



Xspect
SOLUTIONS

WENZEL[®]

The company of μ

Coordinate Measuring Machines

LH 108 and LH 1010

Technical Data Sheet – Enhanced Accuracy



Technical Data LH 108, LH 1010 Enhanced Accuracy Models

Short description

- CNC-bridge design of measuring machine with Renishaw touch-trigger or scanning probe systems
- All granite guide-ways are accurately hand-lapped
- Ergonomically designed operator workstation, with integrated controller and Renishaw components
- CMM available in multiple sizes for the optimal selection of measuring volume

Application areas

- Production, incoming inspection and quality assurance
- Measurement of prismatic and free-form components
- Repetitive or individual measurements
- Automated part loading solutions available

Standard Features

- The Y-axis guide-way is machined directly into the granite base plate, providing optimal long-term accuracy and stability
- Pre-stressed, encompassing air bearings in all axes
- Passive vibration dampers
- Active pneumatic vibration damping available as option and field retrofittable
- Compact HT 400 control panel with central, logarithmic joystick, "mouse function" and context-sensitive function buttons. Selectable joystick's axis assignment
- The X and Y axis guide-ways feature industrial bellows protection to protect 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
- Optional automatic temperature compensation with sensors on all axes and work piece
- Two-stage speed selection and variable speed adjustment (override 0-100%) in all operation modes, resulting in sensitive movement via joystick or for CNC programming debugging

Probe systems

- Renishaw PH6, fixed probe head
- Renishaw PH10M/PH10T, indexable probe heads featuring 720 repeatable positions in 7.5° steps
- TP20 robust and economic touch-trigger probe. Stylus module changeable via optional tool changer
- SP25 scanning and single-point probe, ultra-precise and flexible for stylus lengths of up to 200 mm, optionally up to 400 mm. Probe module and stylus can be changed via optional tool changer.
- Renishaw PH6M, fixed probe head with the possibility of using complex probes like SP25, SP600
- TP200 touch-trigger probe, highly precise and suitable for styli up to 100 mm in length. Styli can be changed via optional tool changer
- SP80 scanning probe head, ultra-precise for probe lengths up to 500 mm For scanning and single-point probing. Stylus combinations can be changed via optional tool changer

DMIS Software

- Benchmark fully CAD integrated OpenDMIS software for measuring and evaluating geometry and free-form elements
- Graphic user interface featuring extensive automation to aid the User. Full Drag and Drop
- Seamless export of measured data and SPC Charts to Microsoft Excel
- Graphically interactive on and offline programming system for measurement program creation based on CAD data.
- Numeric and graphical reporting of the measured results in HTML format
- CAD import in IGES, STEP and DXF
- Integrated statistic functions, frequency distribution, trend diagram, machine-capability Cm and Cmk, SPC control charts, process capability Cp and Cpk.
- Shape and location tolerances according to ASME Y14.5M
- Context-sensitive on-line
- Native DMIS 5.0 programming language
- PTB Certified Algorithms

