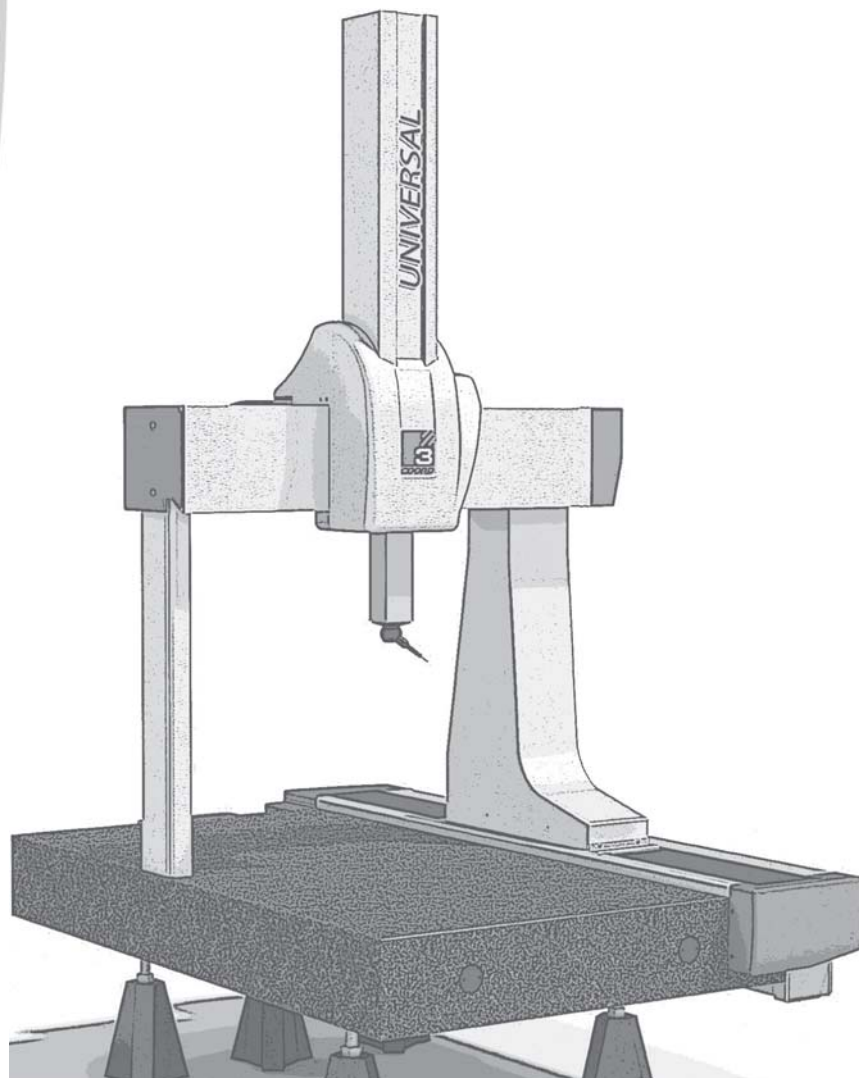




COORD3 UNIVERSAL

07.07 - 09.08 - 10.08

BRIDGE TYPE CNC COORDINATE MEASURING MACHINE



UNIVERSAL 07.07 - 09.08 - 10.08



STRUCTURE:	CNC Bridge Type Coordinate Measuring Machine with alloy bridge frame on granite base.
SURFACE PLATE:	Monolithic granite table with integral guide-ways and isostatic support with flatness to DIN876/III and M8 threaded insert grid.
GUIDEWAYS:	X axis integral dovetail machined into granite table Y/Z axes micro-machined and hard anodized alloy extrusions.
DRIVE METHOD:	CNC drive via DC motors with toothed drive belts to all axes.
BEARING SYSTEM:	Isostatic system of air bearings to all axes.
MEASURING SYSTEM:	High resolution (0.1µm) free floating linear scales mounted in carriers.
COUNTERBALANCE:	Adjustable pneumatic on Z ram.
THERMAL COMPENSATION:	C3TCOMP Wireless multi-sensors for measuring scales and part.

