Process-Oriented Compact Solutions for Tool Inspection



# pomBasic





# We Stand for Smart Progress

ECONOMICS

Do you want to speed up your work processes? Then take the shortcut for tool measurement and inspection. The ZOLLER »pomBasic« and »pomBasicMicro« inspection machines are the ideal solution for well-thought-out, economically structured preparation and production of precision tools.

Save yourself unnecessary trips to the measuring room and benefit from efficient processes and precise results in record time. With their compact dimensions, the ZOLLER »pomBasic« and »pomBasicMicro« inspection machines can be positioned anywhere in your production directly next to the CNC grinding machine, in the goods receipt area or at the tool issue.





# Tool Inspection – Well Thought Through

The ZOLLER »pomBasic« and »pomBasicMicro« impress with reliable measuring. Insert the tool, align it, check it and you're done. This is how you can inspect almost all shank tools easily and reliably. Automatic edge detection guarantees fast measurement with high accuracy.

Wizard-guided measuring sequences, seamless inspection reports at the touch of a button and the tool-specific management of all parameters in the z.One central ZOLLER tool database ensure efficient production processes and traceable quality at all times.



safetv



Quality Management/Environmental Management according to ISO 9001, VDA 6.4 and ISO 14001



»pomBasic«

# We Stand for Passionated Precision

TECHNOLOGY

A ZOLLER »pomBasic« is simple, fast and safe to handle three unbeatable characteristics that could not be more true. But its design also provides the basis for µm-precise measurements. Linear measuring axes, slides and the cable ducts, for example, are unique. The ZOLLER »pomBasic« guarantees quality and efficiency, making its use and precise measurements directly in your production indispensable.

Each »pomBasic« is a promise to our customers. Thanks to clever and process-oriented measuring, or POM for short, the »pomBasic« achieves proven precision. The manually operated inspection and measuring technology has high-quality components and an industry-compatible device design – ZOLLER compactness that impresses.

For us, doing the ZOLLER assembly, attention to detail and customer benefit go hand in hand: mechanics, stability and operation are always the focus of our production processes.

**TOBIAS WONNER, TIM BIRKENFELDER** Part of the ZOLLER assembly team, ZOLLER assembly preparation



## Compactness in Detail

### »pomBasic« TÜV and UL/CSA Approved

Every »pomBasic« inspection device is certified according to international standard IEC/EN 61010-1 and cNRTLus.

Proven and certified safety.

<b>Software »pomSoft«</b> – is self-explanatory, clearly laid out and enables the operator to take reliable measurements. The 24" TFT color monitor impresses with its industry standard and its integration directly on the device.	<b>Drawing holder</b> – i The magnetic sph The drawings can
Incident light camera with multi-LED segment illumination – has centered, dimmable illumination with automatic illumination control. The high-performance LEDs, segmented into eight areas, ensure optimal lighting of the surface for high precision.	Incident light can by CNC and is ava Separate electror
<b>Manual swivel table</b> – enables universal use of the various tool holders. Equipped with $3 \times 90^{\circ}$ indexing, it can be variably adjusted (± 120° including Nonius) to check tools on the circumference and on the face. The swivel position is held precisely by clamping (index positions for $-90^{\circ}/0^{\circ}/+90^{\circ}$ ). To measure extra-long tools, an optional swivel table version for lengths up to 400 mm is available.	Manual fine adjus oriented tool mea
<b>Tool/accessory board</b> – made of solid and anodized aluminium with seven prisms for gentle storage of shank tools. The board also offers sufficient space for small parts and reversible cutting plates.	Accessory board such as a reflecto Device base with endless fine adju
<b>Board for mouse and keyboard</b> – is a space-saving pull-out drawer that is ergonomically located on the lower table.	ergonomic arrang the unique opera Additional illumin
Additional illumination diffuser – enables transmitted light measurement in the circumferential area and allows external contours, step lengths, point angles and much more to be measured.	contrast lighting spotlight can be a Document and ac
<b>Color laser printer</b> – for report and list printing has its place in the practical machine table.	and convenient a Stable machine ta and ensures the s



r – is ideal for attaching drawings in direct proximity of the measurement.
 spherical joint allows flexible and optimal alignment for the operator.
 can be easily fixed and quickly changed using magnets.

camera with zoom optics – which can be adjusted manually or optionally available in monochrome or color, depending on the version.

tronics unit – with professional electrical installation of high-quality or maximum reliability and a long service life. The electronics unit also -friendly maintenance access.

ljustment of the X and Y axes – is easy to move and ideal for processneasurement.

