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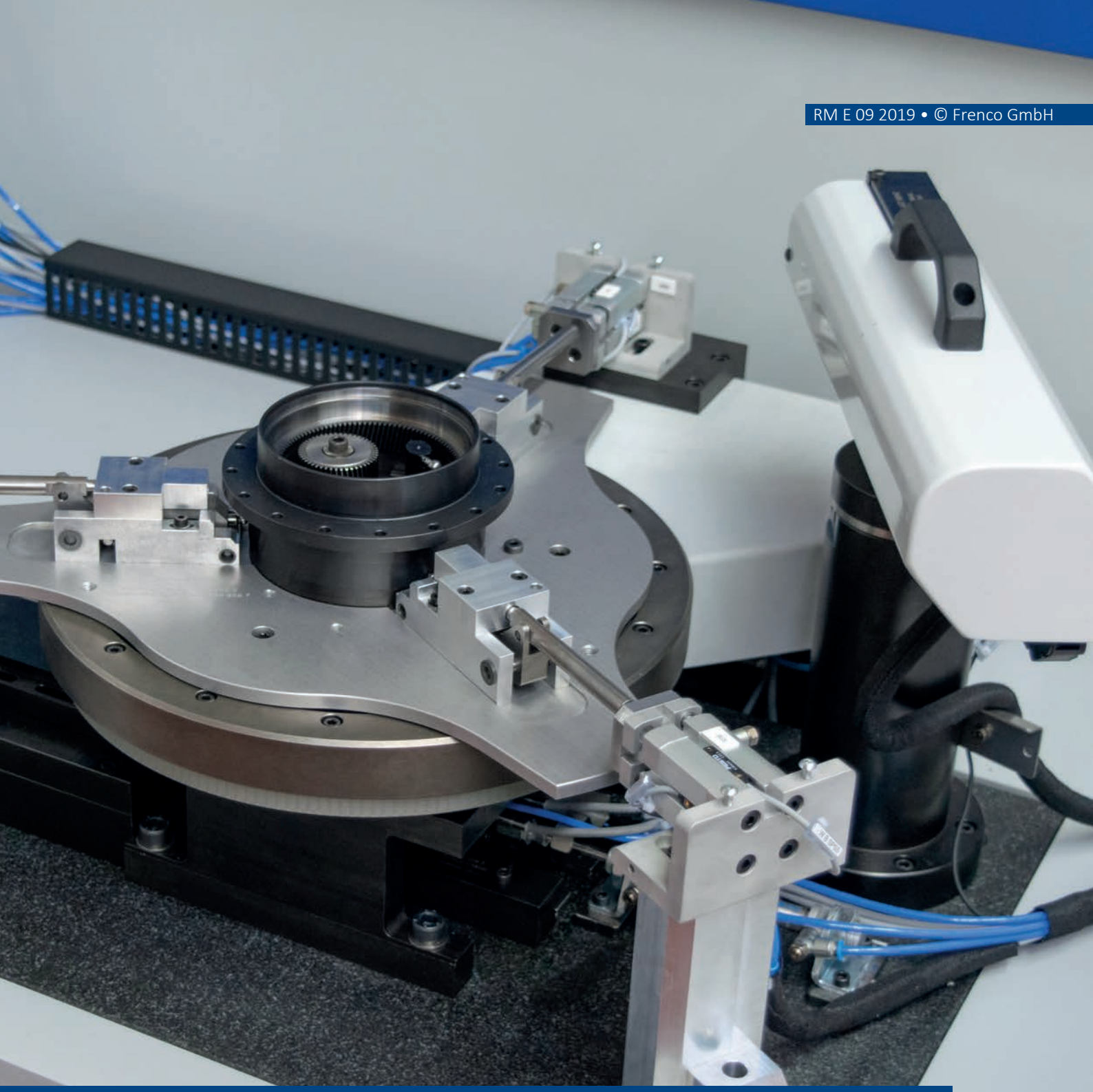