PERFORMANCE

Models	Maximum Permissible Error ISO 10360-2 / ISO 10360-4 MPE [µm], L [mm], t [sec]														Max. 3D Pos. Speed	Max. 3D Accel.
	T ₁ : 18-22 °C							T ₂ : 16-26 °C								
	PH10M/MQ/PH20-TP20		PH10MQ-TP200		PH10MQ-SP25M REVO			PH10M/MQ/PH20-TP20		PH10MQ-TP200		PH10MQ-SP25M REVO				
	⁽¹⁾ MPE _E	⁽²⁾ MPE _P	⁽¹⁾ MPE _E	⁽²⁾ MPE _P	⁽¹⁾ MPE _E	⁽²⁾ MPE _P	⁽³⁾ MPE _{THP}	⁽¹⁾ MPE _E	⁽²⁾ MPE _P	⁽¹⁾ MPE _E	⁽²⁾ MPE _P	⁽¹⁾ MPE _E	⁽²⁾ MPE _P	⁽³⁾ MPE _{THP}		
[µm]		[µm]		[µm]			[µm]		[µm]		[µm]			[mm/s]	[mm/s ²]	
xx.07.07	1,9 + L/333	2,0	1,8 + L/333	1,8	1,5 + L/333	1,5	3,0/90	2,4 + L/200	2,4	2,2 + L/200	2,2	2,2 + L/200	2,2	4,4/90	866	2000
xx.09.08	1,9 + L/333	2,0	1,8 + L/333	1,8	1,5 + L/333	1,5	3,0/90	2,4 + L/200	2,4	2,2 + L/200	2,2	2,2 + L/200	2,2	4,4/90	866	2000
xx.10.08	2,0 + L/333	2,1	1,9 + L/333	1,9	1,7 + L/333	1,7	3,4/90	2,5 + L/200	2,5	2,3 + L/200	2,3	2,3 + L/200	2,3	4,6/90	866	2000

Performance data are only valid if the following specifications are met:
 - PH10M/PH10MQ/PH20/TP20/TP200: tip diameter Ø 4 mm, stylus length 10 mm.
 - PH10MQ/SP25: SM1, stylus Ø 5 mm, length 50 mm.
 - REVO: RSP2/RSH175 - RSP3-1/SH25-1, stylus length 20 mm
 - L = measuring length in mm
 - Ambient temperature:
 T₁: 18 - 22 °C; Max. Gradients: 1,0 °K/h - 2,0 °K/24h - 1,0 °K/m
 T₂: 16 - 26 °C; Max. Gradients: 1,0 °K/h - 5,0 °K/24h - 1,0 °K/m

⁽¹⁾ Maximum Permissible Error of indication for size measurement according ISO 10360-2
⁽²⁾ Maximum Permissible Probing Error according ISO 10360-2
⁽³⁾ Maximum Permissible Scanning Probing Error according ISO 10360-4, applicable to the SP25M/SP80 probes only, reference sphere Ø 25 mm - REVO RSP3

PERFORMANCE VERIFICATION

MPE_E : Maximum Permissible Error of indication for size measurement

Measurement of a set of 5 sizes, taken through two opposite probing points on two nominally parallel planes. The set of 5 sizes is placed in 7 different positions/directions within the measuring volume. Each size is measured 3 times for a total of 105 measurements. All 105 measurements (100%) must be within the specified MPE_E.

