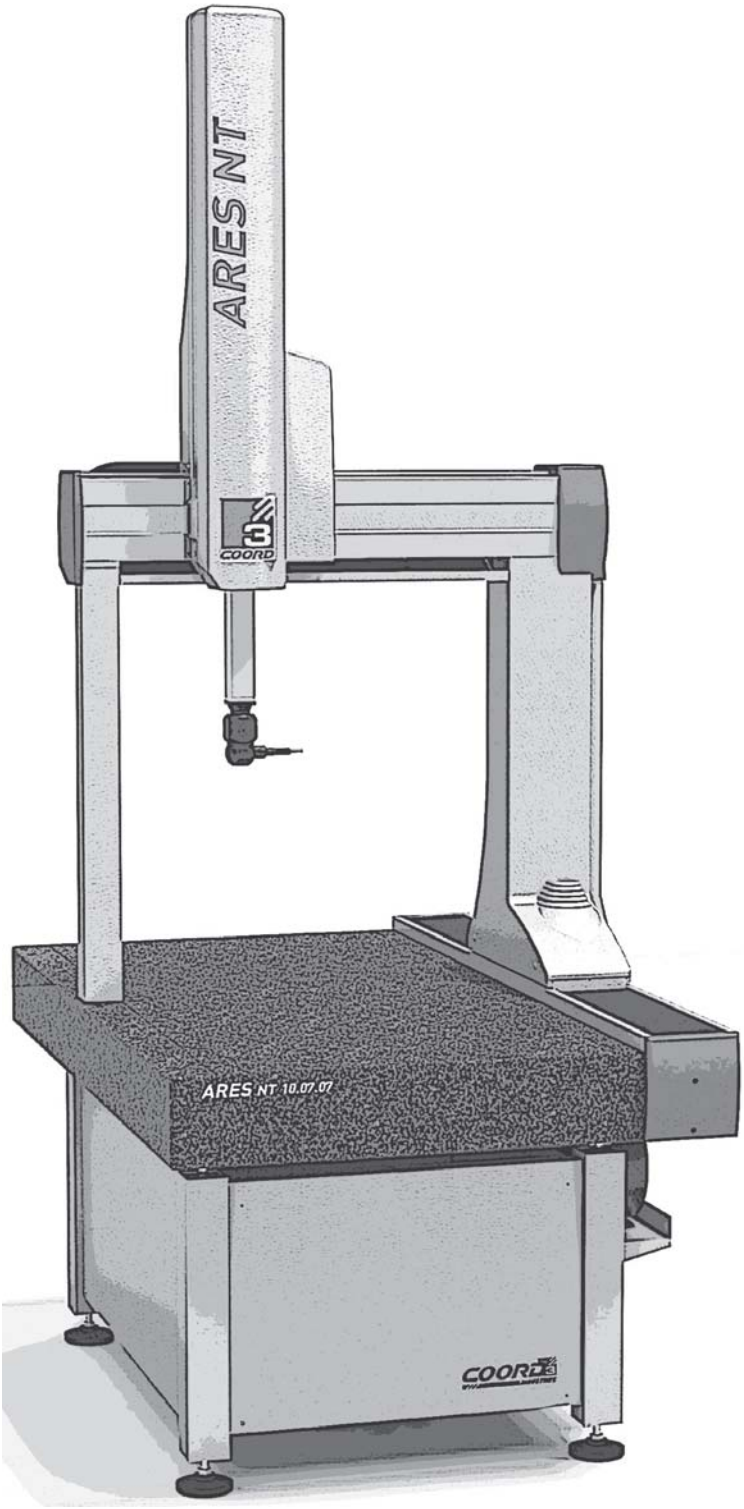
ARES NT

BRIDGE TYPE CNC COORDINATE MEASURING MACHINE



ARES NT

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

SURFACE PLATE: Granite table with integrated guide-ways with flatness to DIN876/III and M8 threaded insert grid

GUIDEWAYS: X axis machined into granite table
Y axis micro-machined and hard anodized alloy extrusions
Z axis Silicon Carbide extrusion (NT only, aluminum alloy extrusion on std)

DRIVE SYSTEMS: CNC drive via DC motors with zero hysteresis friction drive on steel bar on all axes

