

# CMM SWAN SI PERFORMANCE



## HORIZONTAL ARM SWAN SI CNC COORDINATE MEASURING MACHINE

Environment conditions	Models	PH10M/T-TP20					Max. 3D Pos. Speed	Max. 3D Accel.
		Single Arm			Double Arm			
		MPE <sub>EO/20</sub> <sup>(1)</sup> [μm]	MPL <sub>20</sub> <sup>(2)</sup> [μm]	MPE(PFTU) <sup>(3)</sup> [μm]	MPE <sub>EO/20</sub> <sup>(1)</sup> [μm]	MPL <sub>20</sub> <sup>(2)</sup> [μm]		
T <sub>1</sub> 18 ± 22 °C	xx.15.18	20 + 23 L/1000 ≤ 65	20	20	40 + 28 L/1000 ≤ 95	40	520	850
	xx.15.20	22 + 25 L/1000 ≤ 70	22	22	44 + 30 L/1000 ≤ 105	44	520	850
	xx.16.20	25 + 25 L/1000 ≤ 75	25	25	50 + 30 L/1000 ≤ 110	50	520	850
	xx.16.25	30 + 25 L/1000 ≤ 80	30	30	60 + 35 L/1000 ≤ 130	60	520	850
T <sub>2</sub> 16 ± 26 °C	xx.15.18	23 + 30 L/1000 ≤ 90	21	23	46 + 35 L/1000 ≤ 115	42	520	850
	xx.15.20	25 + 32 L/1000 ≤ 100	23	25	50 + 37 L/1000 ≤ 125	46	520	850
	xx.16.20	28 + 32 L/1000 ≤ 105	26	28	56 + 37 L/1000 ≤ 135	52	520	850
	xx.16.25	33 + 32 L/1000 ≤ 115	31	33	66 + 37 L/1000 ≤ 150	62	520	850

<sup>(1)</sup> Maximum Permissible Error of Length measurement according to UNI EN ISO 10360-2:2010

<sup>(2)</sup> Maximum Permissible Limit of Repeatability range according to UNI EN ISO 10360-2:2010

<sup>(3)</sup> Maximum Permissible Single Stylus Form Error according to UNI EN ISO 10360-5:2010

T<sub>1</sub>: 18 ± 22 °C; Max. Gradients: 1,0 °C/h - 2,0 °C/24h - 1,0 °C/m

T<sub>2</sub>: 16 ± 26 °C; Max. Gradients: 1,0 °C/h - 5,0 °C/24h - 1,0 °C/m

L = measuring length (mm)

### STRUCTURE

**CNC Coordinate Measuring Machine, Horizontal Arm type with independent slideway**

#### Guideways:

X Axis: linear guideways  
Y-Z Axes: micromachined anodized light alloy extrusion

#### Drive Method:

X Axis: rack & pinion system  
Y-Z Axis: zero hysteresis friction drive

#### Motion Control:

DC servomotor on all axes

#### Sliding System:

X Axis: Recirculating ball bearing  
Y-Z Axes: Air bearings on all axes

#### Thermal Compensation:

Multi-sensors temperature compensation system for part and scale (Optional)

#### Measuring System:

Linear scales, System Resolution: 0,1 μm.

### OPTION

Steel worktable  
Training c/o Coord 3 Center or Agents  
Installation by Coord 3 or Agents  
PC & Printer  
Multi-wire cable  
Safety laser scanner

### 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:

Max 100 NI/min

#### Minimum Air Supply:

6 Bar

#### Air quality:

Max. oil concentration:  
5 mg/m<sup>3</sup> (ISO 8573 - class 4)

Max. particle size of contaminants:  
40 μm (ISO 8573 - class 5)

Max. contaminants concentration:  
10 mg/m<sup>3</sup> (ISO 8573 - class 5)

Max dew point:  
10 °C (ISO 8573 - class 6)

### ENVIRONMENT

#### Temperature Range for T<sub>1</sub> Metrological Specification:

Ambient Temperature Range: 18 ± 22 °C  
Max. gradient per hour: 1,0 °C/h  
Max. gradient per day: 2,0 °C/24h  
Max. gradient in space: 1,0 °C/m

#### Operating Temperature:

15 ± 35 °C

#### Relative Humidity:

40 ÷ 80 % (non condensing)