Ind – for holding up to two accessory options for the swivel table, acctor or stop. So you always have your accessories on hand.

**ith linear axes** – for safe, fast and convenient measurement. The manual djustment of the integrated X and Y axes with Uhing drives and the angement of the fine adjustment handwheels via reversing gears ensure erating comfort typical for ZOLLER.

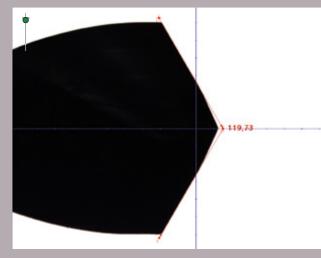
**mination »pomLightTube«** – the LED illumination tunnel ensures highng of the tool cutting edge in incident light. In addition, an optional 2-fold be attached to perfectly illuminate concealed tool geometries.

**accessory board** – in the machine table provides sufficient storage space t access to your documents and accessories.

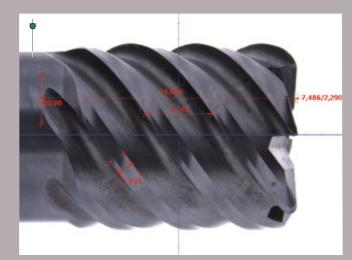
**e table** – can be individually selected as a seated or standing workstation he stable and secure positioning of your »pomBasic«.

# Universal Optics for Inspection and Measuring

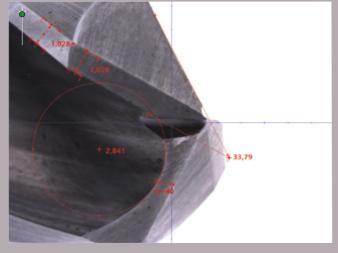
Whenever universal and targeted inspection of cutting tools is required, the ZOLLER »pomBasic« gives you precise results quickly and easily. Angles, radii, distances, cutting edge quality, grinding pattern - the »pomBasic« measures all relevant parameters in incident light of every type of cutting tool, including as drills, hob cutters, saw blades, forming tools and cutting inserts. The additional use of a diffuser (LED flat light) flexibly extends the range of applications for transmitted light measurements. External contours can also be quickly measured and documented.



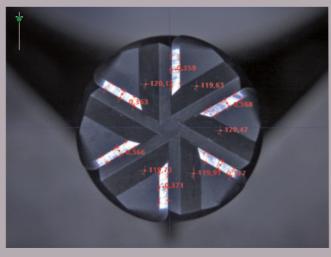
Transmitted light measurement on the circumference



Incident light measurement on the circumference



Contour measurement in the »pomLightTube«



Incident light measurement on the face



	Sensors configuration
_	Optics »pomBasic«
	»pomColorCam«, BF approx. 3.0 x 2.4 mm² to approx. 20.8 x 16.6 mm²
	»pomColorCam«-MOT, BF approx. 3.0 x 2.4 mm² to approx. 20.8 x 16.6 mr
	Optics »pomBasicMicro«
	»pomMicroCam«, BF approx. 0.6 x 0.5 mm² to approx. 7.9 x 6.3 mm²

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Base model

# Tool Inspection in the Best Light

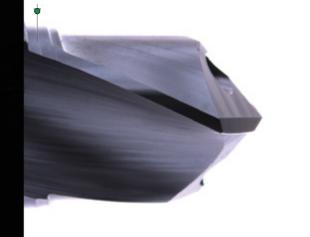
Optimum lighting of the complex geometries on precision tools is a precondition for perfect inspection and measurement. With the ZOLLER illumination »pomLightTube«, which is unique in its design, you can achieve phenomenally homogeneous image quality, even with geometries which are generally difficult to illuminate or with reflective surfaces.