Multiple Inspector

Rotating simultaneous measurements

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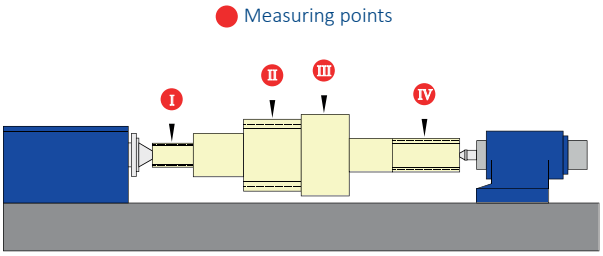
The test method

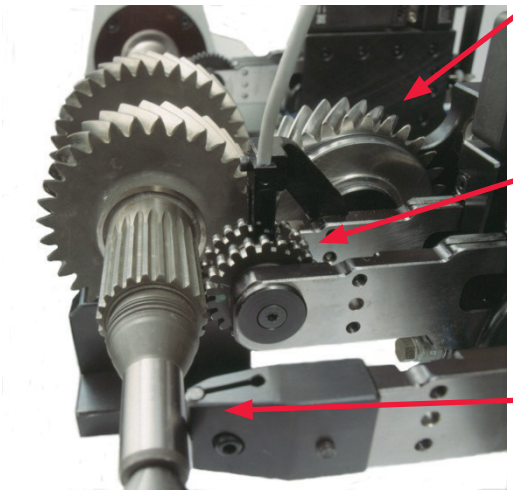
The inspection of workpieces is carried out within a continuous rotation of 360°. The workpieces are scanned by radially assembled measuring carriages, each equipped with its own sensor and powered by a central encoder.

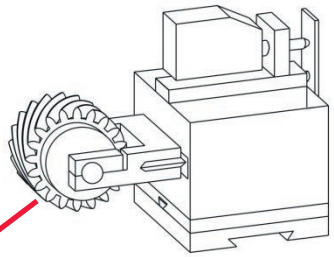
The alignment of various measuring carriages, with one sensor each and a central encoder, allows for different measuring tasks to be carried out simultaneously within one single rotation. The measuring data is processed in real time via the measuring electronic MEG32.

There are three types of measuring carriages that can be combined as required.

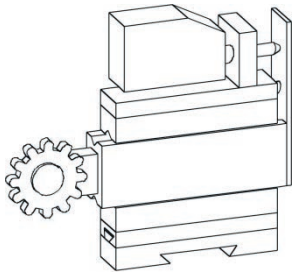


The axes of the individual geometrical elements of the workpiece can be determined and offset against each other.

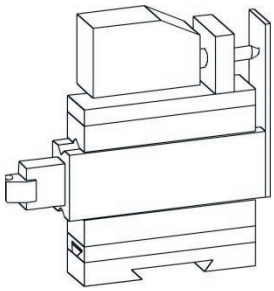




Measuring slide with master gear for a double flank roll test



Measuring slide with measuring wheel for splines



Measuring slide with measuring edge for diameter

What we can offer you:

Client-specific Design:
Optimal adaptation to your demands

Suitable for manufacturing:
Highest precision under toughest conditions

Sophisticated know-how
Special calibration artefacts, low-wear construction, temperature compensation

Own software:
Fast support for questions and problems

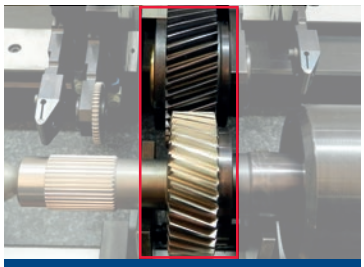
Service:
From our FRENCO Specialists carried out

Retrofit:
Mechanical and electronic upgrade of older devices

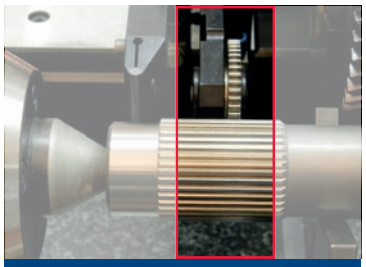
Performance and Application

- Fast measuring of specific features for gears and splines like dimension over balls, runout and roundness
- Double flank roll test for gears
- Rolling ball inspection using measuring wheels on splines
- Measuring time approximately 15 seconds simultaneously on all measuring points
- Automatic slide and tailstock
- Detecting deviations in position on gears, diameters and surfaces
- Automated testing allows a 100-percent-inspection
- Highest precision due to substitution procedure (calibration with setting master)
- Designed for shop-floor use, very robust
- Link between production and measuring laboratory
- Freely programmable system with a powerful evaluation software
- Recording of all measurement results for process monitoring. Interfaces: qs-stat®, transfer format, csv®, pdf® etc.
- Adaption of mechanics and software to customers' specification

