

EX-100 Universal Length Machine



Main Subjects to be Measured:

1. Shaft, hole, plug gauge, ring gauge, clip gauge, length bar, cone, cylindrical workpiece, lower-grade block gauge, workpiece with parallel planes etc.
2. Pitch diameter of internal thread, thread, thread ring gauge, thread plug gauge.

EX-100 is equipped with a data processing system. This system consists of a computer and data processing software, digital display hardware. The measuring results can be output by a printer.

1. Measuring Range (mm)

a) External Dimensions:

Absolute measuring range 0~100
Relative measuring range 0~700

b) Internal Dimensions:

Small-size measuring accessories (maximum penetrating depth 12, maximum wall thickness 50): 10~430
Using large measuring accessories (maximum penetrating depth 50, maximum wall thickness 85): 30~400

Using electrical measuring accessories:

- a) Electrical measuring accessories 1~60
- b) Universal measuring accessories 14~112

Thread measuring accessories:

- a) Thread pitch diameter measuring
Max. 200mm Pitch 0.5~6
- b) Internal thread pitch diameter measuring
Using small-size measuring accessories (small diameter 13~30) Using large measuring accessories [small diameter from 31~(70- wall thickness×2) Pitch 1~6

2. Reading mode and display value: digital display, display value 0.1μm

3. Measuring Force (N) 0, 1.5, 2.5

- #### 4. Display Value Variability
- For external dimensions $2\sigma \leq 0.3\mu\text{m}$
 - For internal dimensions $2\sigma \leq 0.5\mu\text{m}$

- #### 5. Instrument Accuracy
- For external dimensions, accuracy better than: $0.5\mu\text{m}$ ($20^\circ\text{C} \pm 0.2^\circ\text{C}$) dimensions, accuracy better than: $1\mu\text{m}$

- #### 6. Universal Worktable
- Installation area approximately $160 \times 160\text{mm}^2$
 - Height adjustment range (0~100)mm
 - c) Transversal stroke 25 mm
 - Tilting around Y-axis $\pm 3^\circ$
 - Worktable rotation $\pm 4^\circ$
 - Admitted load 10kg

7. Fitting dimension for inner diameter of the measuring cap-shaped accessories: $\Phi 6H7$

8. Outer diameter for the rod fitting with the inner diameter of the measuring cap-shaped accessories: $\Phi 6g6$

9. Instrument Size: Length×width×height 990×390×450 (mm)

Optical Profile Projector



EP-1 optical profile projector is designed for all kind of measurement in mould & die making, form tools making, screw manufacturing, gear manufacturing, electric, electronic and pneumatic components etc...

EP-1 High Precision optical Profile Projector Provides accurate 2D measurement for all common geometric features such as circle, line, angle, distance, intersection points etc... all measured results can be printed directly or transferred to computer for further processing.

Manufactured with top class components, under high standard of workmanship, EP-1 achieves very high measurement accuracy, the accuracy is $(3+L/100)\mu\text{m}$, where L is the measured length in mm. The total contour distortion is less than 0.08%.

EP-1 equipped with the ES-10P or ES-12P measuring system to assure high accuracy measurements and provide easy operations.

MODEL NO.	EP-1 1510	EP-1 2010	EP-1 2515
Table dimensions	300×170mm	350×170mm	420×250mm
Glass dimensions	175×127mm	230×120mm	290×190mm
X measurement travel	150mm	200mm	250mm
Y measurement travel	100mm	100mm	150mm
Z focusing travel	90mm		
XY readout resolution	0.001mm		
Axial measuring accuracy	(3+L/100)um		
Screen diameter	315mm		415mm
A readout range	0-360 degree		
A readout resolution	0.01 degree		
Max. Contour distortion	0.08%		
Magnifications Lens	10×, 20×, 50×		

Portable 2010 Vision Measurement Machine



MODEL NO.	Portable 2010
X,Y Measurement Travel	200x100x70 mm
Overall Dimensions	50x50x70 cm
Machine Weight	40 kg
Repeatability	± 2μm
Max Table Load	20 kg
Operation Model	Manual
Resolution	1μm
X,Y,Z Measurement Accuracy	(4+ L/200) μm
Light source system	Software controlled adjustable 4 zone surface light and straight adjustable contour light
Structure	Cast iron
Lens	High precision Tele-centric lens
Magnification	Optical enlarging rate 0.7-4.5x, image enlarging rate 22-141x
Vision System	1/3" CCD