### Advantages of the »pomLightTube«

- High-contrast lighting of all types of surfaces

- Axial and radial incident light measurement without interruption
- No interference from partial spots

Frontal view of a step drill in the »pomLightTube«

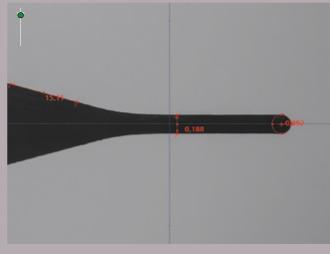


Circumferential view of a step drill in the »pomLightTube«

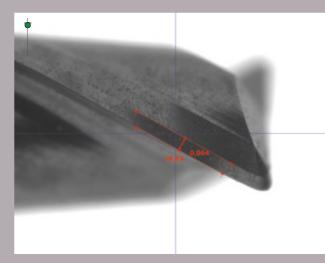


# Highest Perfection with "Micro" Optics

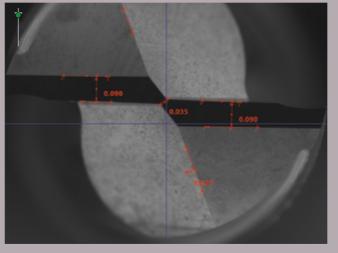
The ZOLLER »pomBasicMicro« is the compact and process-oriented inspection solution for inspecting and measuring micro tools. A special high-resolution micro camera enables the exact inspection of tools of the smallest size. The lens zoom with its magnification capacity of over 400x captures every micro tool in such detail that measurements can be carried out conveniently and with the highest precision. The »pomBasicMicro« can be used universally in the measuring room, in the goods receipt area or directly on the shop floor.



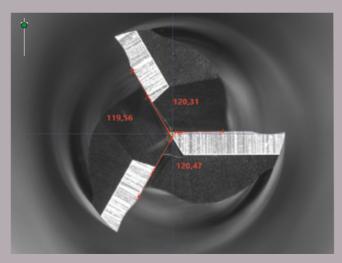
Transmitted light measurement on the circumference



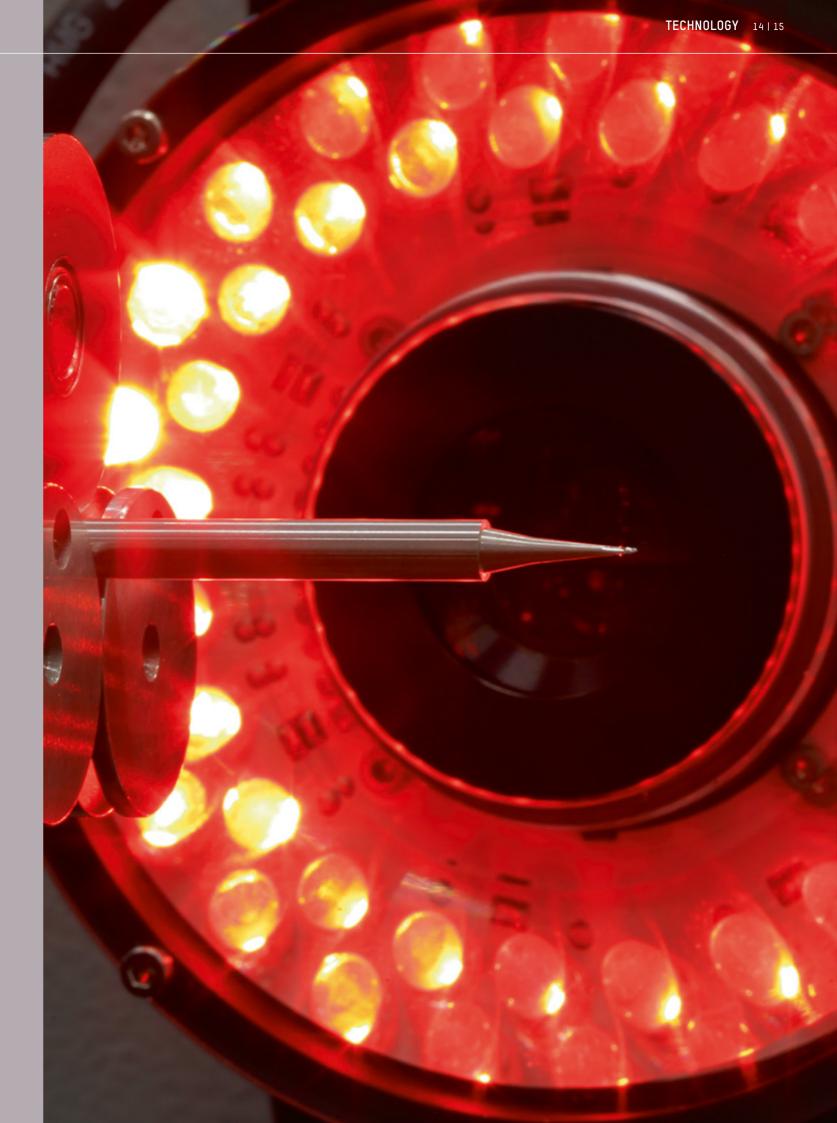
Incident light measurement on the circumference