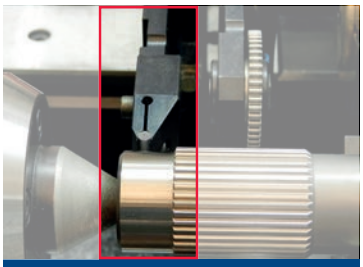
Measurement tasks



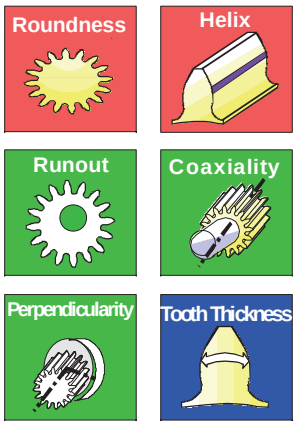
Double flank gear roll test

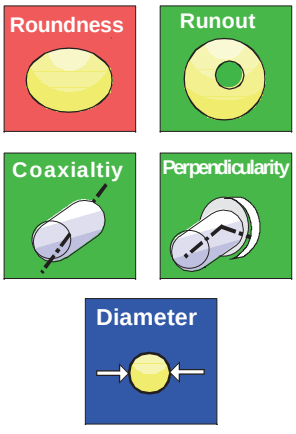


Splines



Diameter





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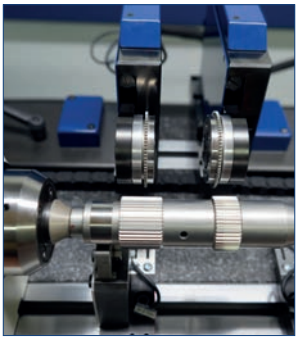
RM Horizontal



Multiple Inspector for Shafts

Component: Crankshafts

Features: Runout of spline and bearing seats
Size over pins

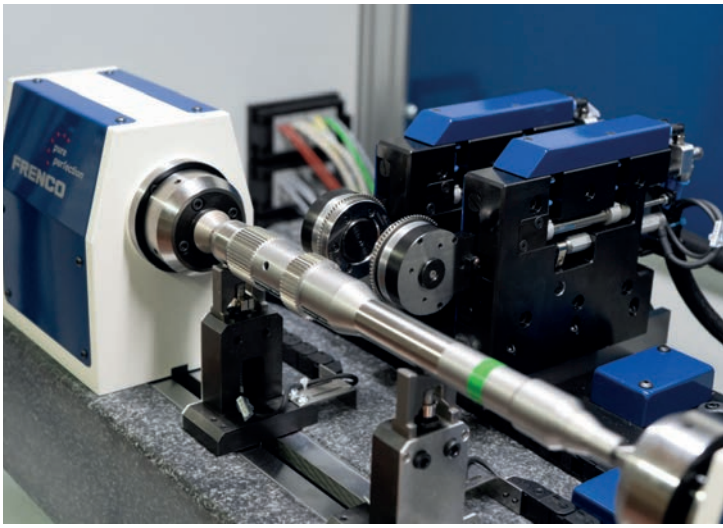
Inspection time: less than 30 seconds, samples

Solution: Horizontal device
Spline measurement with FRENCO wheel
Bearing seat measurement with pins
Loader for heavy components
Clamping between tips

Software: User-friendly Software RM pro
Graphic output of all features
Consideration of position of axis
Eccentricity correction possible

Specials: Temperature compensation for component and measuring slide

Options: Integration into handling systems possible
Software for closed loop



Technical Data	
Max. part length	750 mm
Max. specimen diameter	230 mm
Clamping	between tips
Calibration	Setting master
Lenght x width x height	2060 mm x 640 mm x 2050 mm
Weight	750 kg

