

OPERATING MANUAL

Ultimo-Touch 300

Four-axis touchscreen control for tilting spindle moulders

Usable for the machine versions **245 | 100**, **245 | 200** and **245 | 300**



Operating instructions for the user level “Machine Operator”

- Four-axis touchscreen control for connection to the Modbus TCP network
- Program memory with up to 500 tools with each 100 program blocks
- Positioning of height, tilt and milling fence (total and partial fence)
- With clear and intuitively operable surface

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1 General information

These operating instructions describe the functions of the "UT-300" touchscreen control that can be used for Tilting Spindle Moulders of types **245|100**, **245|200** and **245|300**.



Remark: *This manual only describes the functions for the user level of a machine operator. Further resp. administrative functions and settings are not included. These are listed in a separate document for administrators.*

1.1 Legal notice

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1.2 Illustrations

All photos, figures and graphics contained in this document are for illustration and better understanding only and may differ from the current state of the product.

2 Front switches and push buttons









Action	Function
	Rotary switch with optional HSK 63 Quick Change System: <i>Position right = Work position middle = Spindle off position left = release HSK 63¹</i>
	Brake release switch for tool change at 245 100: <i>Position right = work position left = brake release¹</i>
	Cutter rotation left (conventional milling): <i>Rotation direction (left) for the milling cutter (changeover only at standstill possible)</i>
	Cutter rotation right (climb milling): <i>Rotation direction (right) for the milling cutter (changeover only at standstill possible)</i>
	Switch on milling cutter: <i>Starts the milling cutter with the preselected speed and rotary direction</i>
	Switch of milling cutter: <i>Shuts the milling cutter down (standstill)</i>
	Positioning: <i>If this key flashes, the positioning is enabled. During the key is held down, the axis positions until the defined target position is reached. If the key is released prematurely, positioning is stopped or interrupted.</i>
	Emergency stop: <i>Serves to immediately place the machine in a safe condition in the event of danger or to avert danger. Pressing this button interrupts the machine power supply → all motors and moving axes are stopped².</i>





















Table 1: Front switches and push buttons

¹ The tool can only be removed after a safety dwell time of 10 seconds.

² The braking time of the motor is approx. 10 seconds.

3 Menu button overview

Depending on the mask, different menu buttons appear for the required functions.
The following overview describes the functions of the menu buttons:

Button	Function
	Tap the Hokubema logo to display the current time instead of the logo. Touching the Hokubema logo again returns the window to the logo view.
	This button is used to open the info window with various status messages about the machine and hardware, test functions for inputs and outputs and to set the language.
	The home button always takes you back to the previous selected level.
	Manual mode: Discards all tool and program parameters. The machine no longer positions in relation to the inserted tool.
	Program Details (Digital Clipboard): Shows all details resp. parameters of the selected program.
	Stores the current values into a new program
	When actuated, the target values and actual values of the axes are equated. An existing positioning is thus aborted.
	Scroll through selection
	Scroll selection back
	Add new entry (tool or program)
	Edit existing entry (tool or program)
	Save entry or changes
	Delete existing entry (tool or program)
	Scroll screen down within a long list view
	Scroll screen up within a long list view
	If this symbol appears, the fence is currently positioned by absolute measurement. To switch to incremental mode, press this key.
	If this symbol appears, the fence is currently positioned by incremental measurement. To switch to absolute mode, press this key.
	Swivel-away devices: Pressing this button releases the clamping motors of the fence for the milling plate. Then the message "Loosen screws" appears.
	Exit swivel-away function.
	Move the fence upwards to be able to swing it away to the rear.
	Move the fence back down again after it has been swivelled away.
	Set offset to zero
	This starts a calibration of the height with the "Zeromaster" (see section ⇨ 9.1.1).
	Entries that are made via the alphanumeric touchscreen keyboard (e.g. target value inputs) must be confirmed with this button or "Enter".
	Manual inching: Move the selected axis in positive or negative direction by 1/10 mm steps or increase or decrease the cutter rotation speed gradually by 100 rpm.
	Flip mode: If flip mode is activated (button background black), the display automatically jumps back to the home screen after an entry in a detail window.

4 Start screen

If the machine is not equipped with an optional Machine Access Control “TM-300” (see chapter ⇒ 5), the following screen appears as start screen after switching on the controller:

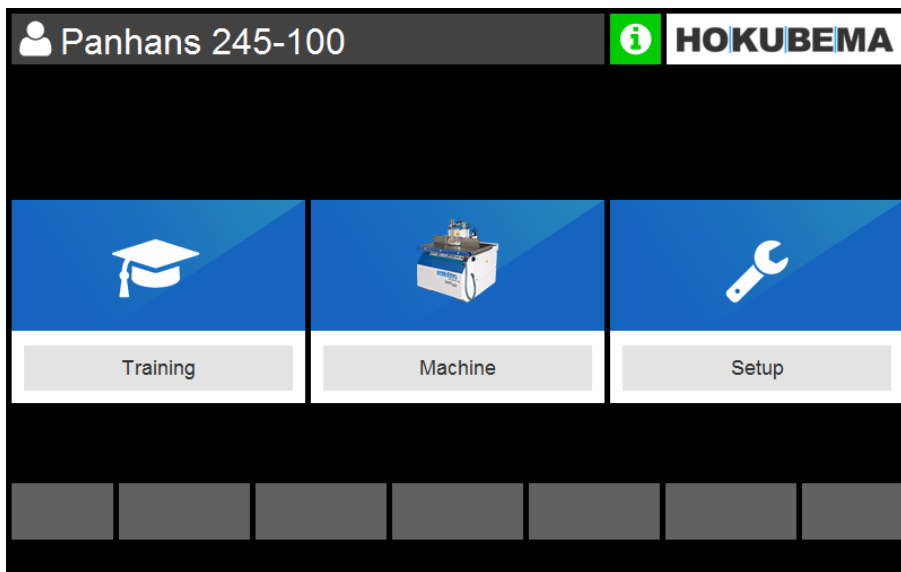




Figure 1: Start Screen

The screen contains three buttons:

Button	Function
Training	<i>The official machine instructions of the German employers' liability insurance association with all safety-relevant information and instructions can be viewed here.</i>
Machine	<i>To work with the machine, this button must be pressed.</i>
Setup	<i>The setup menu is password-protected and only accessible for administrators. Here all control parameters are configured, or fences are calibrated. For more details refer to chapter ⇒ 13 “Setup Menu”.</i>

The info symbol serves to signal the operational readiness:

Colour	Meaning
	<i>The machine and connected components are OK → Machine is ready for operation.</i>
	<i>A red symbol indicates pending errors or problems. Tap the symbol to open the info window with the machine status to obtain more detailed information. Note: Depending on the situation, an additional pop-up window appears with detailed instructions on the existing issue. Then follow the instructions on the screen. Details about the info window can be found in chapter ⇒ 12.</i>

5 Machine access (only with option TM300)

5.1 User registration

In order to work with the UT-300 Ultimo-Touch controller and the machine, the user must first authorize himself with the **RFID key** assigned to him.

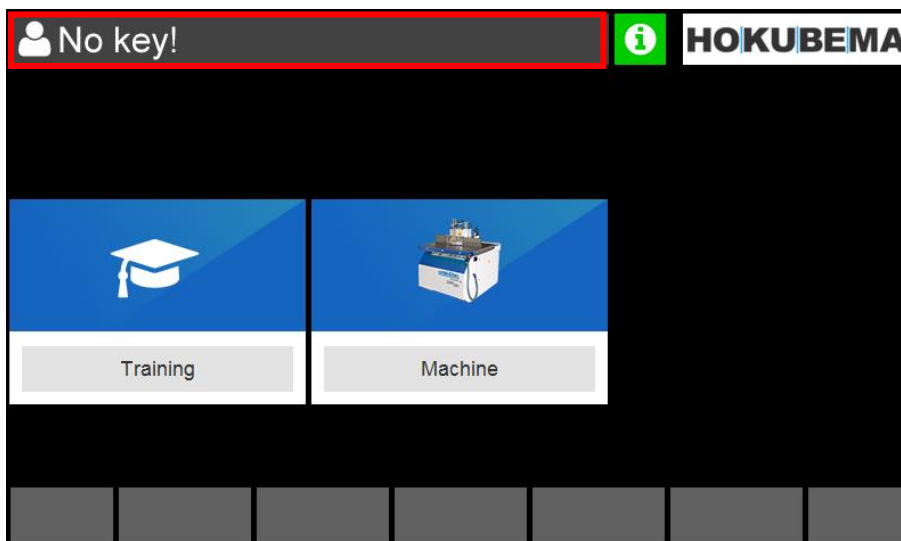


Figure 2: Machine access: no key

Once the appropriate RFID key has been inserted into the **RFID reader**, the user name appears in the upper left corner of the operator surface (see Figure 3):

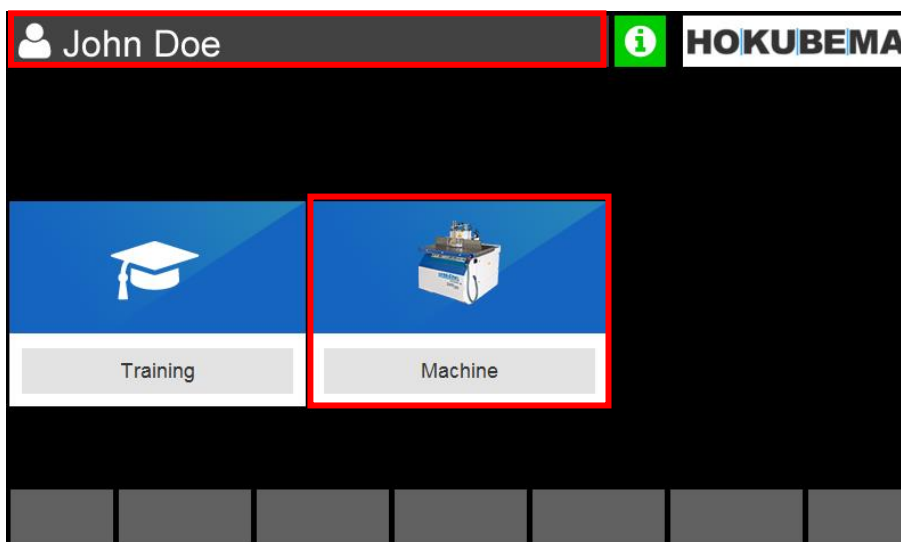


Figure 3: Machine access: username

To access the machine overview, select the "**Machine**" field.

A detailed description of the machine overview can be found in chapter ⇒ 7.



Remark: The setup menu button (see chapter ⇒ 13) is only visible if the master key for the administrator level has been inserted.

5.2 Machine access in the absence of instruction³

Completed and upcoming trainings and annual machine instructions are stored in the system's database. If the target date for the next training resp. instruction has been exceeded, the username on the start screen is highlighted with a red background:

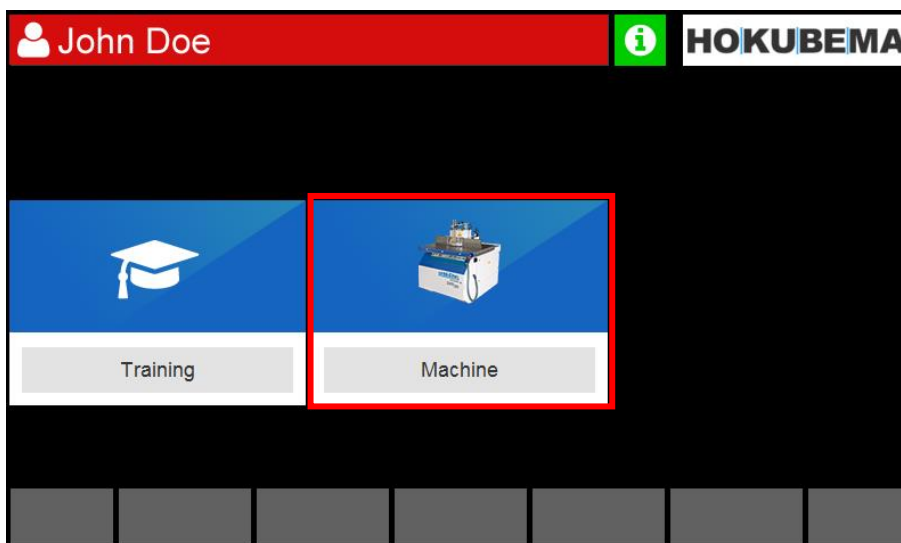


Figure 4: Machine access: Training time exceeded

As soon as the "**Machine**" field is selected, an additional warning message appears to advise the user to carry out the overdue training / instruction:

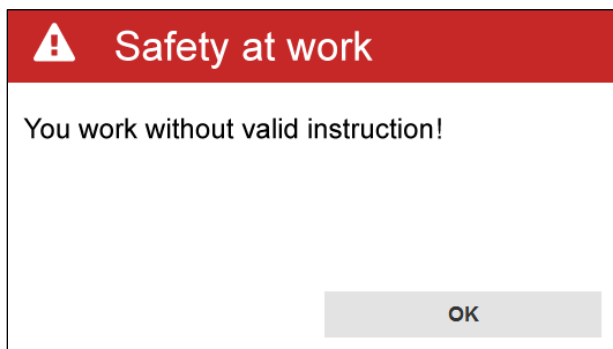




Figure 5: Warning message "Overdue Instruction"

Possible procedures:


1. Select "**OK**" to close the message window and continue without training / instruction. Your username will then remain highlighted in red until the overdue machine instruction has been completed.
2. Select "**OK**" to close the hint window and then  to return to the home screen and start the instruction by selecting the "**Training**" button.
Then select  to follow the instructions step by step and finally click "**Confirm**". Your username will then no longer be highlighted in red until the next machine instruction is due.

³ Function can be disabled administratively (parameter level).

6 General information on axis positioning

For safety reasons, the axes are positioned according to the "Hold to Run" principle, which means that the axes are not positioned simultaneously but one after the other - so that always only one axis can be in motion. With a running spindle, the adjustment of the angular axis is blocked for safety reasons.

6.1 Positioning sequence

The positioning sequence is the same for all moving axes (see chapter ⇒ 8 "Machine Overview"): The **target values** are specified via the alphanumeric touchscreen keyboard and then the positioning is overtaken via the  (Enter) button.