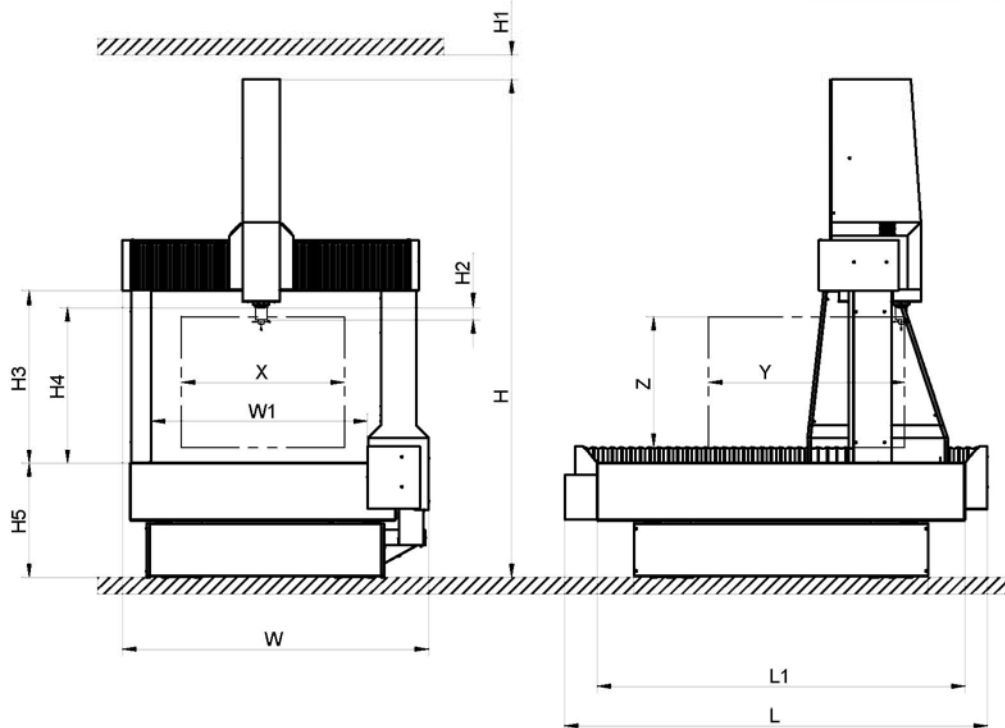
Options:

- Parasolid direct interface
- CATIA V4/V5 CAD direct interfaces
- I++DME Server

Machine Type		LH 108				LH 1010			
Measuring Ranges, Dimensions, Weights									
Measuring ranges	x	[mm]	1000	1000	1000	1000	1000	1000	1000
	y	[mm]	1200	1600	2000	2500	1200	1600	2000
	z	[mm]	800	800	800	800	1000	1000	1000
Useable table surface		[mm]	1310 x 2250	1310x2650	1310x3050	1310x3550	1310 x 2250	1310x2650	1310x3050
Machine weight		[kg]	4350	5350	6500	8150	4450	5450	6600
Permissible part weight		[kg]	2000	2250	2400	2750	2000	2250	2400
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)	Min. 80, higher consumption possible, depending on application (pneum. dampers)							
Measuring Accuracy									
Measurement system	Photoelectric scale set-up system, optical division 20µm, resolution 0.5µm (probe system TP20/TP200) / resolution 0,1 µm (probe system SP25/SP80)								
Probing uncertainty ¹	MPE _P [µm]	TP20 2.4	TP200 2.1	SP25 1.8	SP80 1.8	TP20 2.5	TP200 2.2	SP25 1.9	SP80 1.9
Volumetric length measuring uncertainty ¹	MPE _E [µm]	TP20 2.4+L/350	TP200 2.1+L/350	SP25/80 1.8+L/350		TP20 2.5+L/350	TP200 2.2+L/350	SP25/80 1.9+L/350	
Scanning probe uncertainty ²	MPE _{T+P} [µm]	SP25/SP80 2.4				SP25/SP80 2.5			
Operating Environment									
Operating temperature	15°C - 30°C								
Temperature range for MPE _E	18°C - 22°C, ΔT 1K/h, 1K/m, 2K/d								
Relative humidity	40% - 70%								
Dynamics									
Joystick operation	V _{max}	0-20mm/s [creep mode], 0-100mm/s [normal]							
CNC mode	V _{max}	300mm/s axial, 520mm/s volumetric							
CNC mode	a _{max}	600mm/s axis-related, 1,000mm/s ² volumetric							

1: in accordance with DIN EN ISO 10360-2

2: in accordance with DIN EN ISO 10360-4



Overall Dimensions		
	LH 108	LH 1010
H	3060	3460
W	1875	1875
L	2600 / 3000 / 3600 / 4100	2600 / 3000 / 3600 / 4100
X	1000	1000
Y	1200 / 1600 / 2000 / 2500	1200 / 1600 / 2000 / 2500
Z	800	1000
H1	50	50
H2 (PH 10M)	90	90
H2 (SP 80)	145	145
H3	1055	1255
H4	955	1155
H5	700	700
W1	1325	1325
L1	2250 / 2650 / 3050 / 3550	2250 / 2650 / 3050 / 3550

All dimensions are millimetres

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