BEARING SYSTEM: 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: Optional Wireless multi-sensors for measuring scales and part (Optional)

ARES NT 05.05/07.05/07.07: SPECIFICATIONS

Models	Maximum Permissible Error ISO 10360-2 / ISO 10360-4														Max. 3D Pos. Speed	Max. 3D Accel.
	T_1: 18÷22 °C							T_2: 16÷26 °C								
	PH10T/M/PH20-TP20		PH10T/M-TP200		PH6M/PH10M-SP25			PH10T/M/PH20-TP20		PH10T/M-TP200		PH6M/PH10M-SP25				
	[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/s²]
xx.05.05	2,0 + L/333	2,0	1,8 + L/333	1,8	1,8 + L/333	1,8	3,9/120	2,0 + L/250	2,0	1,8 + L/250	1,8	1,8 + L/250	1,8	3,9/120	500	1500
xx.07.05	2,1 + L/333	2,1	1,9 + L/333	1,9	1,9 + L/333	1,9	4,0/120	2,1 + L/250	2,1	1,9 + L/250	1,9	1,9 + L/250	1,9	4,0/120	500	1500
xx.07.07	2,5 + L/300	2,5	2,3 + L/300	2,3	2,3 + L/300	2,3	4,5/120	2,5 + L/200	2,5	2,3 + L/200	2,3	2,3 + L/200	2,3	4,5/120	500	1200

Performance data are only valid if the following specifications are met:
- PH10T/M/PH20-TP20/TP200: Tip diameter Ø 4 mm x Stylus length 10 mm
- PH6M/PH10M-SP25: SM1, Stylus Ø 5 mm x 50 mm
- L = measuring length in mm
- CMM equipped with Multisensor temperature compensation system (Optional)

- Ambient temperature Range:
T1 : 18 ÷ 22 °C; Max. Gradients : 0,5 °K/h - 2,0 °K/24h - 0,5 °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 accordind 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 probes only

ARES 05.05/07.05: SPECIFICATIONS

Models	Maximum Permissible Error ISO 10360-2 / ISO 10360-4														Max. 3D Pos. Speed	Max. 3D Accel.
	T_1: 18÷22 °C							T_2: 16÷26 °C								
	PH10T/M/PH20-TP20		PH10T/M-TP200		PH6M/PH10M-SP25			PH10T/M/PH20-TP20		PH10T/M-TP200		PH6M/PH10M-SP25				
	[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/s²]
xx.05.05	2,2 + L/300	2,2	2,0 + L/300	2,0	2,0 + L/300	2,0	4,0/120	2,2 + L/200	2,2	2,0 + L/200	2,0	2,0 + L/200	2,0	4,0/120	500	1500
xx.07.05	2,5 + L/300	2,5	2,3 + L/300	2,3	2,3 + L/300	2,3	4,6/120	2,5 + L/200	2,5	2,3 + L/200	2,3	2,3 + L/200	2,3	4,6/120	500	1500

Performance data are only valid if the following specifications are met:
- PH10T/M/PH20-TP20/TP200: Tip diameter Ø 4 mm x Stylus length 10 mm
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[3] Maximum Permissible Scanning Probing Error according ISO 10360-4, applicable to the SP25M probes only

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.

