

ROMER / CIMCORE PRODUCT DATA SHEET

Stinger II Series Portable Coordinate Measuring Machine



9/25/02

General:

Machine Model - Six Axis Articulated Portable Coordinate Measuring Machine

Type of Probing System - Rigid, Flexible or Non-Contact.

Modes of Operation - Manual, Articulated by User

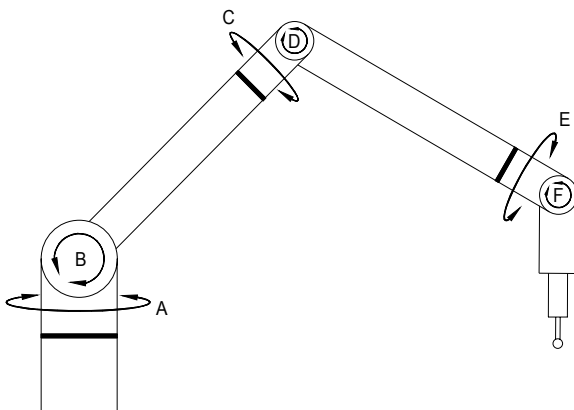
Control Modes - Manual

**Special Accessories - External / Removable Counterbalance, Power Probe™
GridLOK Positioning System, SpaceLOK**

Machine Classification, Degrees of Freedom - 2-2-2

Axis	A	B	C	D	E	F
Degrees of Rotation	450°	170°	450°	180°	540°	220°

Degrees of Rotation with C/Balance	450°	145°	450°	180°	540°	220°
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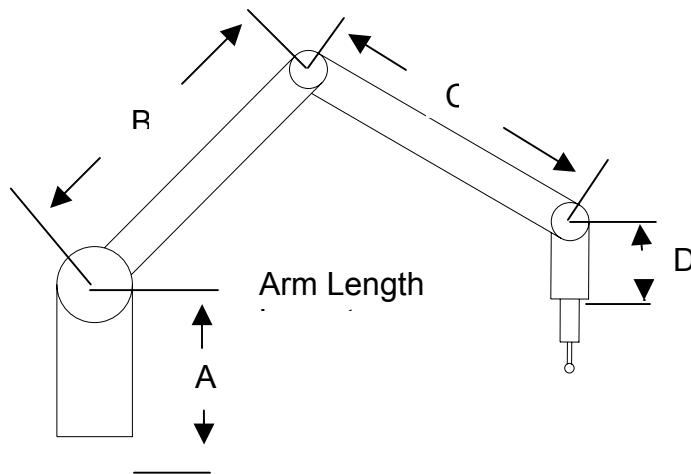
Dimensions, Weights and Moments:

Measuring Range (X,Y,Z - Spherical)

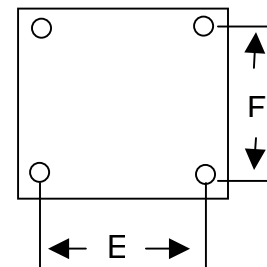
Arm Model	Range (mm)	Range (Inches)
4018	1800 mm	72 inches (6')
4024	2400 mm	94 inches (8')
4030	3000 mm	118 inches (10')
4036	3600 mm	142 inches (12')

Minimum Installation Area for the System: Width - 90 mm, (3.5")
 Length - 90 mm, (3.5")
 Height - 508 mm, (20")

General Arm Dimensions



Machine Base -
M8 SHCS Mounting Bolts



Arm Model	"A" Dim.	"B" Dim.	"C" Dim.	"D" Dim.	"E" Dim.	"F" Dim.
4018	362 mm	515 mm	350 mm	70 mm	85 mm	85 mm
4024	362 mm	695 mm	470 mm	70 mm		
4030	362 mm	867 mm	590 mm	70 mm		
4036	362 mm	1040 mm	710 mm	70 mm		

Mass:

Arm Model	Mass (Kg.)	Mass (lb.)
4018	3.6 Kg	8
4024	4.1 Kg	9
4030	4.3 kg	9.5
4036	4.5 Kg	10

*** Arm Weights are ARM ONLY**

Laptop Computer: 2.25 Kg. (5 lb.)

Counter Balance: 1.00 Kg. (2.2 lb.)

Transportation Case:

Small: 7.25 Kg. (16 lb.) - (4018 model only)

Large: 11.3 Kg. (25 lb.) - (4024, 4030 and 4036 models)

Software - WinRDS Interface / Support Software

Various Application Software Packages, (See Catalog)

Operating Systems - Win98, WinNT, Windows 2000, WinXP (WinRDS 2.3.3 +up)

NOTE: Stinger and Stinger II is only supported on WinRDS 2.3.1 or later!

