

CMM BENCHMARK MAN

SPECIFICATIONS

Models	T ₁ : 18 - 22 °C			T ₂ : 16 - 26 °C		
	MH20i / MH8 / MIH / PH1 / PH6 - TP20			MH20i / MH8 / MIH / PH1 / PH6 - TP20		
	MPE _{E0/150} ⁽¹⁾	MPL _{RO} ⁽²⁾	MPE(PFTU) ⁽³⁾	MPE _{E0/150} ⁽¹⁾	MPL _{RO} ⁽²⁾	MPE(PFTU) ⁽³⁾
	[μm]	[μm]	[μm]	[μm]	[μm]	[μm]
06.05.05	3,2 + 3,3 L/1000	3,2	3,4	3,2 + 5,0 L/1000	3,2	3,4

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

- MPE_{E0} / MPE(PFTU) / MPL_{RO}: tip diameter ø4 mm, stylus length 10 mm.
- MPE_{E150}: tip diameter ø4 mm, stylus length 40 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

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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 MPE_{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}.



CMM BRIDGE

BENCHMARK MAN

06.05.05

HALF-GANTRY TYPE
MANUALLY-CONTROLLED
COORDINATE MEASURING MACHINE



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STRUCTURE

Coordinate Measuring Machine, manual type, with aluminum alloy mobile half-gantry structure on granite table machine base

Surface Plate:
Granite table with integrated guide-ways with flatness to DIN876/III and MS threaded insert grid

Guideways:
X axis: machined into granite table (left) and micro-machined and hard anodized alloy extrusions (right)
Y axis: micro-machined and hard anodized alloy extrusions
Z axis: micro-machined and hard anodized alloy extrusions

Motion Control:
Via manual knobs with zero hysteresis friction drive on steel bar to all axes. Micrometric handwheels are optional to allow accurate and fine axis displacement

Axis Locking:
Via manually operated pneumatic valves

Thermal Lompensation:
Multi-sensors temperature compensation system (total 4 sensors) in option

Measuring System:
High resolution (0,1µm) free floating linear scales mounted in carriers

OPTION

Passive vibration insulating system
Active vibration insulating system (AVM)

POWER SUPPLY

Power Supply Voltage:
230 V ± 10%; 50 Hz ± 2% single phase
115 V ± 10%; 60 Hz ± 2% single phase

AIR SUPPLY

Air Consumption:
90 NI/min
Minimum Air Supply:
5 Bar (71 PSI)

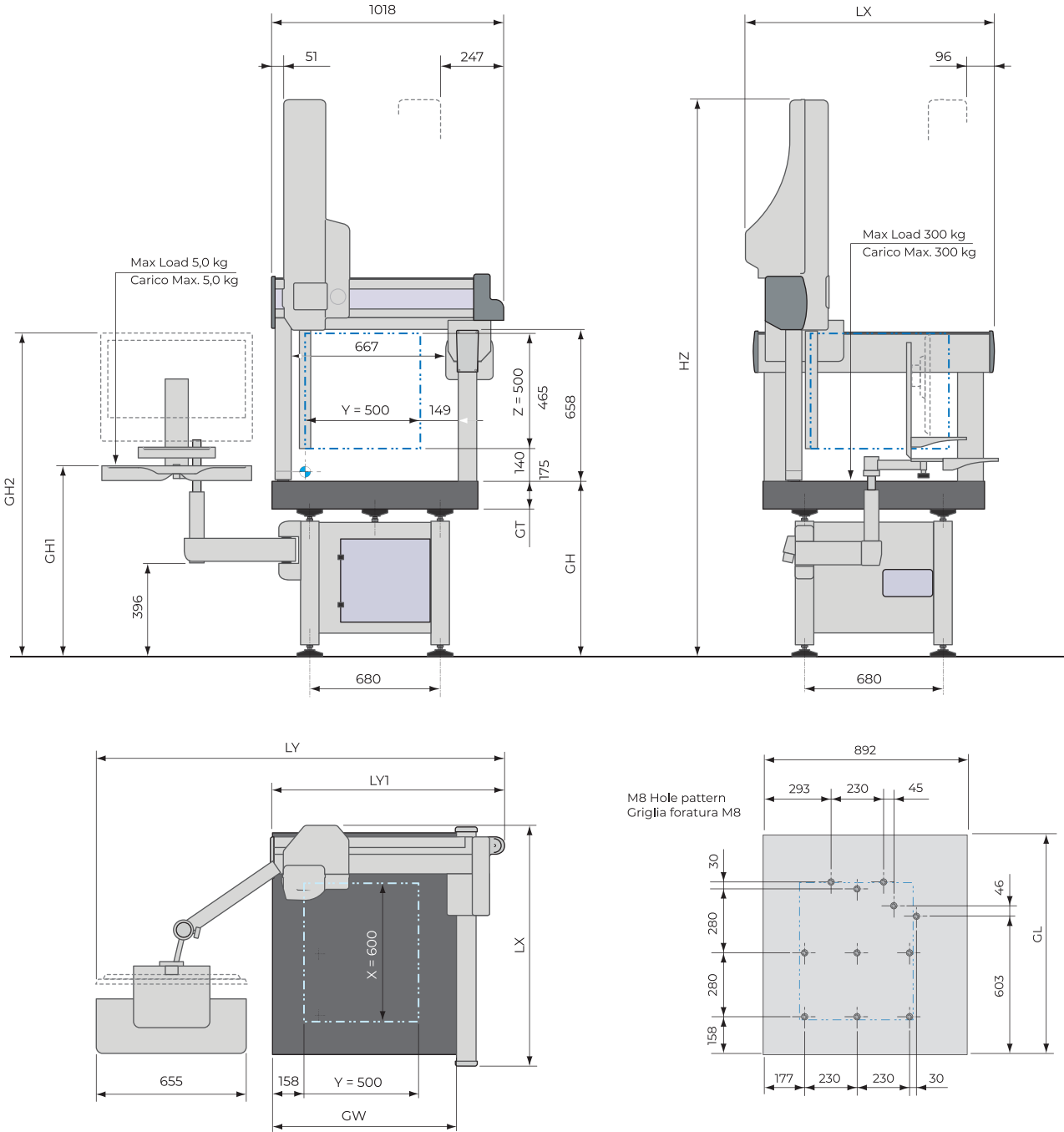
PROBING SYSTEM

Manual Probe Head:
MH20i, MH8, MIH, PH6, PH1

Point-to-point Trigger Probe:
TP20

CMM BENCHMARK MAN
STROKES, DIMENSIONS, WEIGHTS

BENCHMARK is also available w/o intergrated PC and mobile arm. It needs a UNITABLE desk (1200 x 800 x 715 mm) for PC.



Models	Measuring Strokes			Overall Dimensions				Surface Plate						Weights	
	X	Y	Z	LX	LY	LY ^(b)	HZ	GH	CT	GL	GW	GH1	GH2	Max. Part Weight	Machine Weight ^(a)
	[mm]			[mm]				[mm]						[kg]	
06.05.05	600	500	500	1066	1800÷1930	1018	2392	750	100	960	803	800÷1200	1395÷1825	300	435

^(a) Weight includes CMM, Basement. Weight does not include Control and PC, keyboard and Video Terminal (approx. 20 kg)

^(b) BENCHMARK w/o integrated control and articulated arm - Need a UNITABLE desk for PC