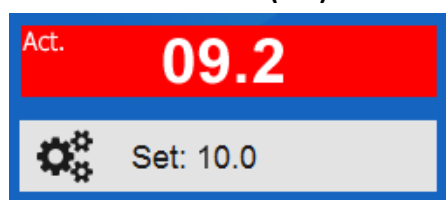
Positioning button

If the actual value deviates from the target value, the **positioning button** on the front (see figure on the left) flashes and the positioning function is enabled. **If the positioning button is pressed, the axis positions until the defined target value is reached.** If the key is released prematurely, the positioning process is stopped or interrupted.

6.2 Actual values / target values

The following applies to all positioning windows: The "Actual" value fields are highlighted in red if the actual value and target value differ from each other or if the target position (setpoint) has not been reached. As soon as the position "Set" has been reached and the two values for actual and target value are identical, the corresponding actual value field is highlighted in green:

Position not reached (red):



Position reached (green):



Figure 6: Coloured background of the actual values





6.3 Manual mode (step positioning)

The UT-300 control offers the possibility to move each **longitudinal** and **vertical axis** in 0.1 mm steps resp. the **angular axis** in steps of 0.1° - either in positive or negative direction.

For this purpose, a + and a – symbol appear next to or below the corresponding target value window.

Versions 245|200 and 245|300 only: When using this function in the "Speed" menu, the rotary speed of the cutter is increased or decreased in 100 rpm steps.

Available actions:

Action	Function
	Move the axis position positively by 1/10 → The positioning button  flashes quickly Increase speed by 100 rpm → The change is effective immediately without confirmation
	Move the axis position negatively by 1/10 → The positioning button  flashes quickly Decrease speed by 100 rpm → The change is effective immediately without confirmation

7 Machine overview

After pressing the "Machine" button, the following screen appears:

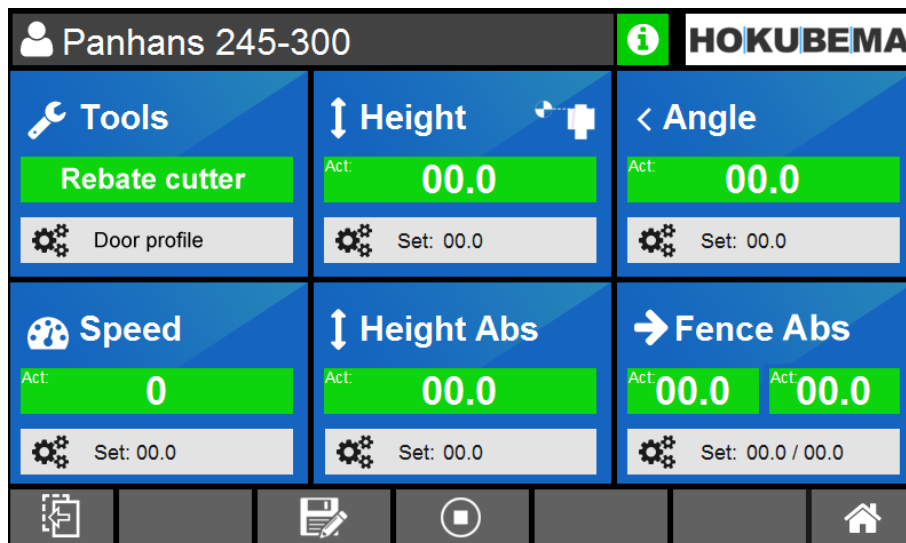


Figure 7: Machine overview mask with tools, axis positions and speed (example 245/300)


The six blue main buttons are used to make the respective settings. This mask also serves as an overview of all adjustable machine settings during regular operation. It shows the tool used with the selected program as well as all current actual values and target positions.

Action	Function
	Flip mode: If flip mode is activated (button background black), the display automatically jumps back to the home screen after an entry in a detail window.
	Return to last selected level
	Display details of the currently selected program
	The target values and actual values of the axes are equated when pressing. All positioning is aborted, all fields turn green and the positioning button stops flashing.
	Program details ⁴ (digital clipboard): Displays all details for a selected program.

⁴ This button appears only if the machine overview shows a loaded program.

8 Speed settings

8.1 Speed setting with types 245|200 and 245|300

After tapping the symbol  in the machine overview (see chapter ⇒ 7), the screen shown below appears. Here the **rotary speed of the cutter** can be set in the range from 1,500 to 10,000 rpm:

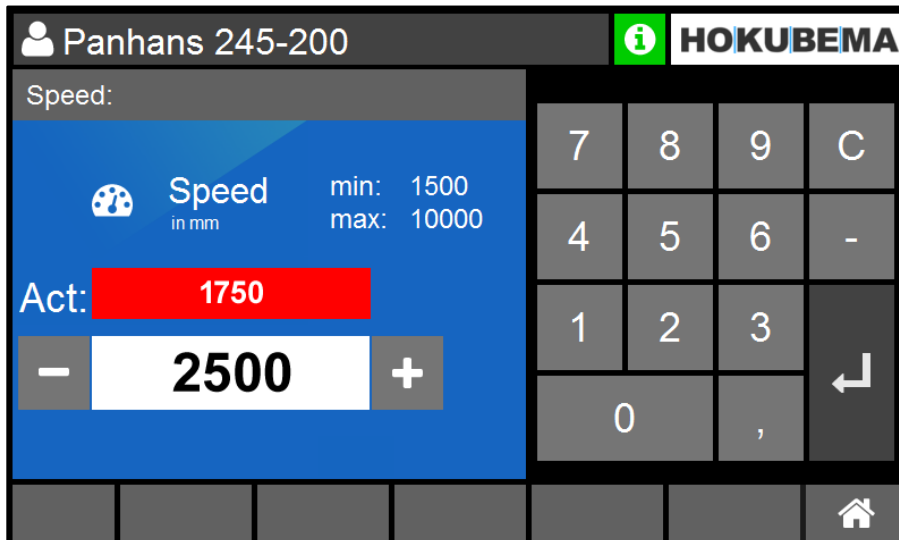





Figure 8: Speed setting for milling cutter

Action	Function
	Confirmation of the setting
	Start milling cutter at new speed (" Switch on milling cutter " button)
	Adjust speed manually in inching mode (100 rpm steps)


Remark: When the spindle is rotating, the speed can only be corrected downwards! The nominal speed specified when starting the spindle is defined as the "**Software Limit**" and is also displayed in the "**Speed**" window.



Figure 9: Software limit in the speed window

8.2 Speed Setting with Version 245|100

Please note: With version 245|100 the speed setting (3000 / 4500 / 6000 / 9000 rpm) is done manually via the belt pulleys (refer to operating manual [BA PH 245-100-300 EN](#)).

When the tachometer symbol  is tapped, an information window with diverse motor status messages of the milling spindle appears here.

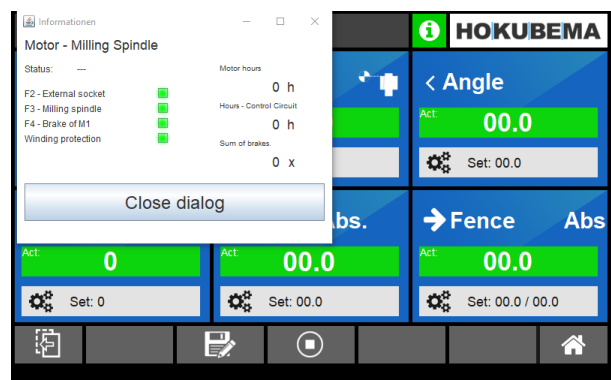


Figure 10: Info screen for milling spindle

9 Height and angle positioning

9.1 Height (offset)

Input of the **effective height** (incl. calculation of the tool, etc.) in the range from 0 to 125 mm:

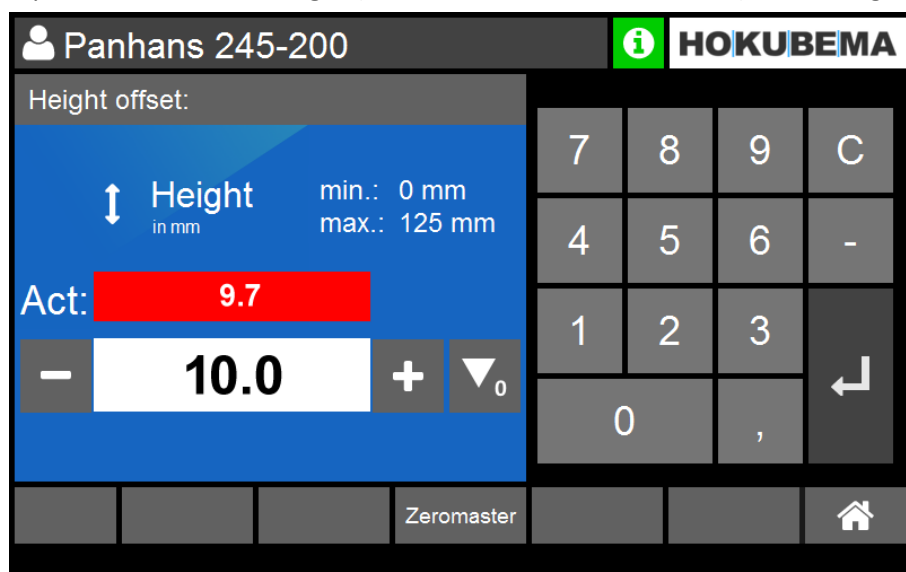


Figure 11: Effective height (incremental)

The setting range depends on the inserted tool and is also calculated accordingly (see display "min" and "max").

Action	Function
	Confirmation of input + positioning enable → The positioning button flashes
	Move height in manual inching mode (1/10 mm steps)
	With this " Reset-Button " the axis can be set to "0".
	Perform calibration with the " Zeromaster " reference measurement adjusting unit (see next section ⇒ 9.1.1).

9.1.1 Zeromaster

With the Zeromaster (accessorial part, Art. No. 2205) it is possible to measure the effective tool height and to reference the machine incrementally to this dimension. This is very helpful to easily calibrate the tool height resp. the zero point of the tool.



Use this function in case of deviations from the set value to the milled, resp. measured value and always after re-sharpening the tool or if a tool has to be replaced.

To perform this function, press the "**Zeromaster**" button and follow step by step the instructions on the screen (see section ⇒ 9.1.2 on the next page).

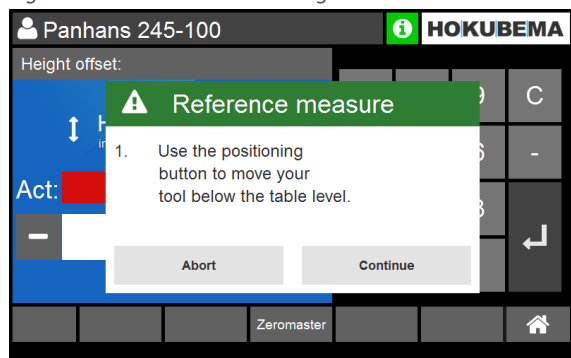
9.1.2 Calibrate the tool height with the Zeromaster

Before calibrating with Zeromaster, make sure that the tool angle is set exactly to 0°!



Before placing the Zeromaster connected to the machine, the table surface of the machine must be cleaned of dirt, chips and any objects must be removed from the table. Chips and dirt between the Zeromaster and the table surface will falsify the calibration value!

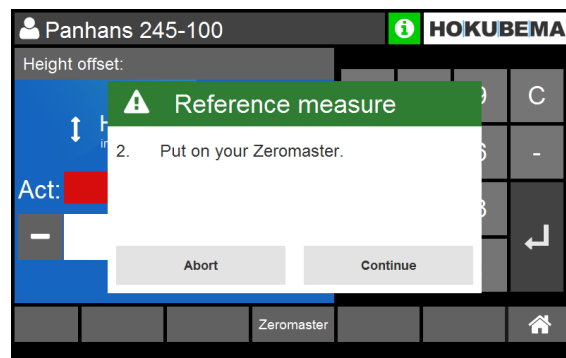
Figure 12: Calibrate the tool height with the Zeromaster



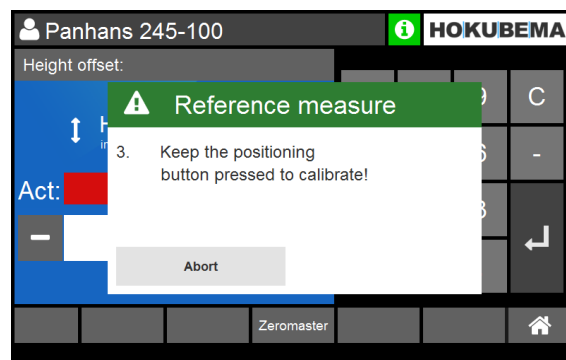
1. Move tool below table level



3. Table surface must be clean and flat



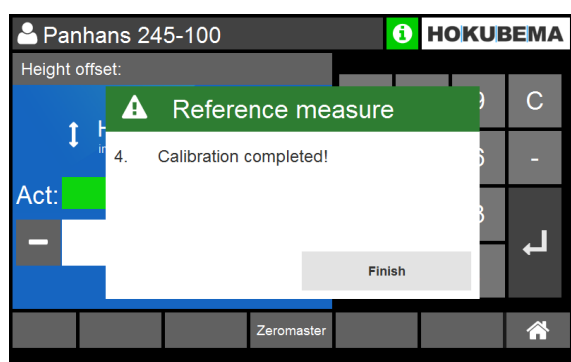
2. Place the Zeromaster (see step 3.)



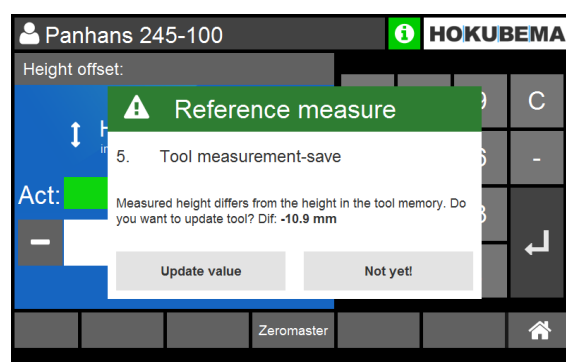
4. Press and hold the positioning button



Note: If the calibration does not trigger and the tool continues to move upwards after reaching the Zeromaster, clean the metal contact surface with a cloth or brush.



5. The calibration procedure is now complete



Remark: When the calibrated tool has been loaded from the existing tool database, the message "Tool measurement-save" appears at the end.

