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**ISP-A350
TOOL PRESETTER
OPERATION MANUAL**

V0

+INSIZE+

Attention

◆ We will inform customers of our basic sales and delivery requirements. The Company shall not be liable for any warranty or obligation claimed by an individual for the following reasons.

    Unauthorized use of the tool presetter.

    Improper installation, operation, startup and maintenance of the tool presetter.

    Unauthorized modifications to the electronic, pneumatic and mechanical systems of the tool presetter.

    Lack of adequate monitoring of wear-prone parts.

    Catastrophic failure due to use or excessive force by unauthorized personnel.

◆ Installation, maintenance and operation in operation as specified.

    Periodically test each pneumatic line for wear and other types of debris. If any cosmetic or audible problems are found, disconnect the voltage to that line and contact authorized personnel for its replacement!

◆ Ensure that the electronic and pneumatic circuits are not accidentally energized.

◆ Disconnect the electronic circuits of the tool presetter before carrying out maintenance, in-service testing and repair work, and make sure that the components are not accidentally connected when carrying out the above work.

◆ Transportation and Storage:

    It is important that the tool presetter is well packaged and must not be in danger of shifting or slackening during transportation.

    When loading the tool presetter, check the following:

    When loading the Tool Presetter into a truck or other vehicle, make sure it is secure and will not slip or tip over.

    The tool presetter is mounted on a special pallet. Its lifting and loading can be accomplished using a forklift.

◆ Packing of tool presetters must be done by personnel who are specially trained and competent in the preparation of machine tool crates.

Production

Easy to operate

Advanced technology

Excellent components

Excellent price/performance ratio

The above excellent advantages will benefit you a lot.

One of the keywords in this article is "convenience", which is also part of our product name. Thanks to the click-and-press keys, you can operate the tool presetter easily. Any operation required by the software can be realized quickly and intuitively by turning and pressing the button. You simply follow the displayed steps.

Product use

The tool presetter is only suitable for the function for which it is designed, and installation and operation must be carried out within the specified indications, for example:

  Pre-setters for cutting tools

  Control of insert production tools

  Verification and testing of insert production tools

The device may only be used for the applications specified above.

Operating Instructions

1 Structural Introduction

air flotation button, rapid movement of X and Z axis

LED coutour light source

7" DFT color display

result

image display   menu

operation button

controller (included)

printer (included)

CCD camera and
LED surface light source

vacuum clamping (optional)   360° clamping (included)   4×90° clamping (included)

key function

ISO/SK/BT50 spindle (included)

2 Operating Instructions:

The 360° spindle brake and 4x90° spindle indexer are operated utilizing a membrane two-button switch.

1. One-hand operation button

The one hand operation button is used to control the vertical and horizontal movement of the main tower.

2. Color Display

The 6.5" color display shows camera pictures as well as counters and menus.

3. EZclick Selection Confirmation Button

Use the EZclick selection confirmation button to operate the image processor. Rotate it to select several menus, data inputs, and icons. Pressing the button, i.e. "clicking", confirms the input.

4. Device spindle

The rotating spindle is used to hold and stabilize the tool for inspection and measurement of the cutting edge.

vacuum clamping **(optional)**   360° clamping (included)   4×90° clamping (included)

One-handed operation button:

The one-handed operating handle is used in camera movement systems.

The operator sets the rack brake by holding the one-handed operation handle firmly in his left hand and pressing the button with his thumb.

Releasing the One-Handed Operation Button properly locks the imager frame.

Color display:

All information, operations, results, and images of the tool's cutting edge can be displayed on the image processor's 6.5-inch monitor.
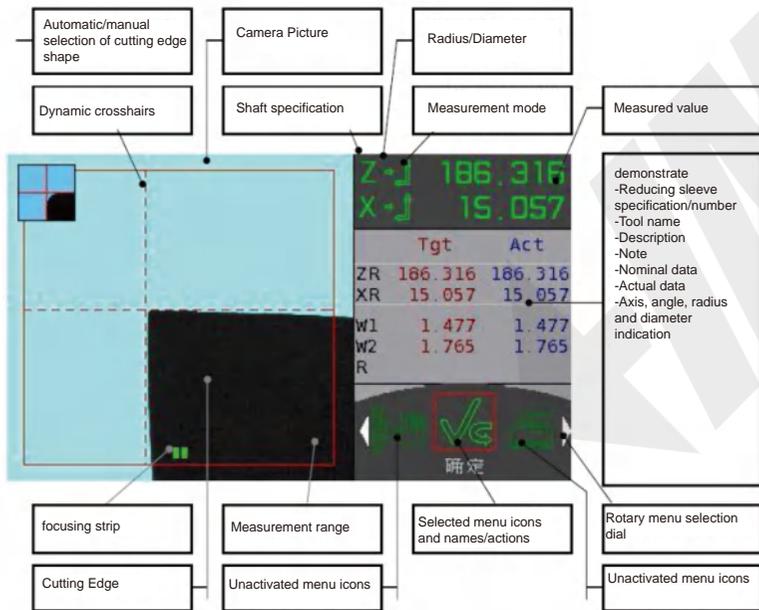
All dialog boxes for data entry and menu selections are displayed in the appropriate menu. Rotate the EZclick button to reselect the desired menu item.