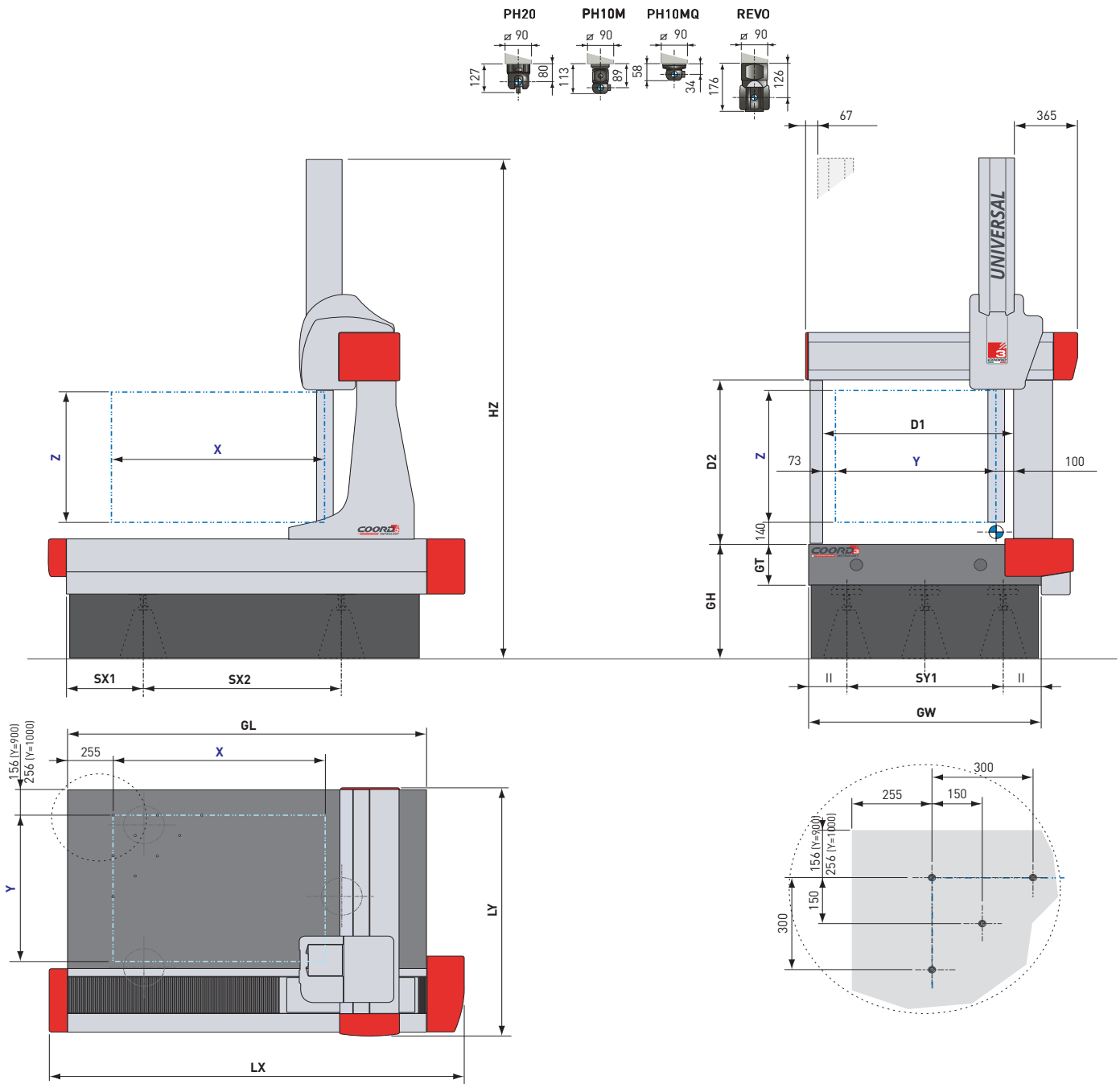
MPE_P : Maximum Permissible Probing Error

A reference sphere is measured with 25 equally distributed probeings. The probing performance shall be verified in one position, placed in the middle of the CMM measure volume. Using all 25 measurements, compute the Gaussian associated sphere. For each of the 25 measurements, calculate the Gaussian radial distance R. Calculate the probing error P, as the range of the 25 Gaussian distances, R_{max} - R_{min}. The probing error P must be within the specified MPE_P.

MPE_{THP/t} : Maximum Permissible Scanning Probing Error

MPE_{THP/t} is the Maximum Permissible Scanning Probing Error of the range of all measured sphere radii (sphere form error), with high point density and predefined path scanning, where t is the specified time (seconds) needed to perform the verification test. The scanning probing performance shall be verified in one single position, placed in the middle of the CMM measure volume. A reference sphere is measured by scanning 4 target scan lines to determine the range of the radial distance R. The scanning probing error THP is calculated as the range of sphere radii between the measured centre and all of the valued scan points. The measured THP and the time to perform the scanning test must be within the specified MPE_{THP/t}.

