

WENZEL



Improvements
Metro*soft* **QUARTIS**[®] R11

Improvements Metrosoft QUARTIS R11

At a glance

Metrosoft QUARTIS R11 offers a wide range of improvements for all users and significantly contributes to optimize daily metrology work.

Metrosoft QUARTIS R11 allows measuring the roughness of work piece surfaces in a coordinate measuring machine. Therefore the roughness probe SFP1 from Renishaw has been integrated. The roughness sensor aligns itself automatically with the work piece surface and measures the roughness among the defined measuring length. The measured roughness profiles and calculates roughness parameters can also be output together with all other inspection features.

Metrosoft QUARTIS R11 offers decisive advantages for users that evaluate form features. The features straightness, flatness, roundness and cylindricity are now also evaluated comfortably using the ribbon - just as the line and surface profile. The straightness and flatness tolerance can be evaluated using a limited evaluation range. The automatic use of Chebychev compensation elements ensures a standardized evaluation.

Metrosoft QUARTIS R11 offers additional value to users in the automotive industry that are using duplex or multi carriage measuring systems. Due to the collision control that looks ahead and is based on moving safety zones, measuring programs can run without the need of user interaction. The collision control between probe system and surface plate can be deactivated - if desired - while the collision control between the other machine components is still active.

Besides updated CAD interfaces, Metrosoft QUARTIS R11 also offers many other useful improvements and extensions. More information on the following pages.

Notice:

Some improvements are not included in the standard product Metrosoft QUARTIS R11 and require additional, chargeable modules. These are described in the document "Products and Modules Metrosoft QUARTIS R11".

Measure work piece surface roughness

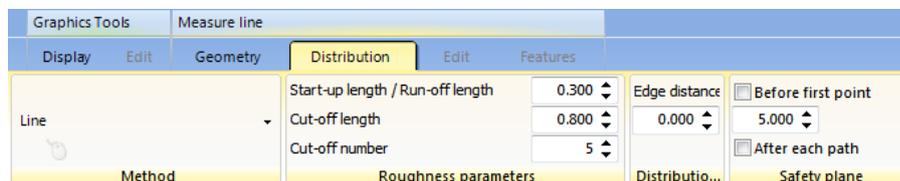
Renishaw REVO roughness sensor SFP1 integrated

You measure parts with roughness tolerances on functional surfaces. It is now possible to determine the roughness directly on the coordinate measuring machine with Metrosoft QUARTIS in connection with a Renishaw REVO probe head. The roughness sensor SFP1 can be used with two different styli, the straight SFS-1 and the angled SFS-2.

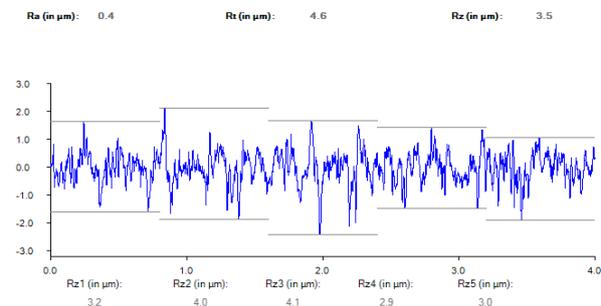
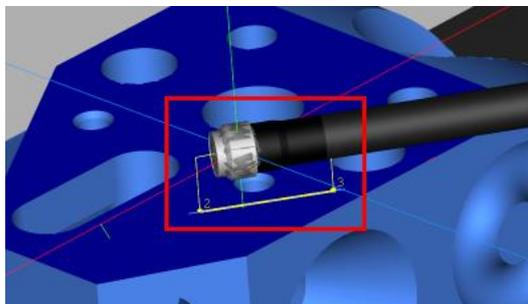


Measure roughness profile and calculate roughness parameters

The measuring length for the roughness measurement is defined via appropriate parameters.



The SFP1 roughness sensor aligns itself automatically with the work piece surface by rotating and swiveling in the A, B and C axis of the REVO probe head and gathers the roughness profile.



The following roughness parameters are automatically calculated: Ra, Rq, Rz, Rp, Rv, Rt, Rmax

Output of Roughness parameters and profiles in a report

Roughness profiles and roughness parameters can be inserted into a report and therefore be output together with other features.

