

**MARPOSS**

# **M110**

## **AUTOMATIC MEASURING MACHINE FOR SHAFTS CHECKING**

### **VERSATILE, RELIABLE, COMPLETE, COMPETITIVE**

Perfect for measuring critical shaft-like components on the shop floor.

Integrable into a production line for inter-operational or final checking.

Able to perform size measurements, geometric and non-destructive inspection and to mark or to classify inspected parts.

Designed and built using advanced engineering methods.

Equipped with all the systems required for automatically loading, referencing and rotating parts picked off the line or loaded by a gantry.

Allows reduced cycle times, 100% checking, quality control and statistical documentation.

Assures excellent price/performance ratio and improves delivery times by complete industrialization.

Gantry-loaded solution guarantees installation easiness.





## THE M110 SYSTEM

### Measuring station

Mounted to a precision vertical slide powered by an electric motor and equipped with:

- Marposs measuring cells which, thanks to their compact size, ruggedness and reliability, guarantee high metrological performances
- counterweight device that balances the station movement, assuring smooth part transfer and reducing possible damage to the structure from parts incorrectly positioned
- special compact part following device, designed to allow rotary and linear movements (specifically for crankpins inspection)
- ambient thermal compensation system  
Integration of linear and angular encoders makes possible stroke/index checking of rotating crankshafts without dramatically effecting machine cycle time.

### Loading devices

The loading arm of bridge-type solution transports the part from transfer line or pallet to measuring station and viceversa. Movement is powered by an electric motor, encoder monitored.

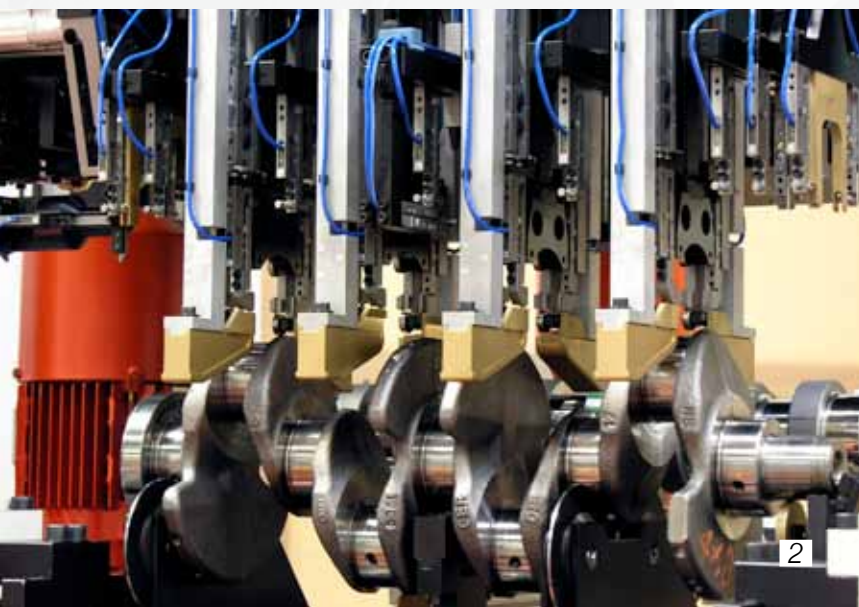
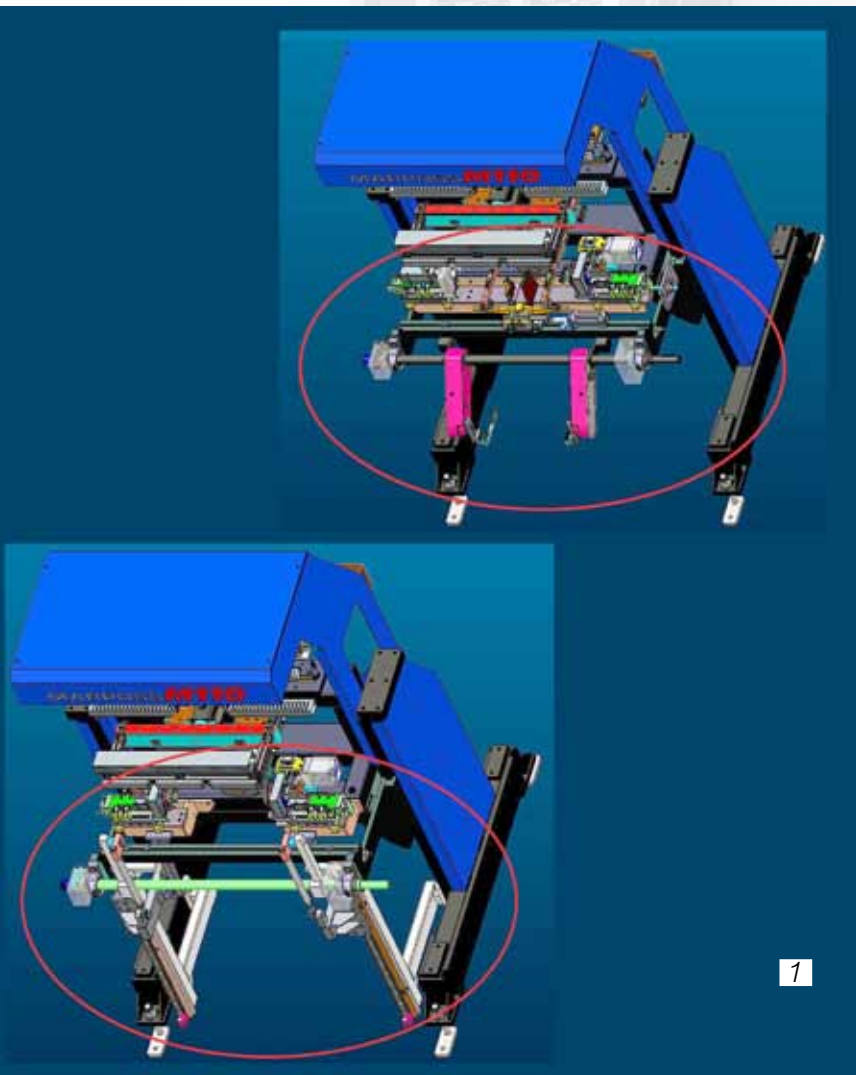
In automatic applications using pick & place robot or overhead gantry loader, the M110 is equipped with a loading shuttle.