Pressing the EZclick button (i.e. "clicking") confirms the selected menu or activates the function icon.
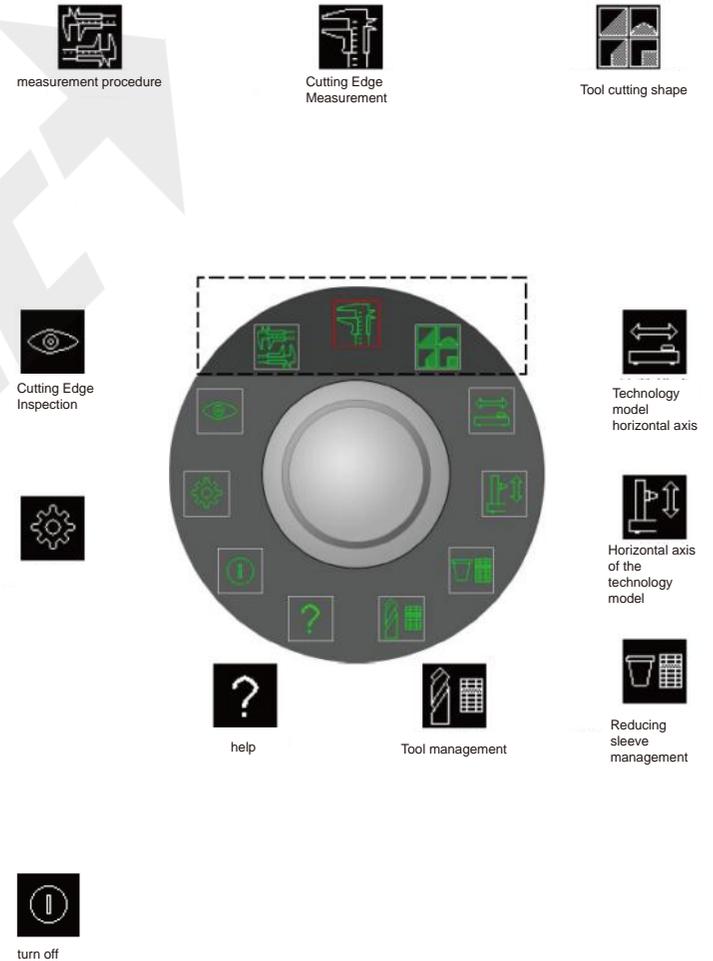
The images displayed by the image processor are described separately below.

activated icon

Displayed on
the monitor
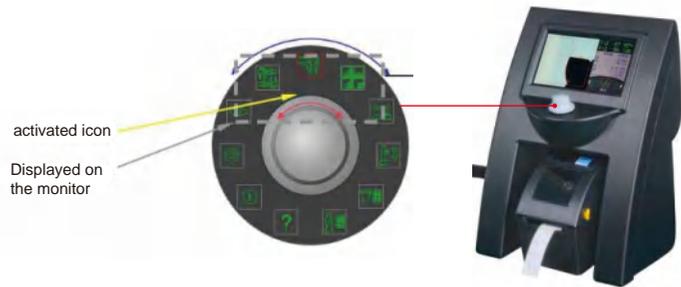
EZclick select-confirm button:
The Select-Confirm button is used as an operator control and data entry device for all other functions of the software.
The icons on the display move left or right as you turn them left or right.
The color display shows three icons at a time.
Turning the EZclick button selects the desired menu and the selected menu is
The selected menu is then highlighted. The centered one of the three icons is also displayed.
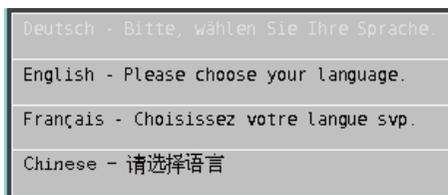A quick push on the EZclick button activates the selected function.

Automatic/manual selection of cutting edge shape

Camera Picture

Radius/Diameter

Dynamic crosshairs

Shaft specification

Measurement mode

Measured value

Z ⌐J 186.316
X ⌐J 15.057

	Tgt	Act
ZR	186.316	186.316
XR	15.057	15.057
W1	1.477	1.477
W2	1.765	1.765
R		

demonstrate
-Reducing sleeve specification/number
-Tool name
-Description
-Note
-Nominal data
-Actual data
-Axis, angle, radius and diameter indication

確定

focusing strip

Measurement range

Selected menu icons and names/actions

Rotary menu selection dial

Cutting Edge

Unactivated menu icons

Unactivated menu icons

③ Overview of the image processing system menu:
Operation of the image processing system is accomplished with a rotary button (with notch) and another button.

measurement procedure

Cutting Edge Measurement

Tool cutting shape

Cutting Edge Inspection

Technology model horizontal axis

Horizontal axis of the technology model

Reducing sleeve management

help

Tool management

turn off

④ Equipment spindles:
The tool holder spindle has a calibrated edge and clamping block with a spindle that does not require a reducer sleeve to mount ISO 50 Cutter.
A black plastic ring fits snugly around the spindle and is used to rotate the spindle.
Reducing sleeves are supplied as an accessory.

