

CMM BENCHMARK

SPECIFICATIONS

Models	Measurement performances												Max. 3D Positioning Speed	Max. 3D Acceleration
	MOTORIZED													
	Environment conditions	MH20i / PH10T / M / PH20 - TP20			PH10T / M - TP200			PH10M / PH6M - SP25M						
		MPE _{E0/ISO} ⁽¹⁾	MPL _{RO} ⁽²⁾	MPE(PFTU) ⁽³⁾	MPE _{E0/ISO} ⁽¹⁾	MPL _{RO} ⁽²⁾	MPE(PFTU) ⁽³⁾	MPE _{E0/ISO} ⁽¹⁾	MPL _{RO} ⁽²⁾	MPE(PFTU) ⁽³⁾	MPE _{Tj} ⁽⁴⁾	MPT _{Tj} ⁽⁵⁾		
[μm]		[μm]	[μm]	[μm]	[μm]	[μm]	[μm]	[μm]	[μm]	[μm]	[μm]	[mm/s]	[mm/s²]	
06.05.05	T ₁ : 18 ÷ 22 °C	2,7 + 3,0 L/1000	2,5	2,7	2,5 + 3,0 L/1000	2,3	2,5	2,5 + 3,0 L/1000	2,3	2,5	5,0	120	500	1500
	T ₂ : 16 ÷ 26 °C	2,7 + 5,0 L/1000	2,5	2,7	2,5 + 5,0 L/1000	2,3	2,5	2,5 + 5,0 L/1000	2,3	2,5	5,5	120		

Performance data are only valid if the following specifications are met:

- MPE_{E0} /MPE(PFTU)/MPL_{RO}: PH10 M/PH10T/PH20/TP20/TP200: tip diameter Ø4 mm, stylus length 10 mm.
- MPE_{E150}: PH10M/TP20/TP200: tip diameter Ø4 mm, stylus length 40 mm. PH20/MH20i: EM1 STDF, tip diameter Ø4 mm, stylus length 20 mm. PH10T: PEL2, tip diameter Ø4 mm, stylus length 10 mm
- L = measuring length in mm
- Ambient temperature Range:
T₁: 18 ÷ 22 °C; Max. Gradients: 1,0 °C/h - 2,0 °C/24h - 1,0 °C/m
T₂: 16 ÷ 26 °C; Max. Gradients: 1,0 °C/h - 5,0 °C/24h - 1,0 °C/m

⁽¹⁾ Maximum Permissible Error of indication for size measurement according UNI EN ISO 10360-2:2010

⁽²⁾ Maximum Permissible Probing Error according UNI EN ISO 10360-2:2010

⁽³⁾ Maximum Permissible Shape error with single stylus according UNI EN ISO 10360-5:2010

⁽⁴⁾ Maximum Permissible Scanning Probing Error in according UNI EN ISO 10360-2:2010, applicable to the SP25M/SP80 probes only, reference sphere Ø25 mm - REVO RSP3-1

⁽⁵⁾ Maximum Permissible Time for Scanning test in according UNI EN ISO 10360-2:2010, applicable to the SP25M/SP80 probes only, reference sphere Ø25 mm - REVO RSP3-1

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PERFORMANCE VERIFICATION

MPE_{E0}: Maximum Permissible Error on length measurement with standard probe OFFSET

Measurement of a set of 5 sizes, taken through two opposite probing points on two nominally parallel planes. The sizes are positioned with direction on the 4 volume diagonals and in 3 different positions chosen by the customer (or along the axes according to the standard) in the measurement volume. Each size is measured 3 times for a total of 105 measurements. All 105 measurements (100 %) must be within the specified MPE_{E0}.

MPE_{E150}: Maximum Permissible Error on length measurement with probe OFFSET 150 mm

Measurement of 1 set of 5 different sizes in 2 diagonal positions on the XZ or YZ plane with a probe OFFSET of 150 mm. All 30 measurements must be less than the Maximum Permissible Error MPEE_{E150}.

MPL_{RO}: Maximum Permissible Repeatability Limit

Evaluation of the 35 repeatability values calculated from the difference between the maximum and minimum values of the 3 different measurements made on the same length size on each of the 5 samples in each of the 7 positions. Each of these 35_{RO} value must be less than the maximum permissible limit MPL_{RO}.

MPE (PFTU): Maximum Permissible Single Stylus Form Error

A reference sphere is measured with 25 equally distributed probings, estimate of the deviation in the shape of the sphere, obtained as a dispersion band of the 25 polar rays. The probing performance shall be verified in one position, placed in the middle of the CMM measure volume. Calculation of the Gaussian sphere using the 25 measures. Calculation of the radial distances R, for each of the 25 measured points. Calculation of the PFTU point gripping error, as dispersion band of the 25 radial distances , Rmax-Rmin. The PFTU error must be within the MPE(PFTU).



CMM BRIDGE

BENCHMARK

06.05.05 MOT

HALF-GANTRY TYPE CNC COORDINATE MEASURING MACHINE



