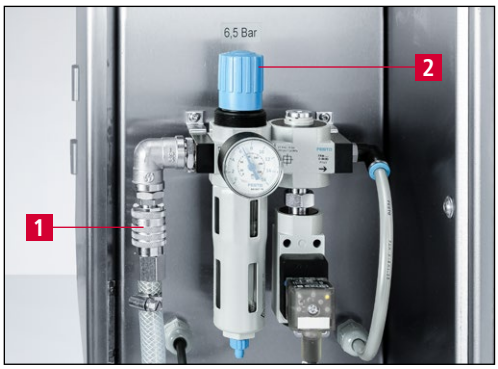

Figure 6-2 Compressed air connection

Plug in the compressed air hose at the compressed air connection (6-2/1).

Use the control knob (6-2/2) to set the pressure to 6.5 bar.

Close the belt protection hood (3-2/7), doors of the polishing and deburring unit (3-8/1) and (3-8/2) and the protection hood (3-2/9).

6. Commissioning

Figure 6-3 Control panel

Set the main switch (3-9/1) to the "1 ON" position and wait for the controls to initialize.

Switch on the control unit with the "Control ON" button (6-3/1).

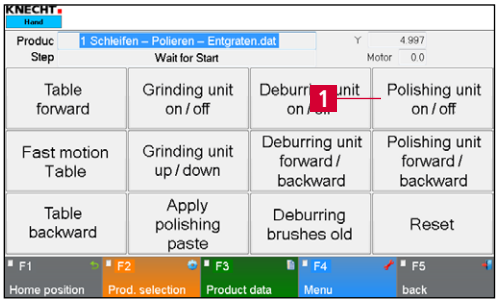

Figure 6-4 Main screen

Press the touch panel field **"Polishing unit on / off"** (6-4/1) on the main screen.

The polishing brush rotates.

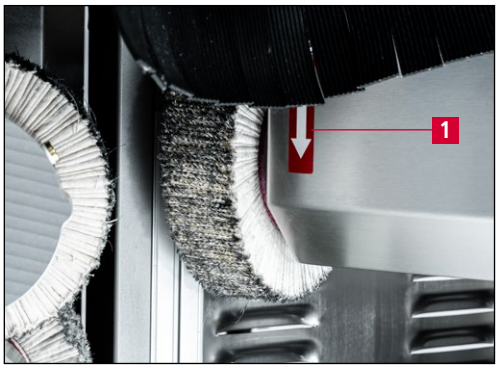

Figure 6-5 Checking rotating direction

Check the direction of rotation of the polishing brush.

The direction arrow (6-5/1) indicates the rotating direction of the polishing brush.

If the rotating direction is incorrect, have the phase reversed by a qualified electrician.

After ensuring the prescribed direction of rotation, turn off the polishing brush.

To do this, press the touch panel field **"Polishing unit on / off"** (6-4/1) on the main screen. The polishing brush stops.

The grinding machine can now be switched off by turning the main switch (3-9/1) to the "0 OFF" position.

7. Operation

7.1 Switch on the grinding machine

Set the main switch (3-9/1) to the "1 ON" position. Wait for the controls to initialize. The main screen appears on the control panel (3-2/5).

Figure 7-1 Control panel

Press the "Control ON" button (7-1/1) to activate the control system. If activation was successful, the "Control ON" button will light up continuously.

Turn the key switch (7-1/2) to position "1" (setup mode).

7.2 Sharpening sickle-shaped cutter knives

7.2.1 Mounting the SP 112 Copy grinding plate

NOTE

KNECHT produces a suitable copy grinding plate for each knife. KNECHT requires as precise information as possible on the shape and size of the knife to be ground. A drawing from the knife manufacturer is ideal (knives that can be procured on the open market sometimes deviate from the original contour).

Photos of the entire knife and the knife label are also helpful.

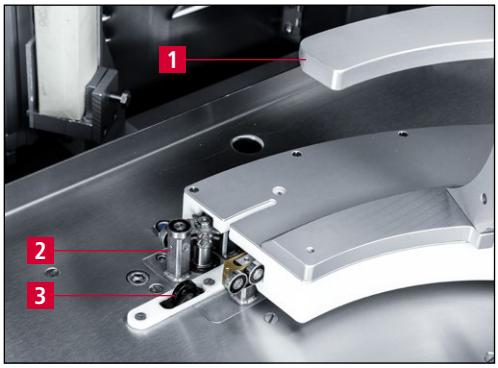

Figure 7-2 Mounting the SP 112 Copy grinding plate

Move the SP 112 Copy grinding plate (7-2/1) onto the ball bearings of the guide carriage (7-2/2) as far as it will go and press it against the stop with your right hand.

7. Operation

Figure 7-3 Control panel

Press the "Change copy grinding plate" button (7-3/1) until the copy grinding plate has moved past the limit switch (7-2/3).

NOTE

Pressing and holding the "Change copy grinding plate" button (7-3/1) again changes the rotating direction of the tooth pinion.

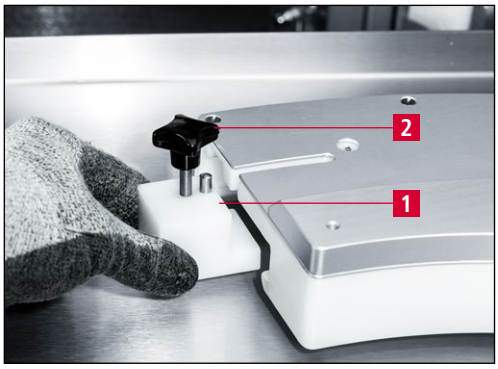

Figure 7-4 Mounting the limit switch cam

Move the limit switch cam (7-4/1) with the pin forward under the copy grinding plate and tighten with the star handle (7-4/2).

7. Operation

7.2.2 Clamping the cutter knife

Serious cutting injuries may occur when handling cutter knives. Only transport cutter knives using transport devices intended for this purpose.

Firm protective gloves and safety shoes must be worn.

ATTENTION

Before clamping the knife, check whether the copy grinding plate matches the knife to be ground. Compare the inscription of the copy grinding plate with that of the knife.

The use of an unsuitable copy grinding plate can damage the knife and copy grinding plate.

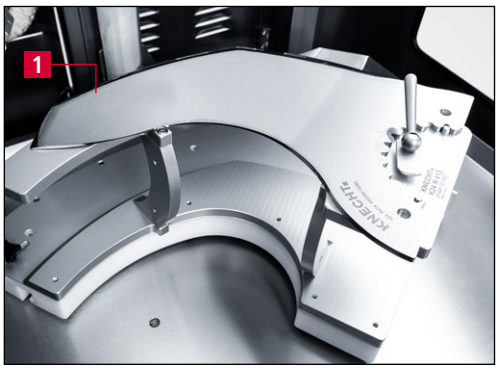

Figure 7-5 Clamping the knife

Place the knife (7-5/1) on the holding fixture of the SP 112 Copy grinding plate.

Figure 7-6 Locking the knife

Lock the knife using the clamping lever (7-6/1).

Close the protection hood.

7. Operation

7.2.3 Setting the grinding angle

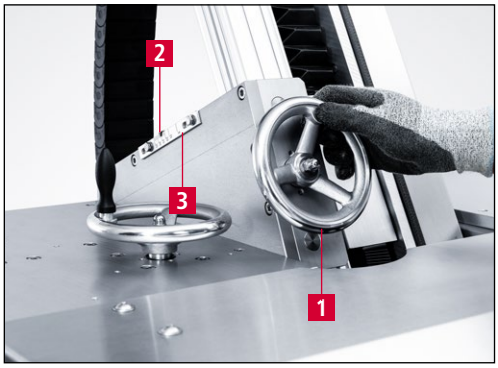

Figure 7-7 Setting the grinding angle

Turn the hand wheel (7-7/1) until the pointer (7-7/2) shows the desired angle on the angle scale (7-7/3).

7.2.4 Adjusting the grinding unit

Figure 7-8 Control panel

Turn the key switch (7-8/1) to position "1".

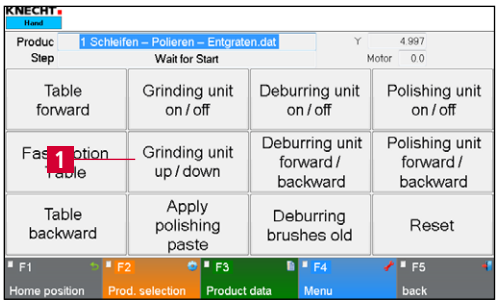

Figure 7-9 Main screen

Move the wet-grinding belt with the touch panel field **"Grinding unit up / down"** (7-9/1) to the working position.

7. Operation

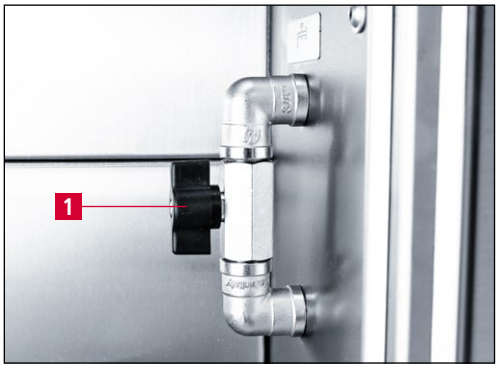

Figure 7-10 Coolant tap

Open the coolant tap (7-10/1).

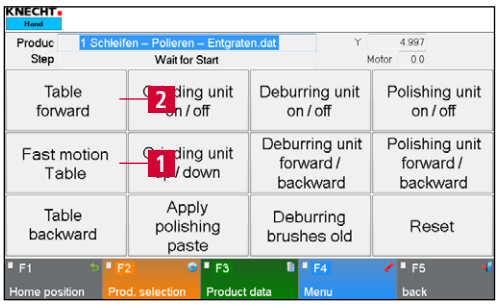

Figure 7-11 Main screen

Activate the **"Fast motion table"** touch panel field (7-11/1) by pressing it.

Then press and hold the touch panel field **"Table forward"** (7-11/2) until the wet-grinding belt and the knife almost touch.

Figure 7-12 Control panel

The cutting edge end must be in the middle of the wet-grinding belt.

Hold down the "Change copy grinding plate" button (7-12/1) until the copy grinding plate reaches the end point.

The end point is reached just before the copy grinding plate changes direction of movement.

NOTE

To change the direction of movement of the copy grinding plate, press and hold the "Change copy grinding plate" button (7-12/1) again.

Figure 7-13 Adjusting the movement of the copy grinding plate

The cutting edge end of the knife is now in the middle of the wet-grinding belt (see Figure 7-13).

The copy grinding plate is correctly adjusted when its movement is sufficient to grind the entire cutting edge length.

NOTE

If the cutting edge end does not reach the middle of the grinding belt, the limit switch cam (7-4/1) must be readjusted.

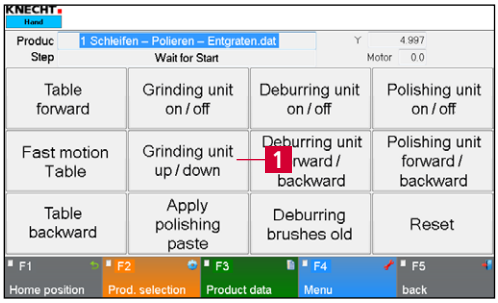

Figure 7-14 Main screen

Then move the wet-grinding belt to the upper end position using the **"Grinding unit up / down"** touch panel field (7-14/1).

7.2.5 Adjusting the deburring unit

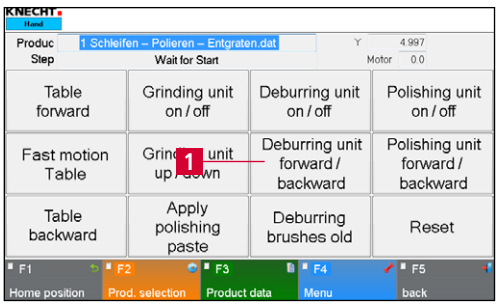

Figure 7-15 Main screen

Since the upper and lower brushes of the deburring unit wear at different rates, the position of the deburring unit must be readjusted at regular intervals.

Use the **"Deburring unit forward / backward"** touch panel field (7-15/1) on the main screen to swivel the deburring unit towards the knife.

7. Operation

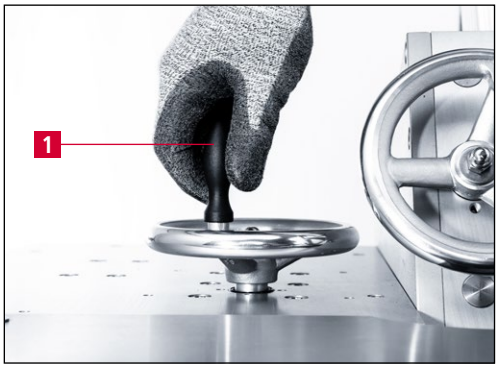

Figure 7-16 Height adjustment deburring unit

Use the "Deburring unit" height adjustment hand wheel (7-16/1) to adjust the deburring unit so that the knife edge is at the intersection of the deburring brushes (see Figure 7-17).

Turning the hand wheel (7-16/1) clockwise = deburring unit moves up

Turning the hand wheel (7-16/1) counterclockwise = deburring unit moves down

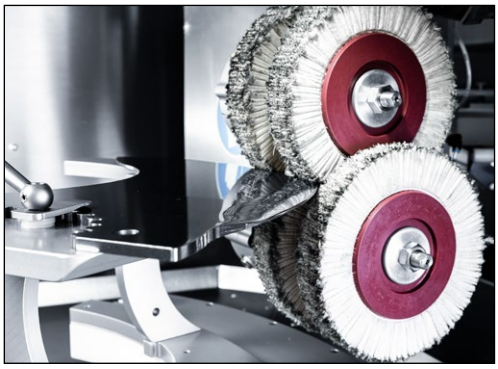

Figure 7-17 Knife cutting edge lies at the intersection of the deburring brushes

All four deburring brushes must rest equally on the knife cutting edge (see Figure 7-17).

NOTE

The deburring unit must be positioned in height so that the intersection of the deburring brushes lies at the knife cutting edge.

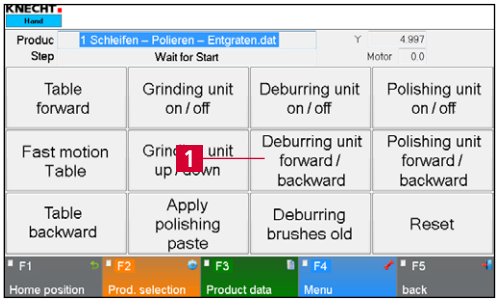

Figure 7-18 Main screen

Then use the **"Deburring unit forward / backward"** touch panel field (7-18/1) on the main screen to swivel the deburring unit back to the rear end position.

7. Operation

7.2.6 Adjusting the polishing unit

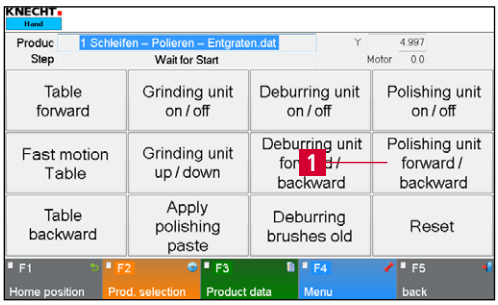

Figure 7-19 Main screen

Since the polishing brush of the polishing unit wears out, the position of the polishing unit must be readjusted at regular intervals.

Use the **"Polishing unit forward / backward"** touch panel field (7-19/1) on the main screen to swivel the polishing unit towards the knife.

