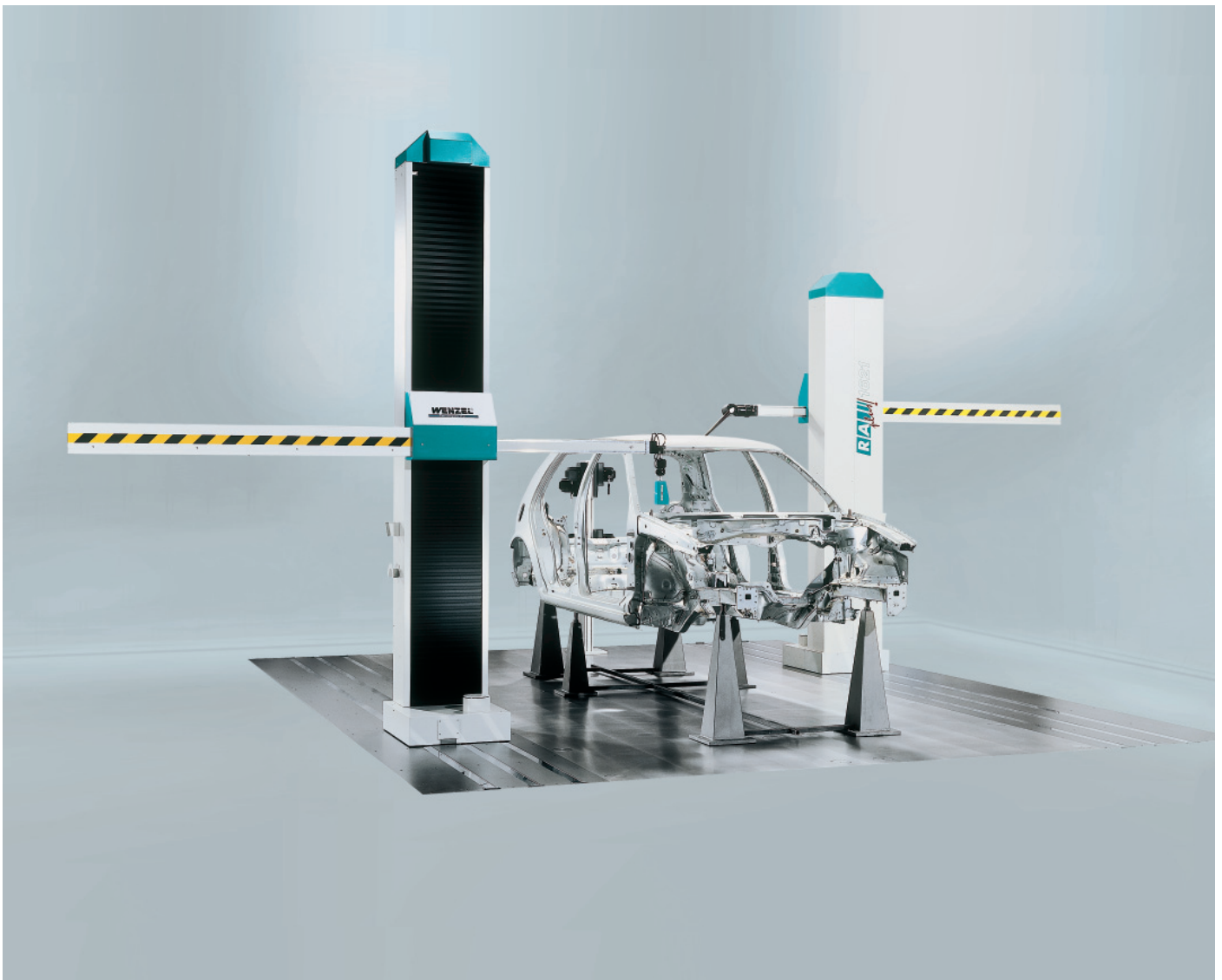


Co-ordinate Measuring RApplus / RAFplus STANDARD/PREMIUM

Technical Data



Technical Data RAplus / RAFplus STANDARD/PREMIUM

Short description

- CNC Coordinate Measuring Machine, mechanical bearings, guideway floor level or guide arm with touch trigger or scanning probe system
- Operation modes joystick-controlled or full CNC
- High-precision linear guideways (ball bearings) and roller bearings
- Several sizes for an optimal choice of the required measuring volume, duplex-mode possible

Application areas

- Werkzeug- und Formenbau, Karosserievermessung und großvolumige Werkstücke bei mittleren bis hohen Anforderungen an die Messgenauigkeit
- In Analysis, gauges and fixtures
- Measurement of prismatic and free-form components
- Both series and individual measurements
- Palletised operation possible