Contour measurement in the »pomLightTube«



Incident light measurement on the face



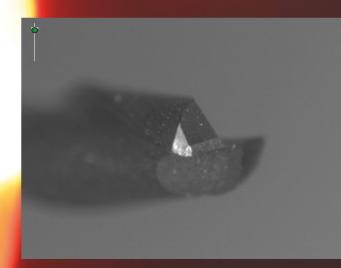
### Micro Tools in the Focus of the "Micro"

With the ZOLLER »pomBasicMicro«, you can inspect even the smallest detail with the utmost precision. We call this ZOLLER high-performance for consistent quality of your micro tools.



- Inspecting the smallest tools with µm-precision

- Future-oriented measuring technology for your production
- Contactless measurements within seconds



Wear testing/inspection of surface coatings

Contour measurement/inspection on a full radius cutter D 0.2 mm



# µm-Precise Tool Holding

Shank tools D 2 mm to D 50 mm\*



Tool holder »pomPrisma«, directly clampable shank: D 2 mm to D 50 mm\*\*



Tool holder »pomRoll«, directly clampable shank: D 2 mm to D 40 mm











Tool holder »pomRoll«-RP lite, directly clampable shank: D 1 mm to D 20 mm, manual fine adjustment for tool rotation



Reversible cutting plate holder D 32 mm



Tool holder small prism





SK 50

Saw blade holder



### Swivel table – with Nonius, clamping and indexing

Enables the universal use of the various »pomBasic« and »pomBasicMicro« tool holders. Equipped with 3 x 90° indexing, it can be variably adjusted (± 120° including Nonius) to check the tools on the circumference and on the face. The swivel position is held precisely by clamping (index positions for -90°/0°/+90°). To measure extra-long tools, an optional swivel table version for lengths up to 400 mm is available.

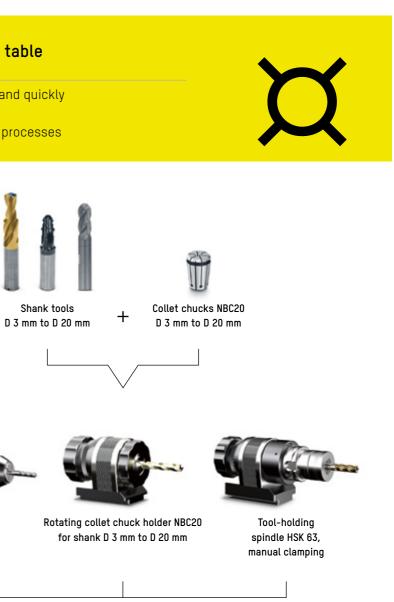


### Rotation sensor (ROD) - for angle display swivel table in »pilot 4.0«

Can be optionally integrated into the swivel table. The angle is displayed digitally in counter mode (C-axis). The digital display ensures, for example, fast positioning of the swivel table to the nominal angle in the »pomSoft« image processing technology.

