



# M100

## **AUTOMATIC MEASURING MACHINE FOR CHECKING BRAKE DISCS, DRUMS AND HUBS**

### **VERSATILE**

Thanks to its rugged design, the M100 system is perfect for shop floor measurement. It can be integrated in a production line for inter-operational or final inspection, integrating in addition to size, geometric and non-destructive inspection, is able to offer other functions such as marking and the segregation of parts by specific category.

### **RELIABLE**

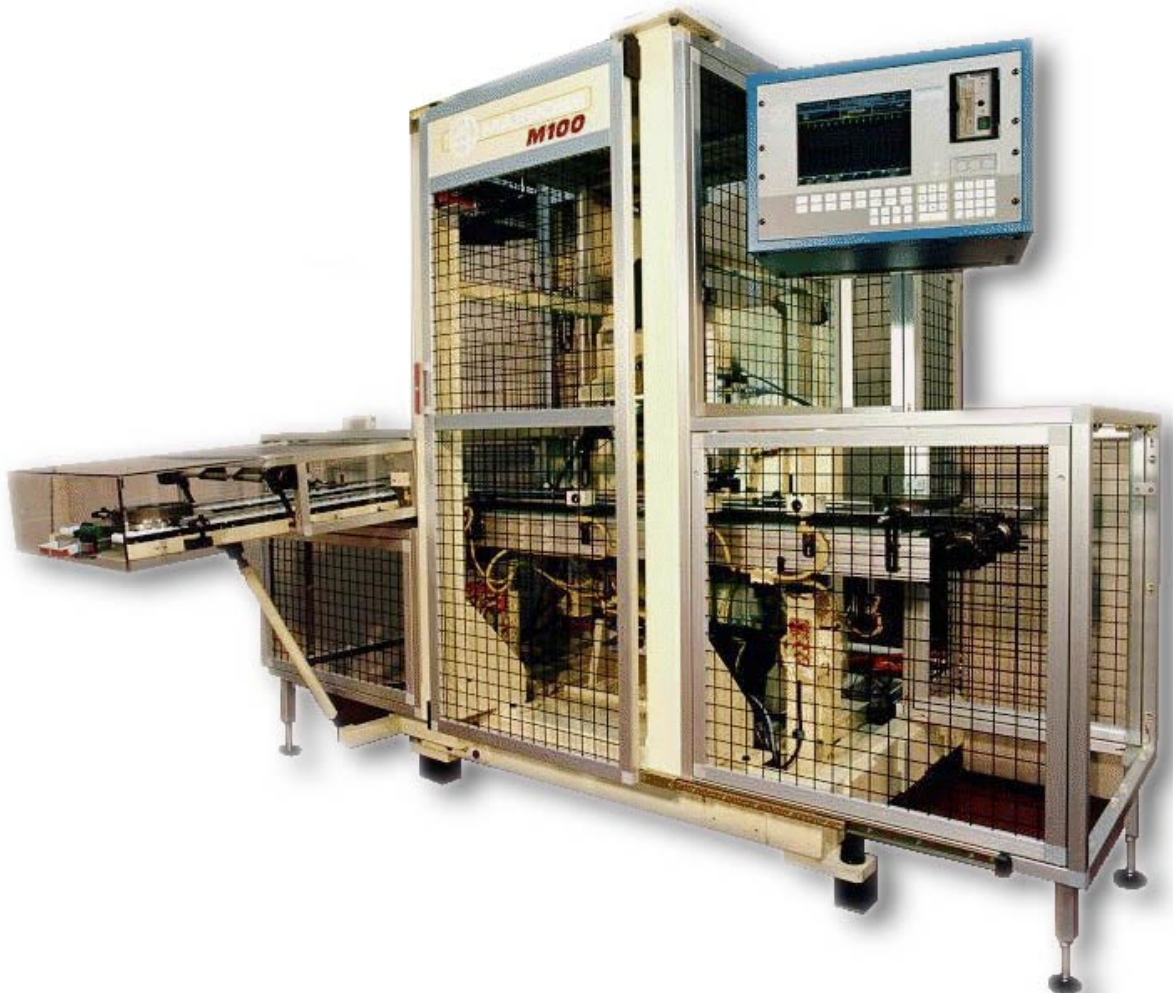
The M100 system is designed with the aid of the most advanced engineering methods, making it an extremely reliable and accurate instrument.

### **COMPLETE**

The M100 is equipped with all the systems required to automatically meter, transfer and rotate all the parts, which come off the line. The ability to maintain reduced cycle times guarantees 100% check of the parts, enabling quality control and statistical documentation of the entire production.