- Touch the **"Update Value"** button to overwrite the original tool height in the database. This is especially useful after resharpening the tool.
- If an existing tool from the database is replaced by a completely new tool after increased resharpening, calibrate it with the Zeromaster and overwrite the height in the database.

9.2 Height (absolute)

Setting of the absolute height in the range from 0 to 125 mm:

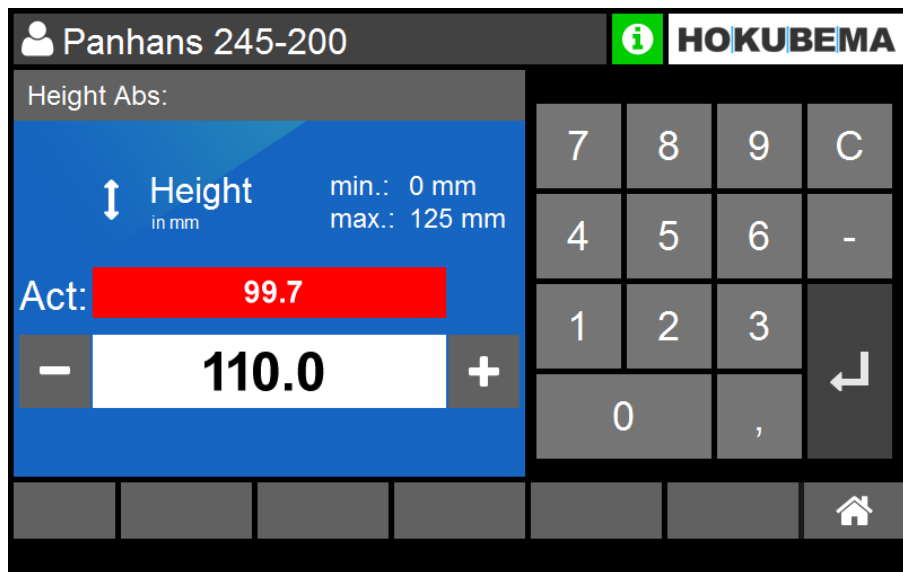


Figure 13: Absolute height

Action	Function
	Confirmation of input + positioning enable → The positioning button flashes
	Move height in manual inching mode (1/10 mm steps)

9.3 Angle

The adjustment of the swivel angle for the milling spindle is made in this mask.

- The possible swivel range of the milling spindle for versions 245 | 200 and 300 is $\pm 45.5^\circ$.
- For the version 245 | 100, the standard range is -5° to $+45.5^\circ$ (optional $\pm 45.5^\circ$).

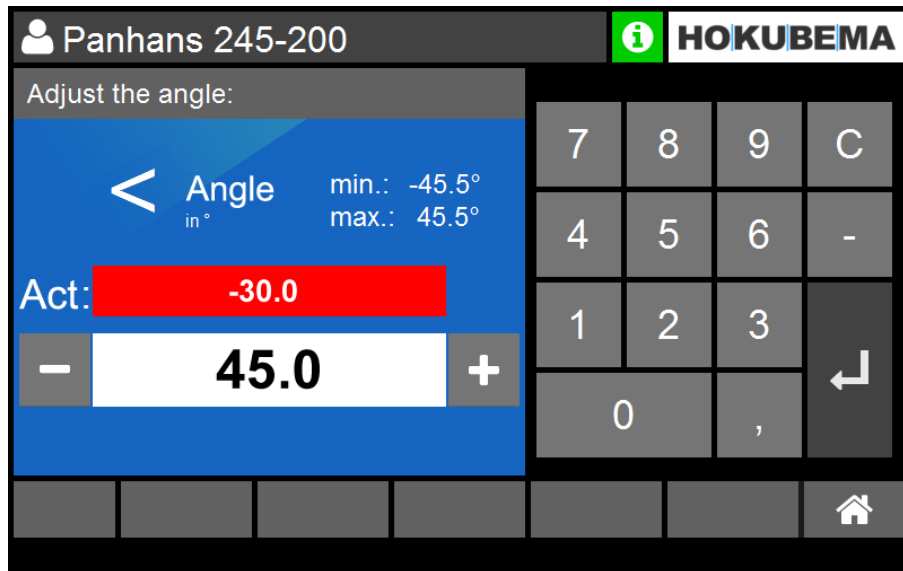


Figure 14: Swivel angle for the milling spindle

Action	Function
	Confirmation of input + positioning enable → The positioning button flashes
	Move angle in manual inching mode (1/10° steps)

10 Fence positioning

Depending on the machine type and equipment, different fence types are used:

- Type 301 (standard for machine versions 245 | 100 and 245 | 200).
→ Total fence and partial fence is manually adjustable.
- Type 302 (option for machine versions 245 | 100 and 245 | 200)
→ Total fence and partial fence is manually adjustable.
- Type 311 (option for machine versions 245 | 100 and 245 | 200)
→ Total fence automatically adjustable and partial fence manually.
- Type 320 (standard for machine version 245 | 300, optional for 245 | 100 and 200)
→ Total fence and partial fence automatically adjustable.

10.1 Fence 301

With this type, the total and partial fence must be adjusted manually. Before adjustment via handwheel, two hand lever screws must be loosened. After adjustment, the two hand lever screws must be tightened again. The partial fence is adjusted via star grip and vernier scale (see figure on the right). The handwheel of the total fence is equipped with an additional position indicator and is visualized at the same time in the touchscreen of the UT-300 control.

10.1.1 Fence type 301 (absolute)

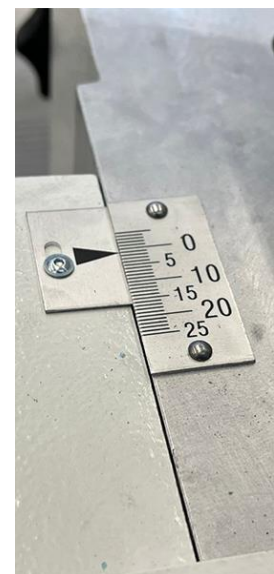
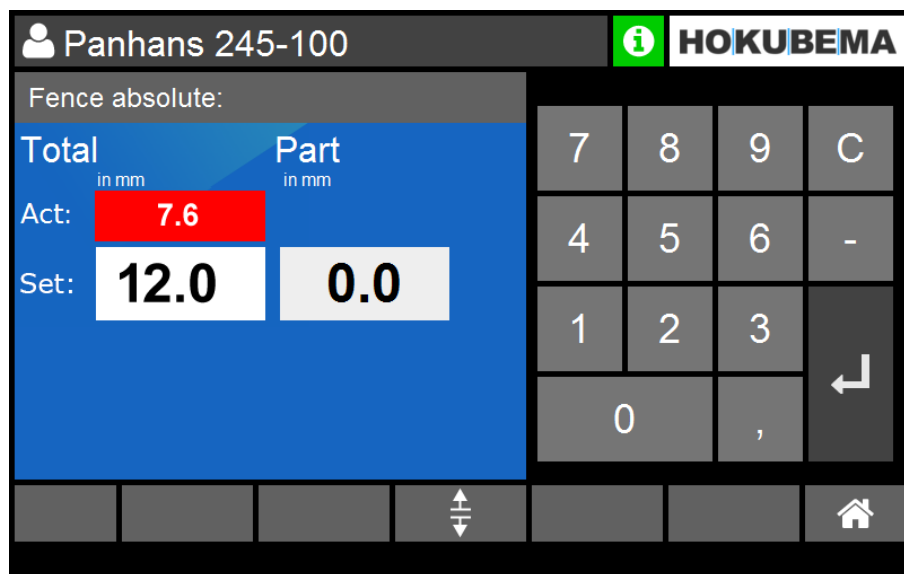



Figure 15: Fence type 301 (absolute)

- The mask is used to specify the target value of the absolute position for the total fence.
- The fence position is approached via the handwheel and can be read in the "Actual:" window.
- For operation of the handwheel display, see Operation Manual [BA PH 245-100-300 EN](#) section "Handwheel Adjustment for Types 301 and 302".
- A setpoint defined via the program for the partial fence is displayed in the "Part" window.
- The partial fence is adjusted manually via the vernier scale (see ⇒ figure on the right).

Action	Function
	Confirmation of the target value input
	Swivel-away devices see section ⇒ 10.6

10.1.2 Fence type 301 (incremental)

Switching to the incremental window is done via the  button on the handwheel.

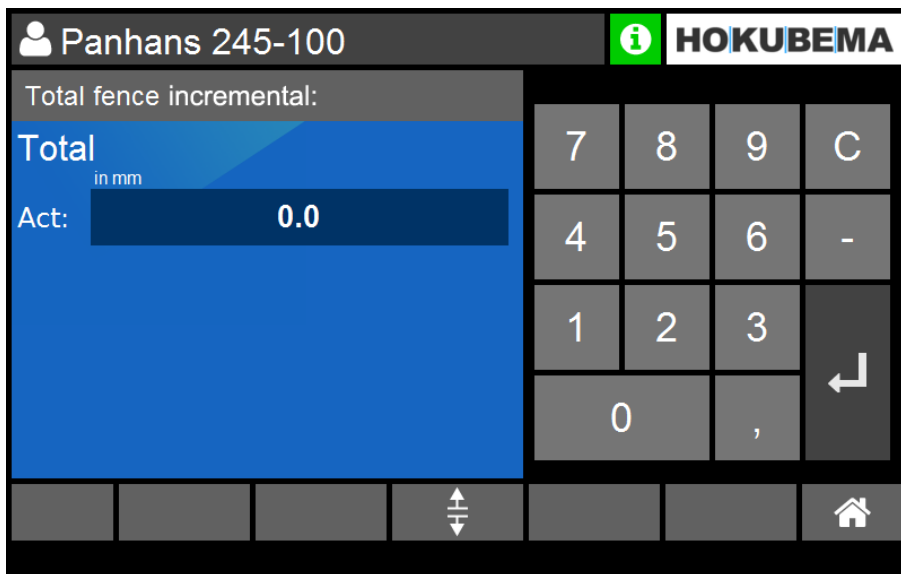





Figure 16: Fence type 301 (incremental)

- The mask is used to read the incremental position of the total fence.
- It is not possible to specify a target value here.
- The adjustment is done manually via the handwheel.
- For operation of the handwheel display, see Operation Manual  [BA_PH_245-100-300_EN](#) section "Handwheel Adjustment for Types 301 and 302".

Action	Function
	Swivel-away devices see section  10.6

10.2 Fence 302

10.2.1 Fence type 302 (absolute)

With this type, the total fence and the partial fence must be adjusted manually. Before adjustment via handwheel, two hand lever screws must be loosened. After adjustment, the two hand lever screws must be tightened again. **Total fence** as well as **partial fence** are each equipped with an indicator on the handwheel and can be read simultaneously on the UT-300 touchscreen controller.

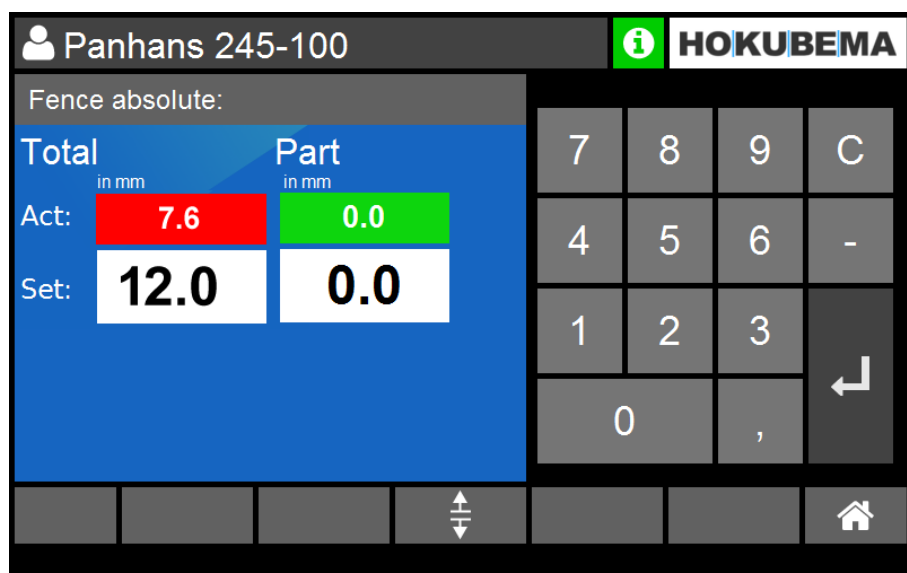



Figure 17: Fence type 302 (absolute)

- The mask is used to specify the target value of the absolute position for the total fence as well as for the partial fence.
- Both fence positions are adjusted by handwheel and can be read in the two "**Actual:**" windows and in the handwheel displays.
- For operation of the handwheel display, see Operation Manual [BA_PH_245-100-300_EN](#) section "Handwheel Adjustment for Types 301 and 302".

Action	Function
	Confirmation of the target value input
	Swivel-away devices see section ⇒ 10.6

10.2.2 Fence type 302 (incremental)

Switching to the incremental window is done via the  button on the handwheel.

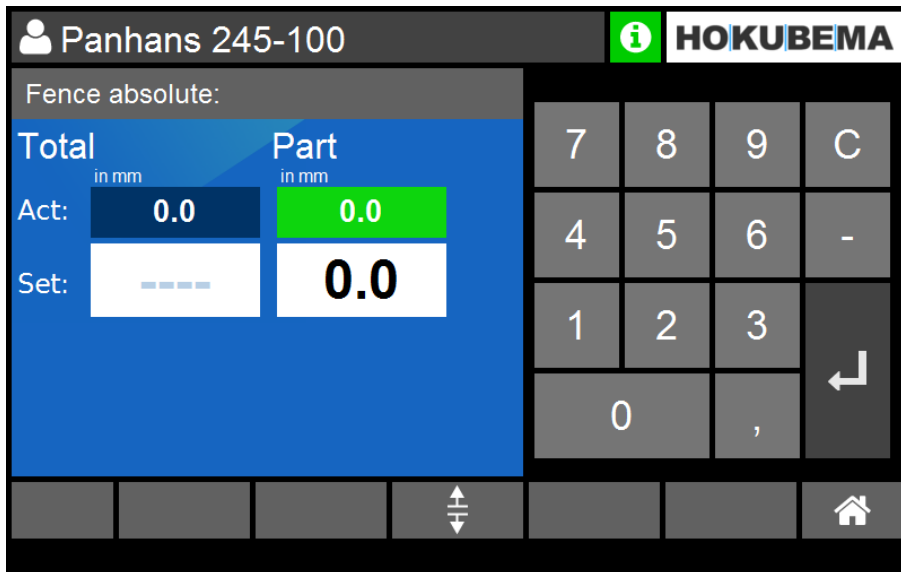






Figure 18: Fence type 302 (incremental)

- No target value setting possible for the total fence in incremental measurement mode.
- In order to be able to compensate for the chip removal also in incremental mode, a target value for the partial fence can be entered in the "**Part**" field (absolute dimension only).
- Both fences are adjusted via the handwheel.
- The actual values of both fences can be read on the touchscreen and on the handwheel indicators
- For operation of the handwheel display, see Operation Manual  [BA_PH_245-100-300_EN](#) section "Handwheel Adjustment for Types 301 and 302".

