

Co-ordinate Measuring Machine RSplus STANDARD/PREMIUM

Technical Data



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Short description

- CNC Coordinate Measuring Machine R-type, guideway side mounted, touch trigger or scanning probe system
- Operation modes manual, joystick-controlled, full CNC (optional)
- 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

- Mould and die, toolmakers, body-in-white and large-volume components with a medium accuracy requirement.
- Measurement of prismatic and free-form components
- Both series and individual measurements
- Palletised operation possible

Standard Features

- X-axis guided with a combination of ball and roller bearings
- Machine weight directly supported by table
- Y-axis with rollers. Guiding profile of carbon-fibre-compounds for utmost stiffness and low CTE (coefficient of temperature expansion)
- 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
- Basic version manual, optional full CNC, drives disengageable
- Baseplate made of special cast iron, granite optional
- 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, SP600
- Renishaw PH10M, PH10T, indexable probe heads featuring 720 repeatable positions in 7.5° steps
- TP20, touch-trigger probe. Stylus module changeable via optional tool changer
- 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 750 mm
- 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.

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

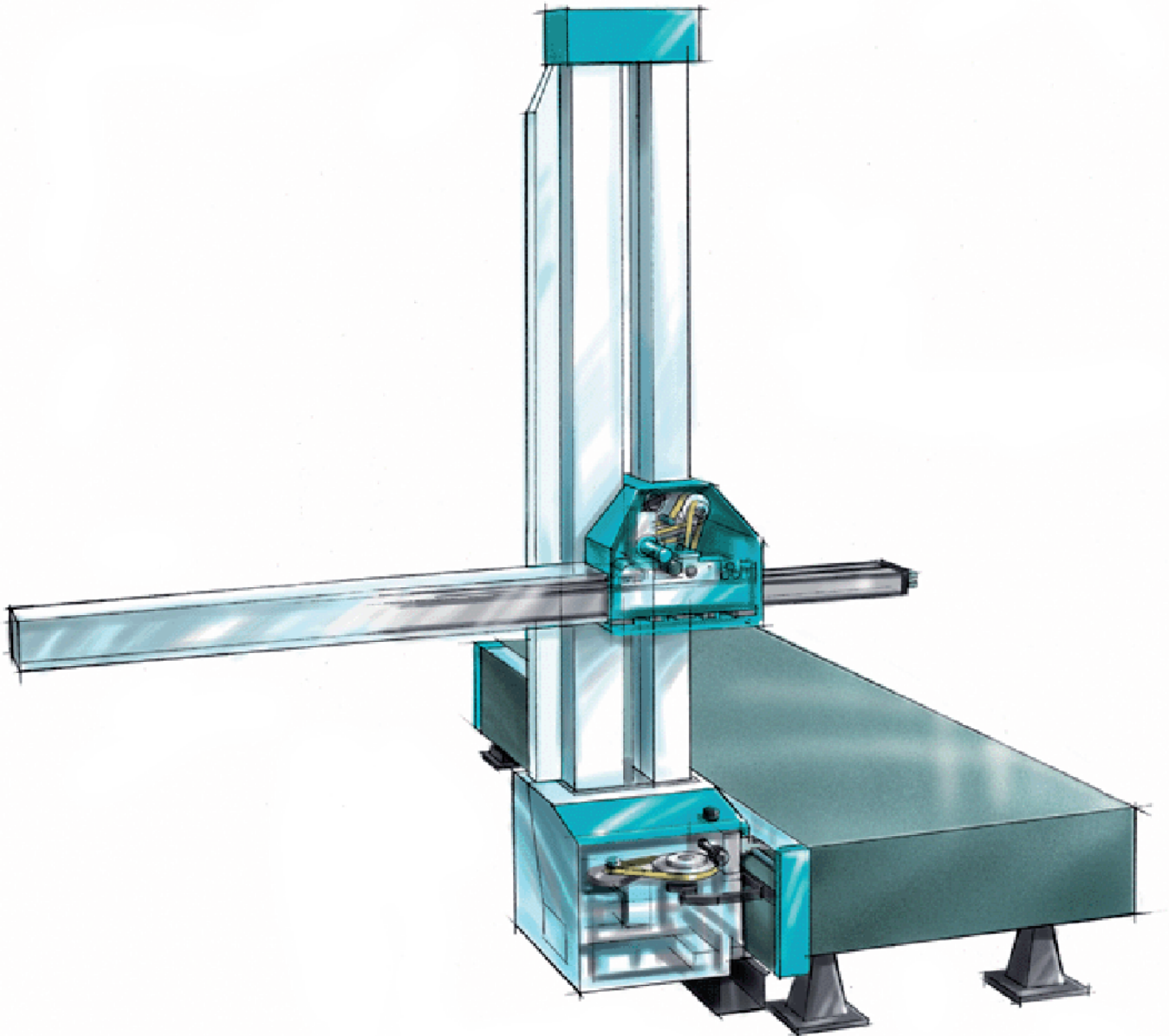
Technical Data RSplus

Machine Type		RSplus 1012			RSplus 1215			RSplus 1618			RSplus 1621			RSplus 1625		
Measuring Ranges, Weights																
Measuring ranges	x [mm]	4000	5000	6000	4000	5000	6000	4000	5000	6000	4000	5000	6000	4000	5000	6000
	y [mm]	1000			1200			1600			1600			1600		
	z [mm]	1200			1500			1800			2100			2500		
Useable table surface	[mm]	4700x1175	5700x1175	6700x1175	4700x1375	5700x1375	6700x1375	4700x1775	5700x1775	6700x1775	4700x1775	5700x1775	6700x1775	4700x1775	5700x1775	6700x1775