### **COMPETITIVE**

The complete industrialisation of the M100 renders a good price/performance ratio drastically reducing product delivery times.



## THE M100 SYSTEM

### The conveyor

The chain conveyor is aligned with the axis of the customer's part conveyor. A metering device regulates the flow of the parts arriving from the line. The M100 can integrate features such as part recognition, measuring, marking, rejection, etc. in a synchronised operation of all the machine's movements, optimising the cycle time.

### Measuring station

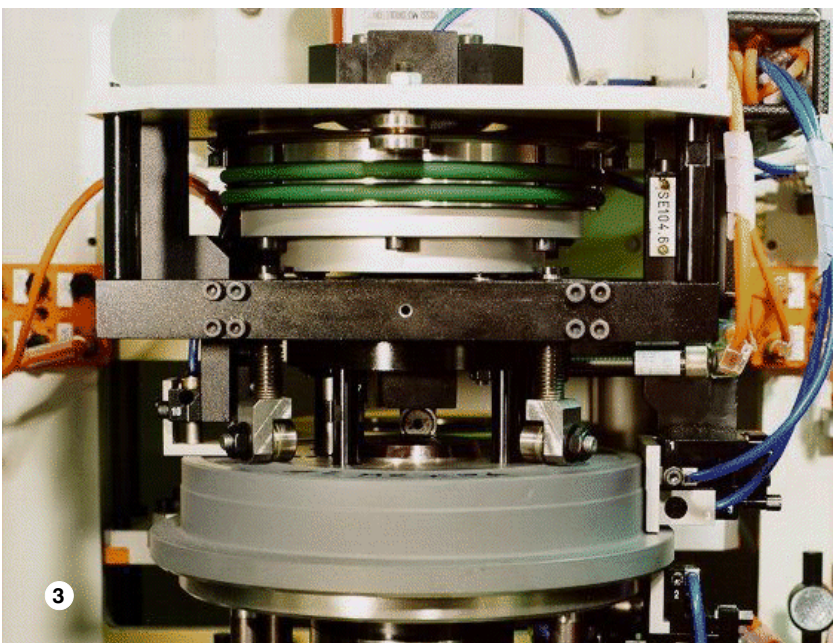
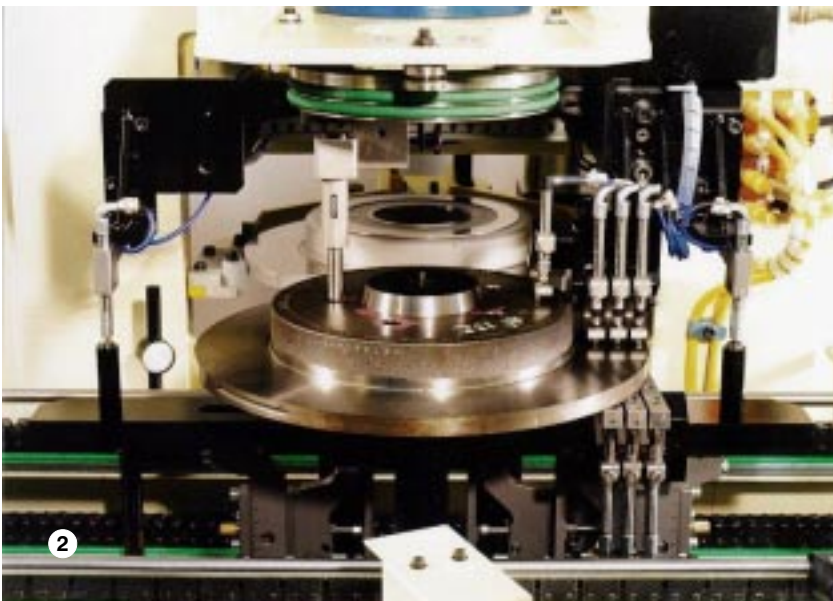
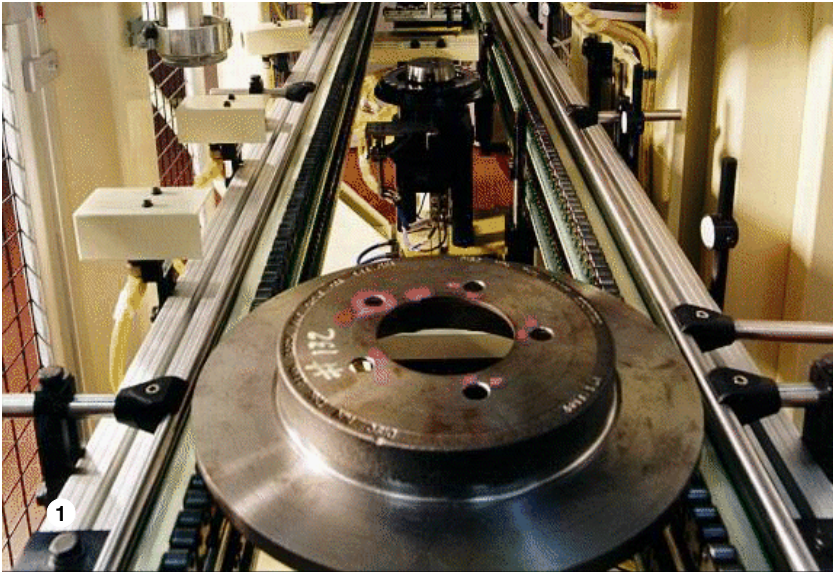
The measuring station is isolated from the supporting structure by three isostatic points, to prevent any deformation or vibration of the based assembly from influencing the measurement.

