

EOSINT M 250 X^{tended}

The laser-sintering system for direct production of tooling for plastic injection moulding, die casting, forming and vulcanization from steel and other metal powders.

Laser-sintering is the technology for the fast track from good ideas to successful products. Innovative enterprises in many different sectors use it to make high-quality prototypes and tools for the development of plastic and metal products. Quickly, cost-effectively and directly, increasing both product quality and their companies' innovative power.

Direct Production of Plastic Prototypes and Series Products

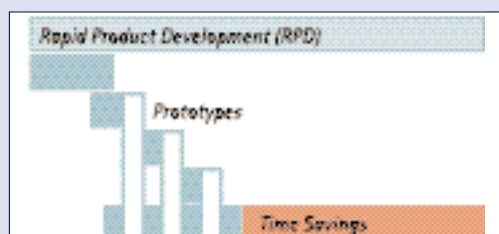
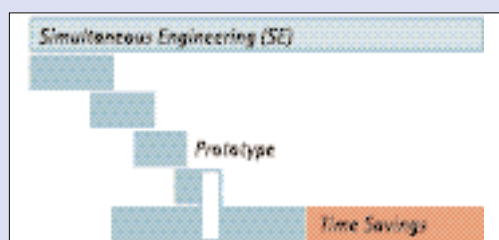
EOSINT M 250 X^{tended} enables users to save considerable amounts of time and money compared with conventional tooling. Using the DirectTool™ process, tools can be created from metal powder directly from 3D CAD data. Allowing prototype, pre-series and production tools to be made available in a minimum of time, in all phases of product development. Injection moulded plastic prototypes can be built cheaply and quickly in any series material desired. In many cases, EOSINT M 250 X^{tended} makes small series production of plastic components economically viable for the first time.

With its EOSINT M 250 X^{tended}, EOS has introduced second-generation Direct Metal Laser-Sintering (DMLS). The system offers high performance, countless user-friendly operating features and the ability to use steel powder for DMLS for the first time.

EOSINT M 250 X^{tended} builds tools and metal prototypes up to 250 mm x 250 mm x 185 mm in size.

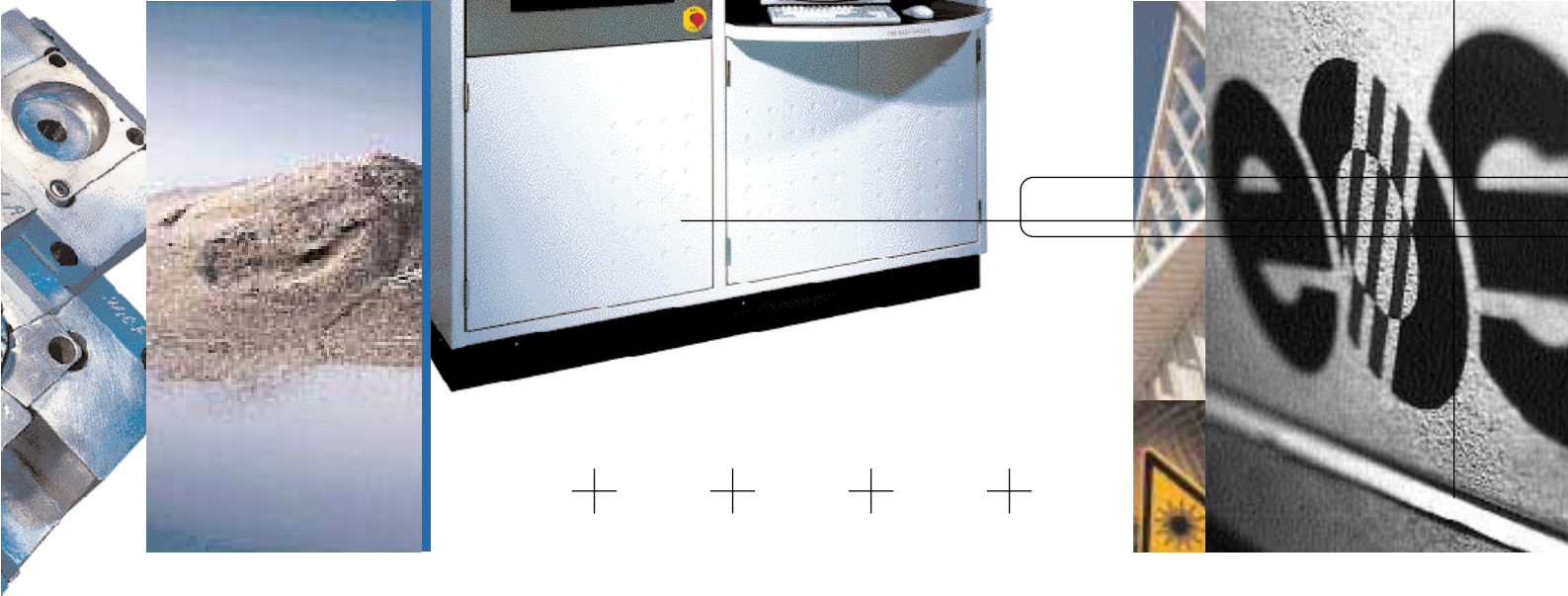
Simultaneous Engineering is the approach needed to meet the challenges of shorter product lifecycles and increasing numbers of product variants. Starting individual development phases much earlier on – in most cases in parallel – allows the entire process to be shortened.

