



FORMIGA P 100

small, fast, efficient

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Plastic laser-sintering system for the direct manufacture of series, spare parts and functional prototypes

Laser-sintering is well known as the technology of choice for ensuring the quickest route from product idea to market launch. Innovative companies from a broad range of industries are using this technology for e-Manufacturing – the fast, flexible and cost-effective production directly from electronic data for every phase of the product life cycle.

Small, fast, efficient – e-Manufacturing in the Compact Class

The FORMIGA P 100 represents laser-sintering in the compact class. With a build envelope of 200 mm x 250 mm x 330 mm, the FORMIGA P 100 produces plastic products from polyamide or polystyrene within a few hours and directly from CAD data. The machine is ideally suited for the economic production of small series and individualised products with complex geometry – requirements which apply among others to the medical device industry as well as for high-value consumer goods. At the same time, it provides capacity for the quick and flexible production of fully functional prototypes and patterns for plaster, investment and vacuum casting. With turnover times of less than 24 hours the FORMIGA P 100 integrates itself perfectly in a production environment that requires the highest level of flexibility. The system distinguishes itself also by comparatively low investment costs.

Innovation for Use in Production

The machine offers its users several technical innovations. It has been designed to produce vertical walls with maximum surface quality. The extremely fine focus diameter enables wall thicknesses of as little as 0.4 mm to be built. Thus, the system is ideally suited for small, filigree components such as connectors, just to name one example. The revolutionary dosage and recoating system ensures a high product quality and process stability. Through several new features, the machine is extremely user-friendly and requires only a minimum of accessories. As a result, energy consumption is comparatively low leading to reduced operation expenses. The FORMIGA P 100 is the first door passing laser-sintering system. As a result, there are little requirements to the set-up conditions. The installation and adjustment of the system has also been simplified and is now carried out within one working day. Data preparation is carried out easily at the user's workplace – once again lending itself to de-centralised production.

Automation and Intelligent Functionality

Due to its ergonomic peripheral devices and the high degree of automation, the FORMIGA P 100 offers user-friendly handling, the optimum level of productivity as well as excellent integration into an industrial environment. The unpacking and sieving station and the integrated powder recycling form part of the Integrated Process Chain Management





(IPCM). Additional productivity is gained by the use of EOSPACE. This software guarantees an optimum utilization of the build envelope and minimizes the build height. As a consequence, turn-around time and costs decrease.

The FORMIGA P 100 offers the flexible, cost-efficient and highly productive entry into the world of laser-sintering.

Technical Data

<i>Effective building volume</i>	<i>200 mm x 250 mm x 330 mm (7.9 x 9.8 x 13 in)</i>
<i>Building speed (material-dependent)</i>	<i>up to 24 mm height/h (0.94 in/h)</i>
<i>Layer thickness (material-dependent)</i>	<i>typically 0.1 mm (0.004 in)</i>
<i>Support structure</i>	<i>not necessary</i>
<i>Laser type</i>	<i>CO₂, 30W</i>
<i>Precision optics</i>	<i>F-theta lens</i>
<i>Scan speed during build process</i>	<i>up to 5 m/s (16.4 ft/sec)</i>
<i>Power supply</i>	<i>16 A</i>
<i>Power consumption (nominal)</i>	<i>2 kW</i>
<i>Nitrogen generator</i>	<i>integrated (optional)</i>
<i>Compressed air supply</i>	<i>minimum 6,000 hPa; 10 m³/h (87 psi; 13.08 yd³/h)</i>
Dimensions	
<i>Machine with powder containers and touch screen</i>	<i>1,320 mm x 1,067 mm x 2,204 mm (51.97 x 42.01 x 86.77 in)</i>
<i>Recommended installation space</i>	<i>3.2 m x 3.5 m x 3 m (126 x 137.8 x 118.1 in)</i>
<i>Weight</i>	<i>ca. 600 kg (1,323 lb)</i>
<i>Powder mixing station</i>	<i>700 mm x 500 mm x 1,000 mm (27.56 x 19.69 x 39.37 in)</i>
<i>Unpacking and sieving station</i>	<i>1,200 mm x 700 mm x 1,500 mm (47.24 x 27.56 x 59.06 in)</i>
Data preparation	
<i>PC</i>	<i>current Windows operating system</i>
<i>Software</i>	<i>EOS RP Tools; Magics RP (Materialise)</i>
<i>CAD interface</i>	<i>STL. Optional: converter to all common formats</i>
<i>Network</i>	<i>Ethernet</i>
Certification	CE

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EOS has been developing technologies and processes for Rapid Prototyping since 1989. Today the company is the world-wide leading manufacturer of laser-sintering systems for Rapid Prototyping, Rapid Tooling and Rapid Manufacturing. Laser-sintering is the key technology for e-Manufacturing.

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