Machine weight	[kg]	5100	6100	7100	5850	7000	8200	7250	8800	10250	7275	8825	10275	7300	8850	10300
Permissible part weight	[kg]	3400	4100	4750	3900	4700	5500	4850	5900	6850	4850	5900	6850	4850	5900	6850
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	Standard	Premium	Standard	Premium	Standard	Premium	Standard	Premium	Standard	Premium	Standard	Premium
Probing uncertainty ¹	MPE _P [µm]	20	15	20	15	25	18	25	18	30	23	30	23	35	25	25
Volumetric length measuring uncertainty ¹	MPE _E [µm]	25+L/40 ≤ 90	15+L/45 ≤ 50	30+L/40 ≤ 100	15+L/45 ≤ 60	40+L/35 ≤ 110	25+L/40 ≤ 70	45+L/35 ≤ 110	25+L/40 ≤ 70	45+L/35 ≤ 110	30+L/40 ≤ 85	55+L/35 ≤ 120	35+L/40 ≤ 100	55+L/35 ≤ 120	35+L/40 ≤ 100	35+L/40 ≤ 100
Volumetric length measuring uncertainty ²	MPE _{EM} [µm]	40+L/20 ≤ 120	25+L/35 ≤ 60	45+L/20 ≤ 130	25+L/35 ≤ 75	60+L/20 ≤ 140	35+L/30 ≤ 90	65+L/20 ≤ 145	35+L/30 ≤ 90	65+L/20 ≤ 145	45+L/25 ≤ 100	80+L/20 ≤ 155	55+L/25 ≤ 120	80+L/20 ≤ 155	55+L/25 ≤ 120	55+L/25 ≤ 120
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}	300 mm/s axial, 519 mm/s volumetric														
CNC mode	a _{max}	400 mm/s ² axis-related, 700 mm/s ² volumetric	400 mm/s ² axis-related, 700 mm/s ² volumetric	400 mm/s ² axis-related, 700 mm/s ² volumetric	400 mm/s ² axis-related, 700 mm/s ² volumetric	400 mm/s ² axis-related, 700 mm/s ² volumetric	400 mm/s ² axis-related, 700 mm/s ² volumetric	400 mm/s ² axis-related, 700 mm/s ² volumetric	400 mm/s ² axis-related, 700 mm/s ² volumetric	400 mm/s ² axis-related, 700 mm/s ² volumetric	400 mm/s ² axis-related, 700 mm/s ² volumetric	400 mm/s ² axis-related, 700 mm/s ² volumetric	400 mm/s ² axis-related, 700 mm/s ² volumetric	400 mm/s ² axis-related, 700 mm/s ² volumetric	400 mm/s ² axis-related, 700 mm/s ² volumetric	400 mm/s ² axis-related, 700 mm/s ² volumetric

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

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