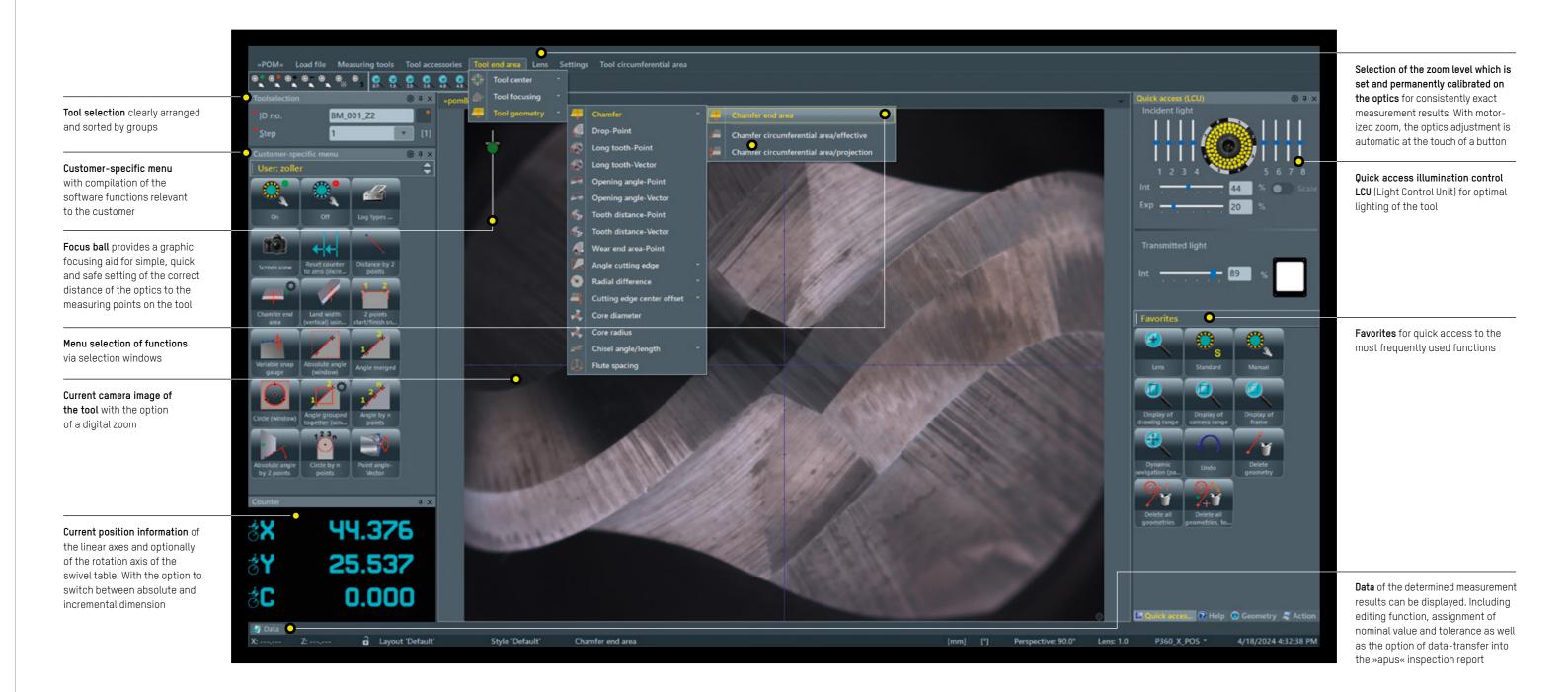
### Advantages of the ZOLLER swivel table

- Tool holders are changed ergonomically and quickly
- Simple alignment and positioning
- Stable construction for exact measuring processes



# Software »pomSoft« – Intelligent Inspection

The special »pomSoft« ZOLLER software for process-oriented measurement is based on the globally proven ZOLLER »pilot 4.0« image processing technology and is equipped with numerous evaluation algorithms for grinding and sharpening shops, as well as tool manufacturers. In addition, all functions can be individually created and saved for the respective inspection task and tool variant in the customer-specific menu. This means that it can be used clearly and user-independently without the need for extensive training.