RM Vertical

Flexible Measuring Instrument for Ring Gears

Workpieces: Ring Gears

Characteristics:
Radial composit deviaton Fi´´
Radial runout Fr´´
Tooth-to-Tooth radial composite fi´´
Runout Fr
Roundness Fr-e
Diameter ø
Dimension between balls Dbb

Measuring time: depending on component, approx. 1 min

Software:
User-friendly Software RM pro
Graphic output of all features
Consideration of position of axis
Eccentricity correction possible

Besonderheiten:
3-point clamping system
Flexible design options

Technical Data:

Dimensions:	220 x 210 x 120 cm
Weight:	600 kg
Oper. pressure:	5 bar

Options:
Integration into handling systems possible
Software for closed loop

Automatic measurement of pinions

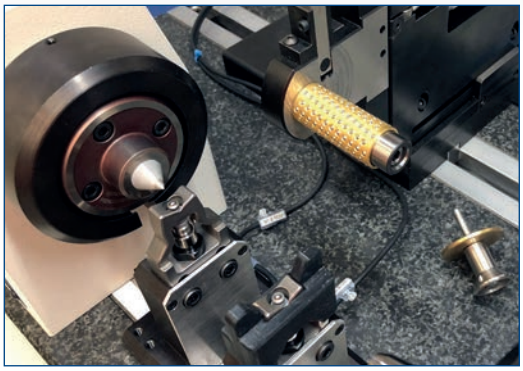
RM HA W

Multiple Inspector

Workpieces: Steering pinions

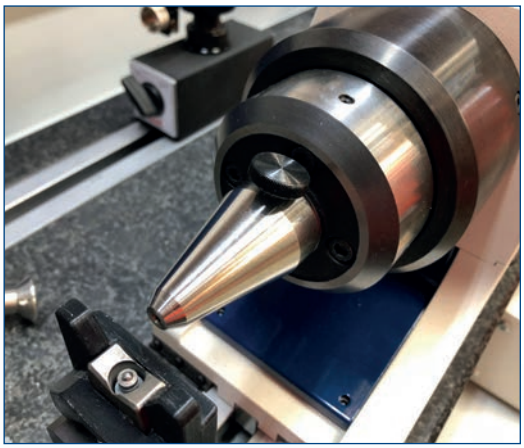
Characteristics:
- Radial composite deviation Fi''
- Tooth-to-tooth radial composite deviation fi"
- Runout by composite test Fr"
- Dimension over balls DoB
- Centre distance Aa

Accuracy:
- Radial composite deviation Fi" ±0,0015 mm
- Tooth-to-tooth radial composite deviation fi" ±0,0015 mm
- Runout by composite test Fr" ±0,0015 mm
- Dimension over / between balls MdK ±0,0030 mm
- Centre distance Aa ±0,0030 mm
- Runout Fr ±0,0030 mm



Solution: The workpieces are clamped horizontally pneumatically between centres.
The measurement is then carried out fully automatically.

Software:
- User-friendly software RMPro
- Graphical display of values
- Extensive options, data export, various languages



