

# MACH-3A 653

Horizontal spindle type CNC CMM for  
measuring in production lines



COORDINATE MEASURING MACHINES

# MACH-3A 653 – the high throughput in-line CNC CMM

Measuring as quick as it can get: The new MACH-3A 653 with horizontal spindle and index table is developed for ultra-fast in-line measurement in production environments. It achieves outstanding throughput at a compact foot print.

The new MACH-3A 653 boasts numerous improvements compared to the predecessor: better protection against rough production environments, a new enhanced controller and a new index table, amongst others.



Specifications		MACH-3A 653
Measuring range	X	600 mm
	Y	500 mm
	Z	280 mm
Guide method		Linear mechanical guide for each axis
Drive speed	CNC MODE	Moving speed: each axis 8~700 mm/s (Max. composed speed: 1212 mm/s)
		Measuring speed: 1~30 mm/s (TP7M / SP25M), 1~20 mm/s (TP20)
	J/S MODE	Moving speed: 0~80 mm/s
		Measuring speed: 0~3 mm/s
Driving acceleration		6860 mm/s <sup>2</sup> (Max. composed acceleration: 11882 mm/s <sup>2</sup> )
Scale		Linear encoder
Resolution		0.0001 mm
Dimensions (Height×Width×Depth)	Main unit	1925 × 1374 × 1280 mm
	Controller	1533 × 556 × 761 mm
Machine mass	Including controller and stand	1400 kg

## Accuracy\*

Temperature range	TP7M (φ 4×20 mm)	TP20 (φ 3×10 mm)	SP25M (φ 4×50 mm)
19 ~ 21°C	2.5 + 3.5L / 1000	2.7 + 3.5L / 1000	2.2+3.5L / 1000
15 ~ 25°C	2.8 + 4.2L / 1000	3.0 + 4.2L / 1000	2.5+4.2L / 1000
10 ~ 30°C	3.2 + 5.0L / 1000	3.4 + 5.0L / 1000	2.9+5.0L / 1000
5 ~ 35°C	3.5 + 5.7L / 1000	3.7 + 5.7L / 1000	3.2+5.7L / 1000
5 ~ 40°C	3.9 + 6.5L / 1000	4.1 + 6.5L / 1000	3.6+6.5L / 1000

\* E<sub>0,MPE</sub> according to ISO 10360-2:2009, results in μm, L = measured length in mm)

# Mitutoyo

Mitutoyo Europe GmbH

Borsigstraße 8-10  
41469 Neuss Germany

Tel. +49 (0) 2137-102-0  
Fax +49 (0) 2137-102-351

info@mitutoyo.eu  
www.mitutoyo.eu



Find additional product literature  
and our product catalogue

www.mitutoyo.eu

**Note:** Product illustrations are without obligation. Product descriptions, in particular any and all technical specifications, are only binding when explicitly agreed upon. MACH is either registered trademarks or trademarks of Mitutoyo Corp. in Japan and/or other countries/ regions. Other product, company and brand names mentioned herein are for identification purposes only and may be the trademarks of their respective holders.

Coordinate Measuring Machines

Vision Measuring Systems

Form Measurement

Optical Measuring

Sensor Systems

Test Equipment  
and Seismometers

Digital Scale and DRO Systems

Small Tool Instruments  
and Data Management