

Improvements

WM | Quartis R2020-1

Update Information

WM | Quartis



Improvements WM | Quartis R2020-1

At a Glance

WM | Quartis R2020-1 offers a wide range of improvements for special applications and areas of use.

WM | Quartis R2020-1 combines **mobile and optical measurement**. On the mobile measuring arms of WENZEL and KREON Technologies, you can use the line scanners of the WM | MLS series and the WM | LS 70 in addition to the tactile sensors. When measuring with optical sensors, the new outlier elimination according to the threshold value method ensures reliable measuring results.

WM | Quartis R2020-1 mathematically increases the usable measuring volume of your mobile or classic coordinate measuring machine. After the mobile measuring device or the workpiece has been moved on the CMM and the function "**Relocate machine or workpiece**" has been executed, it is possible to continue measuring on the workpiece in the original coordinate system.

WM | Quartis R2020-1 boosts productivity with **Renishaw REVO 5-axis measuring systems**. REVO Sweep Scan enables precise, high-speed scanning of surfaces, planes and cylinders. 5-axis positioning with the RSP3 sensor extends the range of applications.

WM | Quartis R2020-1 evaluates features according to current **ISO GPS and ASME Y14.5 standards**. When evaluating the position tolerance, the material conditions on several references are taken into account in further reference systems. In addition, the straightness of a cylinder or cone axis can be evaluated directly.

WM | Quartis R2020-1 supports you when **executing parts of a measuring program** and warns you if, for example, the active coordinate system or probe system does not fit to the program context. This increases safety and avoids collisions. When starting within a loop, the start value of the loop counter can be entered, which saves measuring time.

WM | Quartis R2020-1 offers **further useful improvements and extensions**. You can find out more about them on the following pages.

Note:

Some improvements are not included in the standard product WM | Quartis R2020-1 and require additional, chargeable modules. These are described in the document "Products and Modules WM | Quartis R2020-1".

Mobile and Optical Measurement Combined

You use mobile measuring arms flexibly in production and quality assurance processes. The combination with high-resolution line scanners, which capture every detail without contact, makes the WENZEL WM | MMA measuring arms a good addition to your installed classical coordinate measuring machines.



WENZEL Arm WM | MMA with Optical Sensor WM | MLS

Newly, the measuring arms of WENZEL and KREON Technologies can be equipped with tactile sensors as well as various optical sensors. Supported are the line scanners of the WM | MLS series and the WM | LS 70.



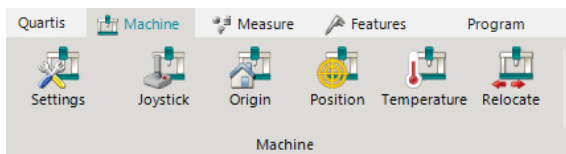
This gives you basically the same possibilities on the measuring arm as with the optical sensors on a CNC-controlled coordinate measuring machine.

- Optical scanning of surfaces
- Illustrative measurement reports with color-coded display of the surface form deviations
- Export of point clouds for optional further processing with WM | PointMaster

Increased Measuring Volume through "Relocate Machine or Workpiece"

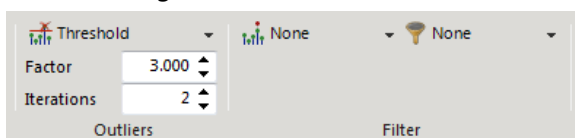
You operate a mobile or fixed coordinate measuring machine and want to increase the measuring volume.

The new function "Relocate machine or workpiece" mathematically extends the usable measuring volume of your measuring device. After the physical movement and execution of the function, you can continue measuring on the workpiece in the original coordinate system.



Outlier Elimination according to Threshold Value Method for Reliable Results

Especially when measuring with optical sensors, outliers can occur, e.g. due to reflections. Such outlier points, which do not lie on the component, can be easily and conveniently removed with the new outlier elimination using the threshold method.