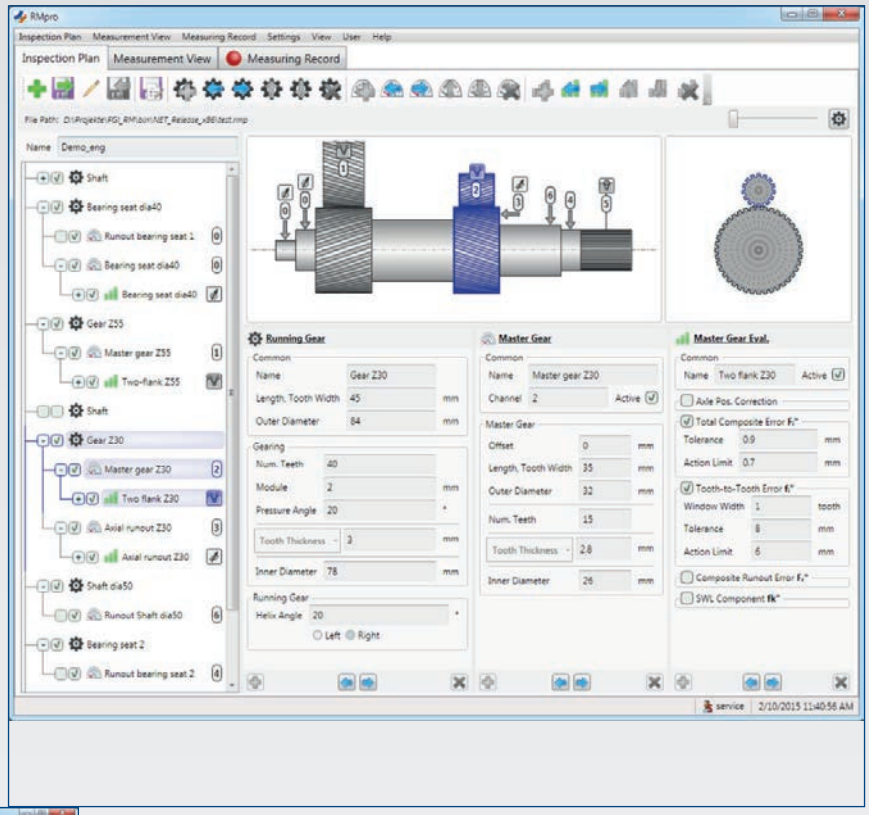
Technical Data	
Max. part length	750 mm
Max. specimen diameter	230 mm
Clamping	between tips
Calibration	setting master
Length x width x height	2060 mm x 640 mm x 2050 mm
Weight	750 kg

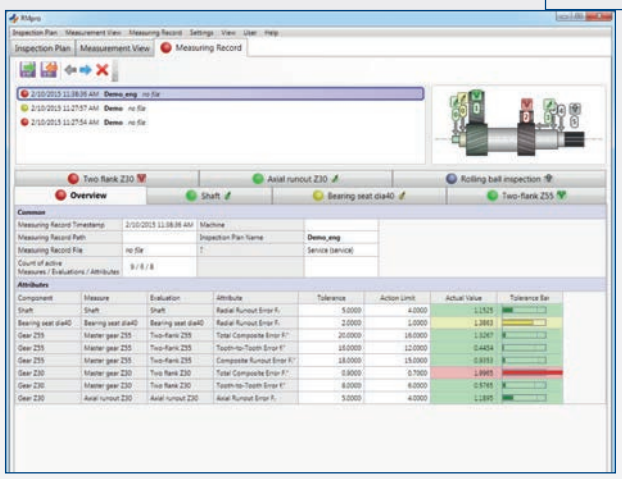
RMpro

Software to measure and evaluate shafts with any number of measuring points

These measuring points can be: radial run-out, axial run-out, master gear or master wheel. The software provides a kind of modular system of components, measuring points, measurements, evaluations and representations.

The inspection plan is made up from the following lists: components, measurements, evaluations, representations and data exports. This ensures that measurements can be attached to components, and evaluations to measurements.





The measured values can also be viewed individually.

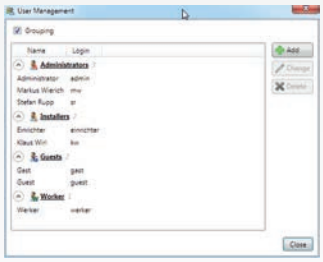
Axial position

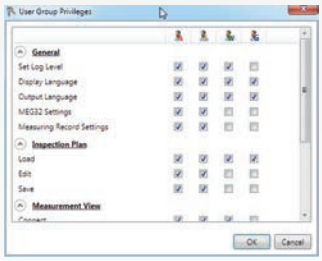
Calculation of the axial position of the shaft can be carried out by linking the results of one to three measuring points. Individual measurements can then also be corrected using the established axial position.

Tolerance bar graph, evaluation graph, radial run-out diagram, axial run-out diagram, ZWP diagrams, master wheel diagram. An overview is available for the entire workpiece.