Action	Function
	Confirmation of the target value input
	Swivel-away devices see section  10.6

10.3 Calibration value “spindle type” for fences 301 and 302



Please note: The following section and the "Spindle diameter" button have no function during standard operation and are only required when calibrating the fences 301/302.

With this new function it is possible to select the spindle type used and to transmit the **spindle radius** as a calibration value to the **handwheel** of the fence types 301 and 302.

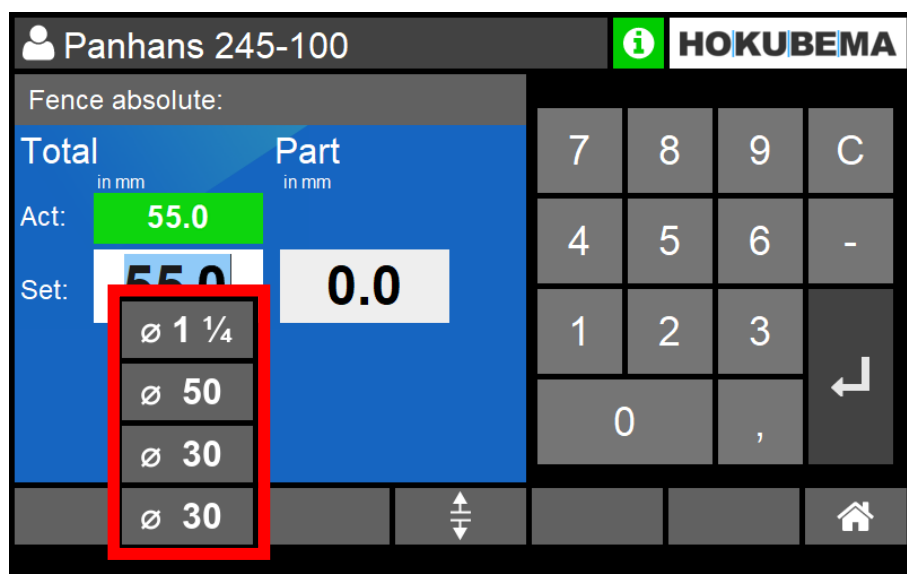


Figure 19: Spindle selection button

- Pressing the button for the spindle diameter opens a selection menu with different spindle types. Select the spindle type used here (e.g. 30 mm).
- The radius of the selected spindle diameter is transmitted from the UT-300 control as “**calibration value**” to the digital handwheel and stored there.
- To load the deposited calibration value into the handwheel display, press and hold the calibration key on the handwheel:
 - A countdown appears “CPL 5” which counts down from 5 to 0
 - When 0 is reached, the calibration value (e.g. 15.0) appears in the handwheel display

For the procedure to calibrate the two fences, please contact our customer service (phone no. 0049-7571 / 755-0).

10.4 Fence 311

10.4.1 Fence type 311 (absolute)

With this type, the total fence can be automatically adjusted and the partial fence manually. Before adjustment, both clamping levers must be released. The total fence can then be positioned automatically. Once the stop has been positioned at the setpoint, the two clamping levers must be tightened again. The partial fence is adjusted by means of a star grip and vernier scale (see figure on the right).

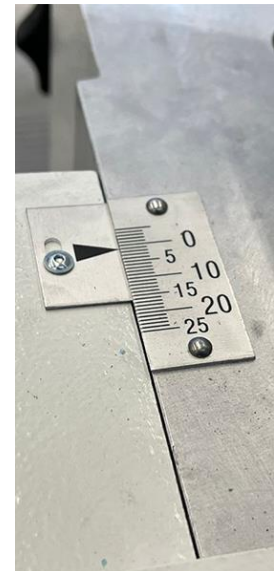
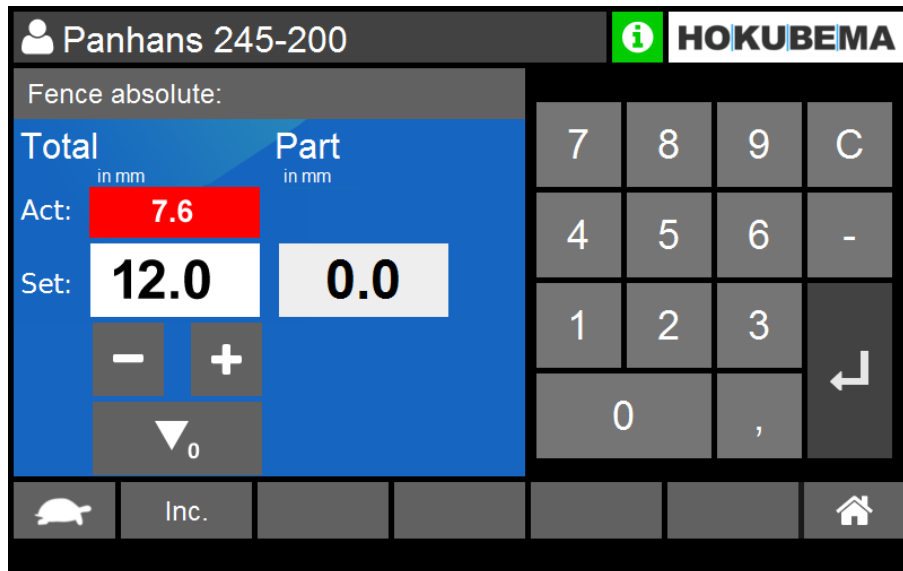











Figure 20: Fence type 311 (absolute)

- The mask is used to set the target value of the absolute fence position for the total fence.
- After entering the target value and confirming with , the positioning button flashes. When the positioning button is pressed, the positioning for the total fence is performed automatically, whereby the current position can be read in the "Actual:" window.
- The – and + buttons can alternatively be used for positioning in manual inching mode.
- A target value defined via program for the partial fence is displayed in the "Part" window.
- The partial fence is adjusted manually using the vernier scale (see ⇨ figure on the right).

Action	Function
	Confirmation of value input + positioning enable → The positioning button  flashes
	Set axis to 0 (Reset)
	Switch to incremental mode " Fence incremental "
	Move fence in manual inching mode (1/10 mm steps)
	Switch to slow positioning speed
	Switch to fast positioning speed
	Swivel-away devices see section ⇨ 10.6

10.4.2 Fence type 311 (incremental)

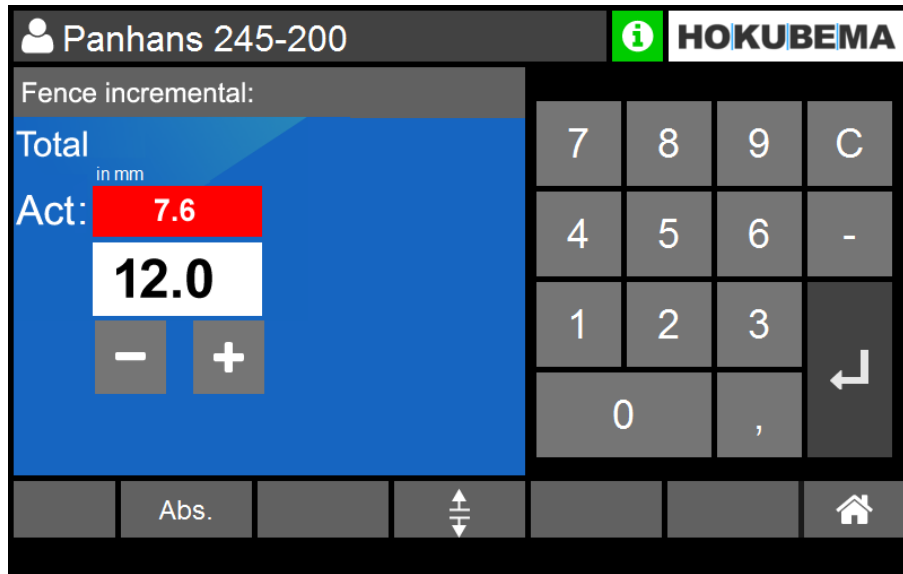









Figure 21: Fence type 311 (incremental)

- The mask is used to set the target value of the total fence position in incremental mode.
- After entering the target value and confirming with , the positioning button flashes. When the positioning button is pressed, the positioning for the total fence is performed automatically, and the current position can be read in the "Actual:" window.
- The – and + buttons can also be used for positioning in manual inching mode.
- The partial fence is adjusted as described in section ⇒ 10.4.1.

Action	Function
	Confirmation of value input + positioning enable → The positioning button  flashes
	Set axis to 0 (Reset)
	Switch to absolute mode " Fence absolute "
	Move fence in manual inching mode (1/10 mm steps)
	Swivel-away devices see section ⇒ 10.6

10.5 Fence 320

With Type 320, the total fence as well as the partial fence can be automatically adjusted and are each clamped electromechanically. To lift the fence, two screws must be loosened and removed manually.

10.5.1 Fence type 320 (absolute)

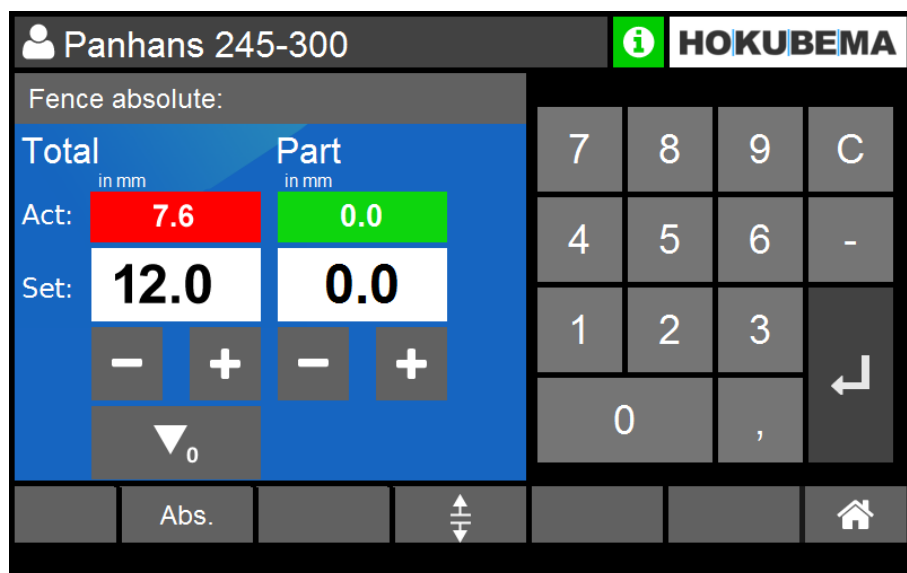











Figure 22: Fence type 320 (absolute)

- The mask is used to enter the target value of the absolute fence position for the total fence and at the same time to enter the compensation dimension for the partial fence.
- After entering the target values and confirming with , the positioning button flashes. When the positioning button is pressed, both fences are positioned automatically.
- The – and + buttons can also be used for positioning in manual inching mode.
- Both current fence positions can be read in the "Act:" windows.

Action	Function
	Confirmation of value input + positioning enable → The positioning button  flashes
	Set axis to 0 (Reset)
	Switch to incremental mode " Fence incremental "
	Move fence in manual inching mode (1/10 mm steps)
	Switch to slow positioning speed
	Switch to fast positioning speed
	Swivel-away devices see section ⇨ 10.6

10.5.2 Fence type 320 (incremental)

This mask is used to enter an **incremental fence position** in mm:

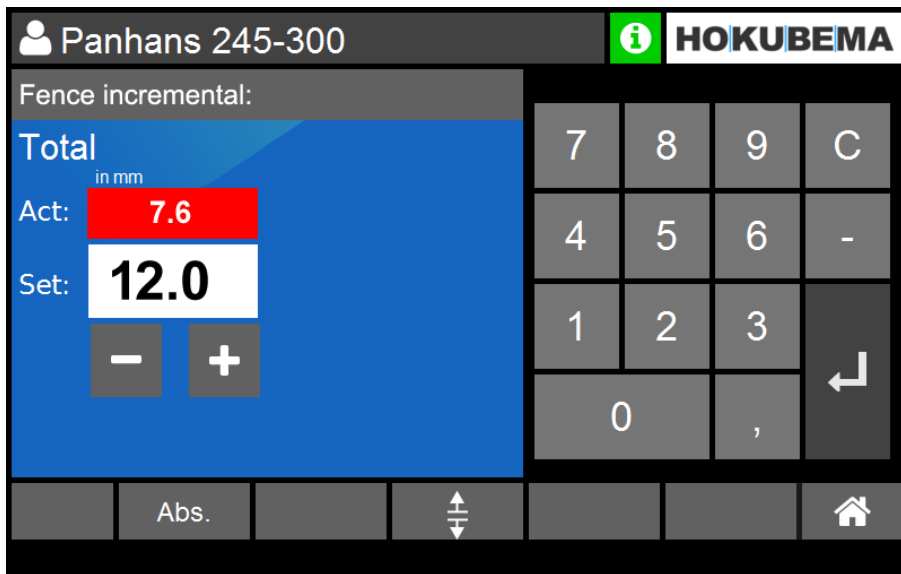








Figure 23: Fence type 320 (incremental)

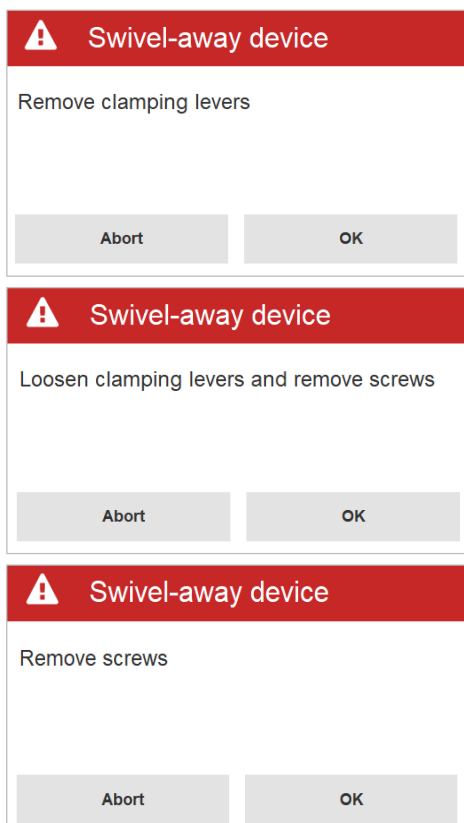
- The mask is used to set the target value of the total fence position in incremental mode.
- After entering the target value and confirming with , the positioning button flashes. When the positioning button is pressed, the positioning for the total fence is performed automatically, and the current position can be read in the "Actual:" window.
- The – and + buttons can also be used for positioning in manual inching mode.
- The adjustment of the partial fence is only possible in absolute mode (see ⇒ 10.5.1).