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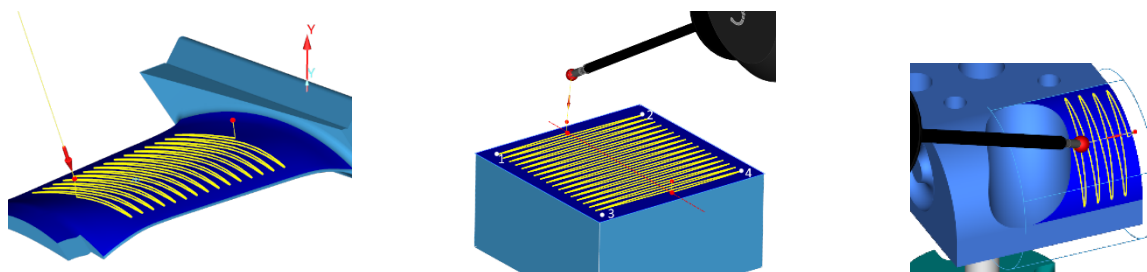
Higher Productivity with Renishaw REVO 5-Axis Systems

You use WM | Quartis with a fast and flexible Renishaw REVO 5-axis probe. Further improvements make your work easier and more efficient.

Sweep Scan for Measuring Planes and Cylinders

The REVO sweep scan allows you to scan surfaces precisely at high speed. The REVO probe head with RSP2 probe measures the surface by quickly moving (wipe) the probe back and forth. The CMM itself moves in one direction at a constant speed. This minimizes the dynamic inaccuracies of the CMM structure that occur at extremely high scanning speeds.

In addition to the surface element, planes and cylinders can now also be acquired with sweep scan.



You define the scan paths by simply clicking on the surfaces to be measured on the CAD model and entering the wavelength. The probe head then aligns itself automatically and sweeps across the surface.

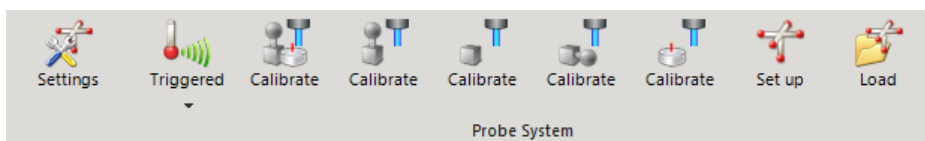
Renishaw REVO RSP3: 5-Axis Positioning

If a Renishaw RSP3 is loaded, only the three machine axes (X, Y, Z) could be moved in the "Position machine" and "Intermediate point" functions. New 5-axes positioning is possible, such as with the Renishaw RSP2. This makes it possible, for example, to swivel a long probe into a bore when the measuring volume is small.

After the RSP3 probe system has been positioned or swiveled, the Renishaw UCC server checks whether a calibrated probe system is available for the swiveled angle. If this is the case, it is automatically loaded and activated by the UCC server.

WENZEL CORE: Sensor Calibration

The different ReQualify() functions for the numerous calibration methods of WENZEL CORE are now available as clickable functions on the WM | Quartis user interface in the menu bar "Probe System".



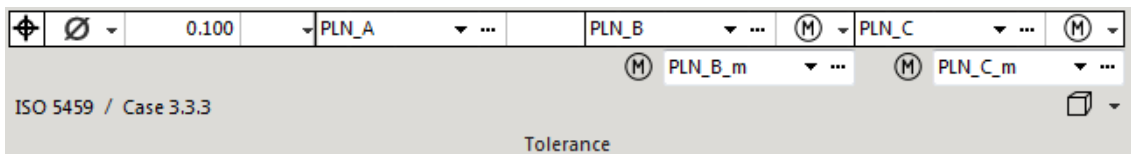
Calling the calibration routines via generic I++ DME commands is still possible.

Evaluate Features according to Current ISO and ASME Standards

Position Tolerance (ISO / ASME): Other Reference Systems with Material Condition

The specifications of your components include tolerances and reference systems with maximum or minimum material requirements. When evaluating the position tolerance according to ISO GPS and ASME Y14.5, the material requirements are taken into account in further reference systems.

Material requirements can now also be defined on several references.