⑤ Initial startup
Press the EZclick button to power up the tool presetter.
NOTE: After 4 seconds, the Image Processor screen light comes on.
The image processor is activated when the two indicator lights on the membrane switch are illuminated. The software download will follow. After the download is complete, menu selections are requested.
The menu can be reselected at any time by selecting "Settings".
Rotate the EZclick button to select the language.

Deutsch - Bitte, wählen Sie Ihre Sprache.

English - Please choose your language.

Français - Choisissez votre langue svp.

Chinese - 请选择语言

After selecting the language, you are asked to choose the units required for the measurement, with a choice of millimeters, inches, or micrometers.

⑥ Each time the tool presetter is activated, the display prints of the axes (horizontal and transverse) are called up, thus prompting the display to show the zero point. The main menu is accessed by moving the main tower using the one-handed operation buttons so that the reference points for the horizontal and transverse axes are horizontal.

请移开
参考点
Z轴
X轴

Z-⅃ 170.732
X-⅃ 38.666
1 SK 50
测量切削刃
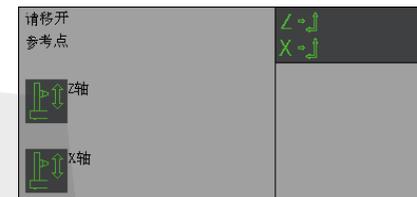
After referencing both axes (ignoring the zero point on the glass ruler), automatic illumination detection is performed.
It is ensured that there are no obstacles between the camera and the light source.
If the path is clear, the light automatically adjusts for optimal illumination. Then select "Measure Cutting Edge" from the main menu.
The camera displays a blue crosshair to indicate that it is ready to measure.
Rotate and press the EZclick button to operate the menu.

⑦ Close
Close the tool presetter with the EZclick button.
Make sure to save all data before turning off the tool presetter.
Unsaved data will be lost if the power cord is inadvertently disconnected.

Z-⅃ 353.135
X-⅃ 133.705
1 SK 50
关闭装置
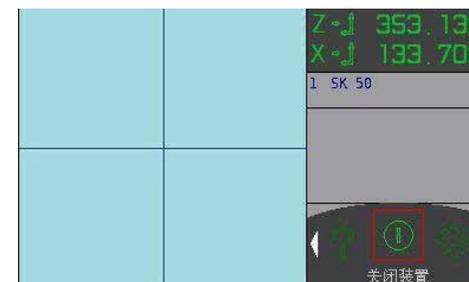
⑧ Reducing Sleeve / Reducing Sleeve Management:
If you have not ordered any other reducers, you can calibrate the spindle directly by selecting "Calibrate Reducers".
Install the reducer:
The tool spindle is suitable for ISO 50 taper shank tools without a reducer. The spindle is set and calibrated.
Calibrate the spindle again and take the first measurement again.
If HSK, VDI or other SK reducers are used, they can be placed in the SK50 spindle and the installation continued.
The reducer must be installed so that its calibration edge is aligned with the spindle's calibration edge.
The spindle to be measured and the reducer must be kept clean and free of dirt, oil and cutting oil. Failure to do so will jeopardize the accuracy of the measurements and may damage the tool presetter.
Select "Reducing sleeve management" from the menu using the EZclick button.
The overview lists all mounted reducers and spindles.

Using the EZclick button, select "Select Reducers" from the menu.
Go to the last line of the listed reducers and the empty field where you need to enter the new reducer.
Enter the reducer. If you need to enter the reducer at another address, you must also enter it here. Entering the address will not affect the separate addition of the mounting reducer. The spindle number remains unchanged and is always 1. Once the entry is complete and the new data has been added, it is sorted in increasing order.

Using the EZclick button, check "Reducing Sleeve Installation".

A new reducer line is installed, the data for which are subsequently entered under "Operational reducers".
Thereafter, the list of parameters for the reducer sleeve is displayed.
Numbering:
The reducer number is added automatically. This data must be entered.
Name:
The name identifies the reducer quickly and accurately. For example: "SK40" or "HSK63". The overview screen also displays a "Caution" message field.
Note:
For example, "Reducing Sleeve" may be used as a registration.

Each reducer sleeve is measured by the manufacturer of the tool presetter and named after the measured value. The label of the measured value engraved on the reducer, the item number, and the axial measured value in millimeters are located on the upper surface of the reducer. Enter this type of information into the overview screen. This data must be entered.
Calibration
After the reducer is installed, it must be calibrated. The reducer can only be selected for use in the measuring tool if it has been calibrated. After successful calibration, enter "Yes" in the data field.
After all parameters have been entered, use the EZclick button and menu to enter "Save".
When all entries are complete, "Data Saved" is displayed.
Use the EZclick button to return to the main menu and enter the "Exit Menu" to complete the installation of the reducer sleeve.