Figure 7-20 Height adjustment polishing unit

Use the "Polishing unit" height adjustment hand wheel (7-20/1) to adjust the polishing unit so that the polishing brush touches the knife (see Figure 7-21).

Then turn the hand wheel counterclockwise one more turn to achieve the best polishing result.

Turning the hand wheel (7-20/1) clockwise = polishing unit moves upward

Turning the hand wheel (7-20/1) counterclockwise = polishing unit moves down

Figure 7-21 Polishing brush rests on knife

The polishing brush must rest fully on the back of the knife (see Figure 7-21).

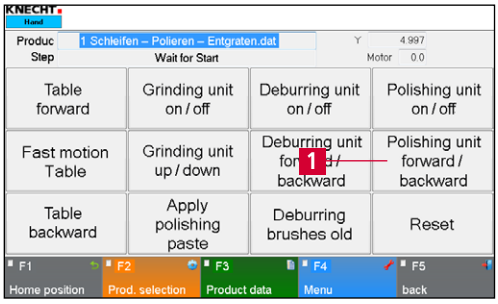

Figure 7-22 Main screen

Then use the **"Polishing unit forward / backward"** touch panel field (7-22/1) on the main screen to swivel the polishing unit back to its rear end position.

7.2.7 Selecting the product file

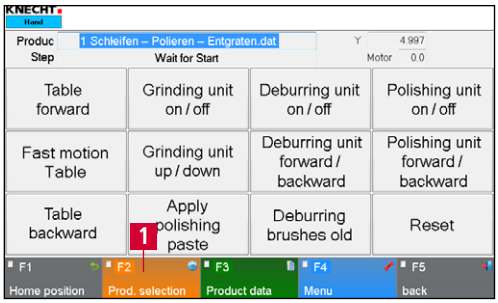

Figure 7-23 Main screen

A separate product file is stored for each machining operation. This product file must be selected and loaded before grinding in automatic mode.

To do this, activate the **"Prod. selection"** touch panel field (7-23/1).

A new window (7-24) opens.

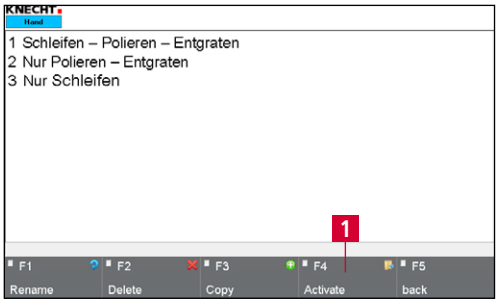

Figure 7-24 Selecting the product file

Select the required product file so that it is highlighted in blue.

Use the **"Activate"** touch panel field (7-24/1) to load the product file into the control system.

The program automatically switches back to the main screen.

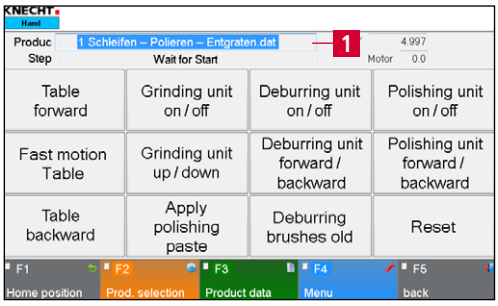

Figure 7-25 Main screen

The new product file appears in the "Product" line (7-25/1).

The new parameters are now loaded from the control system.

7. Operation

7.2.8 Starting the grinding process

Figure 7-26 Control panel

Close the protection hood.

Turn the key switch (7-26/2) to position "0".

Press the "Start/Stop" button (7-26/1).

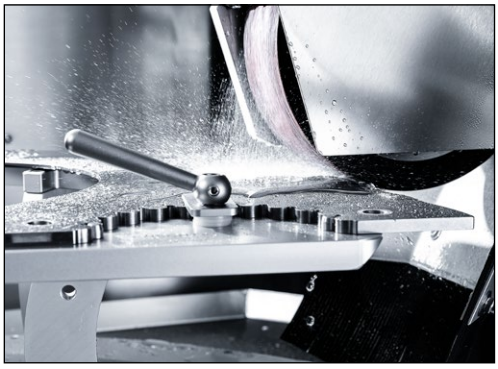

Figure 7-27 Sharpening a sickle-shaped cutter knife

The grinding program starts (Figure 7-27).

NOTE

The run of the program can be aborted at any time using the "Start/Stop" button (7-26/1).

After pressing the "Start/Stop" button (7-26/1), the SP 112 Copy grinding plate returns to its home position.

7. Operation

7.3 Sharpening linear cutter knives

7.3.1 Mounting the SP 112 Copy grinding plate

NOTE

KNECHT produces a suitable copy grinding plate for each knife. KNECHT requires as precise information as possible on the shape and size of the knife to be ground. A drawing from the knife manufacturer is ideal (knives that can be procured on the open market sometimes deviate from the original contour).

Photos of the entire knife and the knife label are also helpful.

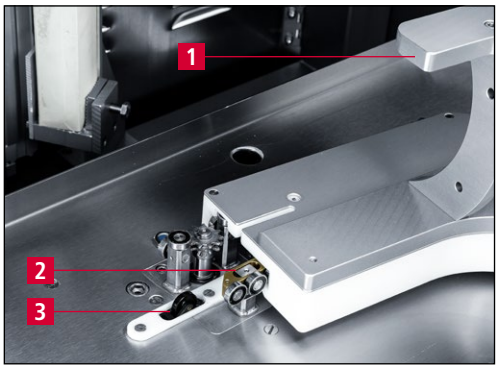

Figure 7-28 Mounting the SP 112 Copy grinding plate

Move the SP112 Copy grinding plate (7-28/1) onto the ball bearings of the guide carriage (7-28/2) as far as it will go and press it against the stop with your right hand.

Figure 7-29 Control panel

Press the "Change copy grinding plate" button (7-29/1) until the copy grinding plate has moved past the limit switch (7-28/3).

NOTE

Pressing and holding the "Change copy grinding plate" button (7-29/1) again changes the rotating direction of the tooth pinion.

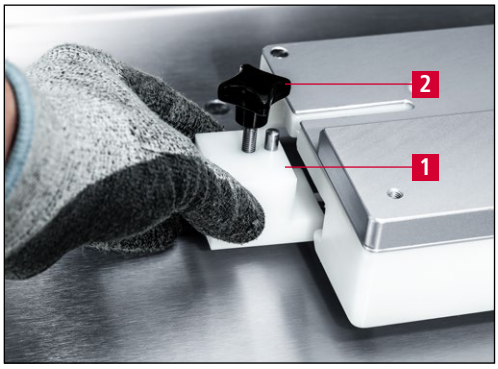

Figure 7-30 Mounting the limit switch cam

Move the limit switch cam (7-30/1) with the pin forward under the copy grinding plate and tighten with the star handle (7-30/2).

7.3.2 Clamping the cutter knife

Serious cutting injuries may occur when handling cutter knives. Only transport cutter knives using transport devices intended for this purpose.

Firm protective gloves and safety shoes must be worn.

ATTENTION

Before clamping the knife, check whether the copy grinding plate matches the knife to be ground. Compare the inscription of the copy grinding plate with that of the knife.

The use of an unsuitable copy grinding plate can damage the knife and copy grinding plate.

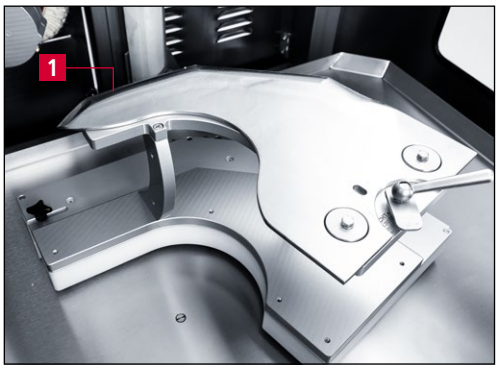

Figure 7-31 Clamping the knife

Place the knife (7-31/1) on the holding fixture of the SP 112 Copy grinding plate.

Figure 7-32 Locking the knife

Lock the knife using the clamping lever (7-32/1).

Close the protection hood.

7.3.3 Setting the grinding angle

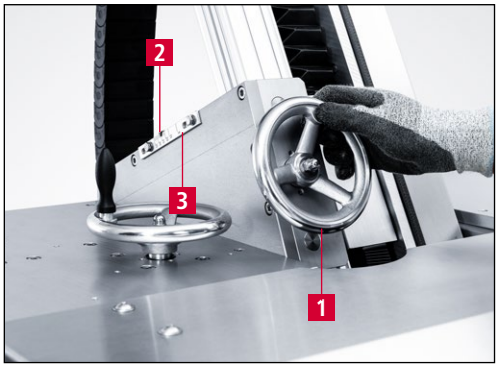

Figure 7-33 Setting the grinding angle

Turn the hand wheel (7-33/1) until the pointer (7-33/2) shows the desired angle on the angle scale (7-33/3).

7.3.4 Adjusting the grinding unit

Figure 7-34 Control panel

Turn the key switch (7-34/1) to position "1".

7. Operation

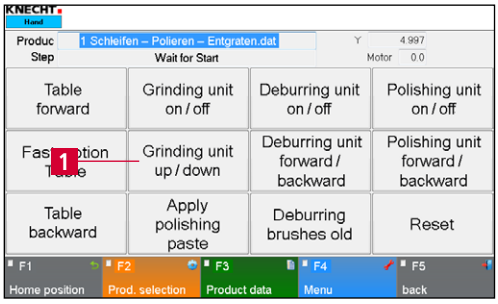

Figure 7-35 Main screen

Move the wet-grinding belt with the touch panel field **“Grinding unit up / down”** (7-35/1) to the working position.

Figure 7-36 Coolant tap

Open the coolant tap (7-36/1).

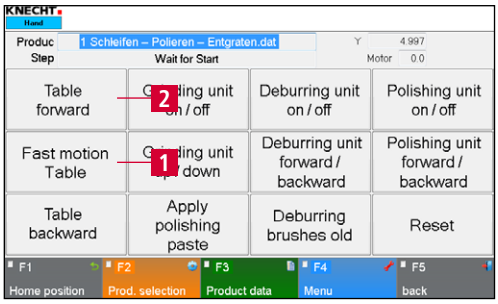

Figure 7-37 Main screen

Activate the **“Fast motion table”** touch panel field (7-37/1) by pressing it.

Then press and hold the touch panel field **“Table forward”** (7-37/2) until the wet-grinding belt and the knife almost touch.

Figure 7-38 Control panel

The cutting edge end must be in the middle of the wet-grinding belt.

Hold down the "Change copy grinding plate" button (7-38/1) until the copy grinding plate reaches the end point.

The end point is reached just before the copy grinding plate changes direction of movement.

NOTE

To change the direction of movement of the copy grinding plate, press and hold the "Change copy grinding plate" button (7-38/1) again.

Figure 7-39 Adjusting the movement of the copy grinding plate

The cutting edge end of the knife is now in the middle of the wet-grinding belt (see Figure 7-39).

The copy grinding plate is correctly adjusted when its movement is sufficient to grind the entire cutting edge length.

NOTE

If the cutting edge end does not reach the middle of the grinding belt, the limit switch cam (7-30/1) must be readjusted.

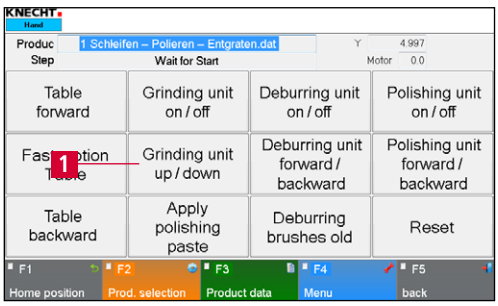

Figure 7-40 Main screen

Then move the wet-grinding belt to the upper end position using the **"Grinding unit up / down"** touch panel field (7-40/1).

7. Operation

7.3.5 Adjusting the deburring unit

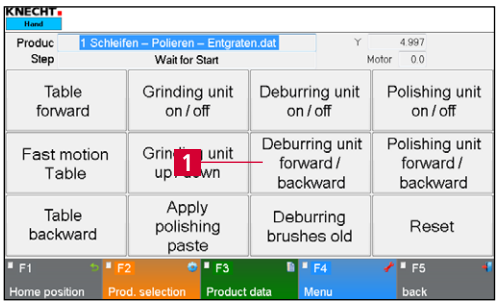

Figure 7-41 Main screen

Since the upper and lower brushes of the deburring unit wear at different rates, the position of the deburring unit must be readjusted at regular intervals.

Use the **"Deburring unit forward / backward"** touch panel field (7-41/1) on the main screen to swivel the deburring unit towards the knife.

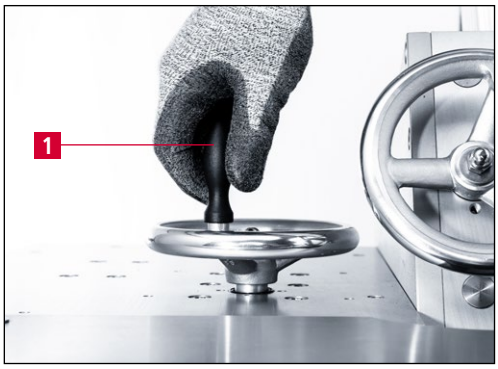

Figure 7-42 Height adjustment deburring unit

Use the "Deburring unit" height adjustment hand wheel (7-42/1) to adjust the deburring unit so that the knife edge is at the intersection of the deburring brushes (see Figure 7-43).

Turning the hand wheel (7-42/1) clockwise = deburring unit moves up

Turning the hand wheel (7-42/1) counterclockwise = deburring unit moves down

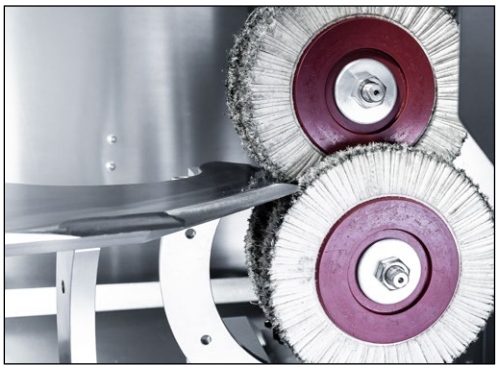

Figure 7-43 Knife cutting edge lies at the intersection of the deburring brushes

All four deburring brushes must rest equally on the knife cutting edge (see Figure 7-43).

NOTE

The deburring unit must be positioned in height so that the intersection of the deburring brushes lies at the knife cutting edge.

7. Operation

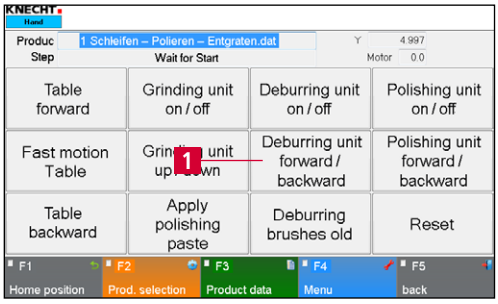

Figure 7-44 Main screen

Then use the **"Deburring unit forward / backward"** touch panel field (7-44/1) on the main screen to swivel the deburring unit back to the rear end position.