Action	Function
	Confirmation of input + positioning enable → The positioning button  flashes
Abs.	Switch to absolute mode " Fence absolute "
	Move fence in manual inching mode (1/10 mm steps)
	Swivel-away devices see section ⇒ 10.6

10.6 Swivel-away devices (option)

10.6.1 Fence types 301, 302, 311 and 320

The button  in the masks "**Fence Abs**" and "**Fence Inc**" is used for the swivel-away devices: Pressing this button releases the clamping motors of the fence for the milling plate (only for fence type 320).



Then the message

"Remove clamping levers"

appears for fence types 301 and 311.

Note: Both clamping levers must be completely removed to enable swivelling.

The message

"Loosen clamping levers and remove screws" appears for fence type 302.

Note: Both screws must be completely unscrewed from the threads to enable swivelling.

The message




"Remove screws"

appears for fence type 320:



Note: Both screws must be completely unscrewed from the threads to enable swivelling.

Figure 24: Messages "Swivel-away device"

Loosen the screws resp. remove the clamping levers and confirm with "**OK**".

Action	Function
	Move the fence upwards to be able to swivel it backwards away
	After swivelling away, move the fence back down again
	Exit swivel-away function ⁵

10.6.2 Remove fence type 320 without swivel-away device

- If the fence type 320 is used without a swivel-away device, the button  must also be pressed to release the electromechanical clamping.
- If the fence is put back on, the two removed screws must be refitted and the button  pressed to clamp again.

⁵ **Note:** With fence type 320, the fence is clamped electrically after this button is pressed. All other fence types must be clamped manually again.

11 Tools and program memory

Touching the "Tools" button opens the tool and program memory:



Figure 25: Open the tool and program memory in the machine overview

Action	Function
	Digital clipboard: Displays all details for a selected program ⁶ (for details refer to section ⇒ 11.6).

11.1 List of tools

After selecting the "Tools" button, an overview of all existing tools appears.

Note: If no tools have yet been created, this list is empty.

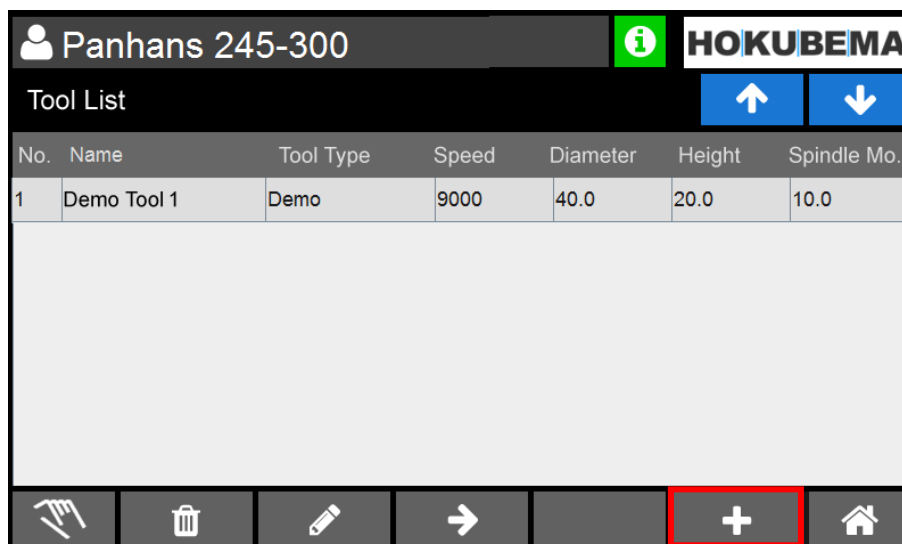


Figure 26: Tool overview

Action	Function
	With this button a new tool can be created.
	Manual mode: Discards all loaded tool and program parameters. The machine no longer calculates any values and the selected axis can be moved manually (refer to ⇒ 6.3).

⁶ This button appears only if the machine overview shows a loaded program.

11.2 Create a tool

Up to 500 tools can be stored in the program memory of the UT-300 unit.

Select **+** to create a new tool:

No.	Name	Tool Type	Speed	Diameter	Height	Spindle Mo.
1	Demo Tool 1	Demo	9000	137.0	50.7	10.0

Correction Value Height
0.0

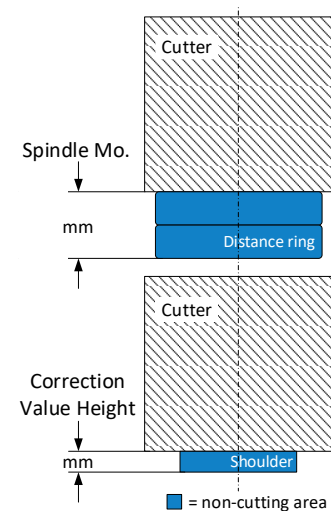


Figure 27: Creating a tool

Fill in all relevant fields (see table below) by tapping in the respective column one after the other and finally confirm the entries with "**Enter**".

Input field	Description
Tool No.	The tool number is assigned automatically and can be renamed if required.
Name	A name can be assigned to the tool here (e.g. manufacturer name).
Tool Type	The tool type is entered in this field (e.g. rebate cutter or jointing cutter).
Speed	The nominal speed of the milling cutter is entered here in rpm.
Diameter	The diameter of the cutter is entered here in mm.
Height	The <u>purely effective</u> cutting height of the cutter is entered here in mm.
Spindle Mo.	This value is used in spindle assembly to compensate for the non-cutting area, e.g. for a spacer ring → Enter the ring height in mm.
Correction Value Height	This value is used for special cutters with a shoulder as compensation for the non-cutting area → Enter the shoulder height in mm.

After pressing "**Enter**" an overview appears including the newly created tool. Please check your entries and correct any incorrect entries by tapping on the corresponding column and overwriting the value. If all entries are correct, press to save the tool.



**Please note: A tool can only be saved if all the necessary information was given.
Missing entries are highlighted in red.**

After saving, the screen automatically switches back to the tool list (refer to section ⇨ 11.1). The created tool can now be found there.

11.3 Edit an existing tool

To edit an existing tool, go to the tool list and select the line of the tool to be changed. This line is now highlighted in light blue:

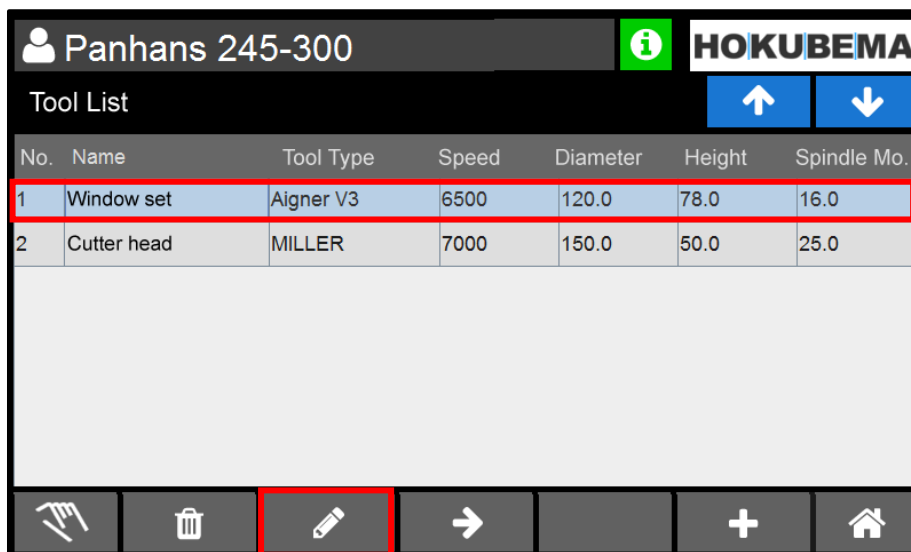







Figure 28: Edit an existing tool / select line

Then press the  button and change the desired parameters by overwriting them with the new values. The procedure is identical to that described in section ⇒ 11.2.

If all entries are correct, press  to save the changed tool.

Further actions:

Action	Function
	Delete a tool (please refer to the instructions on the screen)
	Go to the program list to create a program for the selected tool
	Add another tool (up to max. 500 possible)
	Manual mode: Discards all loaded tool and program parameters. The machine no longer calculates any values and the selected axis can be moved manually (refer to ⇒ 6.3).

11.4 Create a program for a tool

The UT-300 control allows you to assign up to 100 different programs to each existing tool. In a program the parameters **Speed**, **Angle**, **Height**, **Fence**, **Partial Fence** as well as the Reference point of the tool "**Reference Point**" can be set individually.

To create a program for a tool, first select the relevant line in the **tool list** by tapping it. The active line is then highlighted in light blue:

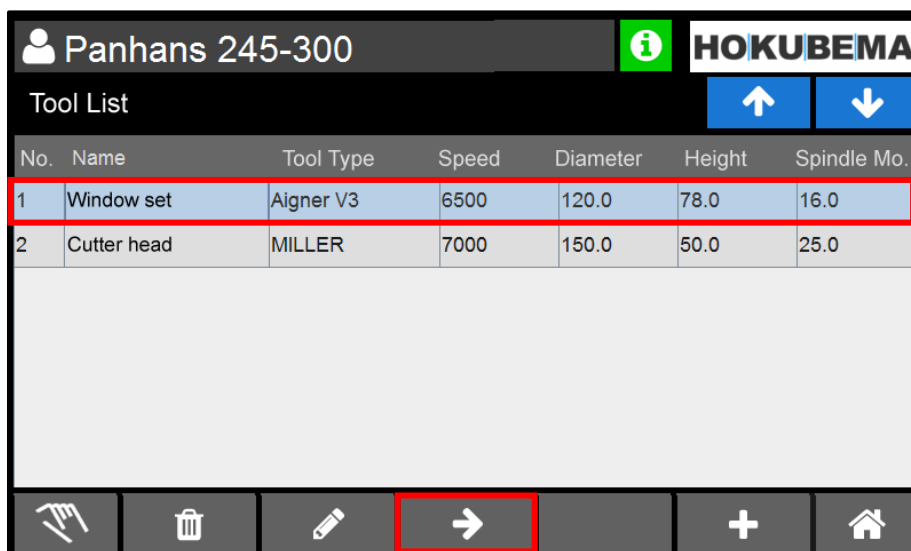



Figure 29: Select the tool for program creation

Then use the  button to scroll to the program list. If no programs have been created yet, an empty program list appears now:

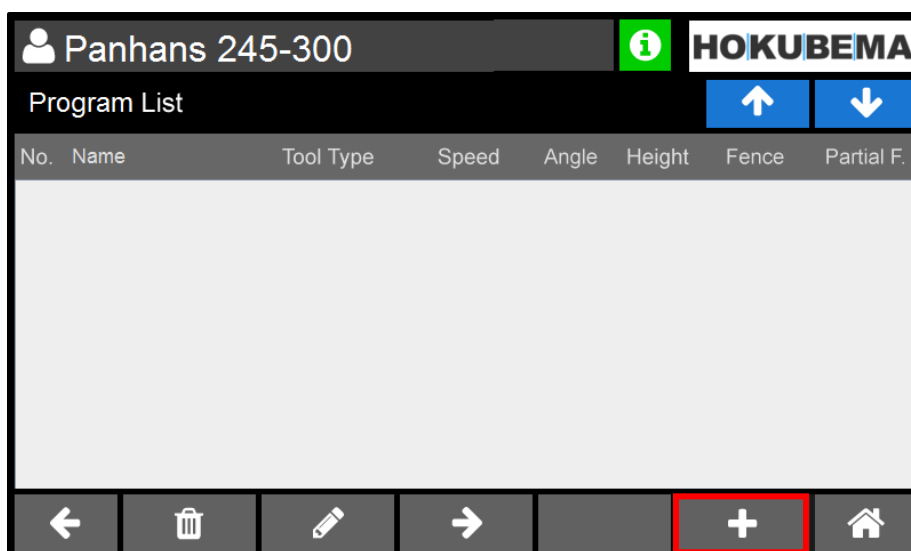


Figure 30: Empty program list

Select  to create a new program for the previously selected tool.

The name of the program and all relevant parameters can be entered in the now appearing mask:

No.	Name	Tool Type	Speed	Angle	Height	Fence	Partial F.
1	Window set Prog. 1	Aligner V3	100	0	0	0	0

Feed: 1 m/min
Datum: Top

Figure 31: Program settings for tool


The “**Program No.**” is assigned automatically and can be renamed if required. The “**Tool Type**” is not editable because it has already been selected before. Now use the corresponding fields and enter a unique name in the “**Name**” field as well as the desired values into the parameter fields **Speed**, **Angle**, **Height**, **Fence** and - if required - **Partial F.** (for the partial fence). If all entries were made, these must be confirmed with “**Enter**”.

Then use the select field “**Reference Point**” to define either the upper edge, the tool center or the lower edge as reference point. By using the selection field “**Feed**” you can select the ideal feed rate from the list as an additional note and save it.

No.	Name	Tool Type	Speed	Angle	Height	Fence	Partial F.
1	Window set Prog. 1	Aligner V3	100	18	56.8	125	0

Feed: 5 m/min
Reference point: Center

Figure 32: Program creation - assign feed rate

Depending on the selection of **Top**, **Center** or **Bottom** the supplementary graphic in the right half of the screen shows exactly where the **reference point** is on the tool. If all entries are correct, press  to save the program.