Z-axis

X-axis

参数	数值
编号	1
名称	SK 50
注意	SPINDLE
z轴变径套尺寸 毫米	-5.137
x轴变径套尺寸 毫米	-50.248
z轴计数方向	正
x轴计数方向	正
z轴名称	Z
x轴名称	X
切削刃形状	86
校准	是

选择

Calibration and recalibration of the reducer sleeve:
9 A new reducer sleeve must be calibrated after it is installed.
The reducer sleeve may not be used for measurements without calibration.
Periodically calibrate the spindle and reducer sleeve to ensure consistently accurate measurements.
If your tool presetter is housed in a room that is subject to high climatic influences, we recommend that you calibrate it every day or every shift. If the tool presetter is susceptible to temperature differences, more frequent calibrations may be necessary.
Please note: During calibration, test the illumination level and remove the camera to ensure proper testing.
When the test is complete, the illumination level will be set automatically.

Use the EZclick button to select "Reducer Management" from the main menu. This takes you to an overview of all installed reducers and spindles. If the overview information has been calibrated, it is noted accordingly. Also displayed are the reducers that need to be calibrated or recalibrated.
Use the EZclick button to select the reducer you wish to calibrate or recalibrate.

Using the "EZclick" button, select "Reducing sleeve calibration".
Follow the instructions to "Place the calibration blade in the measuring window".
Attach the reducer to be calibrated to the spindle.
Make sure that the spindle's calibrating edge is on the same side of the spindle as the reducer and that all flat surfaces are clean and free of dirt.
Rotate the calibration blade to the left in the same direction as the main tower.
When calibrating the reducer sleeve, make sure that the calibration edge of the reducer sleeve is properly located in the camera's field of view and not directly underneath it as the spindle's calibration edge.
Using the one-handed operation button, move the main tower to the calibration area.
Clean the calibration area with a cleaning eraser.

The calibration area must be in the center of the camera's field of view. Click OK to confirm.
If the screen indicates focus, rotate the spindle until the minimum green bar indicates that the focus frame has reached precise focus. Click OK to confirm focus.
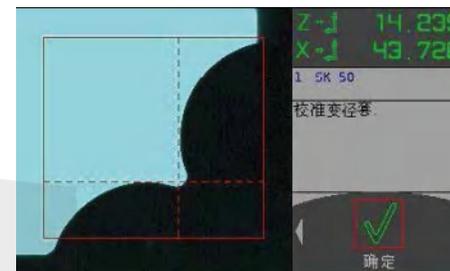
At this point the reducer sleeve can be calibrated and the crosshairs located within the calibration zone. If the crosshairs are not positioned correctly, clean them with cleaning clay and repeat the calibration procedure. Click on "Confirm" to end the calibration procedure.

Return to Reducing Sleeve Management. Determines whether to exit this menu or not to select another reducer set.

Reducing sleeve management:
The menu allows the installation, selection, operation, calibration, and cancellation of the reducer sleeve.

Install the reducer sleeve:
Before operating on the reducer sleeve, the reducer sleeve must be completely installed and fully calibrated using an image processing system.

After the new reducer number has been entered automatically, the menu item "Operate reducer." appears. Thereafter, the list of reducers is automatically organized in numerical order.

编号	名称	注意	校准
1	SK 50	SPINDLE	是
2			否

输入变径套

10 Changing the operation mode (counter mode, horizontal axis, transverse axis)
Changes the operation mode and sets the display method of the measuring unit, where measured values are displayed in radius or diameter.
Start from the standard adjustment of the Z-axis and X-axis. (The results of "Radius" and "Absolute value" are displayed in the following order, respectively.)
The menu icons "Z-axis counting mode" and "X-axis counting mode" determine the affected axes.

Z ⇒ 155.673
X ⇒ 21.539

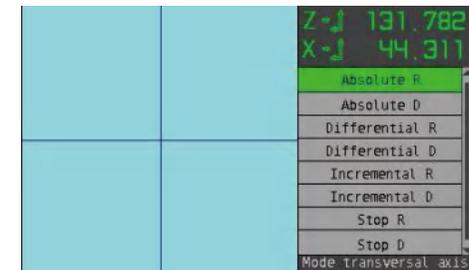|		
Radius, Absolute Measurement		Radius, Absolute Measurement
Diameter, Absolute Measurement		Diameter, Absolute Measurement
Radius, Differential Measurement		Radius, Differential Measurement
Diameter, Differential Measurement		Diameter, Differential Measurement
Radius, Incremental Measurement		Radius, Incremental Measurement
Diameter, Incremental Measurement		Diameter, Incremental Measurement
Radius, Stop Counting		Radius, Stop Counting

Diameter, stop counting   Diameter, stop counting

Absolute measurement: The counter displays the zero point of the reference reducer set.
Differential measurement: This is the difference between the standard value and the calibrated value. In view of this, it is necessary to set the tool, recall (using the "Replay" key) and download the standard value before calling up the measurement program.
Incremental measurement: The actual count value is set to zero (0). Each measurement is referenced to this zero (0) point.
STOP COUNTING: Freezes the counter indication to allow the oversize cutting edge to move in the camera's field of view.