7.3.6 Adjusting the polishing unit

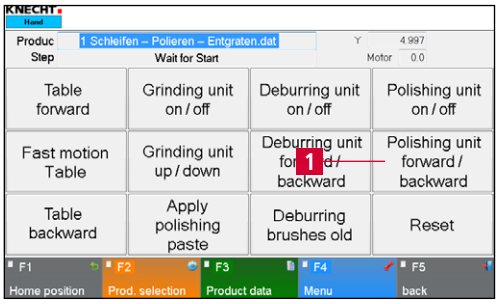

Figure 7-45 Main screen

Since the polishing brush of the polishing unit wears out, the position of the polishing unit must be readjusted at regular intervals.

Use the **"Polishing unit forward / backward"** touch panel field (7-45/1) on the main screen to swivel the polishing unit towards the knife.

Figure 7-46 Height adjustment polishing unit

Use the "Polishing unit" height adjustment hand wheel (7-46/1) to adjust the polishing unit so that the polishing brush touches the knife (see Figure 7-47).

Then turn the hand wheel **counterclockwise** one more turn to achieve the best polishing result.

Turning the hand wheel (7-46/1) clockwise = polishing unit moves upward

Turning the hand wheel (7-46/1) counterclockwise = polishing unit moves down

Figure 7-47 Polishing brush rests on knife

The polishing brush must rest fully on the back of the knife (see Figure 7-47).

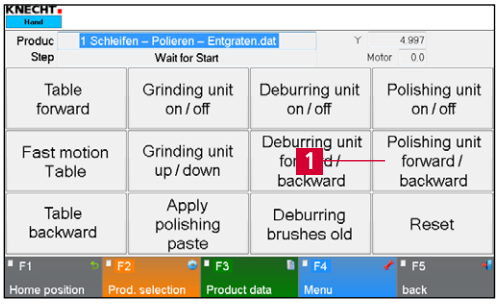

Figure 7-48 Main screen

Then use the **"Polishing unit forward / backward"** touch panel field (7-48/1) on the main screen to swivel the polishing unit back to its rear end position.

7.3.7 Selecting the product file

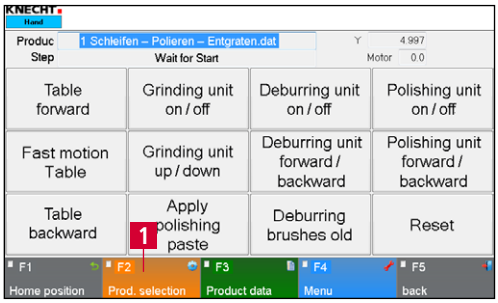

Figure 7-49 Main screen

A separate product file is stored for each machining operation. This product file must be selected and loaded before grinding in automatic mode.

To do this, activate the **"Prod. selection"** touch panel field (7-49/1).

A new window (7-50) opens.

7. Operation

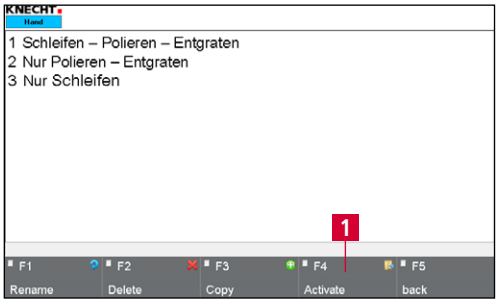

Figure 7-50 Selecting the product file

Select the required product file so that it is highlighted in blue.

Use the **"Activate"** touch panel field (7-50/1) to load the product file into the control system.

The program automatically switches back to the main screen.

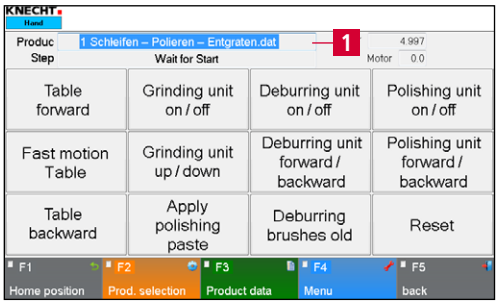

Figure 7-51 Main screen

The new product file appears in the "Product" line (7-51/1).

The new parameters are now loaded from the control system.

7.3.8 Starting the grinding process

Figure 7-52 Control panel

Close the protection hood.

Turn the key switch (7-52/2) to position "0".

Press the "Start/Stop" button (7-52/1).

Figure 7-53 Sharpening a linear cutter knife

The grinding program starts (Figure 7-53).

NOTE

The run of the program can be aborted at any time using the "Start / Stop" button (7-26/1).

After pressing the "Start / Stop" button (7-52/1), the SP 112 Copy grinding plate returns to its home position.

7. Operation

7.4 Replacing the SP 112 Copy grinding plate

CAUTION

Never replace the copy grinding plate with the knife clamped.

There is a risk of crushing and being drawn in at the drive pinion.

Serious injuries are possible.

Only press the "Change copy grinding plate" button (7-55/1) when the copy grinding plate is mounted.

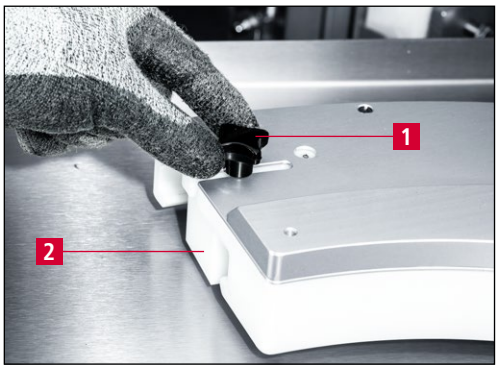

Figure 7-54 Replacing the copy grinding plate

Loosen the star handle (7-54/1).

Remove the limit switch cam (7-54/2).

Figure 7-55 Control panel

Turn the key switch (7-55/2) to position "1".

Press and hold the "Change copy grinding plate" button (7-55/1).

Check the direction of movement of the SP 112 Copy grinding plate and, if necessary, press and hold the button again so that the copy grinding plate moves in the desired direction. Keep the button pressed until the copy grinding plate stops moving.

Then remove the copy grinding plate from the guide carriage by hand without tilting it and store it carefully.

7. Operation

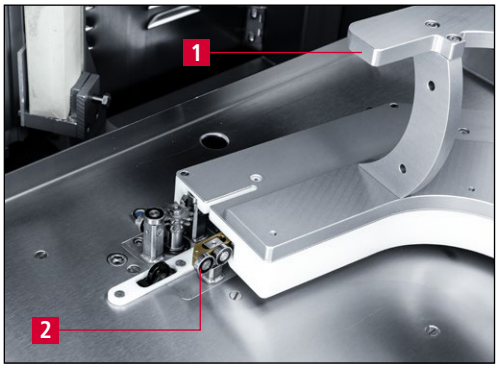

Figure 7-56 Move the SP 112 Copy grinding plate onto the guide carriage

Move the other SP 112 Copy grinding plate (7-56/1) onto the ball bearings of the guide carriage (7-56/2) until it stops and press it against the stop with your right hand.

Figure 7-57 Control panel

Press the "Change copy grinding plate" button (7-57/1) until the copy grinding plate has moved 2 – 3 cm past the guide carriage.

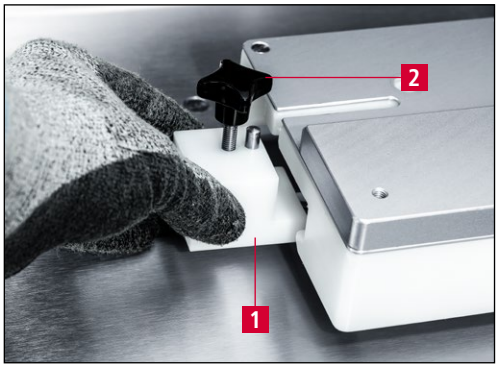

Figure 7-58 Attaching the limit switch cam

Place the limit switch cam (7-58/1) with the pin facing forward under the copy grinding plate and tighten the star handle (7-58/2).

NOTE

If the SP 112 Copy grinding plate is not drawn in correctly, feed it in by hand.

7. Operation

7.5 Replacing the wet-grinding belt

CAUTION

For all work on the sharpening and polishing machine, observe the locally applicable safety and accident prevention regulations as well as instructions in the “Safety” and “Important notes” section of the operating instructions.

Figure 7-59 Removing the belt protection hood

Pull the belt protection hood (7-59/1) upwards and remove it.

Figure 7-60 Swiveling the belt relief lever upwards

Swivel the belt relief lever (7-60/1) upwards.

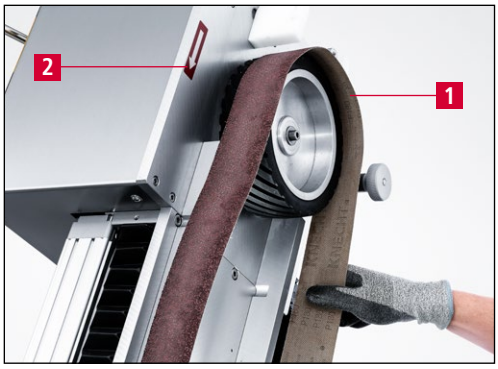

Figure 7-61 Replacing the wet-grinding belt

Loosen and remove the wet-grinding belt (7-61/1).

Attach the new wet-grinding belt, observing the direction of rotation (the motor rotates counter-clockwise). For checking purposes, there is a rotating direction arrow on the grinding unit (7-61/2).

Figure 7-62 Adjusting the grinding belt run

If the wet-grinding belt does not run exactly on the contact wheel, it can be aligned with the belt adjustment (7-62/1).

Turning the belt adjustment counterclockwise = the wet-grinding belt moves to the left

Turning the belt adjustment clockwise = the wet-grinding belt moves to the right

Figure 7-63 Attaching the belt protection hood

Reattach the belt protection hood (7-63/1).

ATTENTION

Only original abrasives from KNECHT Maschinenbau GmbH are permitted to be used.

KNECHT Maschinenbau GmbH assumes no responsibility for the use of non-original abrasives.

7. Operation

7.6 Replacing the polishing brush

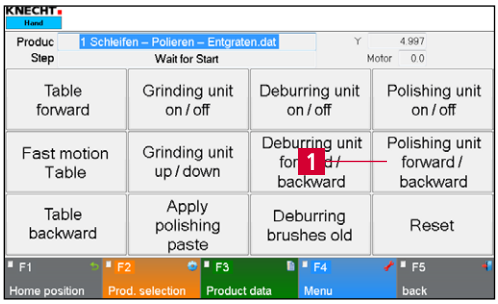

Figure 7-64 Main screen

Turn the key switch (3-10/5) to position "1".

Close the protection hood.

Press the **„Polishing unit forward / backward"** touch panel field (7-64/1).

The polishing unit swivels forward.

NOTE

Turn the key switch (3-10/5) to position "1" so that the polishing unit remains at the front when the protection hood is opened.

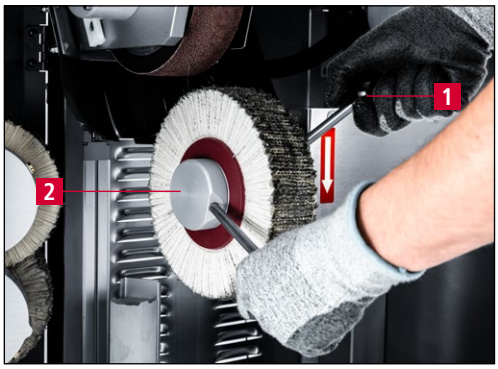

Figure 7-65 Replacing the polishing brush

Open the protection hood.

Insert the locking pin (7-65/1) into the hole in the holding flange behind the polishing brush.

Insert the face spanner (7-65/2) into the holes in the clamping flange and turn **clockwise**.

Figure 7-66 Removing clamping flange

Remove the clamping flange (7-66/1).

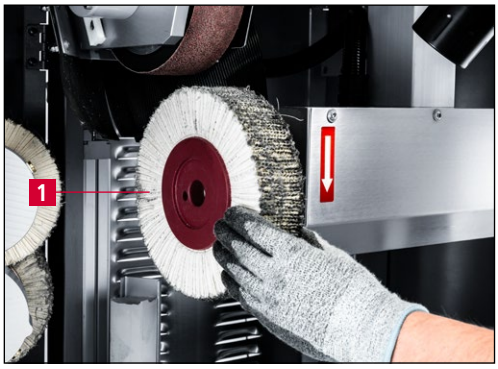

Figure 7-67 Replacing the polishing brush

Remove the used polishing brush (7-67/1) and mount the new one in reverse order.

ATTENTION

Only original abrasives from KNECHT Maschinenbau GmbH are permitted to be used.

KNECHT Maschinenbau GmbH assumes no responsibility for the use of non-original abrasives.

7. Operation

7.7 Replacing the deburring brushes

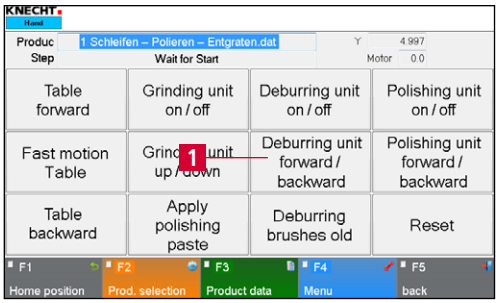

Figure 7-68 Main screen

Turn the key switch (3-10/5) to position "1".

Close the protection hood.

Press the **„Deburring unit forward / backward"** touch panel field (7-68/1).

The deburring unit swivels forward.

NOTE

Turn the key switch (3-10/5) to position "1" so that the deburring unit remains at the front when the protection hood is opened.

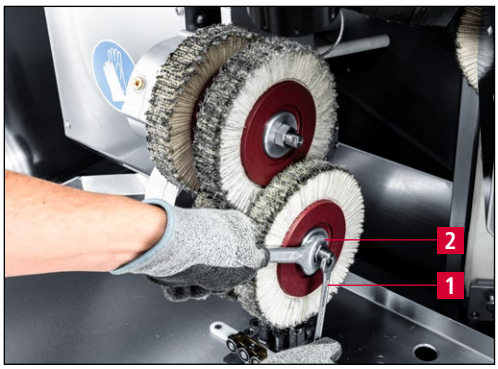

Figure 7-69 Loosening the thread nut

Open the protection hood.

Secure the shaft of the lower deburring brushes with an AF 10 mm open-end wrench (7-69/1), then loosen the thread nut **counterclockwise** with an AF 22 mm open-end wrench (7-69/2).

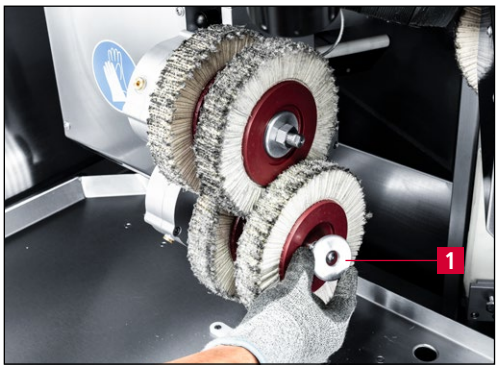

Figure 7-70 Removing the flange cap

Remove the flange cap (7-70/1).

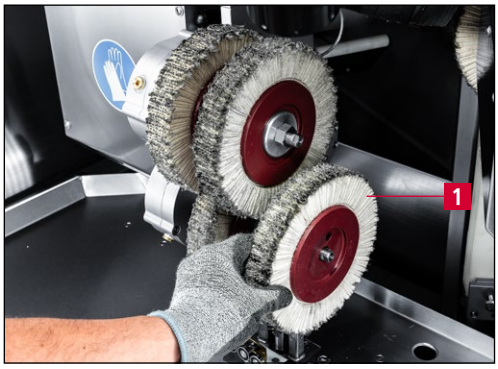

Figure 7-71 Removing the lower deburring brush

Remove the used deburring brush (7-71/1).