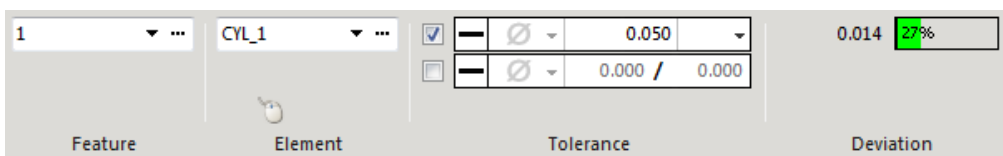


WM | Quartis rotates and relocates the reference system for the calculation of the position deviation with material requirement in the possible degrees of freedom given by the current reference system case and within the limits given by the corresponding bonus feature.

Direct Evaluation of Straightness from a Cylinder or Cone Axis

You measure components on which the straightness of a cylinder axis is tolerated. For this evaluation, up to now several circles had to be measured on the cylinder and then these circle centers had to be constructed to a line.

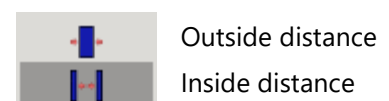
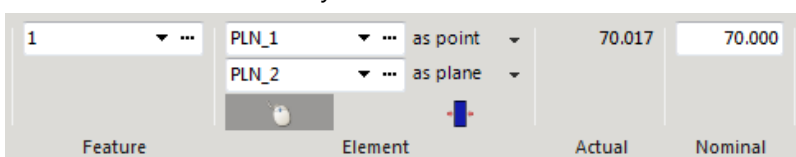
Now the characteristic "straightness" can be evaluated directly with an element of the type "cylinder" or "cone". The shape of the cylinder or cone axis is determined with the algorithm developed for the position tolerance.



Define Characteristic "distance" with Inside / Outside Information for Material Requirements

For the correct bonus calculation of a material condition, it is decisive whether the characteristic used is an inside or outside dimension. For the characteristic "diameter", this information is unambiguous due to the tolerated element (inner or outer circle/cylinder).

For the feature "Distance", you can now choose whether the distance is inside or outside.

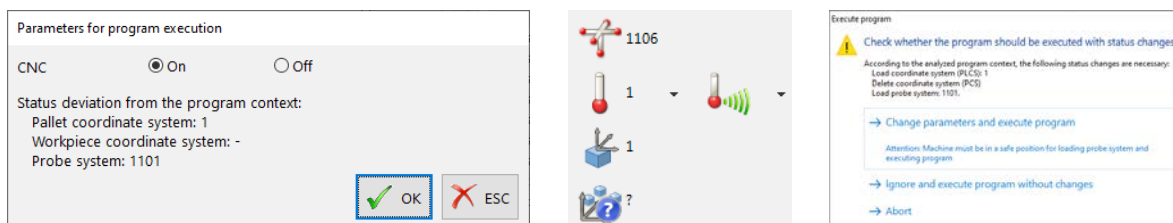


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Comfortable Programming and Safe Program Execution

Increased Security when Executing Parts of a Program

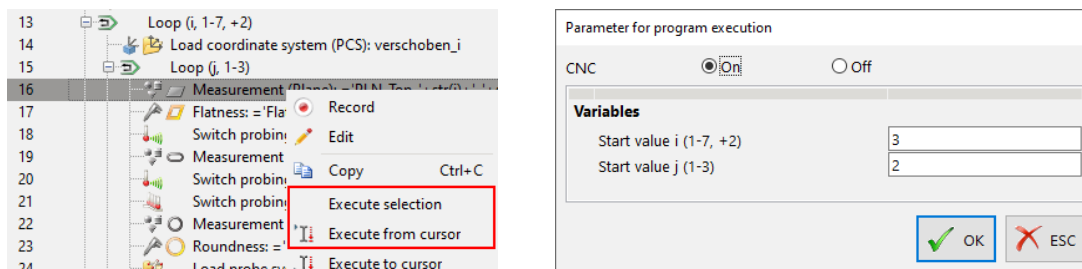
You want to execute a part of a measuring program. WM | Quartis supports you in this and warns you if, for example, the active coordinate system or probe system does not fit the program context.