In the "Horizontal Axis Mode" menu, select and save the necessary counter mode for the horizontal axis.
Use EZclick to select the desired counter mode.

Z⇒ 131.782
X⇒ 44.311

Absolute R
Absolute D
Differential R
Differential D
Incremental R
Incremental D
Stop R
Stop D
Mode longitudinal axis

In the "Horizontal Axis Mode" menu, select and save the necessary counter mode for the vertical axis.
Use EZclick to select the desired counter mode.

Z⇒ 131.782
X⇒ 44.311

Absolute R
Absolute D
Differential R
Differential D
Incremental R
Incremental D
Stop R
Stop D
Mode transversal axis

11 Measuring the tool
This section describes the measurement of tools. The operation of this image processor is explained in detail to enable fast and accurate measurements of cutting tools.
This is followed by two small exercises on measuring drills and cutting tools.
The following chapters describe how to set up the tool, carry out the cutting edge inspection, and how to use the measuring program quickly and easily (e.g., including measurement of shanks, cutting edges, angles, radii, and pre-adjustments).

Measurement tool flow chart:

```
┌─────────────────────────┐
│ Installation of the tool │
│ on the tool holder       │
└─────────────────────────┘
            │
            ▼
┌─────────────────────────┐
│ Positioning the main     │
│ turret on the cutting    │
│ edge                     │
└─────────────────────────┘
            │
            ▼
┌─────────────────────────┐        ┌─────────────────────────┐
│ Rotating spindle for     │ - - -→ │ Selecting and focusing   │
│ focusing                 │        │ the tool cutting edge    │
└─────────────────────────┘        │ program                  │
            │                       └─────────────────────────┘
            ▼                                   │
┌─────────────────────────┐                     │
│ Display of measured      │ ← - - - - - - - - -
│ values                   │
└─────────────────────────┘
```
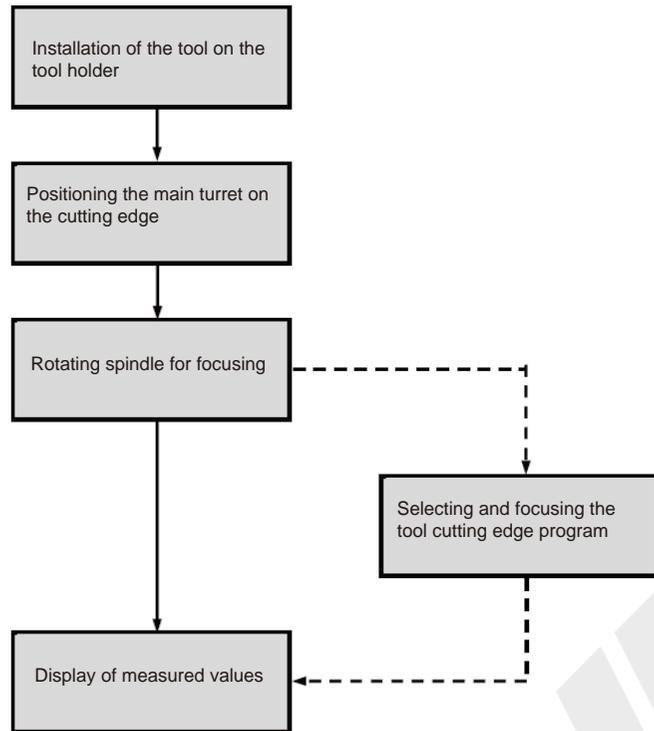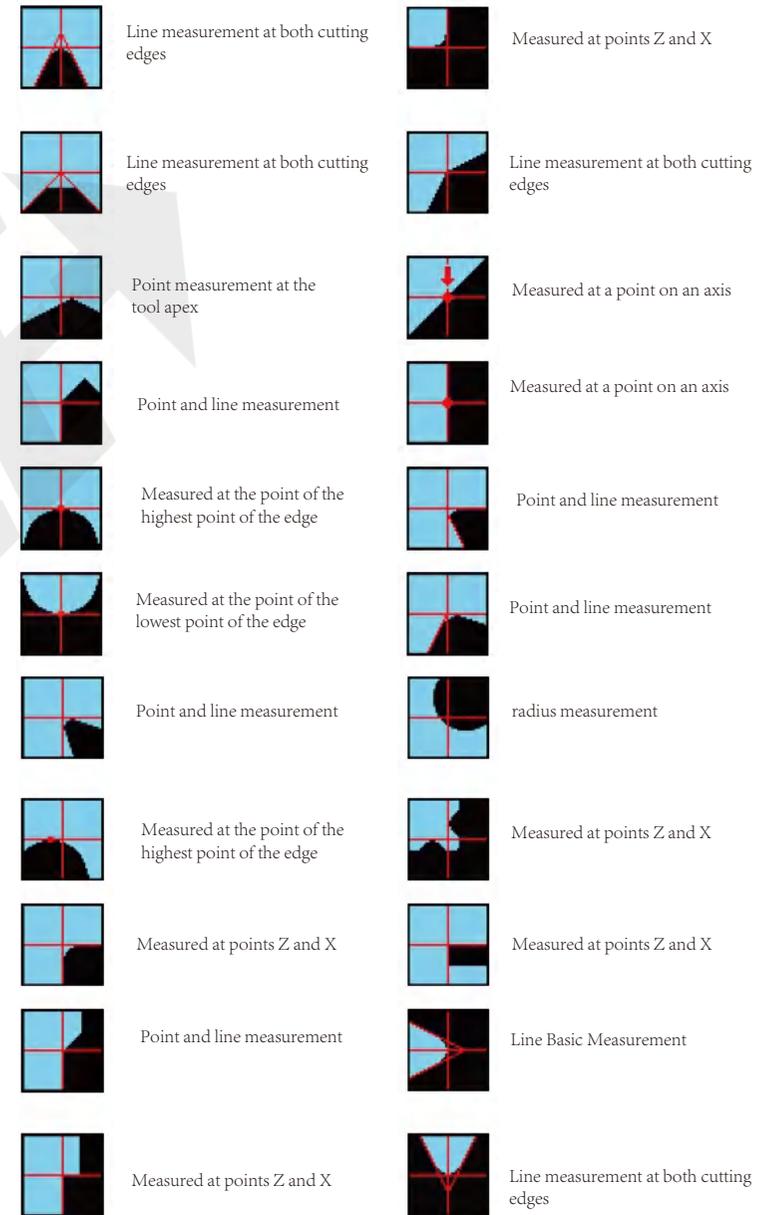
In order to receive the measurement results, the image processing system indicates which measurement values should be determined.