Figure 7-72 Loosening the thread nut

Secure the shaft of the upper deburring brushes with an AF 10 mm open-end wrench (7-72/1), then loosen the thread nut **clockwise** with an AF 22 mm open-end wrench (7-72/2).

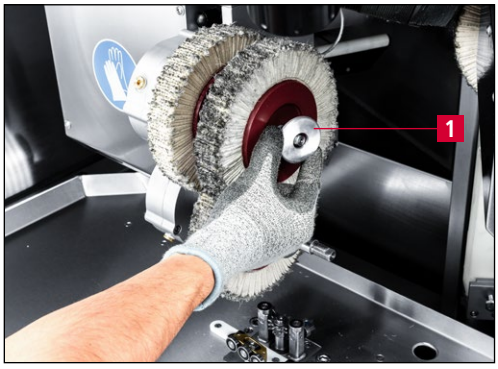

Figure 7-73 Removing the flange cap

Remove the flange cap (7-73/1).

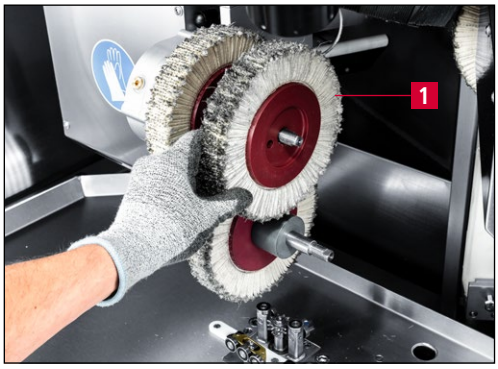

Figure 7-74 Removing the upper deburring brush

Remove the used deburring brush (7-74/1).

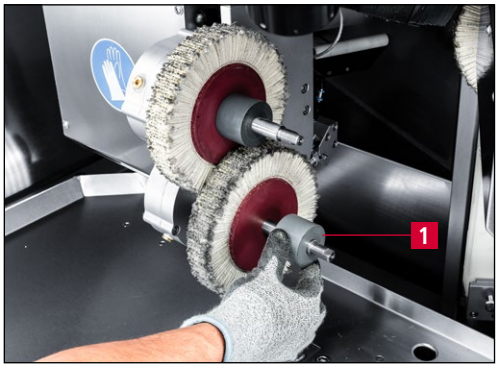

Figure 7-75 Removing intermediate flange

Remove the lower intermediate flange (7-75/1).

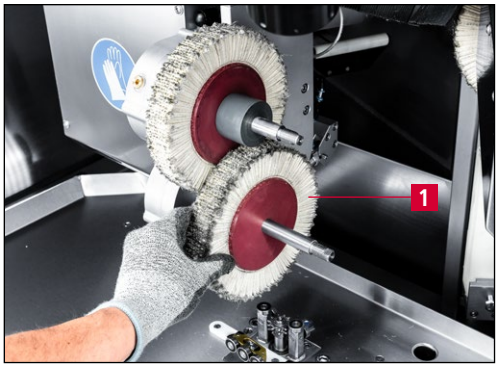

Figure 7-76 Removing the lower deburring brush

Remove the used deburring brush (7-76/1).

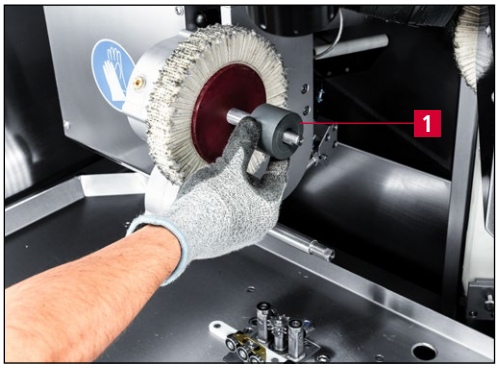

Figure 7-77 Removing intermediate flange

Remove the intermediate flange (7-77/1).

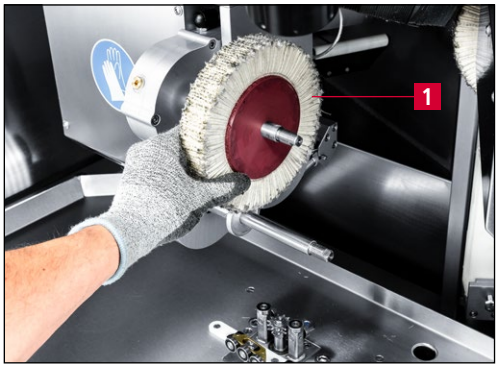

Figure 7-78 Removing the upper deburring brush

Remove the used upper deburring brush (7-78/1) and mount the new ones in reverse order.

Tighten the upper nut **counterclockwise** and the lower nut **clockwise**.

ATTENTION

Only original abrasives from KNECHT Maschinenbau GmbH are permitted to be used.

KNECHT Maschinenbau GmbH assumes no responsibility for the use of non-original abrasives.

7. Operation

7.8 Replacing the polishing pastes

7.8.1 Replacing the polishing paste of the polishing unit

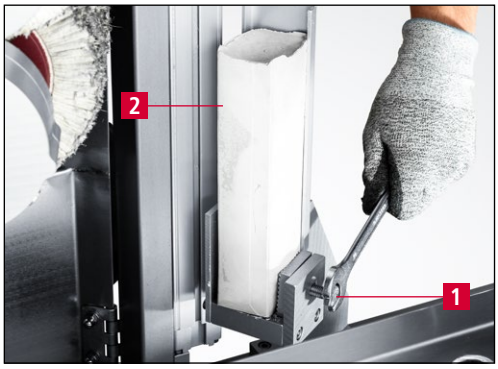

Figure 7-79 Replacing the polishing paste of the polishing unit

Open the door of the polishing unit.

Loosen the clamping claw (7-79/1) with an AF 17 mm open-end wrench.

Remove the polishing paste (7-79/2) and replace it with a new one.

Moderately retighten the clamping claw (7-79/1) again.

Close the door.

7.8.2 Replacing the polishing paste of the deburring unit

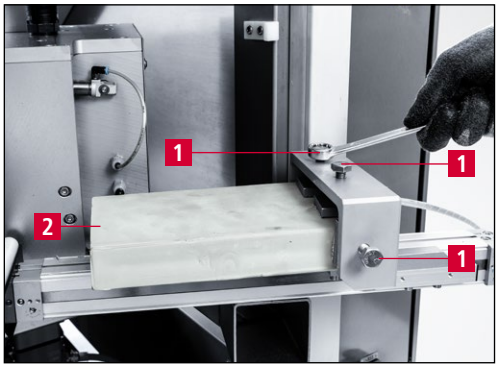

Figure 7-80 Replacing the polishing paste of the deburring unit

Open the door of the deburring unit.

Loosen the clamping claws (7-80/1) using an AF 17 mm open-end wrench.

Remove the polishing paste (7-80/2) and replace it with a new one.

Figure 7-81 Replacing the polishing paste of the deburring unit

Underlay the new polishing paste with the support plate (7-81/1) supplied.

ATTENTION

When inserting new polishing paste, it must be supported with the support plate supplied (see Figure 7-81/1). This prevents the paste from breaking off.

Finally, tighten the clamping claws (7-80/1) moderately.

Close the door.

ATTENTION

Once the polishing paste is about half worn, the support plate (7-81/1) must be removed.

Only original abrasives from KNECHT Maschinenbau GmbH are permitted to be used.

KNECHT Maschinenbau GmbH assumes no responsibility for the use of non-original abrasives.

8. Control

8.1 Main screen

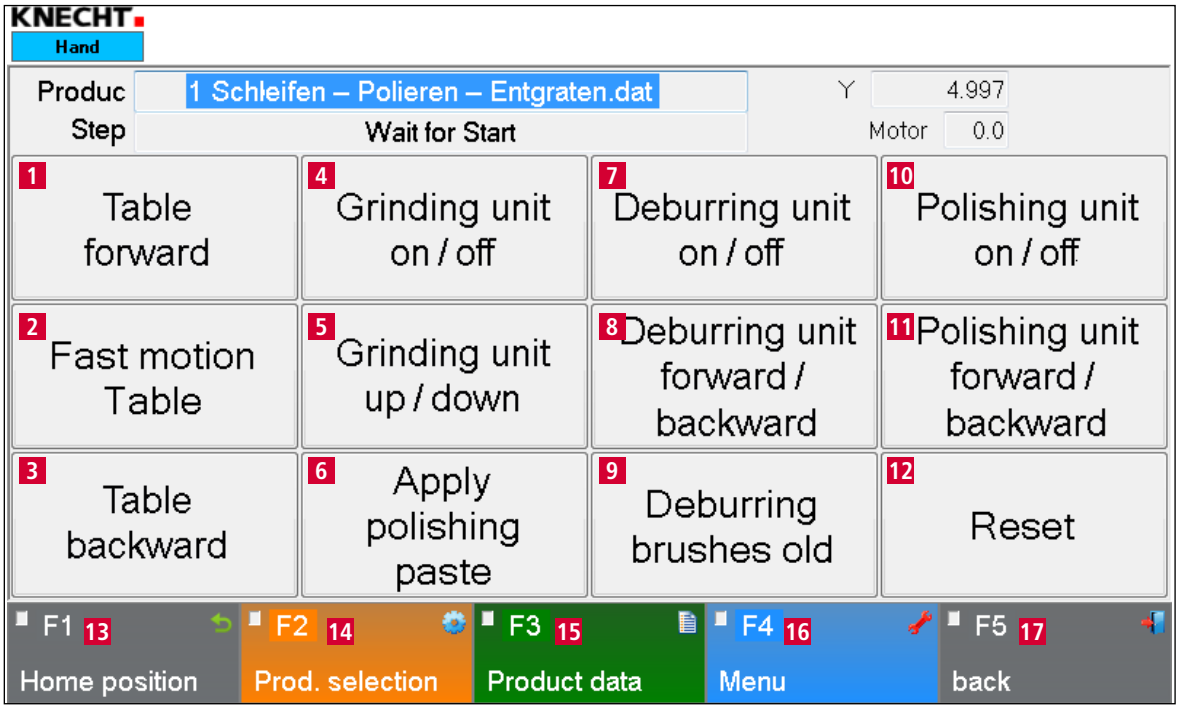

Figure 8-1 Main screen

1 **"Table forward"**: move the table forward in 1 mm steps

2 **"Fast motion table"**: If the fast motion is highlighted in green, the table moves without interruption when "Table forward" (8-1/1) or "Table back" (8-1/3) is pressed

3 **"Table backward"**: move the table backward in 1 mm steps

4 **"Grinding unit on / off"**: switch the wet-grinding belt on/off

5 **"Grinding unit up / down"**: raise/lower the wet-grinding belt

6 **"Apply polishing paste"**: pulse for applying the polishing paste on the polishing and deburring brushes (in addition to the automatic cycle) ´

7 **"Deburring unit on / off"**: switch the deburring unit on/off

8 **"Deburring unit forward / backward"**: move the deburring unit forward/ backward

9 **"Deburring brushes old"**: activate the touch panel field if brushes are worn out, slide automatically moves 10 mm further

10 **"Polishing unit on / off"**: switch the polishing unit on/off

11 **"Polishing unit forward / backward"**: move the polishing unit forward/backward

12 **"Reset"**: delete temporary fault messages

13 **"Home position"**: move the table to the base position

14 **"Prod. selection"**: select the product files

15 **"Product data"**: change the parameters of the product data

16 **"Menu"**: manage the settings and language of the user interface

17 **"Back"**: return to previous screen

8. Control

ATTENTION

Fast motion highlighted in green: Table moves continuously without interruption.

Fast motion highlighted in gray: Table moves a predefined distance.

8.2 Product files

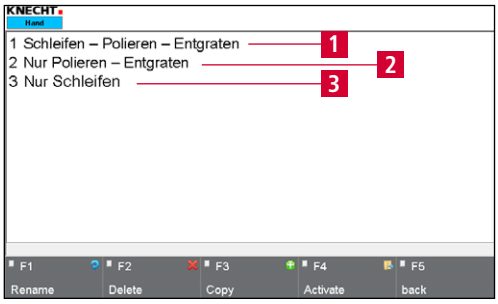

Figure 8-2 Product files

Three product files are stored on the machine as standard:

„1 Grinding – Polishing – Deburring“ (8-2/1)
„2 Polishing – Deburring only“ (8-2/2)
„3 Grinding only“ (8-2/3)

8.2.1 Selecting a product file

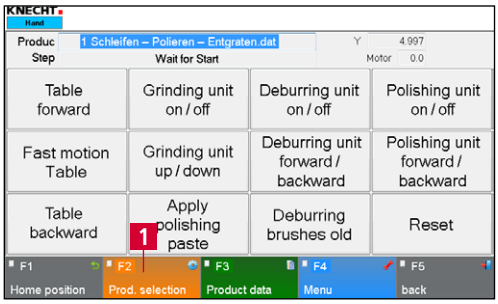

Figure 8-3 Main screen

A separate product file is stored for each processing task. This product file must be selected and loaded before grinding in automatic mode.

To do this, activate the **“Prod. selection”** touch panel field (8-3/1).

A new window (8-4) opens.

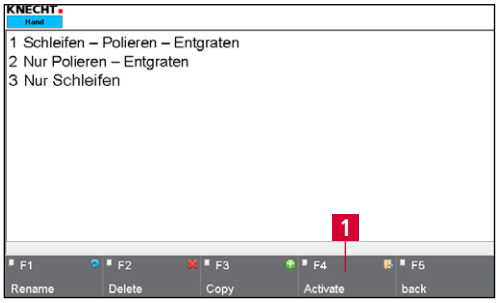

Figure 8-4 Selecting a product file

Select the desired product file so that it is highlighted in blue.

Use the touch panel field **“Activate”** (8-4/1) to load the product file into the control system.

The program automatically switches back to the main screen.

8. Control

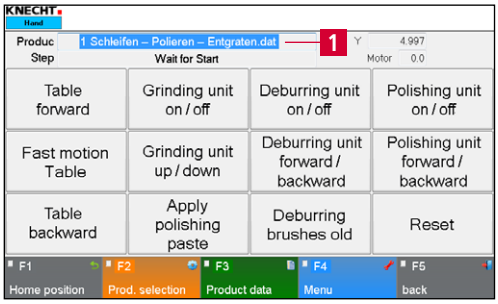

Figure 8-5 Main screen

The new product file appears in the "Product" line (8-5/1). The new parameters are now loaded from the control system.

8.2.2 Renaming a product file

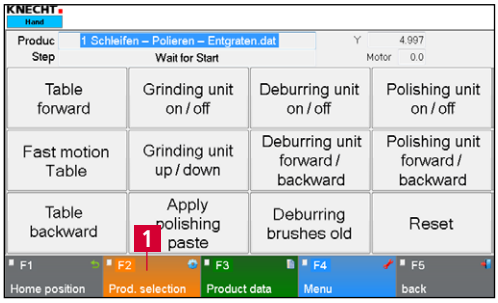

Figure 8-6 Main screen

Activate the **"Prod. selection"** touch panel field (8-6/1).

A new window (8-7) opens.