C Series 2D Vision Measurement Machine



MODEL NO.	C-2010	C-3020	C-4030
X,Y,Z measurement travel	200x100x150 mm	300x200x150 mm	400x300x150 mm
Machine Weight	150 kg	250 kg	350 kg
Repeatability	2 micron		
Max Table Load	25 kg		
Operation mode	Manual		
Resolution	1μm		
X,Y measurement precision	(4+ L/200) micron		
Light source system	LED surface & contour light system, brightness adjust by buttons		
Structure	granite base and mast		
Lens	Ultra-low distortion, can zoom in and zoom out		
Magnification	Optical enlarging rate 0.7-4.5x, image enlarging rate 30-200x		
Vision system	1/3" CCD video camera		

L Series 2D Vision Measurement Machine



MODEL NO.	L-2515	L-3020	L-4030
X,Y,Z measurement travel	250x150x150 mm	300x200x200 mm	400x300x250 mm
Overall Dimensions	100x60x140 cm	120x72x160 cm	120x72x160 cm
Machine Weight	170 kg	280 kg	410 kg
Repeatability	2 micron		
Max Table Load	25 kg		
Operation mode	Manual high speed and trusty USB connect with computer		
Resolution	0.5μm		
X,Y measurement precision	(3+ L/200) micron		
Light source system	software controlled adjustable 6 ring 8 zone surface light and straight adjustable contour light		
Structure	granite base and mast		
Lens	Ultra-low distortion, can zoom in and zoom out		
Magnification	Optical enlarging rate 0.75-4.5x, image enlarging rate 25-125x		
Vision system	1/3" High resolution CCD lens		

EV Series 3D High Performance Manual Vision Measurement Machine



EV series has a high capability / price ratio. Auto focus and Auto zoom function as standard configures in this series. It uses high precision marbles as the machine base stand. High precision working table and 0.1um high resolution optical scales installed in the X,Y,Z axis increase the measuring accuracy to (2.5+L/200)um.

The electronic system of the EV series is advanced, it uses the new multi-axial, light motor controlling card developed by Easson, in this way the controlling system very succinct. Special processor reduce electronic circuitry and connectors, improve stability greatly. Super high speed reading ability, work with our latest high accuracy absolute reading scale make sure high resolution and high accuracy measurement. And use super high speed and high trusty Ethernet connect with computer.

All the EV series can install the Renishaw touch probe and 3D software for 3D measurement.



MODEL NO.	EV-2515	EV-3020	EV-4030
X,Y,Z measurement travel	250x150x150 mm	300x200x200 mm	400x300x250 mm
Overall Dimensions	135x72x155 cm	135x72x165 cm	146x89x175 cm
Machine Weight	170 kg	280 kg	380 kg
Repeatability	2 micron		
Max Table Load	25 kg		
Operation mode	X Y Manual, Z motorized (control by mouse, keyboard or joystick) Super high speed and high trusty Ether net connect with computer		
Resolution	0.1μm		
X,Y,Z measurement precision	(2.5+ L/200) micron		
Light source system	software controlled adjustable 6 ring 8 zone surface light and straight adjustable contour light		
Structure	00 grade granite base and mast		
Lens	High precision Tele-centric motorized auto-zoom lens		
Precision measuring head	English RENISHAW precision touch probe		
Magnification	Optical enlarging rate 0.7-4.5x, image enlarging rate 25-145x		
Vision system	High resolution CCD lens (SONY CD sensor & special SPC)		