#### Acceptable Vibrations:

(vibration acceleration between peaks)  
30 mm /s<sup>2</sup> from 1 to 10 Hz  
15 mm /s<sup>2</sup> from 10 to 20 Hz  
50 mm /s<sup>2</sup> from 20 to 100 Hz

### PROBING SYSTEM

#### Manual Probe Head:

MIH, MH20, MH20i

#### Motorized Probe Head:

PH10T, PH10M, PHS-2

#### Point-to-point Trigger Probe:

TP20

#### Laser Probe:

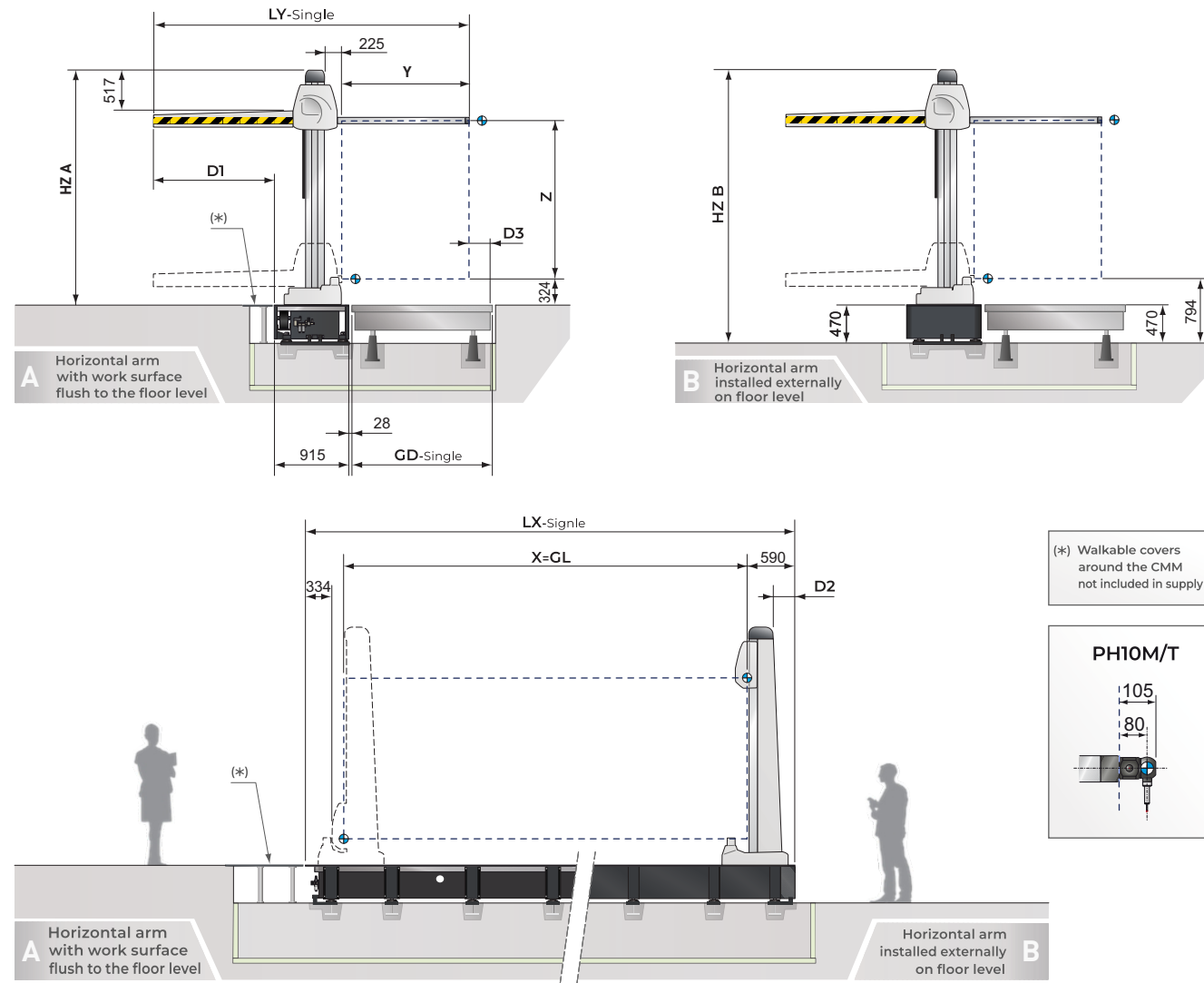
SLK25

#### Stylus and Probe Changer:

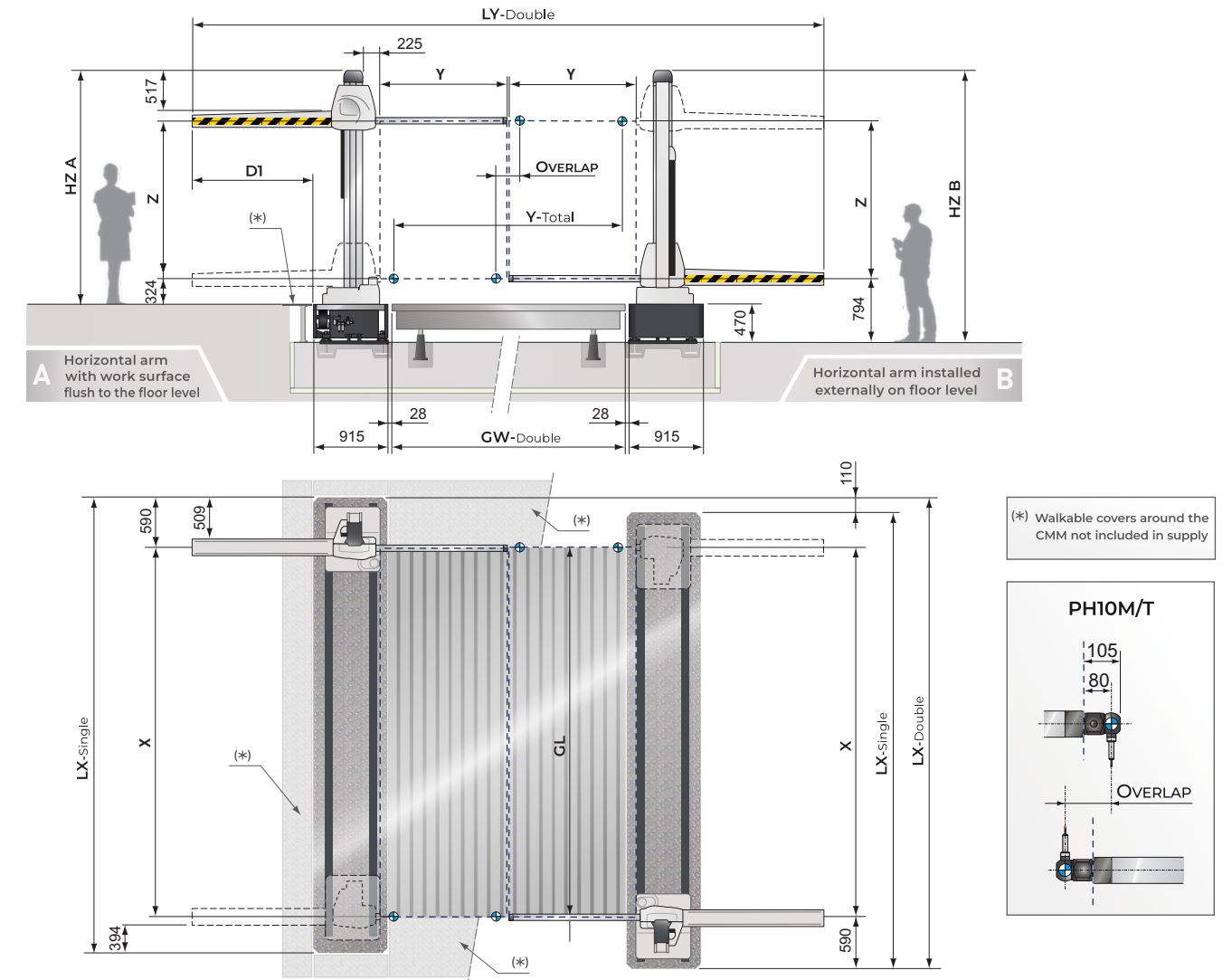
Fully automated stylus and probe changers