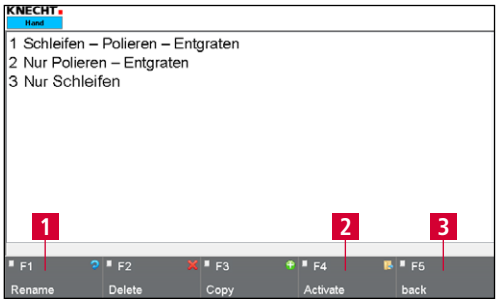

Figure 8-7 Editing a product file

Select the desired product file so that it is high-lighted in blue.

Pressing **"Rename"** (8-7/1) opens the figure (8-8).

Figure 8-8 Renaming a product file

Edit the file name (8-8/1) using the keyboard and confirm with **"OK"** (8-8/2).

The window closes. The renamed file appears in the product file directory.

Then activate a product file with **"Activate"** (8-7/2) or return to the main screen with **"Back"** (8-7/3).

8.2.3 Creating a product file

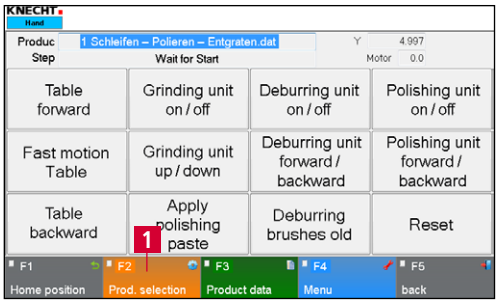

Figure 8-9 Main screen

Activate the **"Prod. selection"** touch panel field (8-9/1).

A new window (8-10) opens.

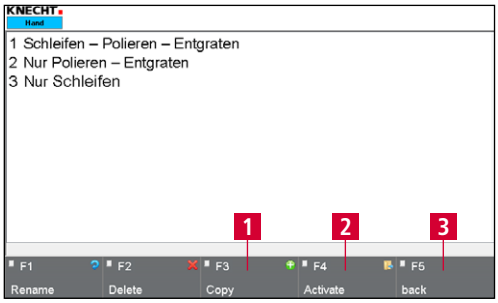

Figure 8-10 Editing the product file

Select the desired product file so that it is highlighted in blue.

Pressing **"Copy"** (8-10/1) opens the figure (8-11).

Figure 8-11 Creating a product file

Edit the file name (8-11/1) using the keyboard and confirm with **"OK"** (8-11/2).

The window closes. The new file appears in the product file directory.

Continue with Chapter 8.3 to edit the parameters of the product file.

8.2.4 Deleting a product file

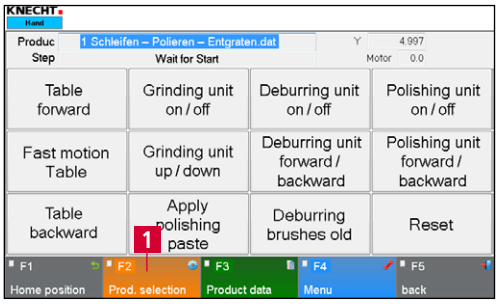

Figure 8-12 Main screen

Activate the **"Prod. selection"** touch panel field (8-12/1).

A new window (8-13) opens.

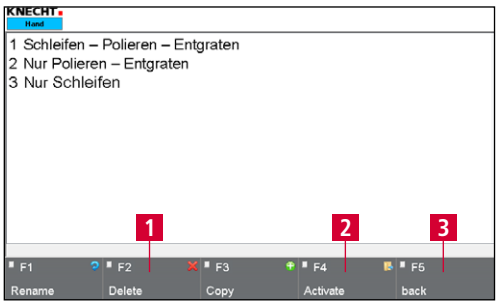

Figure 8-13 Editing a product file

Select the desired product file so that it is highlighted in blue.

Pressing **"Delete"** (8-13/1) opens the pop-up window (8-14/1).

8. Control

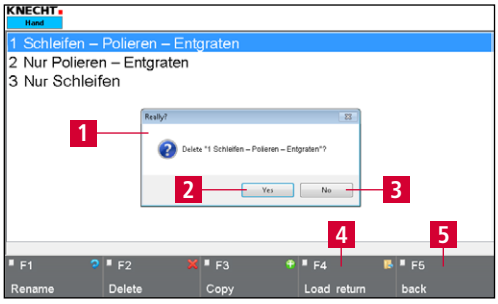

Figure 8-14 Deleting a product file

Confirm with **"Yes"** (8-14/2) or cancel with **"No"** (8-14/3).

The pop-up window closes.

Then activate a product file with **"Activate"** (8-13/2) or return to the main screen with **"Back"** (8-13/3).

8. Control

8.3 Editing the parameters of a product file

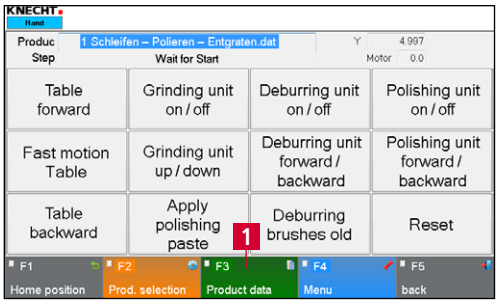

Figure 8-15 Main screen

The parameters of a product file can be changed as follows:

Activate the **"Product data"** touch panel field (8-15/1) on the main screen.

A new window (8-16) opens.

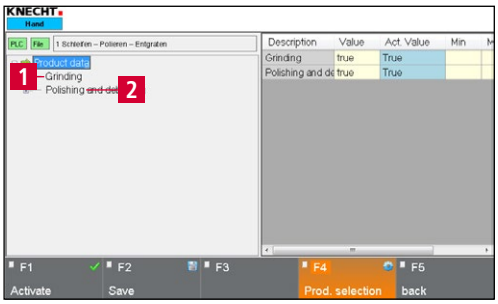

Figure 8-16 Parameter groups

There are two different parameter groups:

Grinding (8-16/1): Grinding process data (see Chapter 8.4.1)

Polishing and deburring (8-16/2): Polishing and deburring process data (see Chapter 8.4.3)

The active group is always indicated with a green arrow. A group becomes active by pressing on its name. The arrow moves forward and the group is highlighted in blue.

8. Control

8.3.1 Parameter “Grinding”

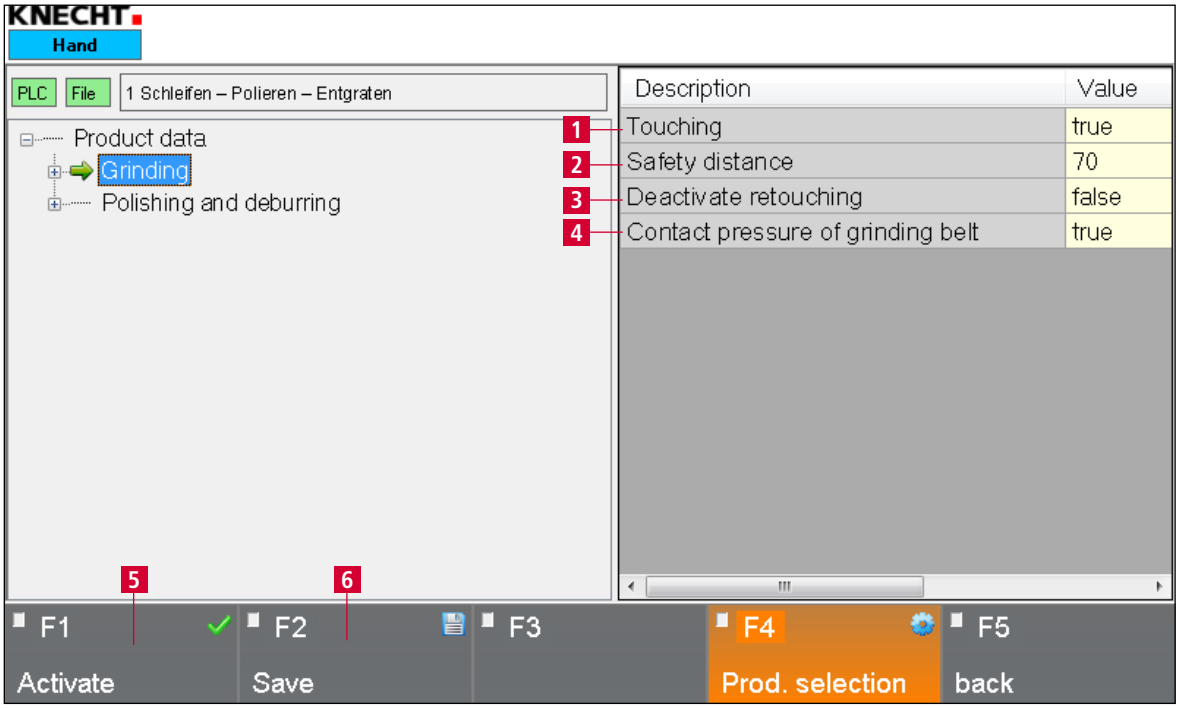

Figure 8-17 Product data “Grinding”

1 **Touching**: true = touching activated, false = touching deactivated

2 **Safety distance**: distance in mm that the knife travels at reduced speed until it touches

3 **Deactivate retouching**: if this function is deactivated, the contact pressure is not automatically corrected during grinding; true = deactivated, false = activated

4 **Contact pressure of grinding belt**: activates/deactivates the rotary control (3-10/6) to manually correct the contact pressure of the grinding belt during grinding; true = rotary control activated, false = rotary control deactivated

5 **“Activate”**: transfers the changed values to the control system

6 **“Save”**: saves the changed values to the control system

To change the parameters, tap on the relevant button highlighted in yellow. With “Numbers,” the window (8-18) opens; with “Values,” the window (8-19) opens.

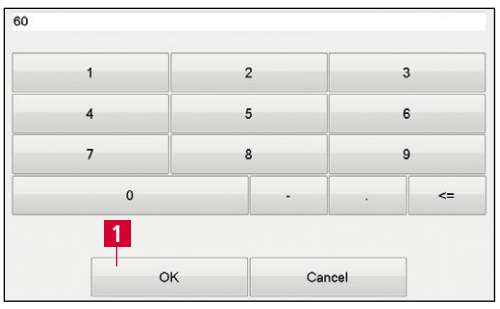

Figure 8-18 Editing the “Number” parameter

Select the desired number and confirm with **“OK”** (8-18/1).

The touch panel field **“Cancel”** closes the window without applying the new value.

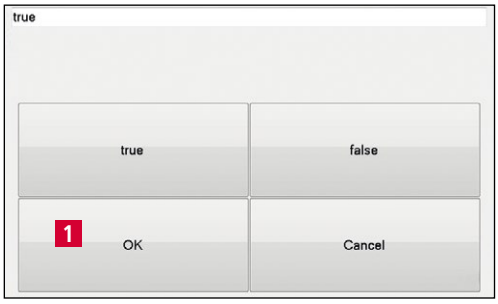

Figure 8-19 Editing the "Values" parameter

Select values between **"true"** and **"false"** and confirm with **"OK"** (8-19/1).

The touch panel field **"Cancel"** closes the window without applying the new value.

ATTENTION

If a current product file is changed, transfer the new data to the control system using the "Activate" touch panel field (8-17/5).

Save the changed values with the "Save" (8-17/6) touch panel field.

8. Control

8.3.2 Parameter “Feed cycles – 1. Step”

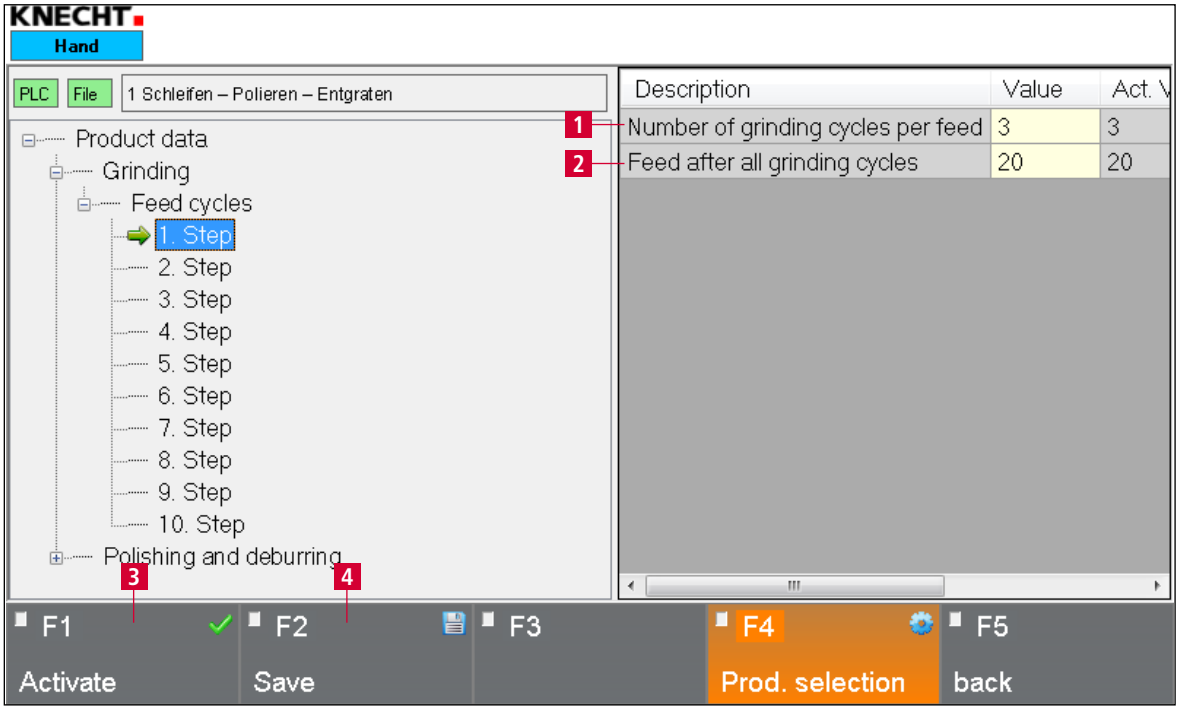

Figure 8-20 Product data “Grinding – Feed cycles – 1. Step”

1 **Number of grinding cycles per feed**: number of cycles in a particular step; the step is not carried out if the value is “0”

2 **Feed after all grinding cycles**: path that the knife covers to the next step after completing processing of the previous step (in mm)

3 **“Activate”**: transfers the changed values to the control system

4 **“Save”**: saves the changed values to the control system

NOTE

The above parameters refer to the 2nd – 10th step.

To change the parameters, tap on the relevant button highlighted in yellow. With “Numbers,” the window (8-21) opens.

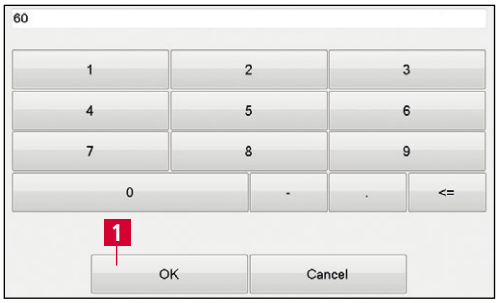

Figure 8-21 Editing the “Number” parameter

Select the desired number and confirm with **“OK”** (8-21/1).

The touch panel field **“Cancel”** closes the window without applying the new value.

ATTENTION

If a current product file is changed, transfer the new data to the control system using the "Activate" touch panel field (8-20/3).

Save the changed values with the "Save" (8-20/4) touch panel field.