An active safety device informs the control PLC of any faults during loading/unloading.

### Part reference

Depending on the application, parts can be referred by:

- a pair of electrically motorized "V" rollers to refer on part diameter
- rotating centers pneumatically actuated, mounted to high-precision mechanical slides with reference cones or balls and synchronized in order to eliminate errors introduction into measurements



1 - M110 with loading arms  
2 - Measuring station detail



## The Non Destructive check (ND)

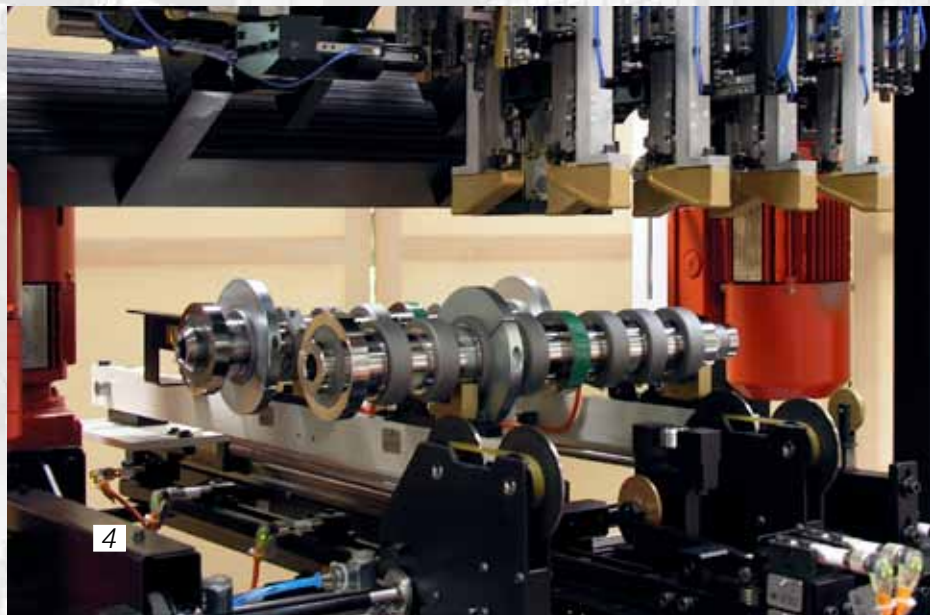
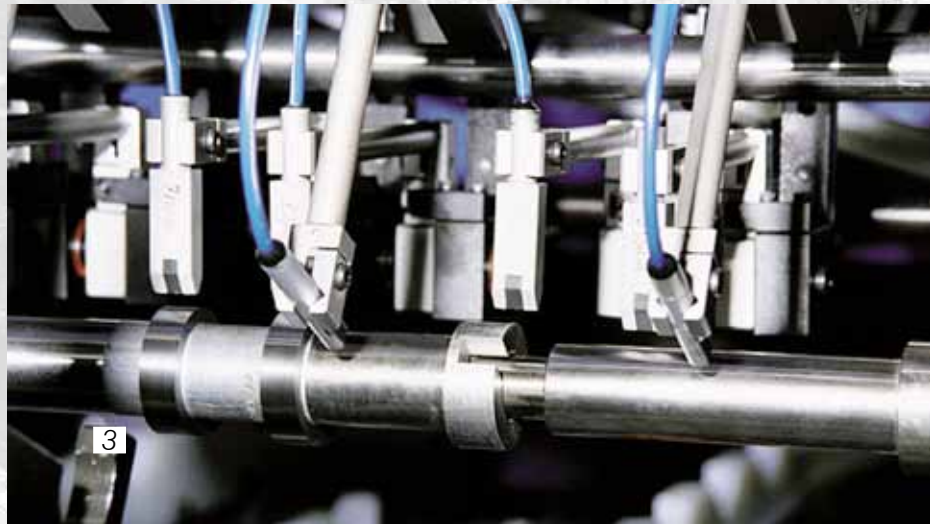
In addition to geometric and dimensional parameters measurements as:

