Universal measuring machine for cutting tools

-genius 3/pilot 3.0-
ZOLLER "genius 3" is the universal measuring machine for metal cutting tools. From rapid testing of individual criteria to complete, fully automatic, operation-independent checks your tools are checked quickly, simply and extremely precisely. The measurement results are documented in detail and can be transferred to the grinding machines at the push of a button.

Find out how simply it all happens, as well as the other benefits "genius 3" can give you in the following pages.

The universal measuring machine

"genius 3"

There are various measuring machines for metal cutting tools, but only one ZOLLER "genius 3"...

This unique universal measuring machine gives you an excellent return on investment as it saves you valuable time during work preparation and programming by preventing troublesome rework and customer complaints. On top of that, it ensures quality results that convince both you and your customers. See for yourself – you will be inspired.

Measure, test and save money with the "genius 3"!

The ZOLLER "genius 3" Highlights

- Adjustable control center for ergonomic layout in a standing or desk orientation
- "A.C.E." universal spindle with power clamping
- Automatic hydraulic expansion for tools
- Intelligent calibration and automatic search runs
- CNC controlled, ability to pivot and backlash-free
- Index camera for radial and axial measurements between 0° and 90°
- Interactive configuration wizard for easy operation
- Extremely fast measuring speed
- Virtual joysticks and membrane keyboard
- Software modules customized
- "elephant" technology

Traversing ranges

<table>
<thead>
<tr>
<th></th>
<th>A-axis length</th>
<th>B-axis length</th>
<th>C-axis length</th>
<th>Diameter Snap gauge Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;genius 3&quot;</td>
<td>600 mm</td>
<td>175 mm</td>
<td>100 mm</td>
<td>340 mm</td>
</tr>
</tbody>
</table>
Axial, backlash-free positioning for accurately measuring the end contour of tools.

CNC-driven pivot position as required for measuring transition radii and slopes, for example of the edge honing.

Radial, backlash-free positioning for automatically measuring the tools at circumference and in the chip space.

Swivelling device and accessories

Innovative technology and ergonomic operation

Speed and comfort during the testing and measuring process translates into pure profit every day in the form of a considerable increase in productivity and motivated, efficient employees. ZOLLER strives to make machine operation as simple and ergonomic as possible and to create the optimum basis for a fully automatic measuring cycle.

Storage shelf

ZOLLER »Cockpit«

Adjustable control center for ergonomic layout as a standing or desk workstation.

Fast, universal and accurate:

The high-precision spindle »A.C.E.« clamps any tool in a power-operated manner, whether steep or hollow shank taper, Sandvik-Capto or Kennametal. From the smallest to the largest shank, from diameters of 3 to 32 mm. The comprehensive ZOLLER system measures any type of tool and is flexibly adaptable to the most recent developments in the market, even in the future. So the matching tool posts are always available, regardless of which tools you have to measure now or in the future. At the same time, all the tool shanks are power-operated at the push of a button and thus always clamped with the same power and with repeatable accuracy.

Universal tool holding fixture

Rapid changing guaranteed

ZOLLER measures everything – and clamps everything, whether steep or hollow shank taper, Sandvik-Capto or Kennametal. From the smallest to the largest shank, from diameters of 3 to 32 mm. The comprehensive ZOLLER system measures any type of tool and is flexibly adaptable to the most recent developments in the market, even in the future. So the matching tool posts are always available, regardless of which tools you have to measure now or in the future. At the same time, all the tool shanks are power-operated at the push of a button and thus always clamped with the same power and with repeatable accuracy.

CNC-driven, adjustable 3D CCD camera and LED lighting

ZOLLER »A.C.E.« spindles

Fast, universal and accurate: The high-precision spindle »A.C.E.« clamps any tool in a power-operated manner, whether steep taper, hollow shank taper, Sandvik-Capto, Kennametal or cylindrical shanks, with clamping accuracy to the micrometer and only 10 seconds per tool post.

Universal tool holding fixture

Rapid changing guaranteed

ZOLLER measures everything – and clamps everything, whether steep or hollow shank taper, Sandvik-Capto or Kennametal. From the smallest to the largest shank, from diameters of 3 to 32 mm. The comprehensive ZOLLER system measures any type of tool and is flexibly adaptable to the most recent developments in the market, even in the future. So the matching tool posts are always available, regardless of which tools you have to measure now or in the future. At the same time, all the tool shanks are power-operated at the push of a button and thus always clamped with the same power and with repeatable accuracy.