8. Control

8.3.3 Parameter “Polishing and deburring process”

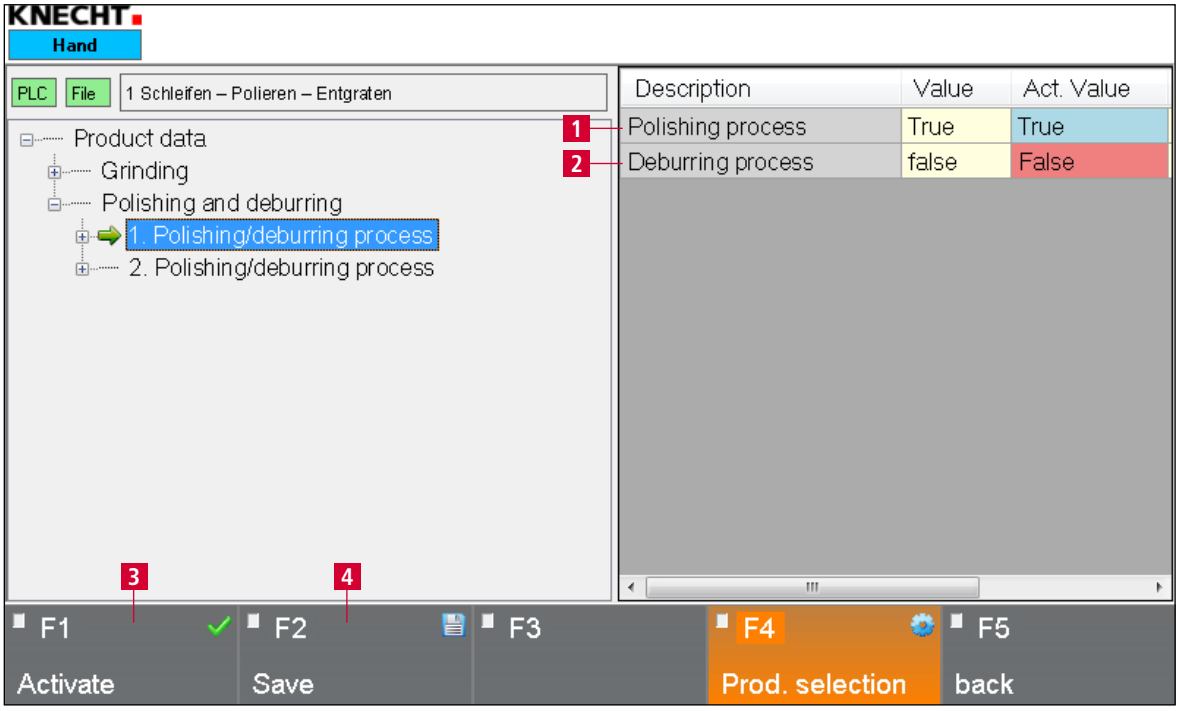

Figure 8-22 Product data “Polishing and deburring – 1. Polishing/deburring process”

1 **Polishing process**: true = polishing process activated, false = polishing process deactivated

2 **Deburring process**: true = deburring process activated, false = deburring process deactivated

3 **“Activate”**: transfers the changed values to the control system

4 **“Save”**: saves the changed values to the control system

NOTE

The above parameters refers also to the 2nd polishing and deburring process.

To change the parameters, tap on the relevant button highlighted in yellow. With “Numbers,” the window (8-23) opens; with “Values,” the window (8-24) opens.

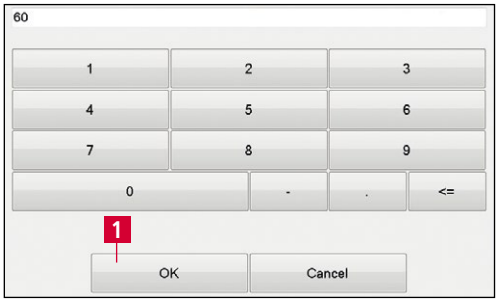

Figure 8-23 Editing the “Number” parameter

Select the desired number and confirm with **“OK”** (8-23/1).

The touch panel field **“Cancel”** closes the window without applying the new value.

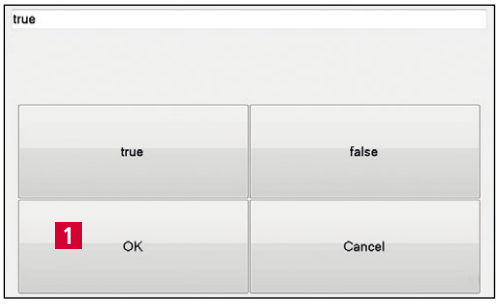

Figure 8-24 Editing the "Values" parameter

Select values between **"true"** and **"false"** and confirm with **"OK"** (8-24/1).

The touch panel field **"Cancel"** closes the window without applying the new value.

ATTENTION

If a current product file is changed, transfer the new data to the control system using the "Activate" touch panel field (8-22/3).

Save the changed values with the "Save" (8-22/4) touch panel field.

8.3.4 Parameter “Polishing / deburring cycles”

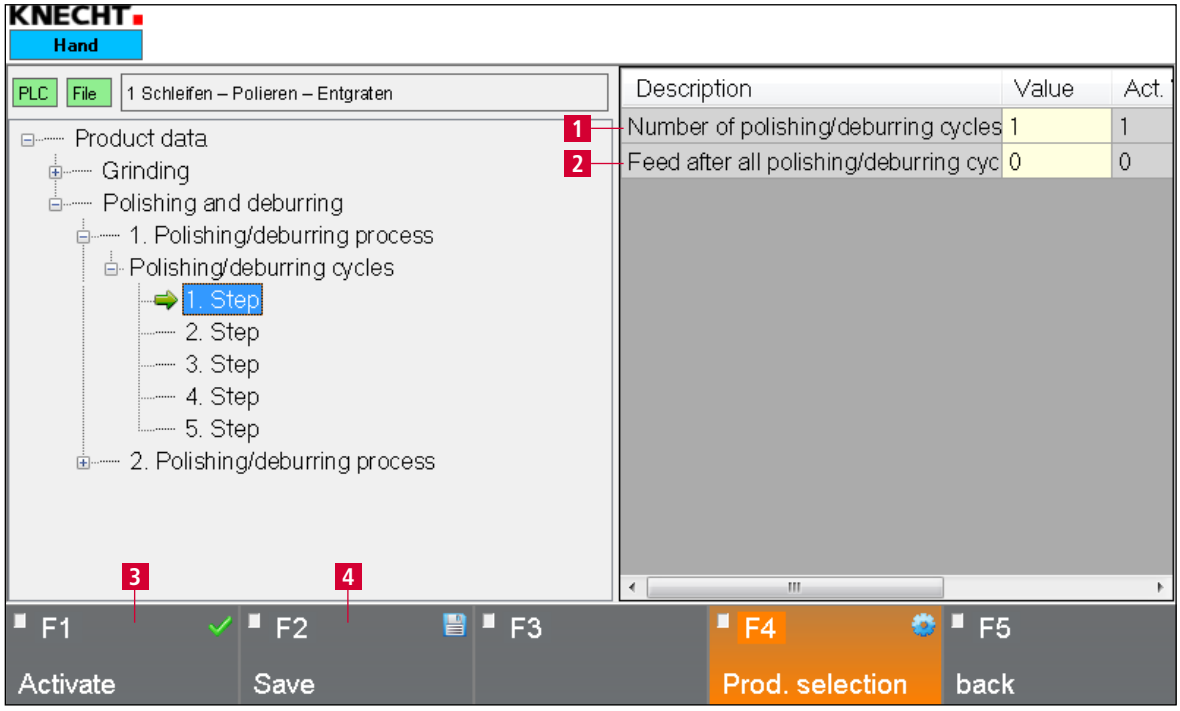

Figure 8-25 Product data „Polishing and deburring – 1. Polishing/deburring process – Polishing/deburring cycles – 1. Step”

1 **Number of polishing / deburring cycles per feed**: number of polishing/deburring cycles in a particular step; the step is not carried out if the value is “0”

2 **Feed after all polishing / deburring cycles**: path that the knife covers to the next step after completing processing of the previous step (in mm)

3 **“Activate”**: transfers the changed values to the control system

4 **“Save”**: saves the changed values to the control system

NOTE

The above parameters refer to the 2nd – 5th step.

To change the parameters, tap on the relevant button highlighted in yellow. With “Numbers,” the window (8-26) opens.

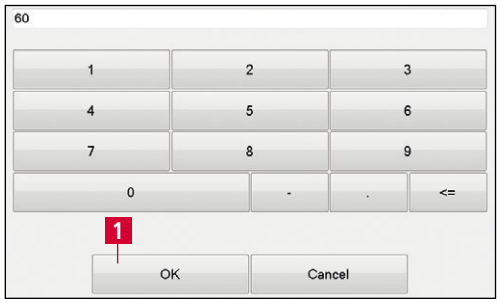

Figure 8-26 Editing the “Number” parameter

Select the desired number and confirm with **“OK”** (8-26/1)**.**

The touch panel field **“Cancel”** closes the window without applying the new value.

ATTENTION

If a current product file is changed, transfer the new data to the control system using the "Activate" touch panel field (8-25/3).

Save the changed values with the "Save" (8-25/4) touch panel field.

8. Control

8.4 Changing the knife profiles

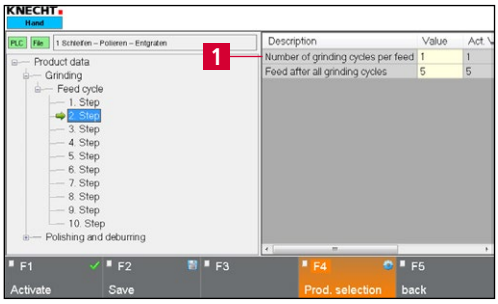

Figure 8-27 Product data "Grinding – Feed Cycles – 2. Step"

The grinding machine creates a profile for boiled sausage knives as standard.

If a flatter profile is to be ground, the value under the parameter "Grinding – Feed Cycles" for the item "Number of grinding cycles per feed" (8-27/1) must be increased from the second step onwards.

The shape of the knife profile is influenced by the number of grinding steps and grinding cycles.

The more grinding cycles in a step, the flatter the knife profile.

The fewer grinding cycles in a step, the steeper the knife profile.

ATTENTION

The control parameters may only be changed by accordingly qualified personnel. This person must be familiar with the machine functions and the meaning of the parameters. Otherwise, damage to the machine may occur.

8. Control

8.5 Setup data

The setup data can be accessed via the main menu **“Menu”** (8-1/16) followed by **“Setup data”**.

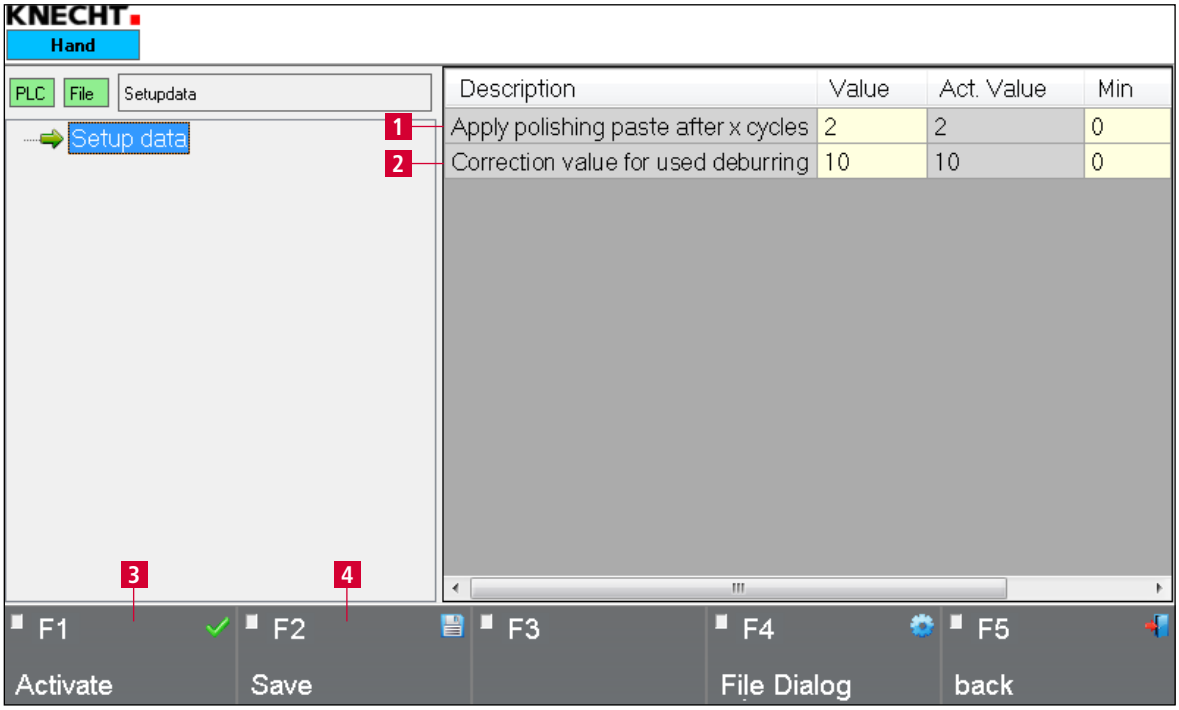

Figure 8-28 Setup data

1 **Apply polishing paste after x cycles**: number of grinding cycles before the polishing paste is automatically applied on the polishing and deburring brushes

2 **Correction value for used deburring brushes:** when the touch panel field on the main screen (8-1/9) is activated, the slide moves forward by the set value so that the deburring brushes can function optimally (in mm)

3 **“Activate”**: transfers the changed values to the control system

4 **“Save”**: saves the changed values to the control system

To change the parameters, tap on the relevant button highlighted in yellow. With “Numbers,” the window (8-29) opens.

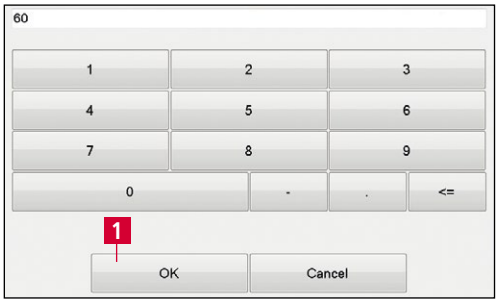

Figure 8-29 Editing the “Number” parameter

Select the desired number and confirm with **“OK”** (8-29/1).

The touch panel field **“Cancel”** closes the window without applying the new value.

ATTENTION

If a current product file is changed, transfer the new data to the control system using the "Activate" touch panel field (8-28/3).

Save the changed values with the "Save" (8-28/4) touch panel field.

8. Control

8.6 Manual functions

The manual functions permit manual operation of the machine. They can be accessed via the main menu **“Menu”** (8-1/16) followed by **“Manual Functions”**. Various functions of the grinding machine can be activated/deactivated individually.

