

# LEGEX COORDINATE MEASURING MACHINES



**LEGEX 300/500/700/900/1200**  
**High-end precision technology**

LEGEX 3D coordinate measuring systems from Mitutoyo:  
Outstanding performance and extraordinarily  
low limits of error

COORDINATE MEASURING MACHINES

322



High drive speed: 200 mm/s max.

Operating temperature range:  
18 to 22°C

774



Measuring force: 0.03 N min.  
(when using MPP300)

574



# LEGEX

Ultra-high accuracy:  
 $MPE_E = (0.35+0.1L/100) \mu\text{m}^*$

Legex 322:  $(0.8+0.2L/100) \mu\text{m}$

Legex 12128:  $(0.6+0.15L/100) \mu\text{m}$

High scanning speed:  
 120 mm/s max.

## 9106



## 12128



Model	Legex 322	Legex 574	Legex 774	Legex 776	Legex 9106	Legex 12128	
Measuring range	X axis	300 mm	510 mm	710 mm	710 mm	910 mm	1210 mm
	Y axis	200 mm	710 mm	710 mm	710 mm	1010 mm	1210 mm
	Z axis	200 mm	460 mm	460 mm	610 mm	610 mm	810 mm
Resolution	0.00001 mm						
Length measurement tolerance (L = measuring length in mm)							
(ISO 10360-2)*	$MPE_E$	$(0.8+0.2L/100) \mu\text{m}$	$(0.35+0.1L/100) \mu\text{m}$			$(0.6+0.15L/100) \mu\text{m}$	
(ISO 10360-2)*	$MPE_P$	1.0 $\mu\text{m}$	0.45 $\mu\text{m}$			0.6 $\mu\text{m}$	
(ISO 10360-4)	$MPE_{THP}$	–	1.4 $\mu\text{m}$			1.8 $\mu\text{m}$	
Max. drive speed	200 mm/s					300 mm/s	
Max. acceleration	850 mm/s <sup>2</sup>	1000 mm/s <sup>2</sup>					
Measuring table dimensions	399 x 271 mm	550 x 750 mm	750 x 750 mm	750 x 750 mm	950 x 1050 mm	1250 x 1250 mm	
Max. workpiece height	210 mm	595 mm	595 mm	745 mm	745 mm	1060 mm	
Max. table loading	15 kgf	200 kgf	500 kgf	500 kgf	800 kgf	1000 kgf	
Mass	260 kg	3500 kg	5000 kg	5100 kg	6500 kg	10500 kg	

\*Using the following probes: TP7M (Legex 322), MPP-300Q, SP 80, SP25 M (Legex 500/700/900/1200) over the temperature range 18-22°C

# Probe systems

- Legex 500/700/900/1200 -

## MTP-2000

The MTP-2000 probe is an outstandingly accurate Mitutoyo touch-trigger probe.

### Technical data

- Repeatability:  $2\sigma < 0.15\ \mu\text{m}$



## Probe systems

The LEGEX can be used with a wide range of probes to cover a wide range of measuring tasks.

Legex  
500/700/900/1200

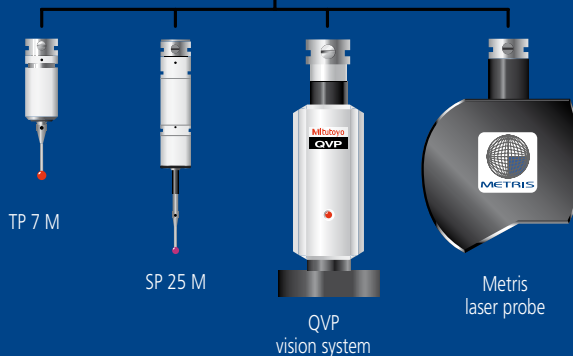


MPP300

Legex 500/700/900/1200



PH 10 MQ



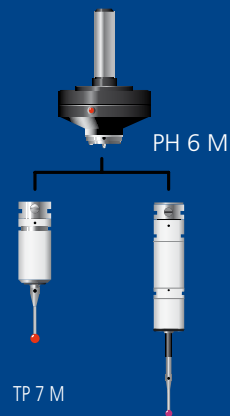
TP 7 M

SP 25 M

QVP  
vision system

Metris  
laser probe

Legex 322



PH 6 M

TP 7 M

SP 25 M



# Technology



Vibration damping system

## External vibration control

The LEGEX is fitted with a vibration damping system targeted on external vibrations. Therefore the entire system is fully protected against normal levels of factory floor vibration.

## Fixed Bridge

The LEGEX uses a fixed bridge structure that virtually eliminates pitch and yaw errors. The fixed bridge allows the X-axis to operate completely independent of the Y-axis.

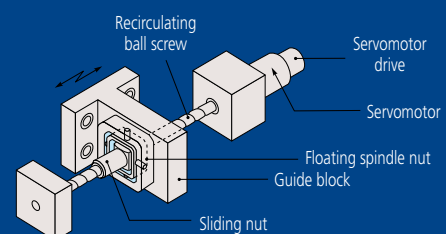
- Legex 500/700/900/1200 -

## Floating mechanism for reducing internal vibrations

Special floating spindle nuts that connect each recirculating ball screw with its guide block rapidly absorb vibrations generated within the CMM. This prevents servomotor vibrations affecting traverse accuracy, particularly during acceleration and deceleration.



Vibration damping element



Coordinate Measuring Machines	11
Vision Measuring Systems	12
Form Measurement	13
Optical Measuring	14
Sensor Systems	15
Test Equipment and Seismometers	16
Digital Scale and DRO Systems	17
Small Tool Instruments and Data Management	18

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