# Check and Document Parameters Precisely









#### Parameters at a glance:

- Outer contour
- Axial/center angle
- Diameter
- Corner radius
- Chamfer width
- Chamfer width face
- Chamfer width circumference
- Chamfer length
- Chamfer angle
- Radial relief angle face
- Radial relief angle circumference
- Hollow angle
- Core diameter
- Cone angle
- Long tooth
  Center offset
- Flute depth
- Run-out
- Chisel edge length
- Chisel edge angle
- Radius
- Concentricity
- Cutting edge length
- K-Land chamfer width
- Helix angle
- Point angle
- Step diameter
- Step length
- Taper
- Wear chest
- Wear front
- Wear circumference
- Tool length



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Tester					
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Title	Actual value 0.664	Nominal value	Lower tol.	Upper tol. 0.050	
Title Chamfer Front					
Title Chamfer Front Tip Angle	0.664	0.650	-0.050	0.050	
Title Chamfer Front Tip Angle Core Diameter	0.664 118.08	0.650 118.00	-0.050 -0.50	0.050	
Title Chamfer Front Tip Angle Core Diameter Chisel Length	0.664 118.08 2.373	0.650 118.00 2.400	-0.050 -0.50 -0.050	0.050 0.50 0.050	
Title Chamfer Front Tip Angle Core Diameter Chisel Length Chamfer Circumference	0.664 118.08 2.373 0.123	0.650 118.00 2.400 0.100	-0.050 -0.50 -0.050 -0.050	0.050 0.50 0.050 0.050	
Tester Title Chamfer Front Tip Angle Core Diameter Chisel Length Chamfer Circumference Helix Angle Axial Relief Angle 1	0.664 118.08 2.373 0.123 0.523	0.650 118.00 2.400 0.100 0.500	-0.050 -0.50 -0.050 -0.050 -0.050	0.050 0.50 0.050 0.050 0.050 0.050	

**Documentation** – of your measurements as a clearly laid out inspection report with the option of output to your list printer or as PDF file

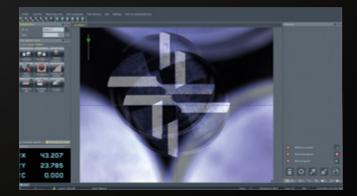
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»pomBasic«		3/5/2024	ZDLLER
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Titel	Ist-Wert Soll-Wert	Untere Tol.	Obere Tol.
Chamfer Width Face Chamfer Width Face	0,548 0,550 0,539 0,550	-0,050 -0,050	0,050 <table-cell></table-cell>

**Inspection report** – with large display of the cutting edge as an additional option for your documentation

### Automatic Inspection with the Macro Function

Do you have repetitive measuring tasks and want to carry them out effectively? ZOLLER has the perfect solution. Thanks to the macro function, repeat measurements can be saved easily and reliably. A reference image serves as a template. As soon as the tool is positioned congruently with the template, a single press of a button is all it takes to start the automatic measuring process, regardless of the operator. We call this intelligent ZOLLER comfort.

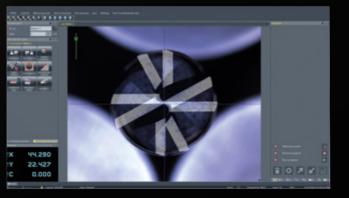
A single click on your saved macro program is all it takes and the measuring process runs automatically: simple, fast and user-friendly.