ATTENTION

Buttons highlighted in green are active.
Buttons highlighted in gray are inactive

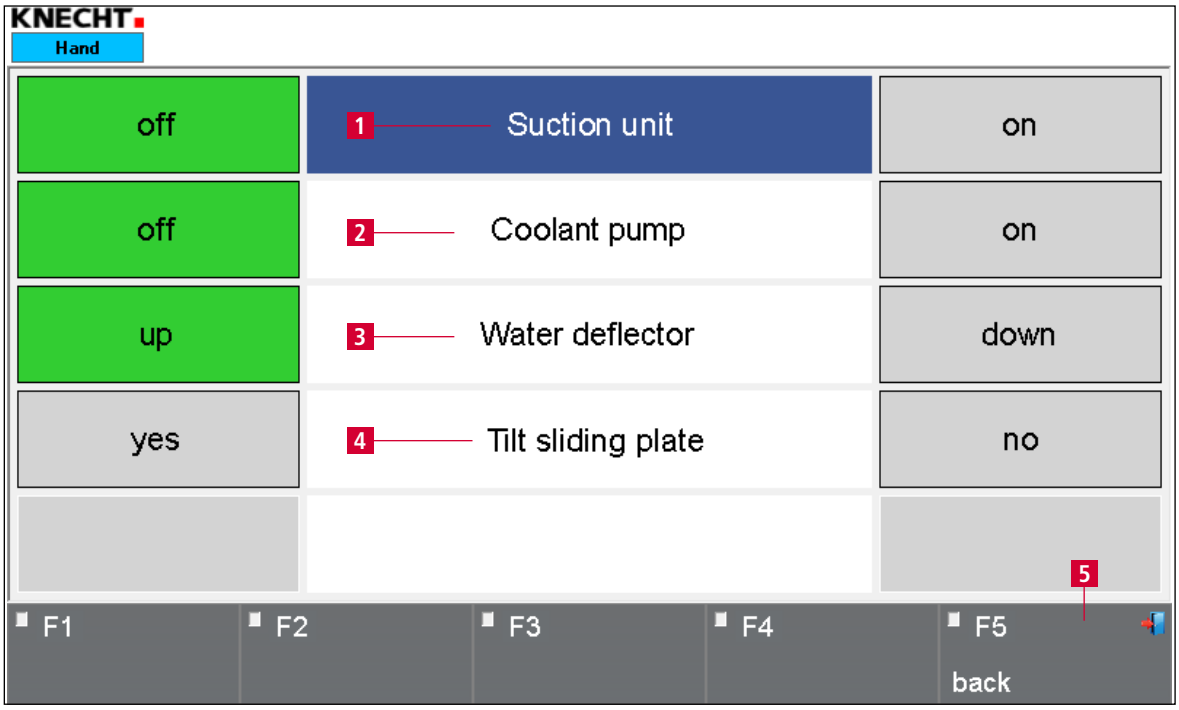

Figure 8-30 Manual functions

1 Switch suction unit on/off (optional)
2 Switch coolant pump on/off
3 Lift/lower water deflector
4 Tilt sliding plate yes/no
5 **“Back”**: back to the last view

8. Control

8.7 Changing the language

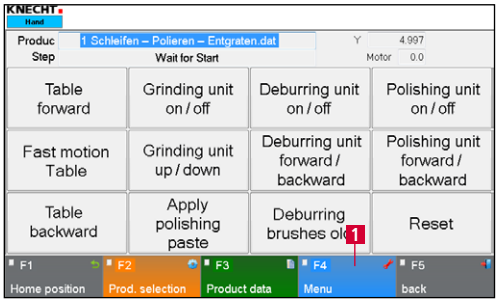

Figure 8-31 Main screen

The user interface language can be changed to the respective national language.

Press the **"Menu"** touch panel field (8-31/1) to access the menu.

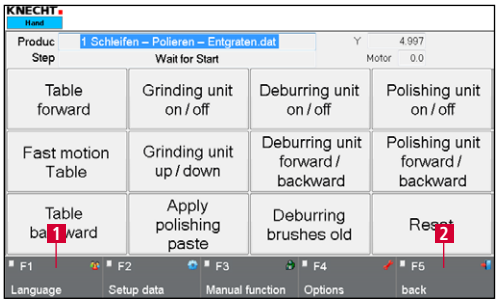

Figure 8-32 Menu

Activate the **"Language"** touch panel field (8-32/1).

A new window (8-33) opens.

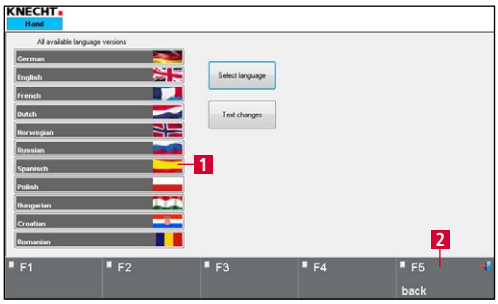

Figure 8-33 Selecting the language

The desired language is selected and automatically activated by pressing the corresponding touch panel field (8-33/1).

Then return to the menu (see Figure 8-32) using the **"Back"** touch panel field (8-33/2).

Pressing **"Back"** (8-33/2) again in the menu brings up the main screen.

8. Control

8.8 Setting up an internet connection

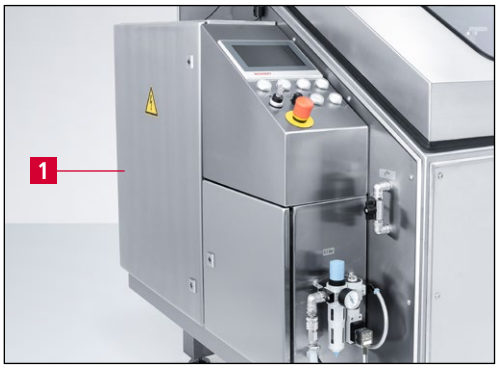

Figure 8-34 Control cabinet

The machine is equipped with an ethernet port. A secure connection between the machine and KNECHT Maschinenbau GmbH can be established via the integrated VPN router. The connection can be activated or deactivated by the operator using the key switch in the control cabinet (8-34/1).

This connection gives the KNECHT service technician access to the control and allows him to diagnose the machine, change the software settings and upload or edit new grinding programs.

There must be an active Internet connection to initiate the connection.

NOTE

When commissioning, the VPN router is configured according to the specified IT infrastructure so that the machine communicates exclusively with KNECHT Maschinenbau GmbH via the VPN server. Any communication within the customer network is excluded. The customer network is therefore optimally protected.

In order to establish the internet connection, plug the supplied ethernet cable into the on-site network socket (RJ45) and the network port in the control cabinet (8-34/1) of the grinding machine.

9. Care and maintenance

For all work on the grinding machine, observe the locally applicable safety and accident prevention regulations as well as instructions in the "Safety" and "Important notes" section of the operating instructions.

9.1 Cleaning

The machine must be cleaned after each grinding operation, otherwise the grinding abrasion dries and is difficult to remove.

Clean the windows with soft cleaning cloths and window cleaning agent.

After cleaning, we recommend the products listed below for care of the machine (see also the table of cleaning agents and lubricants in Chapter 9.1.1).

ATTENTION

The grinding machine must not be sprayed with water. Machine components may be damaged or destroyed.

Polishing brushes and deburring brushes must not get wet, as they can only absorb the polishing paste and polish/deburr a knife properly when dry.

9.1.1 Cleaning agent and lubricant table

Cleaning / Lubrication work	Interflon	WÜRTH	SHELL	EXXON Mobil	OEST
Cleaning and care of machine parts	Dry Clean Stainless Steel	Stainless steel care spray	Risella 917	Marcol 82	New Process Multispray
Lubricate the copy grinding plate tracks on the sliding plate	Fin Grease	Multi-purpose grease	Gadus S2 V100 2	Mobilith SHC 100	IXELON GOC 190
Lubricate the threads of the star handles, clamping levers, flow monitors, and bowex coupling	Fin Grease	Multi-purpose grease	Gadus S2 V100 2	Mobilith SHC 100	IXELON GOC 190
Lubricate parts with lubrication nipples (see Chapter 9.4)	Fin Grease	Multi-purpose grease	Gadus S2 V100 2	Mobilith SHC 100	IXELON GOC 190
Lubricate the guides and adjustment spindles	Fin Grease	Multi-purpose grease	Gadus S2 V 100 2	Mobilith SHC 100	IXELON GOC 190

9. Care and maintenance

9.1.2 Cleaning the machine interior

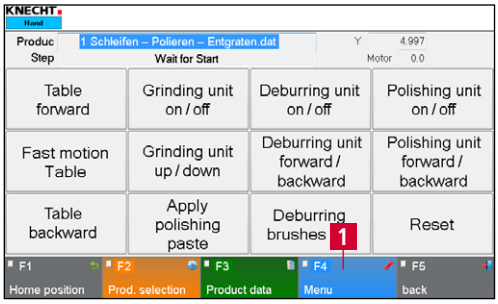

Figure 9-1 Main screen

For cleaning the interior of the machine, the sliding plate can be tilted (see Figure 9-4).

Close the protection hood.

On the main screen press the **“Menu”** touch panel field (9-1/1). A new window (9-2) opens.

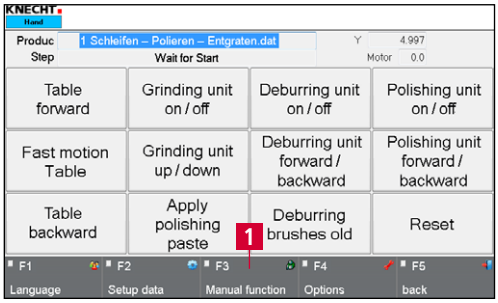

Figure 9-2 Menu

Use the **“Manual Functions”** touch panel field (9-2/1) to open the machine's manual functions.

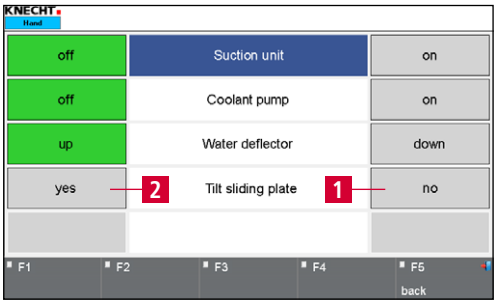

Figure 9-3 Manual functions

Activate **“Yes”** (9-3/1) on the touch panel field “Tilt sliding plate”.

9. Care and maintenance

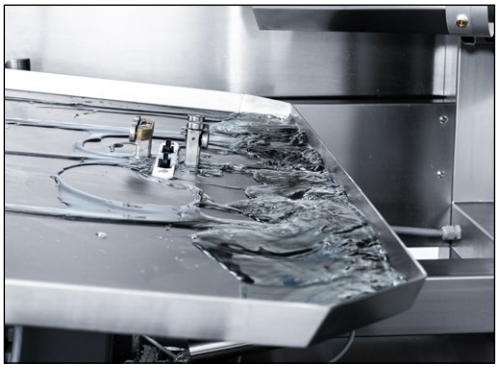

Figure 9-4 Sliding plate tilted

The sliding plate is tilted and the grinding abrasion can be removed with water.

The sliding plate is returned to its horizontal position using the touch panel field "Tilt sliding plate" – **"No"** (9-3/2).

9.1.3 Cleaning the substructure

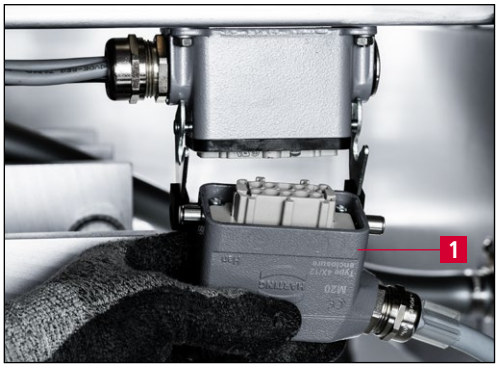

Figure 9-5 Loosening the connecting plug on the sliding plate

For cleaning and maintenance of the substructure, the sliding plate must be removed.

First open the door of the deburring unit (3-8/1) at the rear of the machine and remove the connecting plug (9-5/1) below the sliding plate.

Figure 9-6 Loosening the sliding plate

Then turn the two screws (9-6/1) from the front **counterclockwise** with an AF 10 mm hexagon screwdriver as far as they will go.

Remove the sliding plate from the machine towards the front and clean the base.

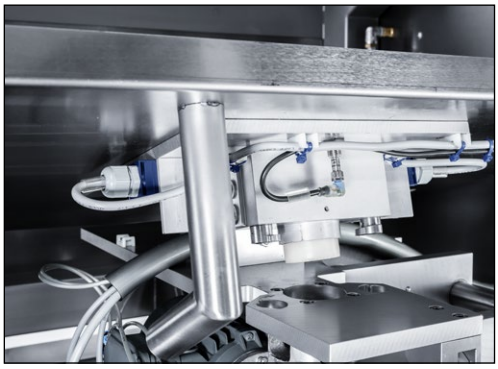

Figure 9-7 Removing the sliding plate

The sliding plate is installed in reverse order.

ATTENTION

Work carefully when installing the sliding plate, as otherwise the limit switch and cable may be damaged.

9. Care and maintenance

9.1.4 Cleaning the flow monitor

Figure 9-8 Unplugging the flow monitor

The flow monitor (9-8/1) must be removed and cleaned every six months.

To do this, remove the plug (9-8/2).

Turn the flow monitor (9-8/1) **counterclockwise** using an AF 22 mm open-end wrench.

Figure 9-9 Cleaning the flow monitor

Clean the measuring probe (9-9/1) with a clean cloth.

Lightly grease the thread (9-9/2) (not the probe).

After cleaning, reinstall the flow monitor in reverse order.

Reinsert the plug (9-8/2).

9. Care and maintenance

9.2 Maintenance plan (one-shift operation)

Interval	Assembly	Maintenance task
Daily	Polishing paste	Clean the paste feed and ensure that it runs smoothly.
		If the polishing paste of the deburring unit has worn down to the support plate, remove the support plate immediately (see Chapter 7.9.2).
	Coolant system	Check the filling quantity of the water tray.
Weekly	Grinding unit	Remove the belt protection hood, remove the contact disc and clean the area.
	Deburring unit	Check the diameter of the deburring brushes. If they are smaller than 165 mm, install new deburring brushes.
		Remove the polishing paste from the deburring brushes using a cleaning brush. After cleaning, reapply polishing paste to the brushes (see Figure 8-1/6 **"Apply polishing paste"**).
	Substructure	Clean and lubricate guides and horizontal spindle.
	SP 112 Copy grinding plate	Lubricate the drive chain.
		Check the felt glides.
		Check the clamping lever and knife holding fixture.
Monthly	Grinding unit	Check the rubber profile on the belt protection hood for leaks.
	Polishing unit	Clear the water drainage hole on the underside of the polishing unit cover.
Semi-annually	Grinding unit	Lubricate the lubrication nipples (see Chapter 9.4.1).
	Substructure	Lubricate the lubrication nipples on the swivel mechanism (see Chapter 9.4.5).
	Coolant system	Remove and clean the flow monitor (see Chapter 9.1.4).
	Sliding plate HV 551	Check chain pinion for wear.
		Check drive shaft for clearance.
		Check limit switch rollers for wear.
		Check guide carriage ball bearings for wear.
Annually	Deburring unit	Lubricate the deburring gear if there is increased noise (see Figure 9-15).
		Contact the service department of KNECHT Maschinenbau GmbH.

9. Care and maintenance

9.3 Lubrication points

9.3.1 Lubricating the guideway housing

Figure 9-10 Lubricating the front of the guide-way housing

There is a lubrication nipple at the front and rear of the guideway housing.

Apply the grease press to the front lubrication nipple (9-10) and lubricate the slide.

We recommend "OEST IXELON GOC 190" or a corresponding commercial multi-purpose grease.

Semi-annually press one stroke of grease into the lubrication nipple using the grease press.

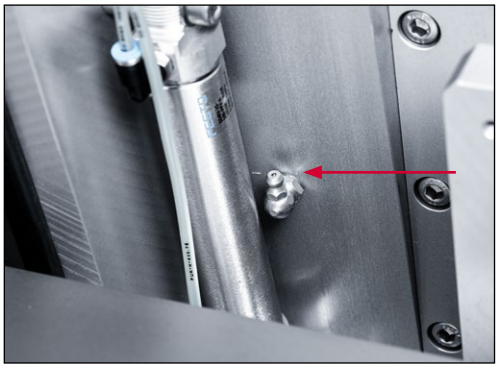

Figure 9-11 Lubricating the rear of the guide-way housing

Apply the grease press to the rear lubrication nipple (9-11) and lubricate the slide.