The system automatically compares the current cutting edge shape with the cutting edge shapes in the database during measurement. If more than one cutting edge shape is detected in the current display, the system suggests the most frequently used cutting edge shape to the operator. Other available cutting edge shapes can be selected manually in the menu "Cutting edge shapes".

When measuring in the measuring program "Measurement of cutting edges", the user selects the desired cutting edge.

With the measuring program "Pre-adjustment measurement" the user indicates the cutting edge shape to be measured in the system.
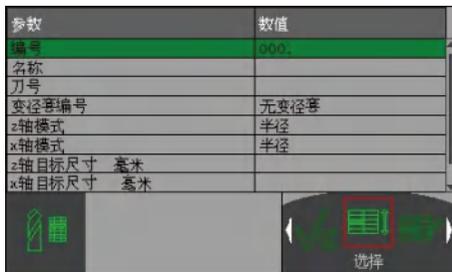
The shape of the cutting edge is determined by copying the cutting edge (dark part), the background (light part), the crosshairs and a table defined by additional points and/or arrows. Below is a description of the cutting edge shapes. The imaging system offers 105 different cutting edge shapes.

Shape	Description	Shape	Description
	Line measurement at both cutting edges		Measured at points Z and X
	Line measurement at both cutting edges		Line measurement at both cutting edges
	Point measurement at the tool apex		Measured at a point on an axis
	Point and line measurement		Measured at a point on an axis
	Measured at the point of the highest point of the edge		Point and line measurement
	Measured at the point of the lowest point of the edge		Point and line measurement
	Point and line measurement		radius measurement
	Measured at the point of the highest point of the edge		Measured at points Z and X
	Measured at points Z and X		Measured at points Z and X
	Point and line measurement		Line Basic Measurement
	Measured at points Z and X		Line measurement at both cutting edges

The accuracy of the angle depends on the calculation of the conversion from one contour segment to another (line/circle), as well as on the contour dimensions and contour accuracy.
Definition of Angle Indication:
Angles measured using an image processing program are defined as follows:
Starting from 0° at the top of the vertical, angles W1 and W2 are formed in a counterclockwise direction (CCW). an angle indication is then formed with the horizontal and vertical axes at the minimum (maximum 45°) angle to this indication, and the angle is displayed.

Cutting angle 1
The transition zone can be observed to change from bright (background) to dark (cutting edge).

Cutting angle 2
The transition zone can be observed to turn from dark (cutting edge) to light (background).

⑫ Tool Management:
Under tool management you have access to all tools and can measure them at any time. You have access to the name and the reducer set required for its use. Execute the "Replay" command to bring up the nominal size.

Installed tools
Tools installed under tool management can be called up at any time to measure and calibrate them. In view of this, we recommend that you list all tools under tool management, which need to be measured and calibrated repeatedly.

