EOSINT P 700

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Plastic laser-sintering system for the direct manufacture of end products, spare parts, functional prototypes and patterns for investment or vacuum casting

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.

Laser-Sintering in New Dimensions

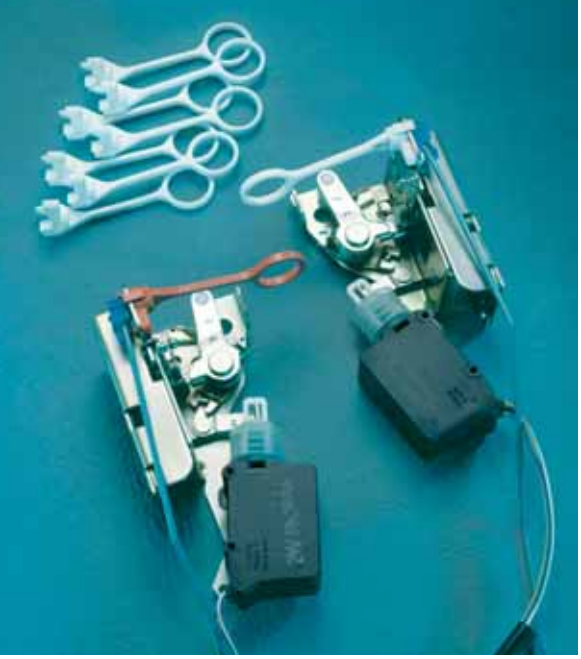
EOSINT P 700 is the world-wide first double-laser system for laser-sintering of plastics. It thus offers totally new dimensions: in productivity, build envelope, building speed and part quality. The system also sets standards for individualized series production. EOSINT P 700 is an industrial plant for economical, batch-size optimized production. The system is ideally suited for economic manufacture of small series as well as individualized products. At the same time it provides capacity for the fast and flexible creation of prototypes or patterns for investment and vacuum casting. Within a very short time, the machine produces large and complex plastic parts or castings. These are needed by companies especially from sectors such as automotive, medical devices and aerospace.

Production of Plastic Parts and Investment Casting Patterns

The EOSINT P 700 processes a wide range of materials. It generates fully functional plastic parts and investment casting patterns of any complexity. The components are built layer by layer, directly from CAD data, in a single process. The technology requires no support structures. That saves time and costs. With its build volume of one metre diagonal, even large geometries are realized in just a few hours. Building larger parts horizontally significantly reduces the number of layers to be built. As a consequence the building process shortens. In addition, the quality of the resulting plastic parts or casting patterns is optimized: these can be built in one piece rather than having to be assembled. For example, a fully functional fuel tank with a size of 607 mm x 330 mm x 491 mm (23.9 x 13 x 19.3 in.) can be produced on the EOSINT P 700 in one single building process. The tank is ready for use in just 4 days. The parts are ideally suited for extensive functional tests with aggressive substances such as petrol: the polyamide materials from EOS are chemical resistant.
And for small parts, EOSINT P 700 delivers convincing advantages as well: the system manufactures more than a thousand pieces economically in a single laser-sintering process. Of course new parts can be added while the system operates.

Highest Productivity – Today and Tomorrow

Due to its ergonomic peripheral devices and the high degree of automation, the EOSINT P 700 offers user-friendly handling, the optimum level of productivity as well as excellent integration into an industrial environment. The automatic powder



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conveying system, the unpacking and sieving station with exchangeable frame docking system as well as the 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. EOSINT P 700 offers its users totally new dimensions in time and space.

Technical Data

Effective building volume	*700 mm x 380 mm x 580 mm (27.6 x 15 x 22.9 in.)*
Building speed (material-dependent)	*10 - 25 mm height/h (0.4 - 1 in./h.)*
Layer thickness (material-dependent)	*0.1 mm - 0.15 mm (0.004 - 0.006 in.)*
Support structure	*not necessary*
Laser type	*CO_2, 2 x 50 W*
Precision optics	*F-theta lens*
Scan speed	*up to 5 m/s (16.4 ft./sec.)*
Power supply	*32 A*
Power consumption (nominal)	*2.2 kW*
Nitrogen generator	*integrated*
Compressed air supply	*minimum 6,000 hPa; 20 m^3/h (87 psi; 26.2 yd^3/h.)*
Dimensions (B x D x H)	
System incl. switchgear cabinet	*2,250 mm x 1,550 mm x 2,100 mm (88.6 x 61 x 82.7 in.)*
Control terminal	*1,045 mm x 850 mm x 1,620 mm (41.1 x 33.5 x 63.8 in.)*
Powder conveying system	*1,890 mm x 1,350 mm x 1,550 mm (74.4x 53.2 x 61 in.)*
Break-out station	*1,600 mm x 800 mm x 1,370 mm (63 x 32 x 53.9 in.)*
Recommended installation space	*4.8 m x 4.8 m x 3.0 m (189 x 189 x 118 in.)*
Weight	*approx. 2,300 kg (5,071 lb.)*
Data preparation	
PC	*current Windows operating system*
Software	*EOS RP Tools; Magics RP (Materialise)*
CAD interface	*STL. Optional: converter to all common formats*
Network	*Ethernet*
Certification	*CE, NFPA*

EOS has been developing technologies and processes for Rapid Prototyping since 1989. Today the company is the world´s 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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