We recommend "OEST IXELON GOC 190" or a corresponding commercial multi-purpose grease.

Semi-annually press one stroke of grease into the lubrication nipple using the grease press.

9.3.2 Lubricating the angle setting slide

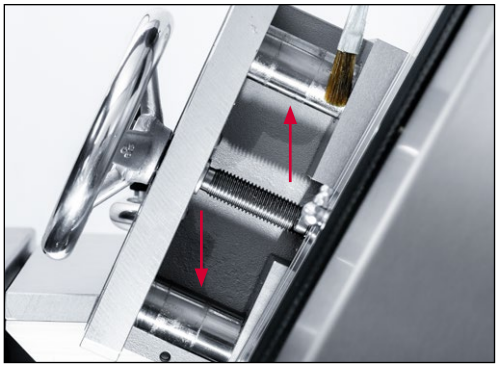

Figure 9-12 Lubricating the guides and adjust-ment spindle for angle setting

The guides and adjustment spindle for angle setting (9-12) must be greased semi-annually.

We recommend "OEST IXELON GOC 190" or a corresponding commercial multi-purpose grease.

9. Care and maintenance

9.3.3 Lubricating the deburring unit

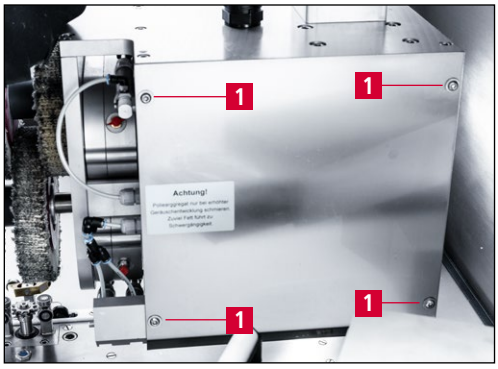

Figure 9-13 Removing the cover of the deburring unit

To access the lubrication nipples on the deburring unit, the cover must be removed.

To do this, open the door of the deburring unit at the rear of the machine.

Use an AF 4 mm hexagon screwdriver to loosen the four screws (9-13/1) and remove the cover.

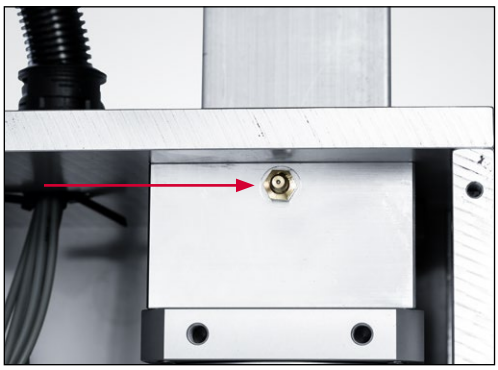

Figure 9-14 Lubricating the deburring unit

Apply the grease press to the lubrication nipple (9-14) and lubricate the slide.

We recommend "OEST IXELON GOC 190" or a corresponding commercial multi-purpose grease.

Semi-annually press one stroke of grease into the lubrication nipples using the grease press.

Figure 9-15 Lubricating the deburring gearbox

The lubrication nipples (9-15) of the deburring gearbox are fitted with red protective caps. They are lubricated by KNECHT Service at the maintenance interval.

The deburring gearbox may only be lubricated by the user after consultation with KNECHT Maschinenbau GmbH.

Once a year or if the deburring unit generates increased noise, press three strokes of grease into the lubrication nipples (9-5) using the grease press.

We recommend "OEST IXELON GOC 190" or a corresponding commercial multi-purpose grease.

9. Care and maintenance

ATTENTION

Lubrication nipples with red protective caps are lubricated by KNECHT Service.

Too much grease in the deburring gear leads to sluggishness of the deburring brushes.

9.3.4 Lubricating the polishing unit

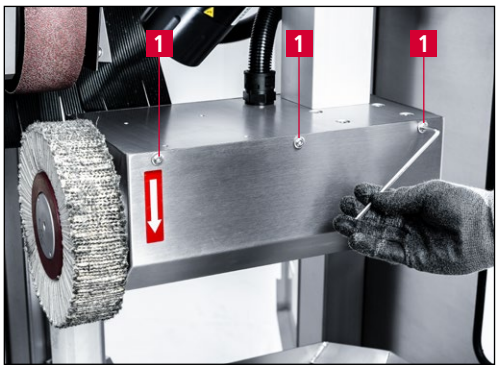

Figure 9-16 Removing the cover of the polishing unit

To access the lubrication nipples on the polishing unit, the cover must be removed.

Use an AF 4 mm hexagon screwdriver to loosen the six screws (9-16/1) and remove the cover.

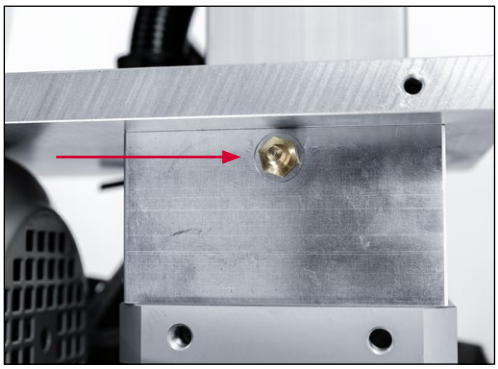

Figure 9-17 Lubricating the polishing unit

Apply the grease press to the lubrication nipple (9-17) and lubricate the slide.

We recommend "OEST IXELON GOC 190" or a corresponding commercial multi-purpose grease.

Semi-annually press one stroke of grease into the lubrication nipples using the grease press.

9. Care and maintenance

9.3.5 Lubricating the swivel mechanism

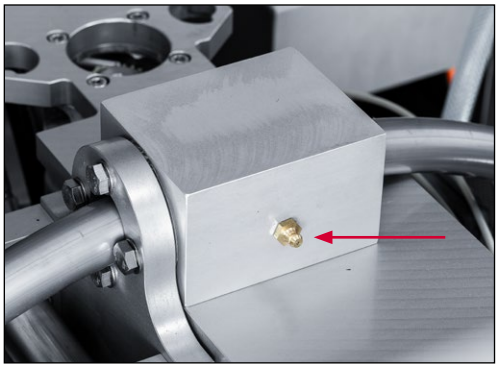

Figure 9-18 Lubricating the swivel mechanism

To lubricate the lubrication nipple of the swivel mechanism, the sliding plate must first be removed (see Chapter 9.2.3).

Apply the grease press to the lubrication nipple (9-18) and lubricate the swivel mechanism.

We recommend "OEST IXELON GOC 190" or a corresponding commercial multi-purpose grease.

Semi-annually press one stroke of grease into the lubrication nipples using the grease press.

9.3.6 Lubricating the bowex coupling

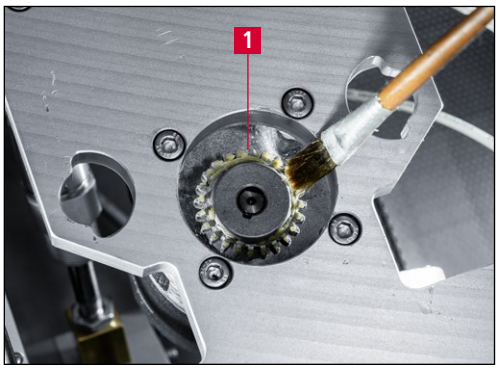

Figure 9-19 Lubricating the bowex coupling

To lubricate the bowex coupling (9-19/1), the sliding plate must first be removed (see Chapter 9.2.3).

The bowex coupling (9-19/1) must be greased semi-annually.

We recommend "OEST IXELON GOC 190" or a corresponding commercial multi-purpose grease.

9.3.7 Lubricating the table feed guides

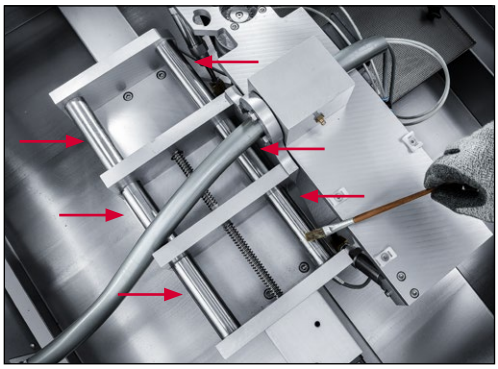

Figure 9-20 Lubricating the table feed guides

To lubricate the table feed guides, the sliding plate must first be removed (see Chapter 9.2.3).

The guides (9-20) must be greased semi-annually.

We recommend "OEST IXELON GOC 190" or a corresponding commercial multi-purpose grease.

9. Care and maintenance

9.4 Coolant

Figure 9-21 Replacing the coolant water

The coolant water has to be replaced weekly and the water tray must be cleaned.

The water tray must always be filled with water up to 3 cm below the rim. For filling and cleaning, the water tray can be pulled out to the front.

9.4.1 Coolant additive

When grinding corrosion-resistant cutting tools, we recommend not adding any coolant additive to the cooling water.

When grinding non-corrosion-resistant cutting tools, it is essential to add a corrosion-inhibiting coolant additive to the cooling water.

To do this, mix approx. 50 liters of water with approx. 2.5 liters of Colometa SBF-PN coolant additive and pour into the water tray (mixing ratio 1:20).

ATTENTION

No other coolant additive may be used without the permission of KNECHT Maschinenbau GmbH.

9.4.2 Measuring the cooling lubricant concentration

ATTENTION

Measurement errors are eliminated by carrying out a zero line adjustment with the provided calibration fluid before using the refractometer.

To do this, turn the small upper screw of the measuring device until zero is displayed.

9. Care and maintenance

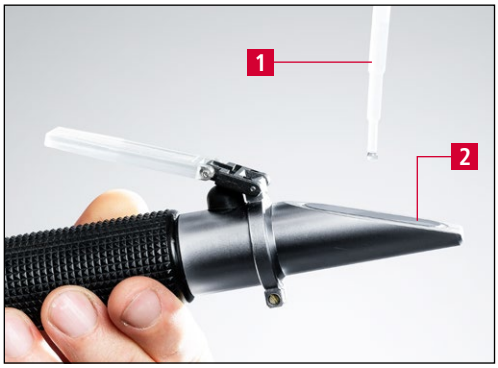

Figure 9-22 Measuring the cooling lubricant concentration

The concentration of the cooling lubricant is measured using the hand refractometer supplied.

To do this, use the pipette (9-22/1) and place a few drops of the coolant water on the test area (9-22/2) of the refractometer.

Figure 9-23 Reading the refractive index

Then read off the refractive index of the liquid (Figure 9-23).

The value read in °Brix multiplied by 1.6 gives the concentration in %.

9. Care and maintenance

9.4.3 Maintenance schedule for cooling lubricant

- Check filling volume daily.
- If water has been topped up, be sure to measure the concentration (see Chapter 9.4.1) and top up with cooling lubricant if necessary.
- Check the cooling lubricant concentration weekly.

Coolant additive: Colometa SBF-PN	**Refractometer °Brix: 3–5**			
Date	**°BRIX**	**Conc. %**	**Notes etc.**	**Signature**

The value read in °Brix multiplied by 1.6 gives the concentration in %.

The concentration must always be between 3 – 5 °Brix (corresponds to 5% to 9% concentration).

Check the cooling lubricant regularly for smell and appearance. The cooling lubricant must be exchanged every three months at the latest (biological hazard due to germ formation in the cooling lubricant).

10. Disassembly and disposal

10.1 Disassembly

All operating materials must be disposed of properly.

Secure moving parts against slippage.

Disassembly must be conducted by a qualified specialist.

10.2 Disposal

After the machine has reached the end of its service life, it must be disposed of by a qualified specialist. In exceptional situations, and after consultation with KNECHT Maschinenbau GmbH, the machine may be returned.

Operating materials (e.g. wet-grinding belts, polishing brushes, deburring brushes coolant etc.) must be disposed of correctly.

11. Service, spare parts and accessories

11.1 Postal address

KNECHT Maschinenbau GmbH
Witschwender Straße 26
88368 Bergatreute
Germany

Phone +49-7527-928-0
Fax +49-7527-928-32

mail@knecht.eu
www.knecht.eu

11.2 Service

Service line:
For address, see postal address

service@knecht.eu

11.3 Wear and spare parts

If you need spare parts, please use the spare parts list provided with the machine. Please place your order using the format described below.

When ordering, please always provide:	**(example)**
Machine type	(B500)
Machine number	(1230970500)
Designation of assembly	(HV551)
Designation of single part	(Guide carriage assembly)
Item number (position number)	(1)
Drawing number (article number)	(013RA01-0000)
Quantity	(1 pc)

We are always happy to answer any questions.

11. Service, spare parts and accessories

11.4 Accessories

11.4.1 Abrasives used etc.

Type	Dimensions	Grain	Article number	Notes
Wet-grinding belt	2200x60	80	412A-62-0725	
	2200x60	100	412A-63-0726	
	2200x60	120	412A-64-0727	
	2200x60	240	412A-66-0728	
Wet-grinding belt Compact grain	2200x60	180	412A-70-0180	Installed on delivery
Polishing brush (finned brush)	d.200x50xd.25		412J-02-8150	Installed on delivery
Polishing paste (right)	230x60x50		412R-01-0501	Installed on delivery
Deburring brush (finned brush)	d.180x30xd.17		412J-02-0180	Installed on delivery
Polishing paste (left)	250x40x140		412R-06-0140	Installed on delivery

ATTENTION

Only original abrasives, wear and spare parts from KNECHT Maschinenbau GmbH are permitted to be used.

KNECHT Maschinenbau GmbH assumes no responsibility for the use of non-original parts.

If you require abrasives or other accessories, please contact our sales staff and distributors, or KNECHT Maschinenbau GmbH directly.

Thank you for choosing KNECHT!

12. Appendix

12.1 EU Declaration of Conformity
in accordance with EU Directive 2006/42/EU

- Machinery 2006/42/EU
- Electromagnetic Compatibility 2014/30/EU

We hereby declare that the machine designated as follows, due to its construction and design, as well as the version we introduced on the market, complies with the relevant basic safety and health requirements of the applicable EU Directive.

In case of a modification of the machine not agreed with us, this declaration loses its validity.

Designation of machine:	Automatic Sharpening and Polishing Machine
Model designation:	B 500
Machine number:	from no. 1230970500
Applicable harmonized standards, in particular	DIN EN ISO 12100 DIN EN ISO 13857 DIN EN ISO 16089 DIN EN 61000-3-2 DIN EN 61000-3-3 DIN EN 55014-1 DIN EN 13854
Responsible for documentation:	Andreas Doerr (State-certified technician) Phone +49-7527-928-81 a.doerr@knecht.eu
Manufacturer:	KNECHT Maschinenbau GmbH Witschwender Straße 26 88368 Bergatreute Germany

A complete technical documentation is available. The operating instructions document for the machine is available in its original version and in the native language of the user.

The validity of the declaration expires in the event of changes to the legal requirements.

Bergatreute, November 24, 2025

KNECHT Maschinenbau GmbH

Markus Knecht
CEO

KNECHT Maschinenbau GmbH
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mail@knecht.eu . www.knecht.eu