Rapid Product Development with EOS technologies accelerates Simultaneous Engineering still further, by providing prototypes and tools at short notice throughout product development. As a result, individual phases can be shortened even more. At the same time, development quality improves, since errors can be avoided or detected earlier on – before they incur major costs or even endanger the product launch.



EOSINT M 250 Xtended. The world's only laser-sintering system that processes steel and other metal powder using the DMLS process.

M 250 Xtended



Steel for Heavy Duty Tools and Parts

The DirectSteel™ 50-V1 metal powder is particularly suited to laser-aided manufacture of heavy duty injection-moulding tools, die-casting tools or metal functional prototypes. Parts sintered with this material have extremely good mechanical properties, a high degree of accuracy and superior structural and surface detail.

Automatic Surface Treatment for Tool Inserts

Micro shot peening is a new process recommended by EOS that simplifies and accelerates finishing of laser-sintered parts.

There are two stages to the process: in the first, the surface is cleaned and the surface topography smoothed. In the second phase, the surface is compacted by cold forming. Specially shaped jets enable even hard-to-reach slots no broader than 1 mm to be processed.

Micro shot peening produces R_z values of less than 20 microns for untreated laser-sintered components. Where components are manually polished afterwards, values of less than 3 microns can be achieved.

Designed for High Productivity

EOSINT M 250 Xtended also comes with a special clamping system for tooling, making manufacturing high-quality tool inserts using the DirectTool™ process even faster and more cost-effective. Handling during both the building process and finishing is simplified, making the entire tooling process more efficient.

Using DirectTool™ and EOSINT M 250 Xtended for tooling.

EOSINT M 250 Xtended technology can be used in all phases of the tooling process - to produce prototype, pre-series and series tools. Saving considerable time and money by the time of the product launch.



The Uses of EOSINT M 250 X^{tended}

New Opportunities for Tooling.

Complex geometric shapes such as free forms, deep slots and conformal cooling channels can be created in a single piece, direct from the CAD data.



The DirectTool™ Process Using EOSINT M

Computerized tool design – laser-sintering of three-dimensional CAD data – metal tool – technical prototype in series material or series product.

A number of different materials are available for use with EOSINT M 250 Xtended, guaranteeing a broad range of applications. As a result, EOSINT M 250 Xtended can be used either alone or as an ideal complement to conventional and other modern tooling processes.

Laser-sintered Tools for Vulcanization of Rubber

EOS' new DirectMetal™ 100-V3 metal powder is suitable for manufacturing small series and functional prototypes in series materials. Tools can be sintered with this material extremely quickly, and offer good mechanical properties, a high degree of accuracy and superior structural and surface detail.

Complex Injection Moulding Tools within Hours

The new DirectMetal™ 50-V2 fine metal powder was developed for the production of small series and functional prototypes in series thermoplastic materials. The resulting tools have good mechanical properties, plus extremely high levels of accuracy and structural and surface detail. Components to be used for tooling can be infiltrated with high-temperature epoxy resin, if needed.

EOSINT M 250 Xtended



EOS has been developing technologies and processes for Rapid Prototyping since 1989. It all started with a vision – the dream of manufacturing three-dimensional models and moulds direct from CAD data using laser technology. Today the company is the leading European manufacturer of Rapid Prototyping and Rapid Tooling systems. Manufacturing enterprises and specialist service bureaus from many different sectors are using EOS technologies to improve their competitiveness and market position.

Technical Data

Maximum building volume	250 mm x 250 mm x 185 mm
Building Speed (material-dependent)	2 – 15 mm ³ /s
Layer thickness (material-dependent)	0.05 – 0.1 mm
Laser type	min. 200 W, CO ₂
Precision optics	F-theta lens
Scan speed (maximum)	3.0 m/s
Power supply	32 A
Power consumption (maximum)	6 kW
Nitrogen generator	integrated (optional)
Compressed air supply	minimum 7,000 hPa; 6 m ³ /h
Dimensions	
System	1,950 mm x 1,100 mm x 1,850 mm (B x D x H)
Recommended installation space	4.7 m x 3.7 m x 3.0 m (B x D x H)
Weight	approx. 900 kg
Data preparation	
PC	Windows 95, Windows NT
Software	EOS RP Tools, Magics RP / Materialise, DeskArtes
CAD interface	STL, CLI
Network	Ethernet
Certification	CE

EOS GmbH – Electro Optical Systems
Pasinger Strasse 2, D-82152 Planegg/Munich
Tel.: ++49 (0)89 / 856 85-0, Fax: ++49 (0)89 / 859 84 02
e-mail: info@eos-gmbh.de, www.eos-gmbh.de

EOS France – Electro Optical Systems S.A.
27-29 bd du 11 Novembre 1918, BP 2131, F-69603 Villeurbanne Cedex
Tel.: ++33 (0)4 78 94 56 70, Fax: ++33 (0)4 78 94 56 43

EOS s.r.l. – Electro Optical Systems
Sansovino Business Centre, Via Sansovino, 8, I-20133 Milano
Tel.: ++39 / 02 / 29 51 62 51, Fax: ++39 / 02 / 29 40 45 12