After saving, the screen changes to the program list, where the newly created program is listed :

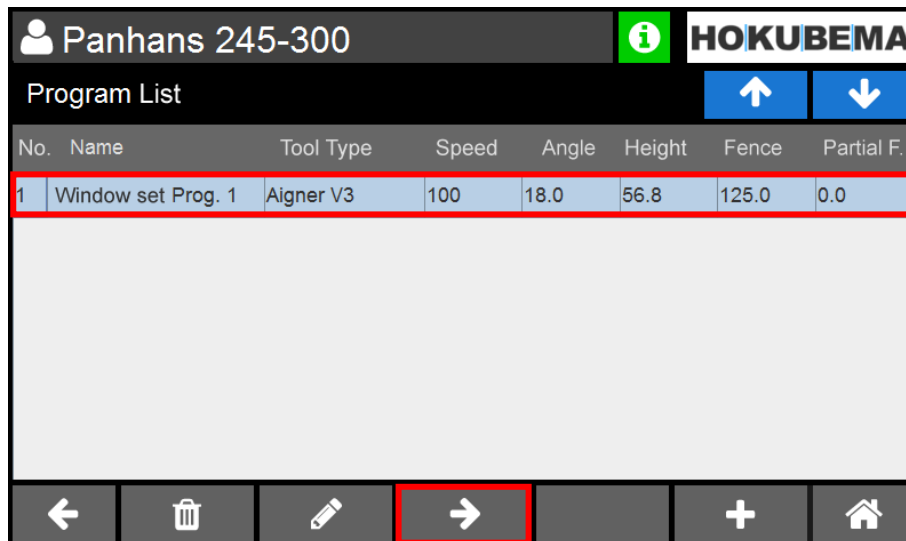



Figure 33: Program list with a stored program

11.4.1 Load program

To load a stored program from the program list into the machine, mark the corresponding program line by touching it so that it is highlighted in light blue. Then press  to accept the program.

The pop-up window **"Program memory"** appears with the query whether the correct tool has been inserted in the machine:

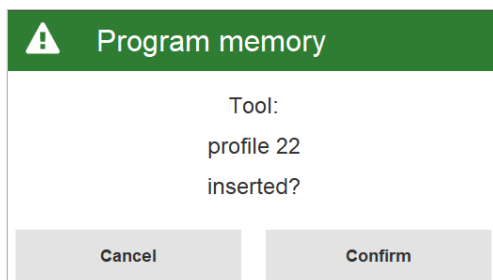






Figure 34: Pop-up window "Correct tool?"

→ If so, confirm with the **"Continue"** button.

→ Then the machine overview appears with the loaded program in the **"Tool"** area.


Further actions:

Action	Function
	Add further program (up to max. 100 per tool possible)
	Delete a program (please refer to the instructions on the screen)
	Edit existing program (same procedure as when creating)
	Scroll back to tool list

11.5 Correct loaded program

In some cases it may be necessary to correct specific settings of a loaded program after a trial milling.

As soon as any value of the currently loaded program is changed, a small ★ symbol (see ⇒ Figure 35) appears next to the tool designation in the machine overview.

The floppy disk  in the taskbar opens a query window (see ⇒ Figure 36), where you can specify,

- whether you want to save the changed program as a new program
→ the original program will be retained,
- or whether you want to overwrite the existing program with the new values
→ the original program will be lost.



Figure 35: Note on changed program

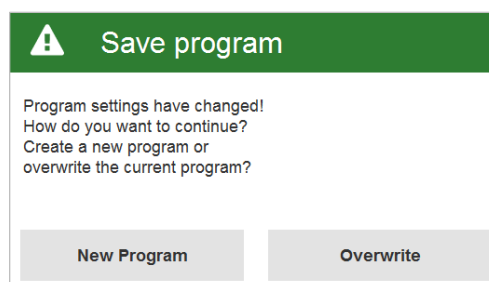



Figure 36: Query window "Save program"

11.6 Digital clipboard

When a program has been loaded in the machine overview (see ⇒ Figure 25), the button  appears at the bottom left. This button can be used to open the digital clipboard, where all relevant program details are listed and graphically illustrated.

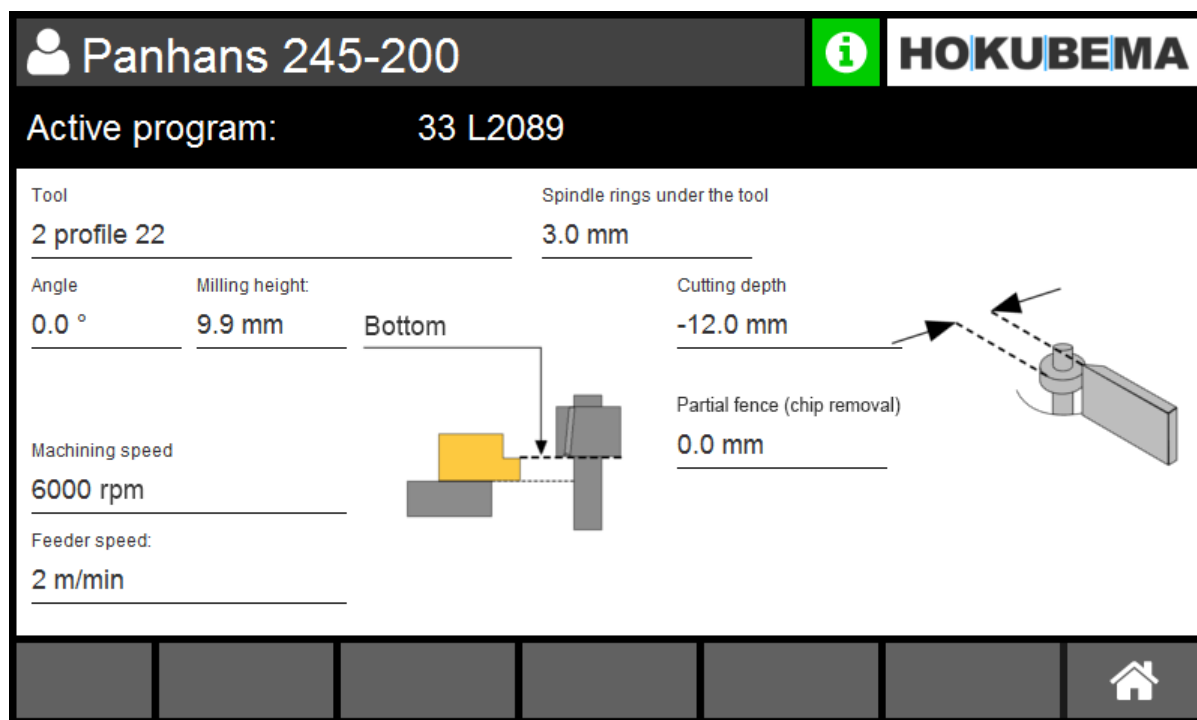



Figure 37: Digital clipboard with program details

12 Machine status and language setting

When the symbol  is pressed, a window opens with status messages, information about the machine and connected hardware, test functions for the inputs and outputs, and the language setting:

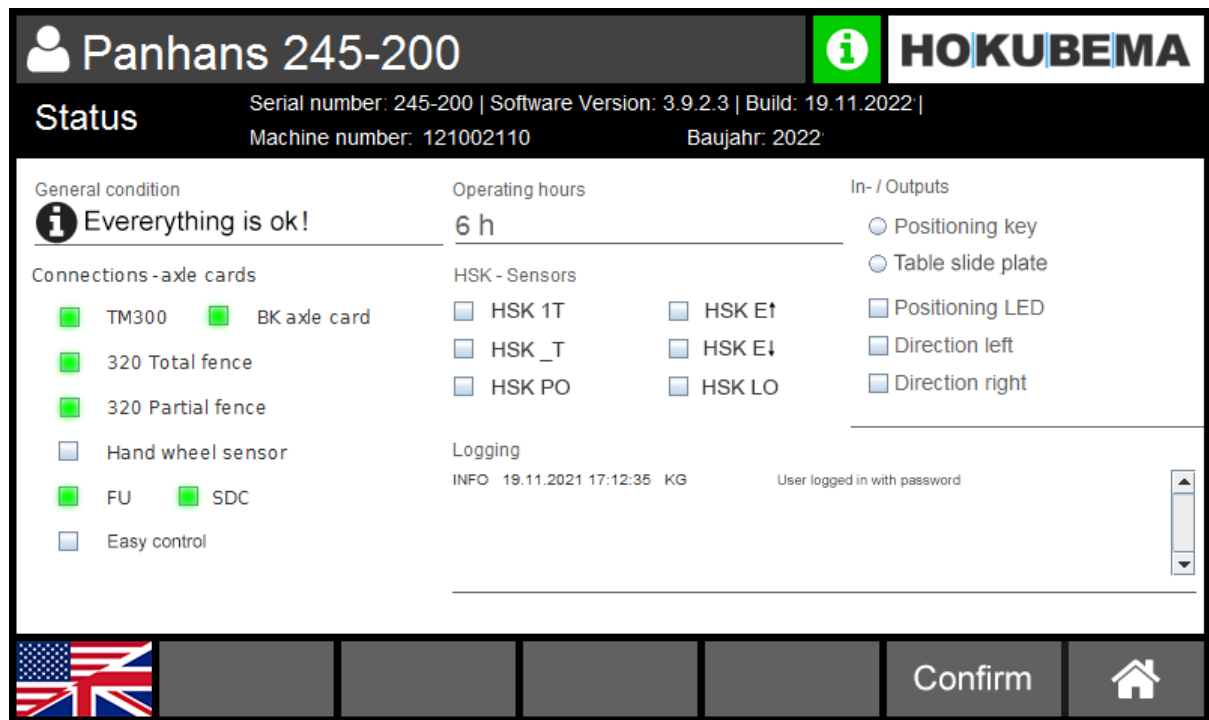







Figure 38: Info window with status messages

The info symbol serves additionally to signal the operational readiness:

Colour	Meaning
	The machine and connected components are OK → Machine is ready for operation.
	A red symbol indicates pending errors or problems. Tap the symbol to open the info window with the machine status to obtain more detailed information. Note: Depending on the situation, an additional pop-up window appears with detailed instructions on the existing issue. Then follow the instructions on the screen.


12.1 Status: connections - axle cards

This column indicates which modules are connected and ready for operation. Depending on the model and equipment, the display may vary or differ from the above ⇒ Figure 38 .

Status	Meaning
	Module not present or not connected
	Module is correctly connected and ready for operation
	Communication or processing error / module is <u>not</u> ready for operation

HSK - sensors (option), inputs/outputs and language setting see next page ⇒

12.2 Status: HSK sensors (option)

This column shows the status of an optional HSK tool change system, which is queried via various sensors. The active status is visualised with .

Acronym	Meaning	Acronym	Meaning
HSK 1T	HSK clamped with tool	HSK E↑	HSK top end position reached
HSK _T	HSK clamped without tool	HSK E↓	HSK bottom end position reached
HSK PO	HSK unclamping position reached	HSK LO	HSK logic enable*


*) Only fulfilled when the lower end position has been reached and the tool is clamped.

12.3 Testing functions: inputs/outputs

This column contains various hardware test functions for the inputs and outputs.

Input	Testing function
Positioning key	Used to test the positioning button function: → Press the positioning button → The status box becomes active.
Table slide plate	Used to test limit switch function of the table slide plate: → Open the table slide plate completely → The status box becomes active.
Output	Testing function
Positioning LED	The tick in the checkbox must flash at the same rate, as the positioning button in the control panel → If not, the light in the positioning button is defective.
Direction left	A tick appears in the checkbox as soon as the yellow indicator light for “direction left” (conventional milling) on the control panel lights up → If not, the white indicator light in the control panel is defective.
Direction right	A tick appears in the checkbox as soon as the white indicator light for “direction right” (climb milling) on the control panel lights up → If not, the yellow indicator light in the control panel is defective.

12.4 Language setting

Button	Function
	Select the flag icon to change the language → A window appears with more flag icons for the available languages. <ul style="list-style-type: none"> • Select the desired flag symbol there. • The new language is adopted immediately (without confirmation).

13 Setup menu (without machine access control TM 300)

When starting a machine without optional machine access control, the additional field “**Setup**” appears. On machines with optional machine access control, the master key must be inserted to enable the setup menu.

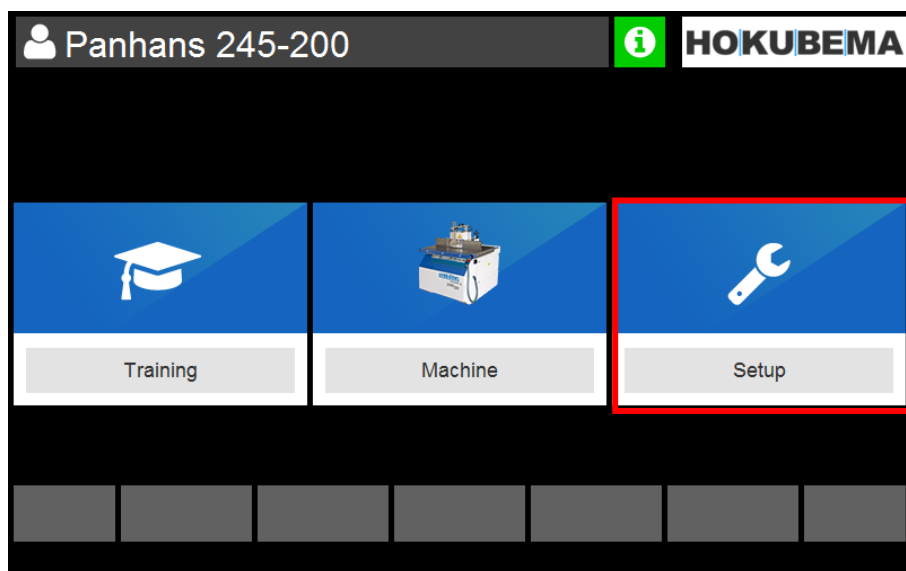


Figure 39: Main screen with "Setup menu"



This menu is password-protected and intended only for the administrator. Therefore, the administrator password * must be entered in the next screen:***

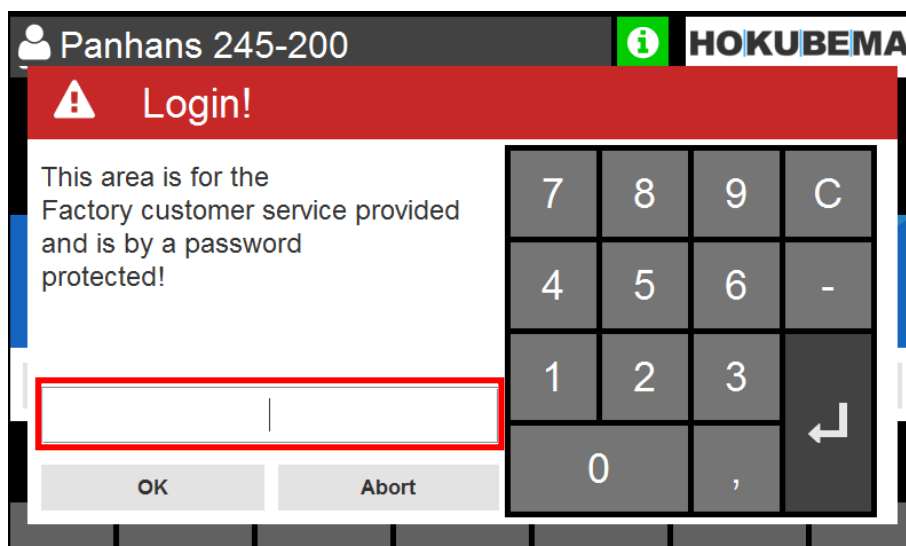


Figure 40: Setup menu: Password










The detailed description with all details and functions of the setup menu can be found in the ↗ separate manual for the administrator.