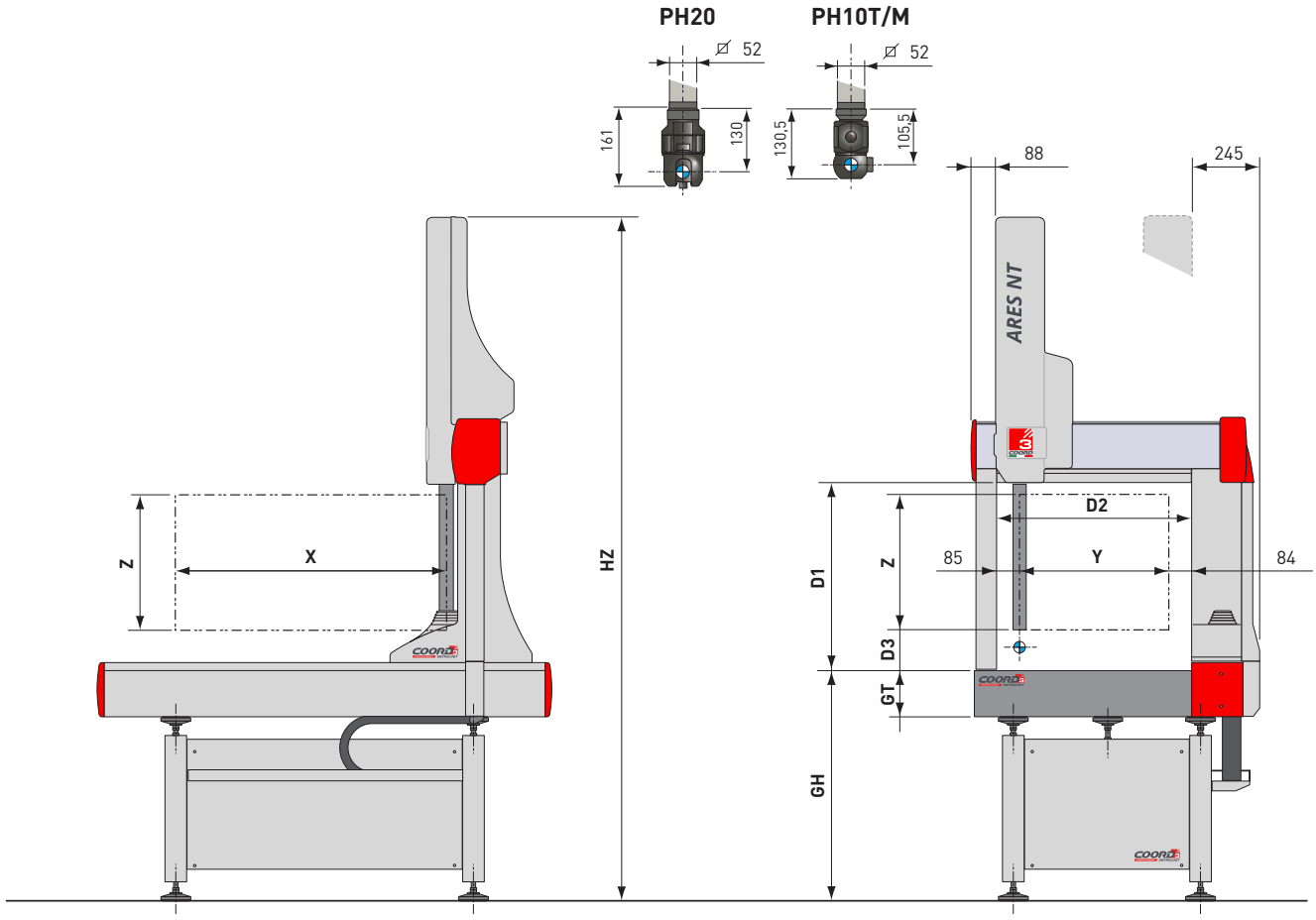
MPE_P : Maximum Permissible Probing Error

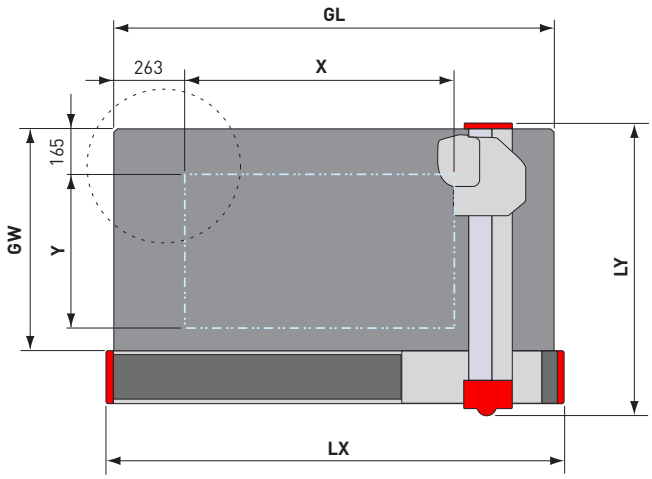
A reference sphere is measured with 25 equally distributed probings. The probing performance shall be verified in one position, placed in the middle of the CMM measure volume. Using all 25 measurements, compute the Gaussian associated sphere. For each of the 25 measurements, calculate the Gaussian radial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

