

Coordinate Measuring Machine XOrbit 55/87/107

Technical Data



Technical Data XOrbit 55/ 87/ 107

Short description

- CNC-bridge design measuring machine with touch-trigger or scanning probe systems
- All granite guide-ways are accurately hand-lapped
- Compact design operator workstation, with integrated controller and computer
- CMM available in two sizes for the optimal selection of the required measurement volume

Application areas

- In production, receipt of goods and quality assurance
- Measurement of prismatic and free-form components
- Both series and individual measurements
- Palletised operation possible

Standard features

- The Y-axis guide-way is machined directly in the base plate, providing optimal long-term stability
- Pre-stressed, encompassing air bearings in all axes
- Passive vibration dampers
- Compact HT 400 control panel with central, logarithmic joystick, "mouse function" and context-sensitive function buttons. Selectable joystick axis assignment
- The Y-guide-ways feature bellow protection against contamination
- High-speed-dynamic servo drives with position monitoring, combined friction power transmission
- Three-axis contouring controller with intelligent "look-ahead" function for application-optimised trajectory
- Manual temperature compensation
- 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

Probe systems

- Renishaw PH6M, compact probe head for 3D probe mounting
- 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
- SP25 scanning probe, ultra-precise and flexible for scanning and single-point probing
- For scanning and single-point probing. Stylus combinations can be changed 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 C_m and C_{mk}
- Shape-and location tolerances according to ISO 1101/ ASME Y14.5M
- Context-sensitive online help in all 12 user languages

Software options:

- Software package CM-Surf for measuring free-form surfaces
- CAD direct interfaces(e.g. CATIA V4/V5, Pro-E, Unigraphics, Parasolid)
- DMIS Import, DMIS Export, DMIS Reporting, DMIS Native Interpreter
- I++DME Server
- Blade analysis software package
- Export point and element data in VDA1 format
- SPC control charts, process capability c_k and c_{pk} , with the QS-STAT interface

Reverse Engineering option:

- The 3D Linescanner SHAPETRACER
- Powerful Software Package Pointmaster
 - Reverse engineering, construction of CAD model
 - Measurement and evaluation
 - Iterative tool compensation(ITC)

Machine Type		XOrbit 55		XOrbit 87			XOrbit 107			
Measurement Ranges, Weights										
Measurement ranges	X	[mm]	500		800			1000		
	Y	[mm]	700	1000	1000	1500	2000	1200	1500	2000
	Z	[mm]	500		700			700		
Useable table surface	[mm]	800X1500	800X1500	1100X1840	1100X2340	1100X2840	1300X2040	1300X2340	1300X2840	
Machine weight	[kg]	1250	1450	2650	3000	3800	2950	3350	4150	
Permissible part weight	[kg]	300	300	800	800	1000	900	1000	1200	
General Requirements										
Electric	Single-phase AC, 1P+N+PE, 115/230 V \pm 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	[$\frac{Nl}{min}$]	70								
Measuring Accuracy										
Measurement system	Photoelectric scale system, Optical division 20 μ m									
Resolution	[μ m]	0.1								
Probing uncertainty ¹	MPE _P [μ m]	TP20 2.6	TP200 2.2	SP25 2.0	TP20 2.8	TP200 2.4	SP25 2.2	TP20 3.2	TP200 2.8	SP25 2.6
Volumetric length measuring uncertainty ²	MPE _E [μ m]	TP20 2.6+L/300	TP200 2.2+L/300	SP25 2.0+L/300	TP20 2.8+L/300	TP200 2.4+L/300	SP25 2.2+L/300	TP20 3.2+L/300	TP200 2.8+L/300	SP25 2.6+L/300
Volumetric scanning probing uncertainty ³	MPE _{THP} [μ m]	SP25 2.5			SP25 2.7			SP25 2.9		
Total measuring time for THP	MPT _{THP} [sec]	72			72			72		
Operating Environment										
Operating temperature	[°C]	15-30								
Temperature range for MPE _E		18-22 °C, ΔT : 1 K_h , 1 K_m , 2 K_d								
Relative humidity	[%]	40-70								
Dynamics										
Joystick-operation	v_{max} [$\frac{mm}{s}$]	0-20 (creep mode), 0-100 (normal)								
CNC-mode	v_{max} [$\frac{mm}{s}$]	300 axial, 520 volumetric								
CNC-mode	a_{max} [$\frac{mm}{s^2}$]	1200 axis-related, 2000 volumetric				900 axis-related, 1500 volumetric				