ZOLLER tool posts are as quick, convenient and reliable to change as tools – and just as accurate. The beautifully simple principle of modular construction has convinced users all over the world since 1968. The spindle is fitted with a pull through, into which all ZOLLER tool posts can be inserted with absolute precision and above all without play, for you, this means: Changing the tool post is less than 10 seconds with an accuracy of 0.001 mm. Other convincing features of the fixed and tested system are its small number of components, low weight and its absolute freedom from wear. That makes the ZOLLER change system the first choice not only technically but economically too.

Tool sets for »A.C.E.« spindles

Available for all tools used in the world

ZOLLER »A.C.E.« spindles

Fast, universal

and accurate!
It's as simple as this:

1. Insert tools in »genius 3« and clamp them at the push of a button
2. Start »elephant« technology
3. Select tool type from the overview on screen
4. Start fully automatic measurement cycle

All measurement sequences can be saved, adapted as required and repeated for each tool.

ZOLLER »pilot 3.0« software highlights:

- »elephant« technology, measure ground tools – automatically, without programming time
- »expert« measuring program generator – measure tools in transmitted and incident light in the chip space at circumference and at the end
- Measurement of contours, radii, angles, distance, wear, chamfer width, and many more
- Fully automatic edge determination
- Detects profiles in incident light in any desired manner
- Image archiving and software zoom
- Define and create automatic measuring sequence flexibly
- Concentricity and wobble compensation
- Scan any desired rotationally symmetrical tool or work-piece contour with »lasso« contour measuring
- Scanning of chip space contour with graphical display – automatically and without contact
- Keyboard-based comparator tool for central contour with visible tolerance band
- Automatic generation of tool drawing from the actual data of the tool
- Measurement of cutting edge preparation (edge rounding)
- Interfaces to grinding machine controls
- Save and print functions
- And many more

ZOLLER »genius 3.0« electronics

Software for all requirements

For the highest performance and best quality, hardware and software assume equal responsibility. And that’s what makes the combination of ZOLLER »genius 3« with »pilot 3.0« electronics so valuable: they are perfectly matched to each other to provide the user with exactly what he or she is looking for: real labor savings.

**ZOLLER measuring program generator »expert«**

Fully automatic measuring cycle at the click of a mouse: fast set the desired measurement position manually or by CNC, check the boxes of the parameters to be measured – done! All geometries which can be measured with »genius 3« are ordered under the headings “chip space”, “circumference” or “end” and displayed graphically. Standard parameters are stored for each measurement operation and can be adapted as required. The measuring sequence determined for the tool is saved and is available at any time for subsequent measurements. Saved measurement programs can be edited and expanded. Simply select and deselect new parameters or measure individual parameters repeatedly at a targeted manner.

**Chip space select menu:**

Example: effective cutting angle

**Select menu for measuring at circumference:**

Example: head length

**Select menu for measuring at the end:**

Example: chisel edge angle

**Configuration menu for user-specific settings:**

Example: distance measurement

**»expert« interactive configuration wizard:**

Example: effective cutting angle/illumination

**ZOLLER electronics Highlights**

How good a machine control system is can be seen in its application. When it’s not a matter of theory, but of practice, of day-to-day work, in which user-friendliness, time saving and precise results are indispensable. This is where ZOLLER electronics show their strengths, because they have features which make work easier for the user. A small selection of examples can be found below – but that’s not all, not by a long way. We would be glad to show you personally how you can solve your specific problems quickly and simply, fast and sure.

- The groove/chip space contour is scanned automatically, without contact, and displayed graphically. It can be exported as a DXF/TIF/RLE file and subjected to a numerical/cad comparison.
- The edge honing is measured without contact and displayed in surface for assessing the angles and radii.
- A 3D model of the scanned cutting edge is generated and output for evaluating the contour profile.
- Chip space measurements are output not only as measured values but also as surface models for checking and assessing the profile of the scanned area.
- With »CoCon«, the outer contour of form tools is scanned (left) and the deviations automatically indicated (right). The data can then be used in the machine control system or programming system for correcting the erosion or grinding path.

**ZOLLER »elephant«**

Extremely easy to operate

This unique technology is now also available for »genius 3«. With this software, any employee can measure up to 52 different parameters of any standard tool fully automatically without any training time.
From practice
Application examples

Seamless documentary proof thanks to test reports

Documentation

The quality of the precision tools delivered is critical for your customers. Proving this quality is critical for you: Because you are covered 100% in the event of a complaint thanks to airtight test reports, created with ZOLLER measurement technology which is recognised on the market. No ifs, ands, or buts.

With this seamless documentation you can demonstrate your high quality to your customers and thus stand out clearly from your competitors.

Meaningful documentation is the best way to show your customers how the delivered tools have been sharpened or manufactured. In the event of a complaint, the test reports can be used to prove that the goods are in order. Free deliveries of replacement tools or even disagreements with the customer are ruled out: your company’s reputation is beyond any doubt. Can there be any better reason for seamless documentation?