14 Error messages and troubleshooting







Depending on the machine model and fence type, different error messages appear when a malfunction occurs or due to safety-relevant aspects. The following overview table shows all error numbers and the corresponding page number.







- Clicking on the error number or using the indicated page number will take you directly to the corresponding error description with the cause and how you can remedy the fault.







<i>Reference</i>	<i>Type of error</i>	<i>Page</i>	<i>Reference</i>	<i>Type of error</i>	<i>Page</i>
⇒ [U0001]	Collective Fault	38	⇒ [E0032]	Modbus Exception	43
⇒ [T0031]	Software End Limit	38	⇒ [E0033]	Bus Exception Error	44
⇒ [E0001]	Modbus Error	38	⇒ [E0034]	Modbus Slave Error	44
⇒ [E0002]	Modbus Error	38	⇒ [E0035]	Modbus Exception	44
⇒ [E0003]	Modbus Error	38	⇒ [E0036]	Bus Pause Error	44
⇒ [E0004]	Brake Released	39	⇒ [E0037]	Modbus Timeout (Socket)	44
⇒ [E0005]	Motor Protection F2	39	⇒ [E0038]	Bus Exception Error	45
⇒ [E0006]	Motor Protection F3	39	⇒ [W0001]	Bus Error	45
⇒ [E0007]	Motor Protection F4	39	⇒ [T0037]	Access Denied	45
⇒ [E0008]	Tool Change	39	⇒ [T0012]	Emergency Stop	45
⇒ [E0009]	Modbus Slave Error	40	⇒ [T0029]	Database	45
⇒ [E0010]	Modbus Exception	40	⇒ [T1001]	Runtime error	45
⇒ [E0011]	Error Bus Pause	40	⇒ [T1002]	Runtime error	46
⇒ [E0012]	Modbus Timeout	40	⇒ [T0033]	Service Level Error	46
⇒ [E0013]	Bus Exception Error	40	⇒ [T0034]	CSV User Error	46
⇒ [E0014]	Bus Pause Error - TM System	40	⇒ [T0035]	Tool Memory Error	46
⇒ [E0015]	Modbus Slave Error - TM System	41	⇒ [T0036]	Work Safety	46
⇒ [E0016]	Modbus Exception	41	⇒ [T0038]	Software End Limit	46
⇒ [E0017]	Modbus Input/Output Error	41	⇒ [T0039]	Software End Limit	47
⇒ [E0018]	Bus Error	41	⇒ [T0040]	Software End Limit	47
⇒ [E0019]	Modbus Input/Output Error	41	⇒ [T0041]	Software End Limit	47
⇒ [E0020]	Modbus Value Error	41	⇒ [T0042]	Software End Limit	47
⇒ [E0021]	Modbus Protocol Error	42	⇒ [T0043]	Software End Limit	47
⇒ [E0022]	Bus Pause Error	42	⇒ [T0044]	Program Memory Error	47
⇒ [E0023]	Bus Exception Error	42	⇒ [T0045]	Software End Limit	48
⇒ [E0024]	Modbus Input/Output Error	42	⇒ [C0704]	Touchscreen Error	48
⇒ [E0025]	Modbus Value Error	42	⇒ [C0705]	Tool List Error	48
⇒ [E0026]	Modbus Protocol Error	42	⇒ [C0706]	Tool List Error	48
⇒ [E0027]	Bus Pause Error	43	⇒ [C0707]	Program Memory Error	48
⇒ [E0028]	Bus Exception Error	43	⇒ [C0708]	Program Memory Error	48
⇒ [E0029]	Bus Error	43	⇒ [S0001]	Belt Pulley	49
⇒ [E0030]	Bus Pause Error	43	⇒ [none]	Table Slide Plate closed	49
⇒ [E0031]	Modbus Slave Error	43			






<div> Collective Fault</div> <div>[U0001] Frequency Inverter Code:</div> <div>OK</div>	<div>Cause: Frequency inverter went into collective fault. Error may have been reset automatically. Error code is supplemented with the error number of the frequency inverter.</div> <div>Remedy: <ul style="list-style-type: none"> Restart the machine. If this is not successful, contact customer service and inform them of the FI error number. <p> Work on the FI only by a qualified electrician! ATTENTION: The inverter can remain energised for up to 15 minutes after turning off the main switch!</p> </div>
<div> Software End Limit</div> <div>[T0031] You are trying to cross an end position!</div> <div>OK</div>	<div>Cause: When attempting to start positioning, a software end limit was detected in the target position!</div> <div>Remedy: <ul style="list-style-type: none"> Check target value - correct if necessary. </div>
<div> Modbus Error</div> <div>[E0001] Error when connecting to main motor control.</div> <div>OK</div>	<div>Cause: Control module "Eaton Easy" not accessible.</div> <div>Remedy: <ul style="list-style-type: none"> Check the connection and fix the cause of the interruption. <p> Work on the electrical system may only be carried out by a qualified electrician!</p> </div>
<div> Modbus Error</div> <div>[E0002] Modbus malfunction!</div> <div>OK</div>	<div>Cause: Possible timeout</div> <div>Remedy: <ul style="list-style-type: none"> Check the connections and wiring of the axis controllers. If unsuccessful, contact customer service. </div>
<div> Modbus Error</div> <div>[E0003] Bus data processing error.</div> <div>OK</div>	<div>Cause: This message appears if a register is not queried or is invalid.</div> <div>Remedy: <ul style="list-style-type: none"> Check parameterisation If unsuccessful, contact customer service. </div>

<div>⚠ Brake Released</div> <p>[E0004] Selector switch "Brake Release" is active!!</p> <p>OK</p>	<div> <div>Cause:</div> <p>245 100 only: When the spindle start button is pressed, the "Release Brake" switch on the "Eaton Easy" control module is queried.</p> </div> <div> <div>Remedy:</div> <ul style="list-style-type: none"> Deactivate the brake release switch. </div>
<div>⚠ Motor Protection F2 Error</div> <p>[E0005] Motor protection F2 (machine socket) tripped!</p> <p>OK</p>	<div> <div>Cause:</div> <p>Malfunction at the machine socket.</p> <ul style="list-style-type: none"> Circuit breaker F2 has tripped Machine socket / connections defective Machine socket has been overloaded External device defective </div> <div> <div>Remedy:</div> <ul style="list-style-type: none"> Check F2 and reset if necessary Check machine socket / connections Check connected external unit ⚠ Work on the electrical system may only be carried out by a qualified electrician! Contact customer service if necessary. </div>
<div>⚠ Motor Protection F3 Error</div> <p>[E0006] Motor protection F3 (milling spindle) tripped!</p> <p>OK</p>	<div> <div>Cause:</div> <p>Malfunction of the main motor.</p> <ul style="list-style-type: none"> Circuit breaker F2 has tripped Main motor overloaded 245 100: power supply unit -G1 defective 245 200/300: supply unit -2TB1 defective </div> <div> <div>Remedy:</div> <ul style="list-style-type: none"> Check F3 and reset if necessary Check main motor 245 100: check power supply unit -G1 245 200/300: check supply unit -2TB1 Contact customer service if necessary. </div>
<div>⚠ Motor Protection F4 Error</div> <p>[E0007] Motor protection F4 (brake of M1) tripped!</p> <p>OK</p>	<div> <div>Cause:</div> <p>Malfunction of the main motor brake.</p> <ul style="list-style-type: none"> Circuit breaker F4 has tripped Brake defective </div> <div> <div>Remedy:</div> <ul style="list-style-type: none"> Check F4 and reset if necessary Replace defective brake Contact customer service if necessary </div>
<div>⚠ Tool Change</div> <p>[E0008] Tool spanner not in tray!</p> <p>OK</p>	<div> <div>Cause:</div> <p>The tool spanner is not resp. not correctly inserted in the side tray or the switch is defective!</p> </div> <div> <div>Remedy:</div> <ul style="list-style-type: none"> Place the key in the designated tray Check correct position in the tray Check the switch in the tray Contact customer service if necessary. </div>


<div> Modbus Slave Error</div> <div>[E0009] BK 3-axis controller</div> <div>OK</div>	<div>Cause: Error when processing a bus request to the 3-axis controller.</div> <div>Remedy: <ul style="list-style-type: none"> • Contact customer service </div>
<div> Modbus Exception</div> <div>[E0010] BK 3-axis controller</div> <div>OK</div>	<div>Cause: An error on the bus was intercepted.</div> <div>Remedy: <ul style="list-style-type: none"> • Contact customer service </div>
<div> Bus Pause Error</div> <div>[E0011] BK 3-axis controller</div> <div>OK</div>	<div>Cause: An error occurred when pausing between two bus queries.</div> <div>Remedy: <ul style="list-style-type: none"> • Check wiring between controller and switch </div>
<div> Modbus Timeout (Socket)</div> <div>[E0012] BK 3-axis controller</div> <div>OK</div>	<div>Cause: The TCP connection for the Modbus participant does not respond. <ul style="list-style-type: none"> • The participant is not reachable • The participant answers too slowly </div> <div>Remedy: <ul style="list-style-type: none"> • Check wiring between controller and switch </div>
<div> Bus Exception Error</div> <div>[E0013] BK 3-axis controller</div> <div>OK</div>	<div>Cause: An error that cannot be assigned and should not actually occur.</div> <div>Remedy: <ul style="list-style-type: none"> • Contact customer service </div>
<div> Bus Pause Error</div> <div>[E0014] TM System</div> <div>OK</div>	<div>Cause: An error occurred when pausing between two bus queries.</div> <div>Remedy: <ul style="list-style-type: none"> • Check wiring between reader unit and switch </div>

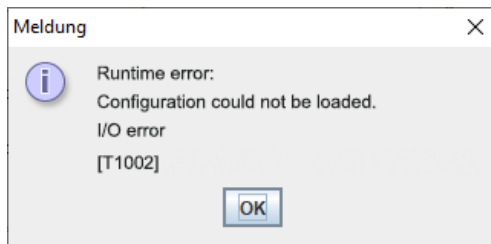
<div>  Modbus Slave Error </div> <div> [E0015] TM System </div> <div>OK</div>	<div> Cause: Error while processing a bus request to the TM 300 Reader. </div> <div> Remedy: <ul style="list-style-type: none"> • Contact customer service </div>
<div>  Modbus Exception </div> <div> [E0016] TM System </div> <div>OK</div>	<div> Cause: An error on the bus was intercepted. </div> <div> Remedy: <ul style="list-style-type: none"> • Contact customer service </div>
<div>  Modbus Input/Output Error </div> <div> [E0017] TM System </div> <div>OK</div>	<div> Cause: Faulty input or output on the bus. </div> <div> Remedy: <ul style="list-style-type: none"> • Contact customer service </div>
<div>  Bus Error </div> <div> [E0018] Unknown TM participant </div> <div>OK</div>	<div> Cause: The address for the TM participant cannot be resolved. <ul style="list-style-type: none"> • Incorrect host name specified </div> <div> Remedy: <ul style="list-style-type: none"> • Check host name and correct if necessary • Contact customer service </div>
<div>  Modbus Input/Output Error </div> <div> [E0019] Total fence controller </div> <div>OK</div>	<div> Cause: Faulty input or output on the bus. Bus participant cannot be found in the network. </div> <div> Remedy: <ul style="list-style-type: none"> • Check wiring between “Nanotec” control unit and switch </div>
<div>  Modbus Value Error </div> <div> [E0020] Total fence controller </div> <div>OK</div>	<div> Cause: An attempt was made to write invalid values into a register. </div> <div> Remedy: <ul style="list-style-type: none"> • Check entered values • Repeat process </div>

<div>  Modbus Protocol Error </div> <div> [E0021] Total fence controller </div> <div> OK </div>	<div> Cause: An attempt was made to access an invalid address or the participant cannot process the request. </div> <div> Remedy: <ul style="list-style-type: none"> • Contact customer service </div>
<div>  Bus Pause Error </div> <div> [E0022] Total fence controller </div> <div> OK </div>	<div> Cause: An error occurred when pausing between two bus queries. </div> <div> Remedy: <ul style="list-style-type: none"> • Check wiring between controller and switch </div>
<div>  Bus Exception Error </div> <div> [E0023] Total fence controller </div> <div> OK </div>	<div> Cause: An error that cannot be assigned and should not actually occur. </div> <div> Remedy: <ul style="list-style-type: none"> • Contact customer service </div>
<div>  Modbus Input/Output Error </div> <div> [E0024] Partial fence controller </div> <div> OK </div>	<div> Cause: Faulty input or output on the bus. Bus participant cannot be found in the network. </div> <div> Remedy: <ul style="list-style-type: none"> • Check wiring between controller and switch • Contact customer service </div>
<div>  Modbus Value Error </div> <div> [E0025] Partial fence controller </div> <div> OK </div>	<div> Cause: An attempt was made to write invalid values into a register. </div> <div> Remedy: <ul style="list-style-type: none"> • Check entered values • Repeat process </div>
<div>  Modbus Protocol Error </div> <div> [E0026] Partial fence controller </div> <div> OK </div>	<div> Cause: An attempt was made to access an invalid address or the participant cannot process the request. </div> <div> Remedy: <ul style="list-style-type: none"> • Contact customer service </div>