The measuring station is normally divided into two units: one upper fixed unit and one lower mobile unit. These units contain the sensors required for the measurements, the references and the part rotation devices. The combination of signals from the electronic sensors provide the inputs that are elaborated into measurements which may be diameters, thickness, concentricity, parallelism, perpendicularity, TIR, etc. A variety of Marpos Transducers and measuring devices can be used making the measuring station adaptable to every market and application requirement, always guaranteeing the very highest metrological standards. Marpos systems can also be provided with ambient thermal compensation devices.

### The non destructive check (ND)

In addition to the measurement of all the geometric and dimensional parameters of the brake discs, drums and hubs, the M100 system may be configured for the non destructive detection of surface faults, such as:

- cracks
- blow holes
- porosity
- local drawing
- metallographic faults
- absence of material



1 - conveyor detail

2 - brake disc check measuring station

3 - ND brake drum check station

### Auto Mastering device

The auto-mastering device, used to zero the measurements, is built into the M100 system and includes a mean master for automatic predetermined mastering of the machine without operator intervention. This function may be easily programmed depending on the customer's individual needs:

- auto-calibration upon request
- auto-calibration programmed after "n" measurement cycles
- auto-calibration programmed to time
- auto-calibration programmed after an important variation in ambient temperature.

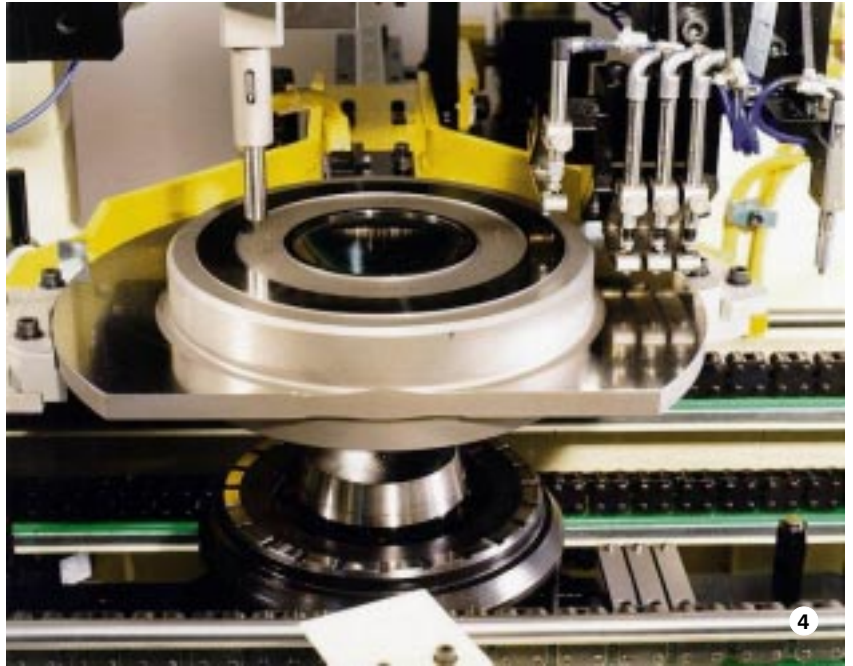
### Reject escapement

A reject escapement is a standard part of the M100 system. Thanks to the system's modularity, its position may vary depending on the specific lay-out of the part transfer line. The transparent safety guards and its structure make checking and removing the parts rejected by the measuring machine extremely easy.

