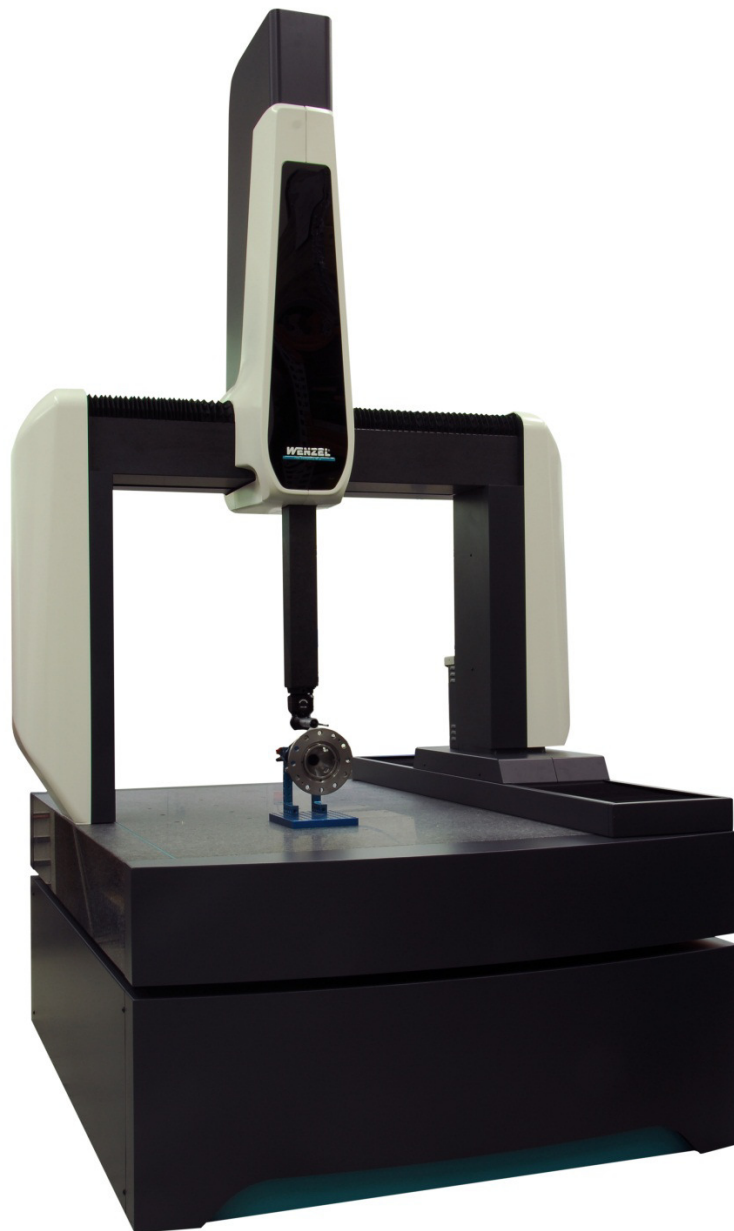


3D-Coordinate Measuring Machine (CMM) LH 65 STANDARD / PREMIUM / PREMIUM-SELECT

Technical Data



Short description

- CNC-bridge design measuring machine capable for touch-trigger and scanning probes; for optical or continuous and indexing probe systems
- Dynamic and high precision series with air bearings in all axis
- All granite guideways accurately hand-lapped
- Compact design. Operator workstation with integrated controller and computer
- CMM available in multiple sizes for the optimal selection of the required measurement volume

Application areas

- In production, quality control, process and production control; in reverse engineering and model making
- Geometric and free-form components
- Both series and individual measurements
- Palletized operation possible

Features

- The Y-axis guideway is machined directly in the base plate, providing optimal long-term stability
- Pre-stressed, encompassing air bearings in all axes
- Passive vibration dampers
- Active pneumatic vibration damping optionally available and field retrofittable
- Compact control panel with central, logarithmic joystick, "mouse function" and context-sensitive function buttons. Selectable joystick's axis assignment. Wireless version optionally available.
- The X- and Y-guideways feature bellows protections against contamination
- High-speed-dynamic servo drives with position monitoring, combined friction power transmission
- Three-axis contouring controller with intelligent "lookahead" function for application-optimized trajectory
- Manual temperature compensation in Standard version
- Premium- and Premium-Select version with automatic temperature compensation 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 in CNC mode

Probe systems

- PH10M / PH10T motorized indexing head
 - TP200 touch-trigger probe, highly precise and suitable for styli up to 100 mm in length. Styli can be changed via optional tool changer
 - Touch-trigger probe TP20, Stylus module changeable via optional tool changer
- PH10M motorized indexing head
 - SP25M scanning and single-point probe, precise and flexible for stylus lengths of up to 400 mm. Probe module and stylus can be changed via optional tool changer.
 - Shapetracer: 3D Line Scanner to report and handle point clouds
- SP80 scanning probe head, highly precise for larger probe lengths. For scanning and single-point probing. Stylus combinations can be changed via optional tool changer
- PH20™: Continuous 5-axis touch-trigger system with „head touch“