You decide whether the status changes displayed are to be carried out automatically before the program is executed or whether they are to be ignored for the program execution. This helps to avoid operating errors with possible collisions.

Continue Programs within Loops and Set the Loop Index

You are working with loops in the measuring program and want to continue an interrupted measurement at the beginning or within a loop. The start value of the loop counter can now be entered when starting the measuring program. The partial execution of a loop can save you a lot of measuring time compared to the complete execution of the loop.



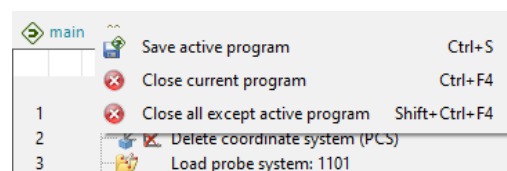
Of course, the current status is also compared with the program context and ensures that the program can be started safely.

New Options for Saving / Closing Programs

You often have many programs open because you work with subprograms. Closing these programs is easier and faster with the functions in the new context menu.

The context menu on the program tab contains the following functions:

- Save active program
- Close current program
- Close all except active program

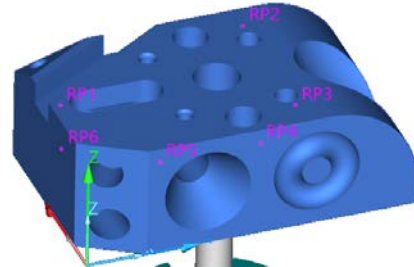


Further Innovations Simplify Daily Work

Display Names of Auxiliary Elements in Graphics

The names of the auxiliary elements can now be displayed in the graphics. This makes it easier, for example, to identify the RPS points while aligning the workpiece.

The display can be switched off in the graphics settings if required.

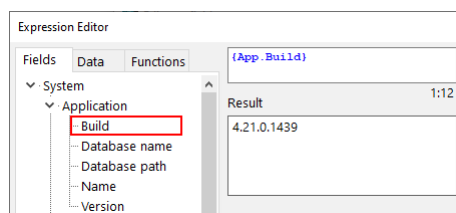


Extended DMIS Functionality

With the DMIS statement "CALL / EXTERN, SYS, 'pathname', ..." an external, executable file (.bat, .exe) is called from a DMIS program. Now a parameter list can be added to this command.

The DMIS statements XTERN, EXTFIL and ENDXTN are used to declare external DMIS programs and modules. The programs and macros contained in the declared files can be called and executed. The variables declared as LOCAL, GLOBAL or COMMON are passed and handled correctly.

Expression Editor: New Field "Build" Available



The new field "Build" is available for clear identification of the software version used on the measurement report. It supplements the fields "Name" and "Version".

WENZEL Shop-Floor SF 55: Measuring Device Model Available

The WENZEL SF 55 is a CNC portal measuring machine for use in the direct production environment and can be equipped with switching, measuring and optical sensors.

If the new measuring device model is configured, the WENZEL SF 55 is displayed in the 3D graphics.



Further Improvements

- Features that were evaluated with the calculation methods two-point size (LP) or envelope requirement (E) are now labelled with the corresponding prefix (SX, SN, GX, GN) throughout.
- WM | MMA and Kreon measuring arm: The function "End and calculate element [F5]" can now be triggered directly at the pistol grip of the measuring arm.
- FARO USB FaroArm: On arms that support the "FARO kinematic intelligent probes (i probe)", the probes are automatically recognized and activated.
- When starting the programs via quick selection code, the confirmation dialog can optionally be suppressed. This is particularly useful in automation solutions.



WENZEL Metromec AG

Rheinfelsstrasse 1
CH-7007 Chur / Schweiz
Phone: +41 81 257 07 00
Fax: +41 81 257 07 01
E-Mail: info@wenzel-metromec.ch
Web: www.wenzel-metromec.ch

WENZEL Group GmbH & Co. KG

Werner-Wenzel-Strasse
D-97859 Wiesthal / Deutschland
Phone: +49 6020 201-0
Fax: +49 6020 201-1999
E-Mail: info@wenzel-group.com
Web: www.wenzel-group.com

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Subject to technical modification and to changes in scope and design.