Save tool as digital reference image



Start the automatic measuring process in the macro program



Position the tool to be measured in relation to the reference image

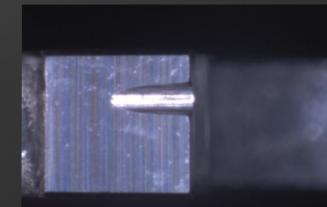


Overview of measurement results and tolerances

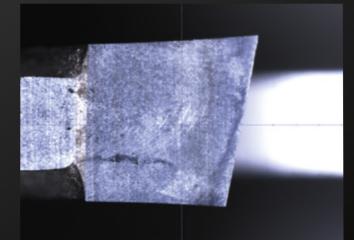


## Measuring Saw Blades Tooth by Tooth

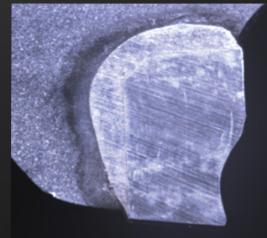
The saw blade holder extends the range of applications of the »pomBasic«. It can be used to clamp saw blades with a diameter of 150 mm to 600 mm with corresponding reducer rings. With »pomSoft« image processing technology, a variety of parameters and geometries on the teeth of the saw blades can be determined axially and radially in incident light.



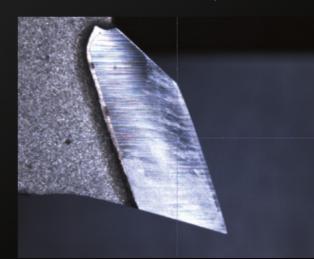
Radial view of saw blade tooth with flute



Radial view of saw blade tooth to control cutting edge and soldering



Axial view of saw blade tooth with flute step



Axial view of saw blade tooth to control cutting edge and soldering



# Options/Accessories

#### Machine table standing workstation

Stable and safe positioning of the »pomBasic« and »pomBasicMicro« inspection machines as a standing workstation. Includes pull-out board for mouse and keyboard.



#### Machine table seated workstation

Stable and secure positioning of the »pomBasic« and »pomBasicMicro« inspection machines as a seated workstation for optimum comfort, even on time-consuming inspection tasks. Includes pull-out board for mouse and keyboard.



### Diffuser (white/red)

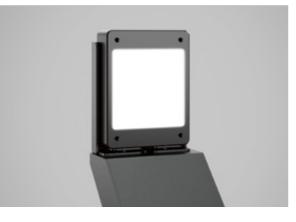
The diffuser (LED flat light) enables transmitted light measurement in the circumferential area. For this purpose, the diffuser is positioned opposite the video microscope system. This means that outer contours, step lengths, point angles and much more can be measured.

Diffuser white for »pomBasic« Diffuser red for »pomBasicMicro«

### »pomLightTube« (white/red)

Additional illumination adjustable in height for optimum, high-contrast lighting of even the smallest areas along the tool cutting edge – for radial and axial incident light measurements.

»pomLightTube« white for »pomBasic«
»pomLightTube« red for »pomBasicMicro«



#### 2-fold LED spot illumination (white/red)

The dimmable additional illumination consisting of two LED spots can be flexibly positioned in relation to the tool to provide optimum lighting even for undercut tool geometries.

LED spots white for »pomBasic« LED spots red for »pomBasicMicro«

### Drawing holder

Ideal for attaching drawings in direct proximity of the measurement. The magnetic spherical joint allows flexible and optimum alignment for the operator. The drawings can be easily fixed and quickly changed using magnets.

#### Tool/accessory board

The tray on the left of the inspection device allows tools with a maximum shaft diameter of D 50 mm to be stored carefully. The board also offers sufficient space for small parts and reversible cutting plates.









### Options/Accessories

#### Extended swivel table

For extra-long tools such as drills or reamers, the extended swivel table enables perfect tool fixing.



#### Motor zoom

The zoom level is selected in the software at the click of a mouse and automatically adjusted by motor, making measuring processes even more reliable and comfortable.

#### Extended holder for deep hole drills

Support for extra-long tools D 3 mm to D 20 mm up to a length of 1000 mm. The support height of the prism can be adjusted. The connection to the extended swivel table is mechanical.



#### Calibration gauge

The calibration gauge for the »pomSoft« image processing technology is used to correct the distortion of the optics and to determine the absolute accuracy of the zoom levels. The calibration gauges can be mounted directly on the swivel table.



#### Color laser printer

For report printouts directly on the inspection machine.