■ Highlights

- Roughness sensor Renishaw REVO SFP1 with styli SFS-1 and SFS-2 integrated
- Calculate roughness parameters Ra, Rq, Rz, Rp, Rv, Rt and Rmax
- Output of roughness profile and roughness parameters in a report

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Evaluation of form features

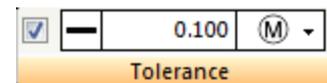
Unified use of ribbon for form features

You evaluate form features according to ISO 1101 or ASME Y14.5. The features straightness, flatness, roundness and cylindricity are now also evaluated using the ribbon - just as the line and surface profile.



This has several significant advantages:

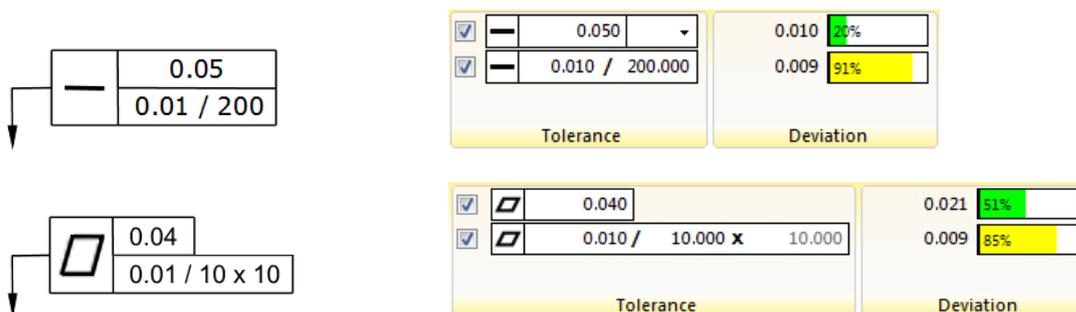
- Clear, simple operation
- Define ID with expression thus allowing to use loops
- Check or adjust tolerance defaults during the evaluation
- Recognize drawing symbols on the Metrosoft QUARTIS graphical user interface
- Tolerated elements can be clicked directly in the graphics
- Graphics work window is not hidden by dialogs



Straightness and flatness with limited evaluation range

Straightness and flatness tolerances can be calculated using a limited evaluation range. This kind of tolerance is frequently used in sealing surfaces.

The tolerancing with limited evaluation range can be indicated individually or combined on the drawing. Thus Metrosoft QUARTIS allows the selection of one or two check boxes:



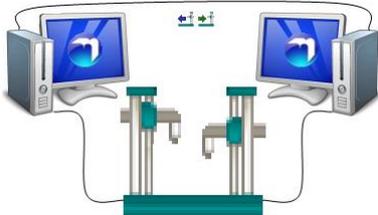
Independent from the way the tolerated element was measured, a Chebychev compensation element is calculated for the straightness and flatness evaluation which results in a standardized evaluation according to ISO 1101.

■ Highlights

- Advantageous evaluation of form features by using the ribbon
- Evaluate straightness and flatness with limited evaluation range
- Automatic standardized evaluation using Chebychev compensation elements

Multiple machine network / Multiple machine mode

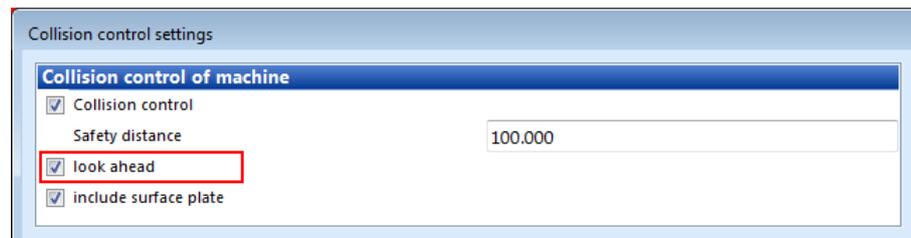
Collision control that looks ahead



You use duplex or multi carriage systems and simultaneously measure the same work piece with multiple carriages.

A collision control that looks ahead is now available. Looking ahead means, the carriages check before moving if the next motion path is clear or already occupied by another carriage. If no release is given, the carriage automatically waits until the motion path is

clear. By doing so, measuring programs can be executed without user interaction. The collision control used until now required user interaction as soon as a carriage exceeded the safety distance and therefore was stopped.



The collision control that looks ahead is based on moving safety zones that are automatically calculated around the probe configuration and machine components. It applies in multiple machine network (multiple Metrosoft QUARTIS control one machine using a QUARTIS or DMIS program) as well as in the multiple machine mode (one Metrosoft QUARTIS controls multiple machines via DMIS programs).