Standard Features

- X- and Z-axis with ball bearings
- Guideways and scale protected by walk-on steel covers
- Weight of gauge stand directly supported by table or beam
- Y-axis with rollers. Guiding profile of carbon-fibre-compounds for utmost stiffness and low CTE (coefficient of temperature expansion)
- Z-axis encapsulated for improved temperature stability
- Compact HT 400 control panel with central, logarithmic joystick, „mouse function“ and context-sensitive function buttons. Selectable joystick's axis assignment (optional)
- Counterbalance guided by mechanical bearings, free-of-play
- Basisplatte aus speziellem Grauguss oder Führungsbalken aus Mineralguss für höchste Stabilität
- High dynamic servo drives with speed error control, combined friction and form-fitted transmission
- Two-stage speed selection and variable speed adjustment (override 0-100%) in all operation modes, resulting in sensitive movement via joystick or in CNC debugging
- Three-axis contouring controller with intelligent „look-ahead“ function for application-optimised trajectory

Probe systems

- Renishaw PH6M, compact probe head for 3D probe mounting
- Renishaw PH6M, fixed probe head with the possibility of using complex probes like SP25, SP600n
- Renishaw PH10M, PH10T, indexable probe heads featuring 720 repeatable positions in 7.5° steps
- TP200 touch-trigger probe, highly precise and suitable for styli up to 100 mm in length. Styli can be changed via optional tool changer
- PHS servo positioning head. Can be swivelled continuously. Minimized calibration need. Extensions up to 750mm
- Optical high speed sensor „Phoenix“ Hybrid system with high-resolution CCD camera for image processing in the X-Y plane and multiple laser triangulation for distance measuring in Z
- TP20, touch-trigger probe. Stylus module changeable via optional tool changer

Software

- User-friendly Windows software Metrosoft CM for measuring and evaluating geometry and free-form elements (option)
- Graphic user interface featuring extensive automatism to support the User
- User dialog and reporting can be selected and switched on-line independently between 12 languages
- Graphically interactive on- and offline programming system „Grips“ for measurement program creation based on CAD data.
- Numeric and graphic reporting of the measured results
- Workpiece-oriented database, SQL-capable, with multi-user access, network capabilities
- Integrated statistic functions, frequency distribution, trend diagram, machine-capability Cm and Cmk, SPC control charts, process capability Cp and Cpk. Interface to QS-Stat
- Shape- and location tolerances according to ISO 1101 / ASME Y14.5M
- Context-sensitive on-line help in all 12 User languages

Options:

- Software package CM-Surf for measuring free-form surfaces
- CAD direct interfaces (e.g. CATIA V4/V5, Pro-E, Unigraphics, Parasolid)
- I++DME Server
- DMIS Import, DMIS Export, DMIS Reporting, DMIS Native Interpreter

Technical Data RAplus / RAFplus

Machine Type		RAplus / RAFplus 1621			RAplus / RAFplus 1625		
Measuring Ranges, Weights							
Measuring ranges x	[mm]	4000	5000	6000	4000	5000	6000
y	[mm]	1600			1600		
z	[mm]	2100			2500		
Useable table surface *	[mm]	4800x1715	5800x1715	6800x1715	4800x1715	5800x1715	6800x1715
Machine weight*	[kg]	9500	11300	13200	9550	11350	13250
Permissible part weight*	[kg]	6300	7500	8800	6300	7500	8800
General Requirements							
Electric	Single-phase AC, 1P+N+PE, 115/230V +/- 10%, 50/60 Hz, max. 1000 VA, acc. to EN 60204/1						
Compressed air	Supply pressure 6-10 bar, pre-filtered, quality according to ISO 8573-1: Class 4 or better						
Air consumption	(Nl/min)	<5					
Measuring Accuracy							
Measurement system	Photoelectric scale system, optical division 20µm, resolution 0,5 µm						
Construction		Standard	Premium		Standard	Premium	
Probing uncertainty ¹	MPE _P [µm]	25	20		25	20	
Volumetric length measuring uncertainty ¹	MPE _E [µm]	30+L/35 ≤ 85	25+L/40 ≤ 65		40+L/35 ≤ 90	30+L/40 ≤ 75	
Volumetric length measuring uncertainty ²	MPE _{EM} [µm]	45+L/20 ≤ 100	30+L/25 ≤ 85		60+L/20 ≤ 110	40+L/30 ≤ 100	
Operating Environment							
Operating temperature	15°C - 30°C						
Temperature range for MPE _E	16°C - 24°C, ΔT 1,5 K/h, 0,5 K/m						
Relative humidity	40% - 70%						
Dynamics							
Joystick operation	V _{max}	0-20 mm/s (creep mode), 0-100 mm/s (normal)					
CNC mode	V _{max}	axial: 300 mm/s or 500 mm/s (with safety system fitted) volumetric: 680 mm/s or 865 mm/s (with safety system fitted)					
CNC mode	a _{max}	1400 mm/s ² axis-related, 2400 mm/s ² volumetric			1200 mm/s ² axis-related, 2000 mm/s ² volumetric		

1: According to DIN EN ISO 10360-2 2: According to VDI/VDE 2617 Blatt 2.3

*: Part dimensions and weights don't affect the RAplus series

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