Performance Data:

Arm Model	Point Accuracy (2 Sigma)	Length Accuracy (2 Sigma)
4018	+/- 0.0015" (.040 mm)	+/- 0.0021" (.055 mm)
4024	+/- 0.0019" (.050 mm)	+/- 0.0027" (.070 mm)
4030	+/- 0.0031" (.080 mm)	+/- 0.0043" (.110 mm)
4036	+/- 0.0043" (.110 mm)	+/- 0.0061" (.155 mm)

Point Accuracy: Obtained via Single Point Articulation Test, Values at 2 Sigma Confidence per Pending B89 Specification, Range/2 method

Length Accuracy: Obtained via Volumetric Length Accuracy Test, Values at 2 Sigma Confidence per Pending B89 Specification, Range/2 method

Arm Model	Linear Displacement Accuracy
4018	.0031" (.080 mm)
4024	.0035" (.090 mm)
4030	.0044" (.112 mm)
4036	.0053" (.135 mm)

Linear Displacement Accuracy: Obtained on certified step-gage throughout measuring volume. Horizontal (X & Y) orientations and 45° inclinations at 2 Sigma Confidence. Certification statistics calculated via "Range/2" method.

System Resolution

Resolution of Measuring System, (Radial): 0.65 Arc Seconds

Resolution of Measuring System, (Linear): Dependent on distance
Resolution at a distance = $(2\pi / 2 \times 10^6) * R$ (in mm)

Arm Model	Linear Resolution at Maximum radial distance
4018	0.00270 mm / mm
4024	0.00372 mm / mm
4030	0.00450 mm / mm
4036	0.00558 mm / mm

Probing system: Three Point Kinematic Seat
Probing mounting error: 0.0127 mm (0.0005")

Measuring forces (applied during point measurement)

Fixed Value	.15 N
Pre-selectable	NO
Pre-selectable in steps (resolution):	N/A
Maximum stylus mass:	450 g
Maximum stylus length:	300 mm

Repeatability of probe/stylus change:

In all planes referred to probe tip center (range)	0.0127 mm (0.0005")
For a probe length of:	300mm

Scanning

Resolution: (See Arm Resolution)	
Operating Range: Entire Spherical Volume of Arm	
Data Rate: 66 Points / Second Max	points/s
Probing error: (See Arm Performance Specifications)	μm
Time for scanning mode test: Manual, Operator Dependant	s

Operating conditions:

- 1. Stylus Length: Variable**
- 2. Type Diameter: Variable**
- 3. Number of Measurement Points: 66 Points / Second Max**
- 4. Scanning Speed: 66 / Sec Max**
- 5. Number and Location of measurement lines: Single Point, Probe Center**

Speed of Travel and Acceleration:

Probing speed:	Operator / Application Dependant	mm/s
Speed in CNC Operation: Manual Mode Only		mm/s
Acceleration:	Operator / Application Dependant	mm/s²
Speed in set-up and testing operation:	N/A	mm/s

Measuring time on a sphere:	Operator Dependant, Manual Measurement	s
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Supply Data:

Universal Worldwide Voltage

Power supply

Voltage:	110 Volts or 220 Volts	V
Current:	15 A	A
Permissible voltage variation:	100 - 240 Volts (10%)	%
Permissible voltage peaks between	1 μ s and 100 μ s:	at 250 Vp
Power consumption (detailed specification, if required):		54 VA
Frequency:	From 50 Hz to 60 Hz	

Air supply

Pressure:	N/A
Consumption at:	N/A
Purity Specification:	N/A

Permissible Environmental conditions:

Air Humidity: Relative Humidity from 10% to 90%, Non-Condensing

Vibration at site of installation:

Amplitude, vertical and horizontal:	μ m
Velocity'	m/s
or	
Acceleration:	m/s ²
In the frequency range: from	Hz to Hz

Temperature range:

Of machine not in use:	32°F to 115°F (0° C to 46° C)
Required for operation:	32°F to 115°F (0° C to 46° C)

Temperature conditions in which the specified length-measuring uncertainties are guaranteed:

Ambient temperature:	20° C \pm 6.5° C (68° F \pm 12° F)
Air temperature variation:	Per Hour: \pm 2° F

Air temperature gradient:	vertical:	K/m
	horizontal	K/m

Acceleration:

Permissible angular: 105 rad/s²
Vibration maximum: 55 to 2000 Hz (IEC 68-2-27)
Shock and Impact: 6ms (IEC 68-2-27)

DOCUMENT REVISION HISTORY

<u>DATE</u>	<u>DESCRIPTION OF REVISION</u>	<u>RELEASED BY</u>
8-20-02	Initial Release of Document Release of "Stinger II" Product	Steve Ilmud, V.P. Operations