Activate/deactivate the collision control including the ground plate

The collision control between probe system and ground plate can be deactivated - if desired - while the collision control between the other machine components is still active. This setting can be recorded into a measuring program. By doing so, bores in the ground plate can be measured or stylus changes can be executed with stylus changing systems that are mounted low without receiving collision messages.

■ Highlights

- Simultaneously operate up to eight CNC machines
- Collision control that looks ahead due to moving safety zones
- Automatic motion path release eliminates user interaction and reduces measuring time
- Definable safety distance
- Activate/deactivate the collision control including the ground plate
- Record all settings into a measuring program

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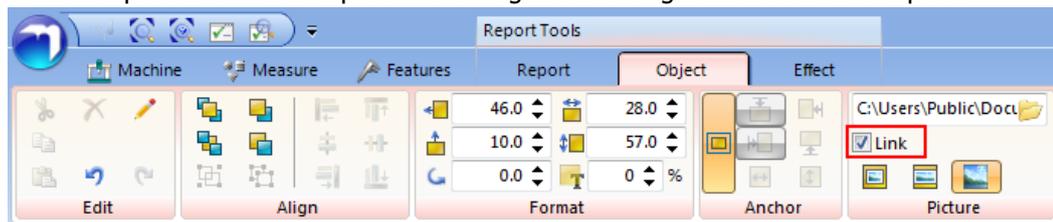
Additional Improvements

The following useful functions have been added in Metrosoft QUARTIS R11:

- The following CAD interfaces have been updated to the latest version:
 - CATIA V5 (versions R8 – R24)
 - Inventor (versions V11 – 2015)
 - Parasolid (versions 10 – 26)
- The Renishaw SCP600 storage module for the mounting on the MRS system is supported. Thus stylus changes in connection with the SP600 probe can now also be executed automatically.
- Probe systems included in a measuring program can now be replaced with other probe systems in one step. This is especially helpful with mirrored programs. It is also helpful if a measuring program is executed on another coordinate measuring machine and the probe systems are named differently.
- Searching for dialogs and comments in measuring programs has been simplified. One can now use the search term "Dialog" to find all dialogs and the search term "##" finds all comments within a program.
- The offline execution of measuring program with maximal simulation speed has been accelerated by suppressing various needless refreshes in the display.
- The error handling during the measurement of elements within a measuring program has been improved. Besides the options "Abort execution" and "Pause", the options "Repeat element - CNC off" and "Repeat element - CNC on" are available. If large work piece deviations or the use of measuring aids lead to collisions, the corresponding element can now be easily and fast re-measured, either manually or automatically.
- If the "Collision detection with work piece" is activated, the motion path of the safety plane is now also monitored if the option "Collision detection during element measurement" is deactivated.
- The dialog "Save coordinate system" is now opened directly after calling or terminating the following alignment functions:
 - Alignment – Define coordinate system / Bestfit
 - RPS – Define coordinate system using reference point system
 - CAD model – Transform coordinate system into CAD model coordinate systemThis reduces the risk that one forgets to save the coordinate system.



- For tolerancing the size of plastics molding, the new DIN 16742 has been integrated. The new standard together with its tolerance groups can be selected in the default tolerance settings.
- Images can now be inserted in a report as a link. When updating the report, the linked images are also updated. This is helpful when images are changed outside of the report.



- Reports saved as PDF files are now compressed without any quality loss. Thus the quality of font and graphics is much better and the file size is reduced. Reports that only include tables are now significantly smaller. The PDF file size can be influenced by setting the print quality. The print quality "Normal" saves the PDF files with a resolution of 200 dpi and the setting "Draft" uses 100 dpi.
- Metrosoft QUARTIS can now optionally be started using user defined default settings. This ensures that specific basic settings are reset to the desired default value, even if they were changed by the user in the previous Metrosoft QUARTIS session.
- The execution of measuring programs with the Renishaw REVO probe head has been accelerated. Short waiting times between the measuring sequences have been reduced.
- With the manual I++ DME Renishaw temperature compensation, the temperatures are now transmitted for each machine axis to the Renishaw UCC server and then processed. Analog, with the automatic I++ DME Renishaw temperature compensation, the temperatures of the individual machine axis are transmitted to Metrosoft QUARTIS and therefore can also, for example, be output on a report.

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