#### UPS system

The UPS system for uninterruptible power supply ensures that your computer is shut down properly in the case of a power failure to prevent data loss. Mains voltages of 230 V~ (Europe) and 120 V~ (USA) are available.

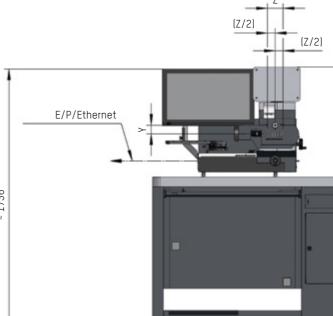


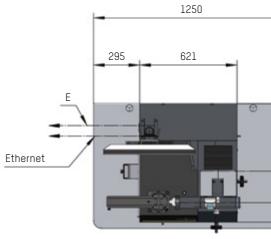


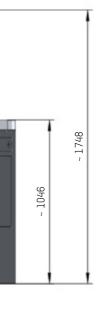


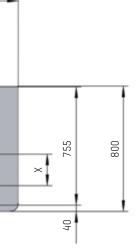
## Installation Dimensions and Technical Data





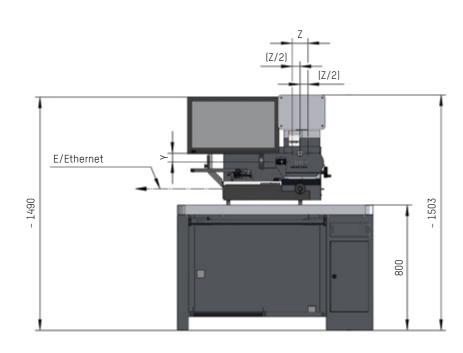


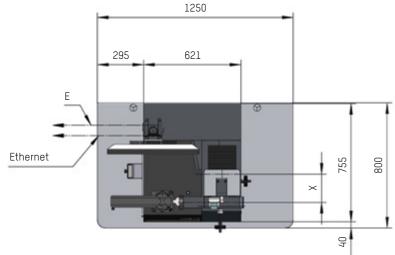




# Installation Dimensions and Technical Data







Axes
Swivel table standard
Swivel table extended
Indexing -90°/0°/+90°
Manual clamping
Nonius angle display swivel table
ROD encoder angle display swivel table
Manual endless fine adjustment X/Y
Manual camera axis
Electronics
»pilot 4.0« 24" TFT color monitor
Device equipment
Workbench version
Machine table standing workstation
Machine table seated workstation
Camera/sensors
»pomColorCam«, BF approx. 3.0 x 2.4 mm² to approx. 20.8 x 16.6 mm²
»pomColorCam«-MOT, BF approx. 3.0 x 2.4 mm² to approx. 20.8 x 16.6 mm²
»pomMicroCam«, BF approx. 0.6 x 0.5 mm² to approx. 7.9 x 6.3 mm²
8-fold LED incident light white
8-folg LED incident light red
Diffuser white
Diffuser red
Technical data
Travel range X-axis
Travel range Y-axis
Travel range Z-axis (camera)
Clampable shaft diameter
Zoom lens
Working distance
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»pomBasic«	»pomBasicMicro«
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180 mm	180 mm
55 mm	55 mm
± 50 mm	± 50 mm
0,5 mm to 50 mm (depending on tool holder)	0,5 mm to 50 mm (depending on tool holder)
Video microscope system color with 6.5x optical zoom	Video microscope system monochrome with 12x optical zoom
90 mm	50 mm



# Pioneering Efficiency for your Grinding Shop

The highest potential for greater efficiency lies outside the grinding machine: ZOLLER Solutions stand for your future – we make you more successful. If you can manufacture your parts faster and more efficiently, you can work more economically and invest in the future. If economic progress is your goal, then ZOLLER is your partner.

**CORREROR** 



## Made in Germany – Available Wherever You Are

Your Advantage **ZOLLER** presence

Global. Close. Personal.

ZOLLER quality is "made in Germany" and there for you, anywhere in the world.

Our company has its own locations and branches at 85 sites in 62 countries, guaranteeing we are close to customers and can provide first-class, personal customer service in local markets.

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