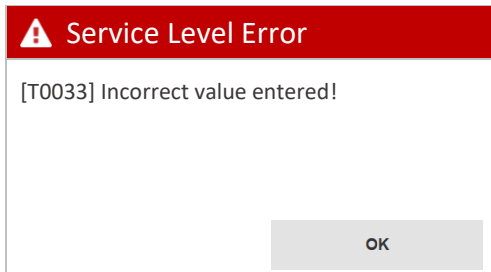
<div> Bus Pause Error</div> <div>[E0027] Partial fence controller</div> <div>OK</div>	<div>Cause: An error occurred when pausing between two bus queries.</div> <div>Remedy: <ul style="list-style-type: none"> • Check wiring between controller and switch </div>
<div> Bus Exception Error</div> <div>[E0028] Partial fence controller</div> <div>OK</div>	<div>Cause: An error that cannot be assigned and should not actually occur.</div> <div>Remedy: <ul style="list-style-type: none"> • Contact customer service </div>
<div> Bus Error</div> <div>[E0029] BK SDC Light, Participant unknown</div> <div>OK</div>	<div>Cause: The address for "SDC Light" speed monitor cannot be resolved. <ul style="list-style-type: none"> • Incorrect host name specified. </div> <div>Remedy: <ul style="list-style-type: none"> • Contact customer service </div>
<div> Bus Pause Error</div> <div>[E0030] SDC Light Speed Monitor</div> <div>OK</div>	<div>Cause: An error occurred when pausing between two bus queries.</div> <div>Remedy: <ul style="list-style-type: none"> • Check wiring between speed monitor card and switch </div>
<div> Modbus Slave Error</div> <div>[E0031] SDC Light Speed Monitor</div> <div>OK</div>	<div>Cause: Error while processing a bus request to "SDC Light" speed monitor.</div> <div>Remedy: <ul style="list-style-type: none"> • Check wiring between speed monitor card and switch </div>
<div> Modbus Exception</div> <div>[E0032] SDC Light Speed Monitor</div> <div>OK</div>	<div>Cause: An error on the bus was intercepted.</div> <div>Remedy: <ul style="list-style-type: none"> • Check wiring between speed monitor card and switch </div>

<div>⚠ Bus Exception Error</div> <div>[E0033] SDC Light Speed Monitor</div> <div>OK</div>	<div>Cause: An error that cannot be assigned and should not actually occur.</div> <div>Remedy: <ul style="list-style-type: none"> • Contact customer service </div>
<div>⚠ Modbus Slave Error</div> <div>[E0034] Frequency Inverter</div> <div>OK</div>	<div>Cause: Error when processing a bus request to the frequency inverter.</div> <div>Remedy: <ul style="list-style-type: none"> • Check wiring between FI and switch • Check proper fit of COM extension to FI <p>⚠ Work on the FI only by a qualified electrician! ATTENTION: The inverter can remain energised for up to 15 minutes after turning off the main switch!</p> </div>
<div>⚠ Modbus Exception</div> <div>[E0035] Frequency Inverter</div> <div>OK</div>	<div>Cause: An error on the bus was intercepted.</div> <div>Remedy: <ul style="list-style-type: none"> • Check wiring between FI and switch • Check proper fit of COM extension to FI <p>⚠ Work on the FI only by a qualified electrician! ATTENTION: The inverter can remain energised for up to 15 minutes after turning off the main switch!</p> </div>
<div>⚠ Bus Pause Error</div> <div>[E0036] Frequency Inverter</div> <div>OK</div>	<div>Cause: An error occurred when pausing between two bus queries.</div> <div>Remedy: <ul style="list-style-type: none"> • Check wiring between FI and switch • Check proper fit of COM extension to FI <p>⚠ Work on the FI only by a qualified electrician! ATTENTION: The inverter can remain energised for up to 15 minutes after turning off the main switch!</p> </div>
<div>⚠ Modbus Timeout (Socket)</div> <div>[E0037] Frequency Inverter</div> <div>OK</div>	<div>Cause: The TCP connection for the Modbus participant does not respond. <ul style="list-style-type: none"> • The participant is not reachable • The participant answers too slowly </div> <div>Remedy: <ul style="list-style-type: none"> • Check wiring between FI and switch • Check proper fit of COM extension to FI <p>⚠ Work on the FI only by a qualified electrician! ATTENTION: The inverter can remain energised for up to 15 minutes after turning off the main switch!</p> </div>

<div>⚠ Bus Exception Error</div> <div>[E0038] Frequency Inverter</div> <div>OK</div>	<div>Cause: An error that cannot be assigned and should not actually occur.</div> <div>Remedy: <ul style="list-style-type: none"> Check wiring between FI and switch Check proper fit of COM extension to FI ⚠ Work on the FI only by a qualified electrician! ATTENTION: The inverter can remain energised for up to 15 minutes after turning off the main switch! </div>
<div>⚠ Bus Error</div> <div>[W0001] Error when connecting to handwheel encoder</div> <div>OK</div>	<div>Cause: No connection could be established with the WuT ComServer.</div> <div>Remedy: <ul style="list-style-type: none"> Restart machine Check wiring between COM server and network switch </div>
<div>⚠ Access Denied</div> <div>[T0037] Key missing or user not in database!</div> <div>OK</div>	<div>Cause: <ul style="list-style-type: none"> With option TM 300, an attempt was made to access the machine overview without a key. The user ID of the inserted key is not stored in the user database. </div> <div>Remedy: <ul style="list-style-type: none"> Insert key with authorization Program a new key </div>
<div>⚠ Emergency Stop</div> <div>[T0012] Emergency stop was pressed!</div> <div>OK</div>	<div>Cause: Emergency stop chain is interrupted.</div> <div>Remedy: <ul style="list-style-type: none"> Check both emergency stop switches and unlock if necessary </div>
<div>⚠ Database</div> <div>[T0029] Database is write-protected!</div> <div>OK</div>	<div>Cause: An attempt was made to change a value in the database which is write-protected.</div> <div>Remedy: <ul style="list-style-type: none"> Allow write access before editing </div>
<div>Meldung</div> <div>  Runtime error: Configuration could not be loaded. File missing [T1001] </div> <div>OK</div>	<div>Cause: The "Mainunit Prop." could not be opened. The file may be missing or write-protected.</div> <div>Remedy: <ul style="list-style-type: none"> Contact customer service </div>



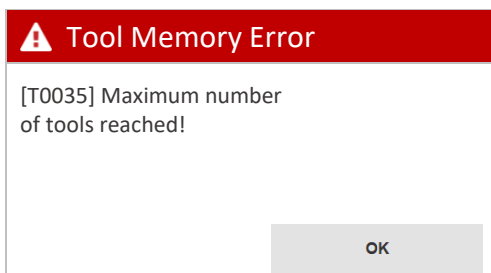
	<ul style="list-style-type: none"> Die „Mainunit Prop.“ file is damaged!
Remedy:	<ul style="list-style-type: none"> Contact customer service



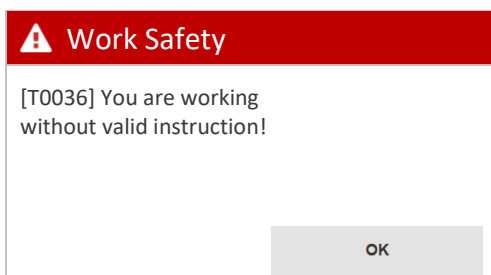
Cause:	An attempt was made to calibrate one of the axes to an invalid value (e.g. by entering invalid or double decimal characters).
Remedy:	<ul style="list-style-type: none"> Check entered values Repeat process



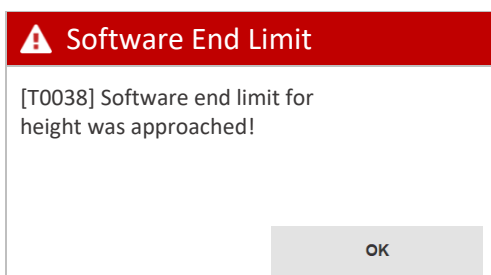
Cause:	The file "user_new.csv" cannot be imported. File may be damaged or not available.
Remedy:	<ul style="list-style-type: none"> Restore data from a backup using the export/import function in the service menu Dispatch panel to the customer service









Cause:	<ul style="list-style-type: none"> No further tools can be saved.
Remedy:	<ul style="list-style-type: none"> Overwrite an existing tool that is no longer needed or expand your tool database: 10 tools à 20 programs (Art.-No. 4614) 20 tools à 20 programs (Art.-No. 4615) 500 tools à 100 programs (Art.-No. 4616)











Cause:	With option TM300, as soon as the instruction period has expired.
Remedy:	<ul style="list-style-type: none"> Carry out the upcoming instruction to be able to work on the machine again.



Cause:	Invalid value: The calculated, absolute height could not be transferred to the controller.
Remedy:	<ul style="list-style-type: none"> Check target value Enter smaller value of the axis

<div> Software End Limit</div> <p>[T0039] Software end limit for total fence was approached!!</p> <p>OK</p>	<div>Cause: Invalid value: The calculated, absolute height could not be transferred to the controller.</div> <div>Remedy: <ul style="list-style-type: none"> • Check target value • Enter smaller value of the axis </div>
<div> Software End Limit</div> <p>[T0040] Transfer prevented! Value for height not permissible.</p> <p>OK</p>	<div>Cause: A transfer of the value for the height axis to the 3-axis controller was cancelled because the calculated value is not permissible.</div> <div>Remedy: <ul style="list-style-type: none"> • Check target value • Enter smaller value of the axis </div>
<div> Software End Limit</div> <p>[T0041] Transfer prevented! Value for angle not permissible.</p> <p>OK</p>	<div>Cause: A transfer of the value for the angle axis to the 3-axis controller was cancelled because the calculated value is not permissible.</div> <div>Remedy: <ul style="list-style-type: none"> • Check target value • Enter smaller value of the axis </div>
<div> Software End Limit</div> <p>[T0042] Transfer prevented! Value for total fence not permissible!</p> <p>OK</p>	<div>Cause: A transfer of the value for the total fence controller was aborted because the calculated value is not permitted.</div> <div>Remedy: <ul style="list-style-type: none"> • Check target value • Enter smaller value of the axis </div>
<div> Software End Limit</div> <p>[T0043] Transfer prevented! Value for partial fence not permissible!</p> <p>OK</p>	<div>Cause: A transfer of the value for the partial fence controller was aborted because the calculated value is not permitted.</div> <div>Remedy: <ul style="list-style-type: none"> • Check target value • Enter smaller value of the axis </div>
<div> Program Memory Error</div> <p>[T0044] Program number already assigned!</p> <p>OK</p>	<div>Cause: When saving a programme, an attempt is made to write to a memory location that is already occupied. After confirming the message, the next free memory location is entered in the " Program number" field.</div> <div>Remedy: <ul style="list-style-type: none"> • Confirm with "OK". No further action is required. </div>

<div>  Software End Limit </div> <p>[T0045] You are trying to cross an end limit!</p> <p>OK</p>	<div> Cause: When updating the move commands, it is checked again whether a target could lead to a collision. </div> <div> Remedy: <ul style="list-style-type: none"> • Check target value • Enter smaller value of the axis </div>
<div>  Touchscreen Error </div> <p>[C0704] Error when displaying the training!</p> <p>OK</p>	<div> Cause: Graphics of the training are loaded concurrently. If the processor is overloaded, loading is aborted and the message is displayed. </div> <div> Remedy: <ul style="list-style-type: none"> • Contact customer service if necessary </div>
<div>  Tool List Error </div> <p>[C0705] Tool list cannot be loaded!</p> <p>OK</p>	<div> Cause: The file "werkzeuge.csv" cannot be imported (not available, damaged or write-protected). </div> <div> Remedy: <ul style="list-style-type: none"> • Contact customer service if necessary </div>
<div>  Tool List Error </div> <p>[C0706] Error when displaying the training!</p> <p>OK</p>	<div> Cause: The stored images cannot be loaded. </div> <div> Remedy: <ul style="list-style-type: none"> • Contact customer service if necessary </div>
<div>  Program Memory Error </div> <p>[C0707] Program list cannot be loaded.</p> <p>OK</p>	<div> Cause: The file "programme.csv" cannot be imported (not available, damaged or write-protected). </div> <div> Remedy: <ul style="list-style-type: none"> • Contact customer service if necessary </div>
<div>  Program Memory Error </div> <p>[C0708] Program list cannot be processed.</p> <p>OK</p>	<div> Cause: The file "programme.csv" is damaged! </div> <div> Remedy: <ul style="list-style-type: none"> • Contact customer service if necessary </div>

<div>  Belt Pulley </div> <p>[S0001] Observe speed! Please set the V- belt to 6000.</p> <div>OK</div>	<table> <tr> <td>Cause:</td><td>On model 245 100, the position of the belt pulley is checked after loading a program. If this does not match the stored speed, the message appears.</td></tr> <tr> <td>Remedy:</td><td> <ul style="list-style-type: none"> Set the V-belt to the speed indicated in the error message. </td></tr> </table>	Cause:	On model 245 100, the position of the belt pulley is checked after loading a program. If this does not match the stored speed, the message appears.	Remedy:	<ul style="list-style-type: none"> Set the V-belt to the speed indicated in the error message.
Cause:	On model 245 100, the position of the belt pulley is checked after loading a program. If this does not match the stored speed, the message appears.				
Remedy:	<ul style="list-style-type: none"> Set the V-belt to the speed indicated in the error message. 				
<div>  Table Slide Plate closed </div> <p>Open the table slide plate completely.</p> <div>OK</div>	<table> <tr> <td>Cause:</td><td>On models with optional table slide plate, its position is monitored with a limit switch to prevent collision with the milling tool. If this message appears, the table slider is in the danger zone.</td></tr> <tr> <td>Remedy:</td><td> <ul style="list-style-type: none"> Open the table slide plate completely. </td></tr> </table>	Cause:	On models with optional table slide plate, its position is monitored with a limit switch to prevent collision with the milling tool. If this message appears, the table slider is in the danger zone.	Remedy:	<ul style="list-style-type: none"> Open the table slide plate completely.
Cause:	On models with optional table slide plate, its position is monitored with a limit switch to prevent collision with the milling tool. If this message appears, the table slider is in the danger zone.				
Remedy:	<ul style="list-style-type: none"> Open the table slide plate completely. 				