### System accessories

The M100 system may be equipped with one or more of the following accessory modules:

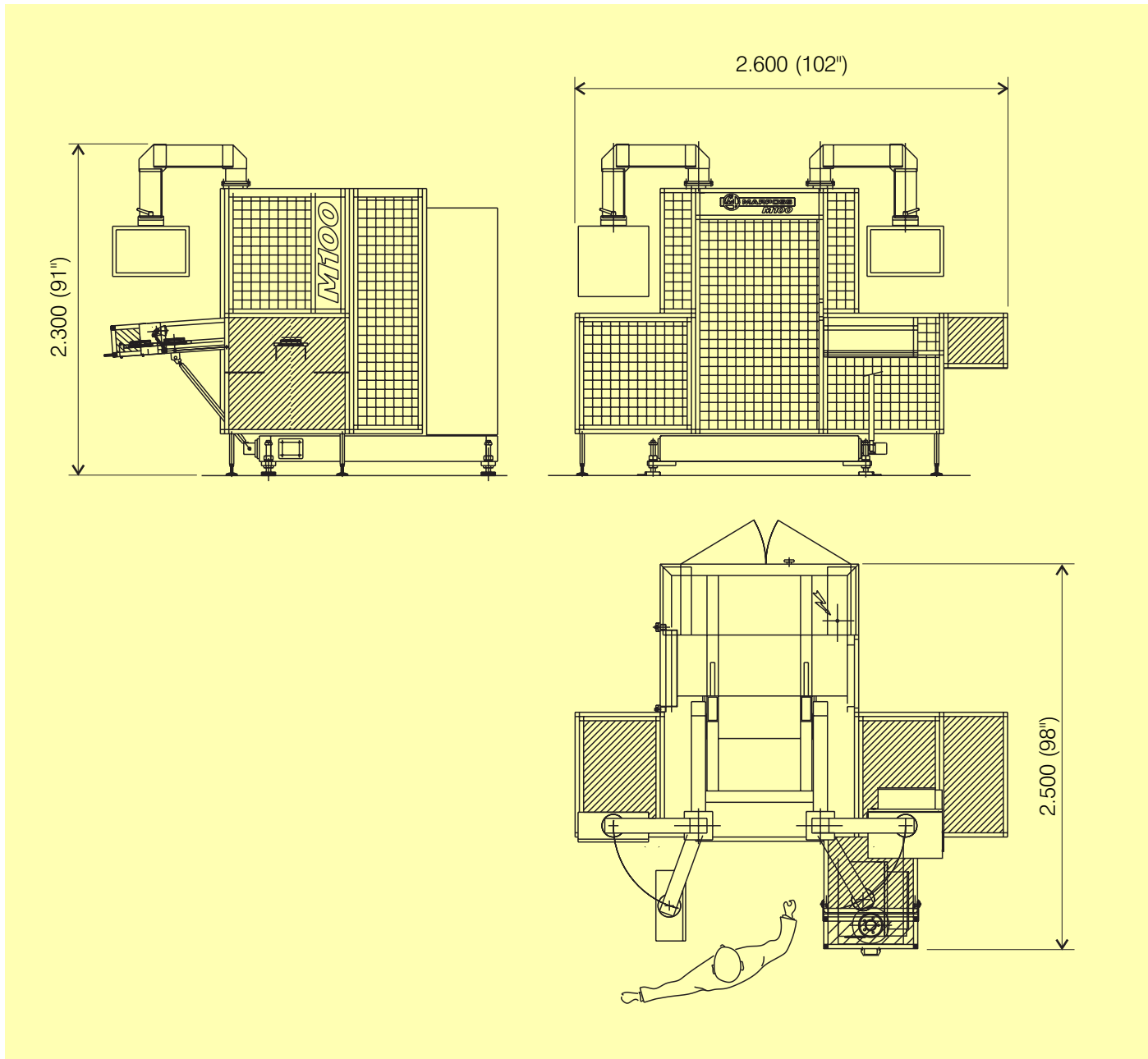
- Part recognition device
- Marking station
- Instant part temperature checking devices
- Automatic or manual re-tooling groups for changing part type



4 - self-calibration device

5 - Reject channel

6 - M100 ND checks



The approximate values for the machine dimensions are:

Dimensions		Notes
Length	2.600 mm (102")	M100 as per photos
Width	2.500 mm (98")	M100 as per photos
Height	2.300 mm (91")	M100 as per photos
Weight	2.500 kg (5,500 lbs)	M100 as per photos

The machine's standard field of application for disc or drum type parts is:

Type	Minimum	Maximum
External diameter	100 mm (3.9")	360 mm (14.2")