SPARTAN Series 3D Super High Performance Automatic Vision Measurement Machine



SP3-3020



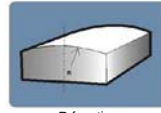
SP3-4030



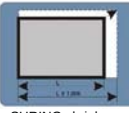
SP3-6050H

MODEL NO.	SP3-3020	SP3-4030	SP-4030H	SP-6050H
X,Y,Z measurement travel	300x200x200 mm	400x300x250 mm	400x300x250 mm	600x500x300 mm
Overall Dimensions	135x72x165 cm	146x89x175 cm		170x136x185 cm
Machine Weight	280 kg	410 kg		1700 kg
Repeatability	2 micron			
Max Table Load	30 kg			50 kg
Operation mode	Automatic CNC control, by mouse, keyboard or joystick, Super high speed and high trusty Ethernet connect with computer			
Resolution	0.1µm			
X,Y,Z measurement precision	(2.5+ L/200) micron	(2.5+ L/150) micron		(3+ L/150) micron
Light source system	software controlled adjustable 6 ring 8 zone surface light and straight adjustable contour light			
Structure	00 grade granite base and mast			
Lens	High precision motorized Tele-centric auto-zoom lens & 0.5x, 1.5x, 2x attached lens			
Probe system	English RENISHAWprecision touch probe			
Magnification	Optical enlarging rate 0.75-4.5x, image enlarging rate 12-290x after install attached lens			
Moving system	X/Y/Z servo motor drive system		Japanese Panasonic AC servo motor & driver	
Vision system	High resolution CCD lens (1/2" SONY CCD sensor & special SPC)			

ES-8 Digital Readouts



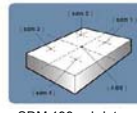
R function



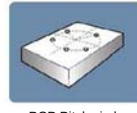
SHRING shrinkage calculation function



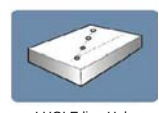
INCL In clined machining function



SDM 199 subdatum memory function



PCP Pitch circle Diameter function



LHOLE line Hole positioning function

Function		Model	General machine use						Special machine use		
			ES-8M miller	ES-8B borer	ES-8G grinder	ES-8L lathe	ES-8E EDM	ES-8W wirecut	ES-8P projector	ES-8G3 3X grinder	ES-8T toolsetter
Axis	Two Axes		•	•	•	•		•	•		•
	Three Axes		•	•	•	•	•			•	
Resolution			5µm	1µm	1µm	5µm	5µm	5µm	1µm	1µm	1µm
Enhanced EMI algorithm							■	■			
Basic function	-Clear zero										
	-centering (1/2)										
	-in/mm display										
	-coordinate entry										
	-abs/inc		■	■	■	■	■	■	■	■	
	-power off memory										
	-199 subdatum										
	-REF memory										
Built in calculator			■				■				
PCD pitch circle diameter			■	■			■				
LHOLE line hole positioning			■	■			■				
INCL inclined machining			■				■				
SHRINK shrinkage calculation			■								
R function	Simple R		■								
	SmoothR		■								
Linear error compensation			■	■	■	■	■	■	■	■	■
None linear error compensation				■	■				■		■
Vibration filtering					■						
XZ axes summation						■					
Z relay output							■				
Rotary encoder readout										■	
RS232 output									■		■
Geometric calculation									■		■
Zero guage setup											■

Easson GS linear optical scales



Glass polishing



Scales machining



Double sealing lips



Reader heads

Model		GS10	GS11	GS12	GS13	GS20	GS21	GS22	GS23	GS30	GS31	GS32	GS33
Measuring Standard		Glass Scale-Grating period:20um(0.020mm)											
Optical Detecting System		Transmissive Infrared system -: wavelength : 880nm											
Slide Carrier System		Vertical five bearings supporting system				45' five bearings supporting system				Vertical five bearings supporting system			
Resolution		5µm	1µm	5µm	1µm	5µm	1µm	5µm	1µm	5µm	1µm	5µm	1µm
Measurement Length	100-1200mm	Every 50mm per length specification								Every 50mm per length specification upto 500mm			
	1300-3000mm					Every 100mm per length specification							
Accuracy	100-450mm	±6µm	±4µm	±6µm	±4µm					±6µm	±4µm	±6µm	±4µm
	500-800mm	±10µm	±8µm	±10µm	±8µm								
	1050-1200mm	±15µm	±12µm	±15µm	±12µm								
	1300-3000mm					±25µm							
Repeatability		2um(0.002mm)											
Hystersis		3um(0.003mm)											
Protection		DIN 40050 IP53											
Power Supply		DC 5V ±5%											
Output Signals		TTL		ELA-422-A		TTL		ELA-422-A		TTL		ELA-422-A	