Go to "Tool Management" from the main menu.

Select "Install New Tool". Below the last column of listed tools, a blank field will reappear where new registrations can be entered.

Enter the new tool in the empty field as shown. The tool number indicates the first tool that has not yet been installed (No. 0001). Each time a new tool is entered, all tools will be rearranged in alpha-numeric order.

The parameters of the newly installed tool can be queried by entering the menu "Tool management" and the submenu "Tool operation".

Place the Selection pointer on the column you want to work on.

Go to "Change Value" and bring up the virtual keyboard/number pad to change the data.
Using the EZclick button, enter the first character and press the EZclick button.
When all characters are entered, click "OK" to confirm. With the "DEL" button, the last entered character is deleted.
Delete the last entered character. With the "ESC" key, the entire entry is deleted.

Using "Select" and "Change value", enter all required parameters. Using "Change value" under the "Reducing sleeve" menu, you can select the desired reducing sleeve.

The Reducer Sleeve List lists all calibrated reducers. Select No Reducing Sleeve if you do not need to add a reducing sleeve to the tool.
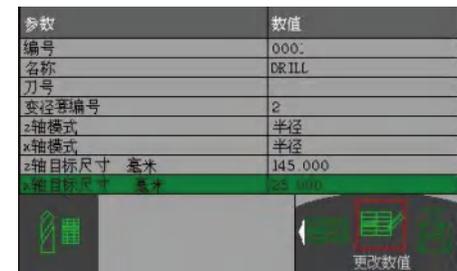
Be sure to display all entered nominal dimensions (e.g. "Horizontal axis mm", "Horizontal axis mm", "Radius mm", "Angle 1" and "Angle 2") every time the tool is called up. "Angle 1" and 'Angle 2'). These five values will be replaced by the actual values when you enter "Replay".

参数 | 数值
x轴模式 | 半径
z轴目标尺寸 毫米 | 145.000
x轴目标尺寸 毫米 | 25.000
目标半径 毫米 |
绝对目标角度1 ° |
绝对目标角度2 ° |
相对目标角度2 ° |

字段
"相对目标角度1 ° "
无法编辑.

选择
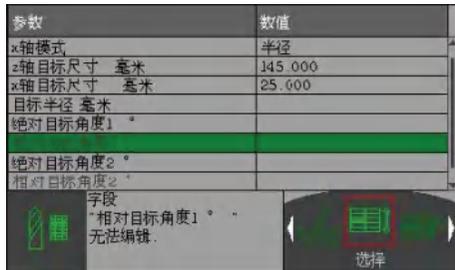
The most recent (latest) measured value is entered as an actual value in the value area and cannot be changed by the operator; values that cannot be edited are displayed in gray.

参数 | 数值
x轴模式 | 半径
z轴目标尺寸 毫米 | 145.000
x轴目标尺寸 毫米 | 25.000
目标半径 毫米 |
绝对目标角度1 ° |
绝对目标角度2 ° |
相对目标角度2 ° |

数据已保存

保存
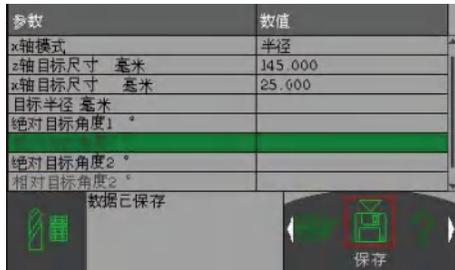
When all entries are completed, save the data using the "Save" command.
If the operation is performed correctly, the screen will display the confirmation message "Data saved".

参数 | 数值
x轴模式 | 半径
z轴目标尺寸 毫米 | 145.000
x轴目标尺寸 毫米 | 25.000
目标半径 毫米 |
绝对目标角度1 ° |
绝对目标角度2 ° |
相对目标角度2 ° |

数据已保存

退出菜单
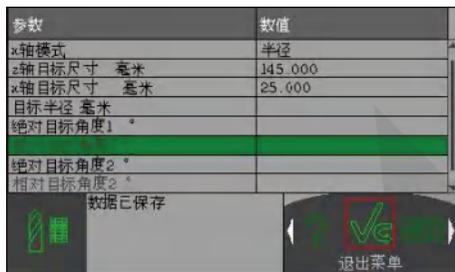
Use the "Exit Menu" to return to "Tool Management".

⑬ Tool printing
Using the menu "Tool Print", the data and nominal values of a tool can be printed out on a label.

编号 | 名称 | 刀号
0001 | DRILL 18,6 |
0002 | DRILL D23,7 |
0003 | DRILL D26,3 |
0004 | MILLING HEAD D80 |
0005 | MILLING HEAD 100 |
0006 | TURNING STEEL 05 |
0007 | TURNING STEEL 06 |
0008 | TURNING STEEL 07 |

选择刀具
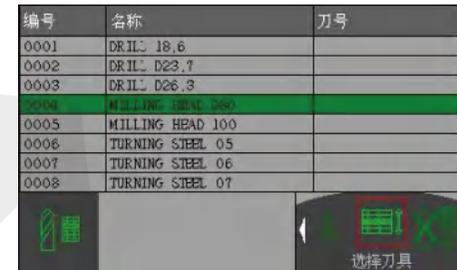
Using "Tool Management", select the tool whose data is to be exported. Use the "Select Tool" menu.

