

The tabletop gantry system

marco GantrySystem



marco GantrySystem is a high-precision tabletop gantry system from marco. The machine can be used in a benchtop, stand-alone or conveyor configuration for line or batch production.

This system accessory expands the possibilities and simplifies integration into existing production lines for automated dispensing systems.

The system employs linear encoders for closed-loop position control, and the dispensing tool position is continuously monitored.

The Dispensing Control Unit (DCU) controls both the robot movement and the dispensing process simultaneously.

This synchronization is unique in the dispensing industry.

The base is constructed as a box using welded steel that has been stress-free annealed and precisely assembled. The surface is nickel-plated. To minimize thermal distortion, all materials in the machine have the same thermal expansion coefficient, ensuring consistent positioning even at different temperatures.

All drives utilize servo motors. The tool's weight is pneumatically balanced in the vertical direction (Z) to increase precision and payload capacity. The system integrates four high-precision

encoder measuring systems for accurate positioning and closed-loop position control. In the Y-axis, two encoders are present to read the tool's position without rotational distortion or tension.

The **marco GantrySystem** is suitable for integration into an in-line assembly line. The work surface has mounting points for a conveyor belt or tooling to accommodate automated loading and unloading designs.

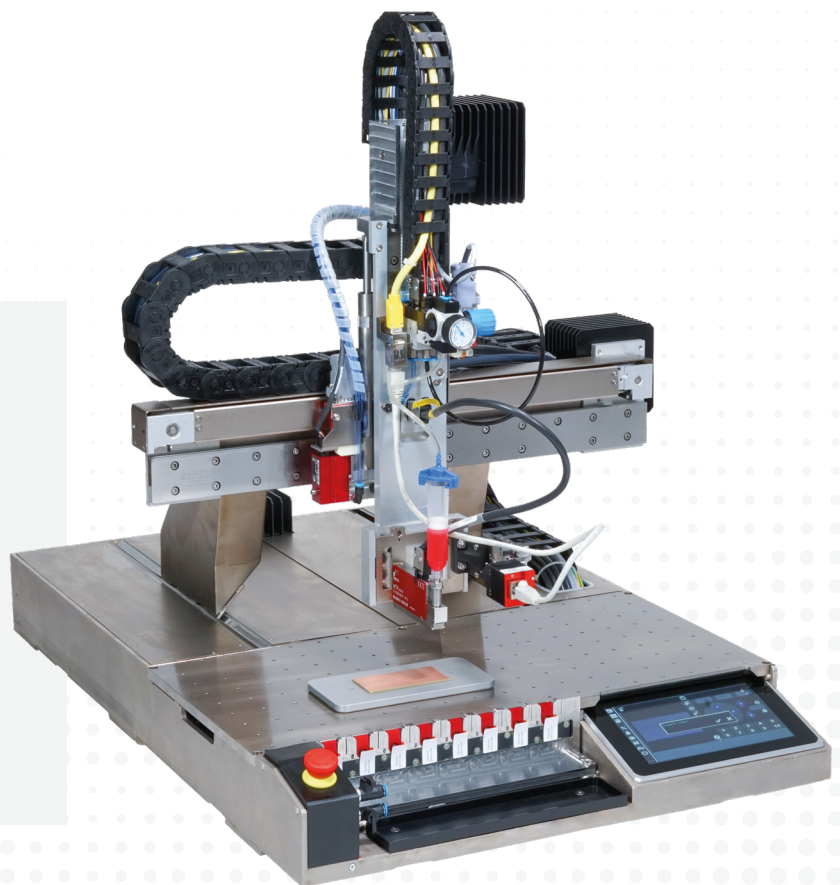
In front of the work area, there is an integrated calibration and maintenance station. The station includes a vacuum suction tool for purging, a nozzle wiping tool for cleaning, a touch sensor for detecting nozzle position, and a LookUpCamera for inspecting nozzle condition.

Predecessors of this robot have been successfully used at marco since 2016 for producing automotive sensors.

Technical data

- Dimensions in mm (W/D/H): 660 x 790 x 750 (including enclosure: 785 x 950 x 820)
- Traverse the X/Y/Z* axes paths in mm: 440 x 255 x 140
- The weight of the basic version is 65 kg
- Tool weight: up to 1.5 kg for high dynamics, maximum 5 kg
- Acceleration*: up to 2g in all axes
- Reproducibility*: $\pm 5 \mu\text{m}$
- Suitable for batch production installation

* Depending on the dispensing solution



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