1: According to DIN EN ISO 10360-2 / Maximum Permissible Error MPE_P

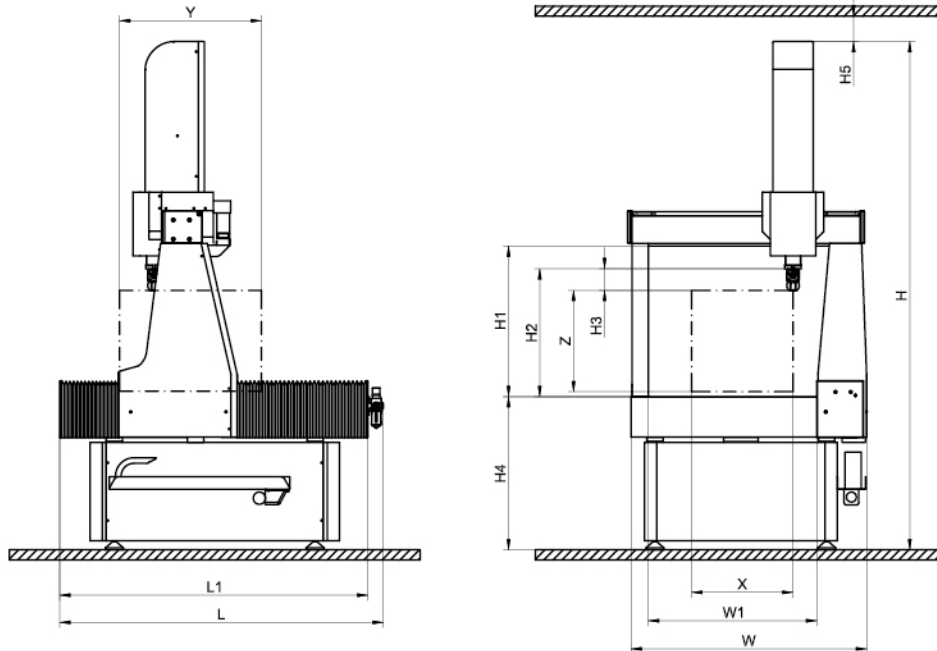
- SP25M with Module SM25-1 and Styli \varnothing 4 x 30 mm
- TP200 with Standard Force Module and Styli \varnothing 4 x 20 mm
- TP20 with Standard Force Module and Styli \varnothing 4 x 20 mm

2: According to DIN EN ISO 10360-2 / Maximum Permissible Error MPE_E

- SP25M with Module SM25-1 and Styli \varnothing 4 x 30 mm
- TP200 with Standard Force Module and Styli \varnothing 4 x 20 mm
- TP20 with Standard Force Module and Styli \varnothing 4 x 20 mm

3: According to DIN EN ISO 10360-4 / Maximum Permissible Error MPE_{THP}

- SP25M with Module SM25-1 and Styli \varnothing 4 x 30 mm



Dimensions [mm]

Machine type		XOrbit 55		XOrbit 87			XOrbit 107		
Measurement ranges	X	500		800			1000		
	Y	700	1000	1000	1500	2000	1200	1500	2000
	Z	500		700			700		
Overall dimensions	W	1180		1565			1765		
	L	1600	1950	2200	2700	3200	2400	2700	3200
	H	2505		2935	2935	2885	2935	2935	2885
Workspace dimension	H1	742		950			950		
	H2	650		865			865		
	H3(PH10T)	80		80			80		
	H4	750	750	750	750	700	750	700	
	W1	830		1125			1325		
	L1	1520	1870	2120	2620	3120	2320	2620	3120
Inspection room dimension	H5	50 (min.)		50 (min.)			50 (min.)		

Computer Trolley

W	1200
L	900
H	750

Wenzel Präzision GmbH
Werner-Wenzel-Straße, D-97859 Wiesthal
 Tel : +49 6020 201-0
 Fax: +49 6020 201-1999
 info@wenzel-cmm.com
 www.wenzel-group.com

Wenzel Measuring Machines(Shanghai)Co.,Ltd.
No.401,Xiang Hua Qiao East Road Qingpu
Industrial Park Shanghai 201707
 Tel :+86 21 5970 3088
 Fax:+86 21 5970 3082
 info@wenzel-cmm.cn