编号 | 名称 | 刀号
0001 | DRILL 18,6 |
0002 | DRILL D23,7 |
0003 | DRILL D26,3 |
0004 | MILLING HEAD D80 |
0005 | MILLING HEAD 100 |
0006 | TURNING STEEL 05 |
0007 | TURNING STEEL 06 |
0008 | TURNING STEEL 07 |

标签已打印

打印刀具

The print program is activated by executing the "Tool Print" command.
When printing is successfully completed, the confirmation message "Label Printed" will be displayed.
If the label cannot be printed, the operator will receive the message "Unable to print label".

⑭ Edge Inspection
In addition to measuring, mounting and calibrating the tool, the tool presetter can also be used to check the condition of the tool by means of reflected light.
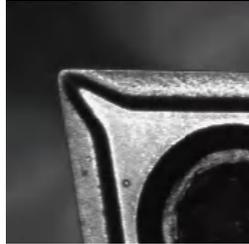

At this point, the light source is not used as a measurement and calibration procedure, but rather to provide a black and white picture for further inspection of the cutting edge. Illumination is provided by the ring light of a light emitting diode.
The illumination can be controlled using the submenu "Reflected Light Illumination" under the "Tool Cutting Edge Inspection" menu.
The illumination level can be set using the submenu "Reflected Light Processing" under the "Tool Cutting Edge Inspection" main menu.
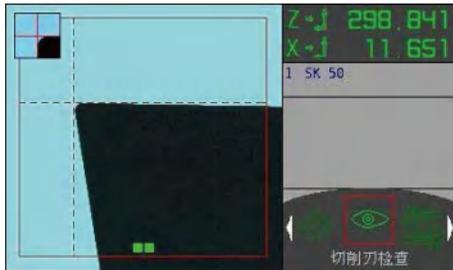
Utilizing the one-handed operation button, the main tower is positioned in a suitable position so that the tool cutting edge is visible in the camera's field of view. When using reflected light, focus on the cutting edge rather than the surface of the tool cutting insert. Select "Cutting Edge Inspection".
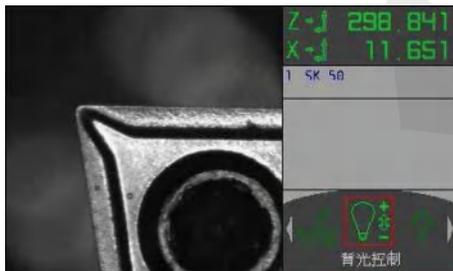
In the "Basic Settings Image Processing System" chapter in "System Configuration", you can set the reflected light intensity and decide whether or not to use the "Final Illumination Intensity".
In the "Basic Setup Image Processing System" chapter in "System Configuration", you can set the reflected light intensity and decide whether or not to use the "Final Illumination Intensity. If you need to adjust the "Illumination", go to the menu "Reflected Light".
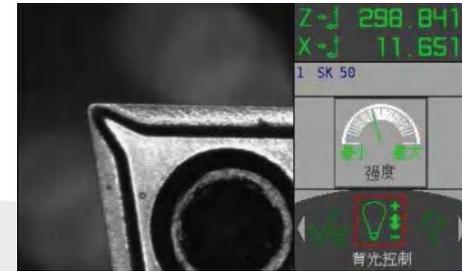
Set the illumination level so that the cutting edge receives optimum illumination. Rotate the spindle to focus the camera image without the use of a focusing bar.

⑮ Measurement procedure
Using the menu "Measuring program", you can solve some other measuring problems:
　Specify and measure the concentricity of the toolholder
　Measuring the diameter of a tool with several cutting edges.
　Measurement of oversized angles with at least two measuring points
　Measurement of oversize angles with at least three more measuring points
　Manually selecting the desired cutting tool shape for pre-mounted measurements
　　Projection mode

⑯ Set up
Click "OK" to return to the "Projection Mode" menu.
　System Settings Printer Settings
　Update/Backup
　LANGUAGE
　Registration
　Calibration
　Protection Range*
　Software Information
　Online Help
　Exit menu
　(*Only for service technicians) Cutting tool shape, pre-mounted measurement

Maintenance

◆ Disconnect the power plug when servicing the tool presetter.

◆ Do not use compressed air to clean the unit. Do not use harsh cleaning materials, e.g. thinner (dissolver).

◆ Wipe the unit housing with a clean, soft, cotton flannel damp cloth, soaked in a light solution of a mild household cleaner. Then air dry the cleaned machine case.

◆ When cleaning glass surfaces, it is highly recommended to use a high quality, moist glass surface cleaning cloth.