Tested quality thanks to ZOLLER:
Optimally checked and tested tools are your guarantees for high quality, on-schedule delivery and a low number of complaints. Use it for yourself!

For measuring grinding wheel and grinding wheel package profiles easily and reliably, and transmitting the results conveniently to the machine control system, there is ZOLLER »corvus«. Contour recording takes place by rotation in order to take into account wheel wobble errors and to determine exactly the contour which is produced on the tool during the grinding process. Predefined measurement macros for 24 FEPA wheel types make fully automatic measurement easier. Combined with the »pilot 3.0« package generator, individual grinding wheel packages can be generated according to requirements. So that they are also available for future measurements, they are stored and managed in »pilot 3.0«, in groups if required. It couldn’t be easier.

»corvus« grinding wheel software

Full automatic measuring cycle

The measured values of saved tools are recorded automatically with each measurement, can be evaluated statistically and called up at any time.

Graphical evaluation of concentricity and radial run-out of the cutting edges with automatic cutting edge correction for end mill, or tool (new-blade, edging tools).

Clear display of measurement results in »pilot 3.0«.

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The ZOLLER »genius 3« opens up whole new worlds of saving potential to you: With the grinding program, the data set for the given tool is generated and the fully automatic measuring cycle is produced. The measured data is then transferred back to the programming system or grinding machines, depending on the type of interface, and the grinding program is temporally corrected. Programming time and machine downtimes are reduced to a minimum in this way. You save time and costs – and also avoid errors when entering data and creating a new grinding program.

Producing new tools

- Processing of nominal data which has been programmed with Numi, MTS, Anca, Schütte etc.
- ZOLLER interfaces are a prerequisite for paperless and process-reliable production in the grinding and sharpening business. How helpful it is that interfaces are available for paperless production?

Form tools/development

- Re-sharpening/re-engineering: Measuring an unknown and worn tool
- CAD drawing or tool pattern
- Programming system
- CNC grinding machine(s)
- CAD software
- ZOLLER »genius 3« with »CoCon«
- Programming system generates the NC program for the grinding or eroding process time-dependent on interface version
- The programming system receives the measured parameters from the ZOLLER »genius 3« so the programming is much shorter. The NC program is transferred to the grinding machine(s) or CNC grinding machine(s) dependent on interface version

Benefits for you:

- Automatic generation of the measuring sequence for measuring and testing tools
- Fully automatic contact correction in form tools
- Fully automatic measurement and data communication of the grinding wheel sets
- CNC grinding machine(s)
- ZOLLER »genius 3« with »CoCon«
- Seamless documentation with automatically generated and saved test reports

ZOLLER »genius 3« with »CoCon«
Demands made of metal cutting increase by the day. In order to achieve the necessary accuracy, numerous prerequisites must be fulfilled. But how is “accuracy” even defined?

And how is it proven? Specifically using tools?

In order to meet current quality management systems such as DIN EN ISO 9001:2000, VDA 6.4, QS 9000, it is becoming increasingly important for every company to guarantee and prove consistent measurement accuracy. ZOLLER tool measuring units measure correctly and accurately. And with the standardised ZOLLER »tethys« measuring unit performance tests, you’ll receive a guarantee of it – documented in writing and in detail. The benefit to you: A high level of reliable measuring accuracy which is in turn reflected in the quality of your tools.

»tethys« software for proving measuring unit performance on the ZOLLER »genius 3«

ZOLLER has the simple solution.
- Ergonomic, innovative design to make work fun – day after day.
- High-precision »A.C.E.« spindle for guaranteed rapid tool changing.
- »pilot 3.0« image processing software, which carries out complex measuring tasks simply with the »elephant« function.
- ZOLLER is the expert in the field of tool measuring units and is continuously developing its »pilot 3.0« software. So the future is in safe hands.
- Whole grinding wheel packages can be created, measured and managed.
- Seamless documentation for each tool for your records and exemplary customer service.
- Interfaces to all well-known programming systems and CNC grinding machines for smooth, efficient processes.
- An extremely high level of accuracy, which ZOLLER supports and demonstrates with the »tethys« measuring unit performance test.

With ZOLLER you have the edge.
- A thriving, independent, family-owned business in its third generation with locations worldwide.
- ZOLLER has expertise in development, sales and service.
- More than 25,000 presetting and measuring units and tool measuring units have been sold worldwide since 1968.

With ZOLLER you set the standard.

- ZOLLER is there for you – all over the world.

Unique selling points
Why should it be a ZOLLER »genius 3«?

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