User Management

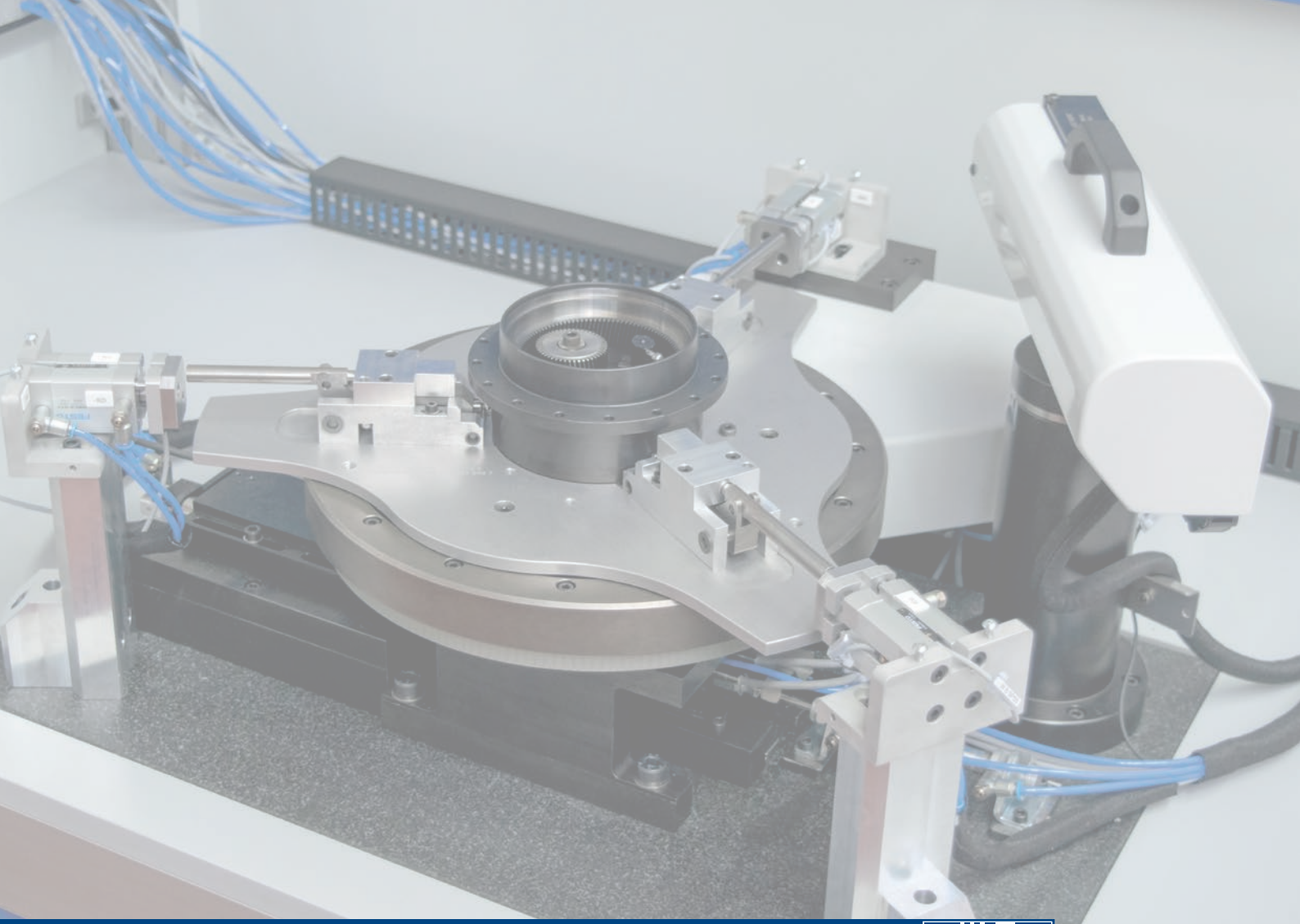
Integrated user management with user configurable group rights.





Data export/ System requirements

Export of the data in QS-Stat format. The software requires at least Windows 7 and the .NET Runtime Version 4.0.



Pure Perfection. Since 1978.

Experience, competence and innovation in gear metrology.

Our Products:

Spline Gauges | Toothed Artefacts and Masters | Master Gears | Tools and Clamping Systems| Size Inspection Instruments | Double Flank Gear Inspection | Gear Flank Analyser | Universal Measuring Machines | Rack Inspection Machines | Software

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