Technical Data LH 65 STANDARD / PREMIUM / PREMIUM-SELECT

Machine Type			LH 65 Standard			LH 65 Premium		LH 65 Premium-Select		
Measuring Ranges, Weights										
Measuring ranges	X	[mm]	650			650		650		
	Y*	[mm]	750	1200		750	1200		750	1200
	Z	[mm]	500			500		500		
Machine weight		[kg]	1340	1895		1340	1895		1340	1895
Permissible part weight		[kg]	500	700		500	700		500	700
General Requirements										
Electric			Single-phase AC 1P+N+PE, 115/230 V ± 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	passive	[^{Nl} / _{min}]	Ø 35				42 (max.)			
	active	[^{Nl} / _{min}]	Ø 56				84 (max.)			
Measuring Accuracy										
Measurement system			Photoelectric scale system, optical division 20 µm							
Resolution		[µm]	0,1			0,05		0,05		
Probing uncertainty ¹		MPE _P [µm]	TP20 2,5	TP200 2,1	SP25/80 1,8	TP200 1,7	SP25/80 1,5	SP25/80 1,4		
Volumetric length measuring uncertainty ²		MPE _E [µm]	TP20 2,5+L/300	TP200 2,1+L/300	SP25/80 1,8+L/300	TP200 1,7+L/350	SP25/80 1,5+L/350	SP25/80 1,4+L/450		
Scanning probe uncertainty ³		MPE _{THP} [µm]	SP25/80 2,4			SP25/80 2,1		SP25/80 2,0		
Total measuring time for THP		MPT _{THP} [sec]	72			72		72		
Operating Environment										
Operating temperature		[°C]	15-30							
Temperature range for MPE _E (Standard/Premium)			18-22 °C, ΔT: 1 ^K / _h , 1 ^K / _m , 2 ^K / _d							
Temperature range for MPE _E (Premium-Select)			19-21 °C, ΔT: 0,5 ^K / _h , 0,5 ^K / _m , 1 ^K / _d							
Relative humidity		[%]	40-70							
Dynamics										
Joystick operation		v _{max} [^{mm} / _s]	0-20 (creep mode), 0-100 (normal)							
CNC mode		v _{max} [^{mm} / _s]	400 axial, 690 volumetric							
CNC mode		a _{max} [^{mm} / _s ²]	1200 axial, 2000 volumetric							

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

- SP25M with Module SM25-1 and Styli \varnothing 4 x 21 mm
- SP80 and Styli \varnothing 5 x 50 mm
- TP200 with Standard Force Module and Styli \varnothing 4 x 21 mm
- TP20 with Standard Force Module and Styli \varnothing 4 x 10 mm

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

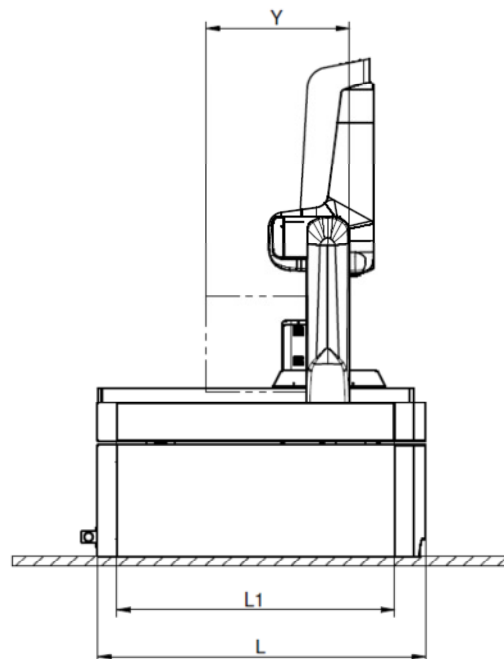
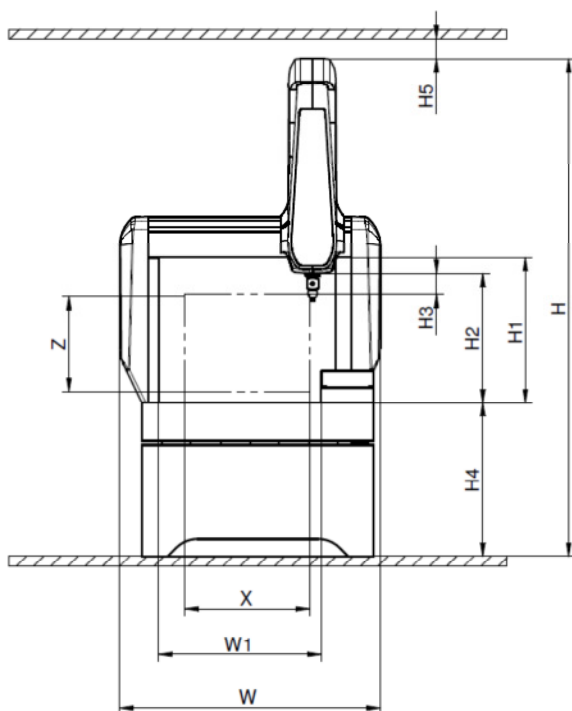
- SP25M with Module SM25-1 and Styli \varnothing 4 x 21 mm
- SP80 and Styli \varnothing 5 x 50 mm
- TP200 with Standard Force Module and Styli \varnothing 4 x 21 mm
- TP20 with Standard Force Module and Styli \varnothing 4 x 21 mm

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

- SP25M with Module SM25-1 and Styli \varnothing 4 x 21 mm
- SP80 and Styli \varnothing 5 x 50 mm

* More Y-measuring ranges on request

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Overall Dimensions [mm]			
Measuring ranges	X	650	
	Y*	750	1200
	Z	500	
Overall dimensions	W	1365	
	L	1715	2215
	H	2595	
Workspace dimensions	H1	760	
	H2	675	
	H3 (PH10M)	105	
	H4	800	
	L1	1450	1900
	W1	850	
Inspection room dimension	H5	65 (min.)	

* More Y-measuring ranges on request