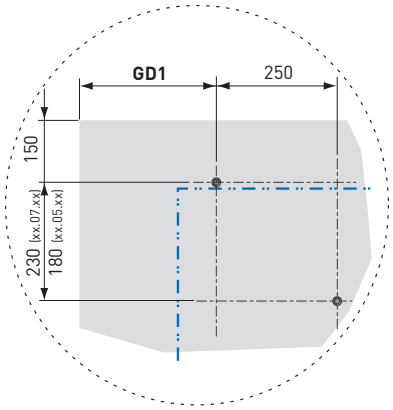
$MPE_{THP/t}$: Maximum Permissible Scanning Probing Error

$MPE_{THP/t}$ 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								Weights	
							Height	Thickness	Length	Width	Holes	Daylights			Max. Part Weight	Machine Weight
	X	Y	Z	LX	LY	HZ	GH	GT	GL	GW	GD1	D1	D2	D3 [1]		
	[mm]			[mm]			[mm]					[mm]			[kg]	
05.05.05	500	500	500	1180	1015	2393	720	140	1130	751	200	688	669	172,5	300	470
07.05.05	700	500	500	1380	1015	2393	720	140	1330	751	350	688	669	172,5	300	540
07.07.05	700	650	500	1380	1160	2429	750	170	1330	899	350	688	819	172,5	650	775
10.07.05	1000	650	500	1680	1160	2429	750	170	1630	899	350	688	819	172,5	700	925
12.07.05	1200	650	500	1880	1160	2429	750	170	1830	899	300	688	819	172,5	700	990
07.07.07 [2]	700	650	650	1380	1160	2734	750	170	1330	899	350	838	819	172,5	650	800
10.07.07 [2]	1000	650	650	1680	1160	2734	750	170	1630	899	350	838	819	172,5	700	950
12.07.07 [2]	1200	650	650	1880	1160	2734	750	170	1830	899	300	838	819	172,5	700	1015

[1] *NT serie, 177,5 mm on std*

[2] *Only available in NT configuration*

TECHNICAL CHARACTERISTICS

STRUCTURE

Coordinate Measuring Machine, CNC type, with aluminum alloy mobile bridge structure on granite table machine base
Guideways:
X axis: dovetail guideways machined into the granite table
Y axis: micromachined anodized light alloy extrusion
Z axis: micromachined anodized light alloy extrusion or Silicon Carbide (NT, NT XL)
Drive Method:
X axis: zero hysteresis friction drive on steel bar
Y axis: zero hysteresis friction drive on steel bar
Z axis: zero hysteresis friction drive on steel bar
Sliding System:
Air bearings on all axes
Motion Control:
DC servomotor on all axes
Thermal Compensation:
Multi-sensors temperature compensation system (total 4 sensors) in Option.
Measuring System:
High resolution (0,1µm) free floating linear scales mounted in carriers

PROBING SYSTEM

Manual Probe Head:
TPC3, MIH, MH20, MH20i, MH8, RTP20, PH6M
Motorized Probe Head:
PH10T, PH10M, PH20
Point-to-point Trigger Probe:
TP20, TP200, TP200B
Analog Contact Probe:
SP25M
Stylus and Probe Changer:
Fully automated stylus and probe changers

OPTION

Passive vibration insulating system
Active vibration insulation system (AVM)
Multi-wire cable

ENVIRONMENT

Temperature Range for Metrological Specification:
Temperature Range: 18 ÷ 22 °C
Max. gradient per hour: 0,5 °K/h
Max. gradient per day: 2,0 °K/24h
Max. gradient in space: 0,5 °K/m
Operating Temperature:
15 ÷ 35 °C
Relative Humidity:
40 ÷ 80 % (non condensing)
Acceptable Vibrations:
(vibration acceleration between peaks)
30 mm/s^2 from 1 to 10 Hz
15 mm/s^2 from 10 to 20 Hz
50 mm/s^2 from 20 to 100 Hz

Optional
- Metrology Room or CMM protection system

AIR SUPPLY

Air Consumption:
100 Nl/min
Minimum Air Supply:
5 Bar (71PSI)

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)

WARRANTY

12 months from the date of acceptance test or a maximum of 15 months from date of shipment.

Distribuito da / Authorized Dealer / Vertrieben durch:

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