STROKES, DIMENSIONS, WEIGHTS



Models	Measuring Strokes			Overall Dimensions			Surface Plate						Daylights		Weights		
	X	Y	Z ⁽¹⁾	LX	LY	HZ	Height	Thickness	Length	Width	Supports			D1	D2	Max. Part Weight	Machine Weight
							GH	GT	GL	GW	SX1	SX2	SY1				
[mm]			[mm]			[mm]						[mm]		[kg]			
10.07.07	1000	700	700	2152	1324	2843	670	200	1830	1110	415	1000	700	873	909	900	1380
12.09.08	1200	900	800	2352	1524	3073	700	250	2030	1310	455	1120	880	1073	1009	1300	2125
15.09.08	1500	900	800	2652	1524	3073	700	250	2330	1310	540	1250	880	1073	1009	1500	2400
20.09.08	2000	900	800	3152	1524	3073	700	250	2830	1310	665	1500	880	1073	1009	1800	2860
12.10.08	1200	1000	800	2352	1624	3073	700	250	2030	1410	455	1120	980	1173	1009	1400	2270
15.10.08	1500	1000	800	2652	1624	3073	700	250	2330	1410	540	1250	980	1173	1009	1600	2570
20.10.08	2000	1000	800	3152	1624	3073	700	250	2830	1410	665	1500	980	1173	1009	1900	3070

⁽¹⁾ With REVO Z Measuring stroke will be reduced by 48 mm

TECHNICAL CHARACTERISTICS

STRUCTURE

Structure:

CNC Bridge Type Coordinate Measuring Machine with alloy bridge frame on granite base.

Surface Plate:

Monolithic granite table with integral guide-ways and isostatic support with flatness to DIN876/III and M8 threaded insert grid.

Guideways:

X axis integral dovetail machined into granite table;
Y/Z axes micro-machined and hard anodized alloy extrusions.

Drive Systems:

CNC drive via DC motors with toothed drive belts to all axes.

Bearing System:

Isostatic system of air bearings to all axes.

Measuring System:

High resolution (0.1µm) free floating linear scales mounted in carriers

Counterbalance:

Adjustable pneumatic on Z ram.

Thermal Compensation:

COORD3-T Wireless multi-sensors for measuring scales and part

OPTION

Active vibration insulation system (AVM)
Basement Side Skirts
Perimetral safety system with SAFE MODE operation (CC3-NT)
Multi-wire cable

PROBING SYSTEM

Manual Probe Head:

MIH, MH20, MH20i

Motorized Indexable Probe Head:

PH10T, PH10M, PH10MQ

Motorized Continuous Probe Head:

PH20, REVO

Point-to-point Trigger Probe:

TP2, TP20, TP200

Analog Contact Probe:

SP600, SP25M, SP80

Stylus and Probe Changer:

Fully automated stylus and probe changers

ENVIRONMENT

Temperature Range for Metrological Specification:

T₁: Ambient Temperature Range: 18 - 22 °C

Max. gradient per hour: 1,0 °K/h

Max. gradient per day: 2,0 °K/24h

Max. gradient in space: 1,0 °K/m

T₂: Ambient Temperature Range: 16 - 26 °C

Max. gradient per hour: 1,0 °K/h

Max. gradient per day: 5,0 °K/24h

Max. gradient in space: 1,0 °K/m

Operating Temperature:

15 ÷ 35 °C

Relative Humidity:

40 ÷ 80 % (non condensing)

Acceptable Vibrations:

(vibration acceleration between peaks)

30 mm/s² from 1 to 10 Hz

15 mm/s² from 10 to 20 Hz

50 mm/s² from 20 to 100 Hz

AIR SUPPLY

Air Consumption:

250 Nl/min

Minimum Air Supply:

5 Bar (71 PSI)

POWER SUPPLY

Power Supply Voltage:

230 V ± 10%; 50 Hz ± 2% (single phase)

115 V ± 10%; 60 Hz ± 2% (single phase)

(data for CC3-NT Control)

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