# CMM HORIZONTAL ARM | SWAN SI - Single Arm



# CMM HORIZONTAL ARM | SWAN SI - Double Arm



## CMM SWAN SI - Single Arm

### STROKES, DIMENSIONS, WEIGHTS

Models	Measuring Strokes			Overall Dimensions <sup>(1)</sup>				Worktable (Opt.)		Other Dimension			Weights
	X	Y	Z	LX Single	LY Single	HZ ver. A   ver. B		GL Lenght	GW-Single Width	D1	D2	D3	Machine Weight <sup>(1)</sup>
	[mm]			[mm]				[mm]		[mm]			[Kg]
30.15.18	3000	1500	1800	4070	3774	2751	3221	3000	1500	1436	279	105	2100
40.15.18	4000	1500	1800	5070	3774	2751	3221	4000	1500	1436	279	105	2540
50.15.18	5000	1500	1800	6070	3774	2751	3221	5000	1500	1436	279	105	2980
40.15.20	4000	1500	2000	5070	3774	2951	3421	4000	1500	1436	279	105	2545
50.15.20	5000	1500	2000	6070	3774	2951	3421	5000	1500	1436	279	105	2985
60.15.20	6000	1500	2000	7070	3774	2951	3421	6000	1500	1436	279	105	3425
40.16.20	4000	1600	2000	5070	3974	2951	3421	5000	1750	1536	279	255	2550
50.16.20	5000	1600	2000	6070	3974	2951	3421	6000	1750	1536	279	255	2990
60.16.20	6000	1600	2000	7070	3974	2951	3421	7000	1750	1536	279	255	3430
70.16.20	7000	1600	2000	8070	3974	2951	3421	6000	1750	1536	279	255	3870
40.16.25	4000	1600	2500	5070	3974	3451	3921	5000	1750	1536	138	255	2615
50.16.25	5000	1600	2500	6070	3974	3451	3921	6000	1750	1536	138	255	3055
60.16.25	6000	1600	2500	7070	3974	3451	3921	5000	1750	1536	138	255	3495
70.16.25	7000	1600	2500	8070	3974	3451	3921	6000	1750	1536	138	255	3935

<sup>(1)</sup> CMM only. Operator table, work table, probe and Control cabinet not included.

## CMM SWAN SI - Double Arm

### STROKES, DIMENSIONS, WEIGHTS

Models	Measuring Strokes					Overall Dimensions <sup>(1)</sup>				Worktable (Opt.)		Other Dimension		Weights
	X	Y	Y Total	OVERLAP	Z	LX Double	LY Double	HZ ver. A   ver. B		GL Lenght	GW-Double Width	D1	D2	Machine Weight <sup>(1)</sup>
	[mm]					[mm]				[mm]		[mm]		[Kg]
30.15.18	3000	1500	2800	200	1800	4180	7507	2751	3221	3000	2750 <sup>(2)</sup>	1436	279	4200
40.15.18	4000	1500	2800	200	1800	5180	7507	2751	3221	4000	2750 <sup>(2)</sup>	1436	279	5080
50.15.18	5000	1500	2800	200	1800	6180	7507	2751	3221	5000	2750 <sup>(2)</sup>	1436	279	5960
40.15.20	4000	1500	2800	200	2000	5180	7507	2951	3421	4000	2750 <sup>(2)</sup>	1436	279	5090
50.15.20	5000	1500	2800	200	2000	6180	7507	2951	3421	5000	2750 <sup>(2)</sup>	1436	279	5970
60.15.20	6000	1500	2800	200	2000	7180	7507	2951	3421	6000	2750 <sup>(2)</sup>	1436	279	6850
40.16.20	4000	1600	3050	150	2000	5180	7957	2951	3421	5000	3000	1536	279	5100
50.16.20	5000	1600	3050	150	2000	6180	7957	2951	3421	6000	3000	1536	279	5980
60.16.20	6000	1600	3050	150	2000	7180	7957	2951	3421	7000	3000	1536	279	6860
70.16.20	7000	1600	3050	150	2000	8180	7957	2951	3421	6000	3000	1536	279	7740
40.16.25	4000	1600	3050	150	2500	5180	7957	3451	3921	5000	3000	1536	138	6450
50.16.25	5000	1600	3050	150	2500	6180	7957	3451	3921	6000	3000	1536	138	6110
60.16.25	6000	1600	3050	150	2500	7180	7957	3451	3921	5000	3000	1536	138	6990
70.16.25	7000	1600	3050	150	2500	8180	7957	3451	3921	6000	3000	1536	138	7870

<sup>(1)</sup> CMM only. Operator table, work table, probe and Control cabinet not included.

<sup>(2)</sup> Formed by two half-worktable of 1500 and 1250 mm.