- Diameters, Oval-shape, Conical-shape, Crowning, Straightness, Concentricity, Distances, Perpendicularity, T.I.R., Stroke, Index, the M110 may be configured for the non destructive inspection of surface faults as:
- Cracks
- Blow-holes / Porosity
- Local drawing
- Metallographic faults and/or absence of material
- Soft spots on crankshafts, camshafts or other critical shaft components being manufactured.

## System accessories

The M110 system may be equipped with one or more of the following accessory modules:

- Automastering device
- Marking station
- Rejected parts storage



3 - ND check on camshaft  
4 - Self-mastering device  
5 - Rejected parts chute



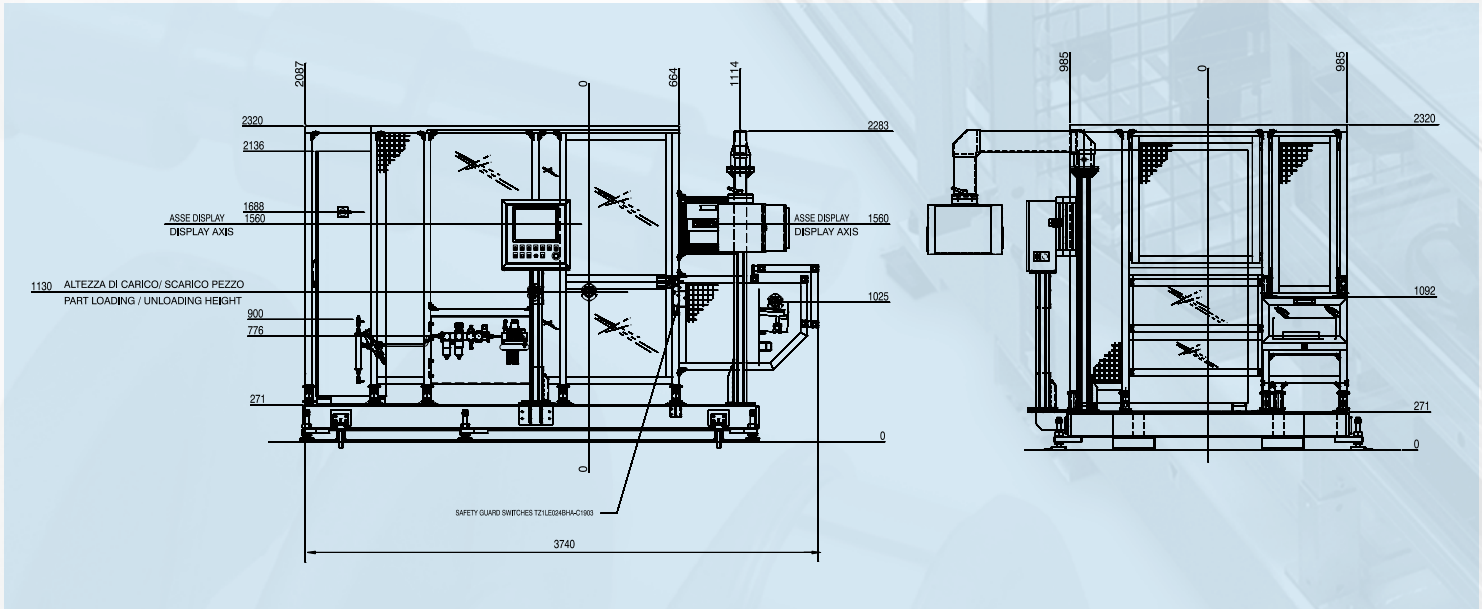
## TECHNICAL CHARACTERISTICS

PART DIMENSIONS	MINIMUM	MAXIMUM
Length	320 mm ( 12.6" )	650 mm ( 25.6" )
Concentric diameter	26 mm ( 1.0" )	100 mm ( 3.9" )
Eccentric diameter (PIN)	32 mm ( 1.3" )	70 mm ( 2.8" )
Handwheel size	-	200 mm ( 70.9" )
Stroke	-	2*55 mm (2*2.2")

MACHINE DIMENSIONS		NOTES
Length	1661 mm ( 65" )	
Width	1918 mm ( 76" )	With arm loading device
Height	2125 mm ( 84" )	With load height equal to 950 mm ( 37" )
Weight	~ 14000 N ( ~ 3100 Lb-fc )	

Operator console or PLC control cabinet not included.

## Dimensions



For a full list of address locations, please consult the Marposs official website  
Edition 01/2017 - Specifications are subject to modifications

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