

SLM 500

Powder Supply Unit PSX

The Powder Supply Unit PSX is a fully automatic system that is designed for sieving and for transporting large amounts of metal powder. This makes this machine ideal for use in the production environment.

All processes inside the PSX take place under inert gas atmosphere. The sieving process starts when the excess metal powder is transported from the overflows of the SLM 500 to the vibration sieve of the PSX. Subsequently, the rough particles are sieved out of the fine powder and are gathered in an overflow bottle. The reusable powder, which has the defined grain size, is transported into the 90l storage container and can be directly used again.

The Powder Supply Unit PSX automatically and continually supplies the Selective Laser Melting Machine SLM 500 with sieved powder from the storage container.



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Part Removal Station PRS



The Part Removal Station PRS is a basic feature of the SLM 500. This useful component of the machine is optimally suited for batch production, and serves for removing the excess powder from the build cylinder and the build parts.

Based on the unloading position, the construction cylinder is removed with the handling device, which is also a basic feature, from the SLM 500 and transferred to the Part Removal Station PRS.

With the use of the PRS, the created build parts can be ergonomically released from excess powder without any skin contact. The build cylinder is extremely comfortable to reach, thanks to the integrated, gas-tight gloves, and the operator is not exposed to the metal powder. All SLM build parts are manufactured on a substrate plate located on the machine's platform. This is raised in the station, and the excess powder collects easily in the powder storage containers on the sides. Finally, the powder is automatically transported from the storage containers to the Powder Supply Unit PSX where it is prepared for use again.



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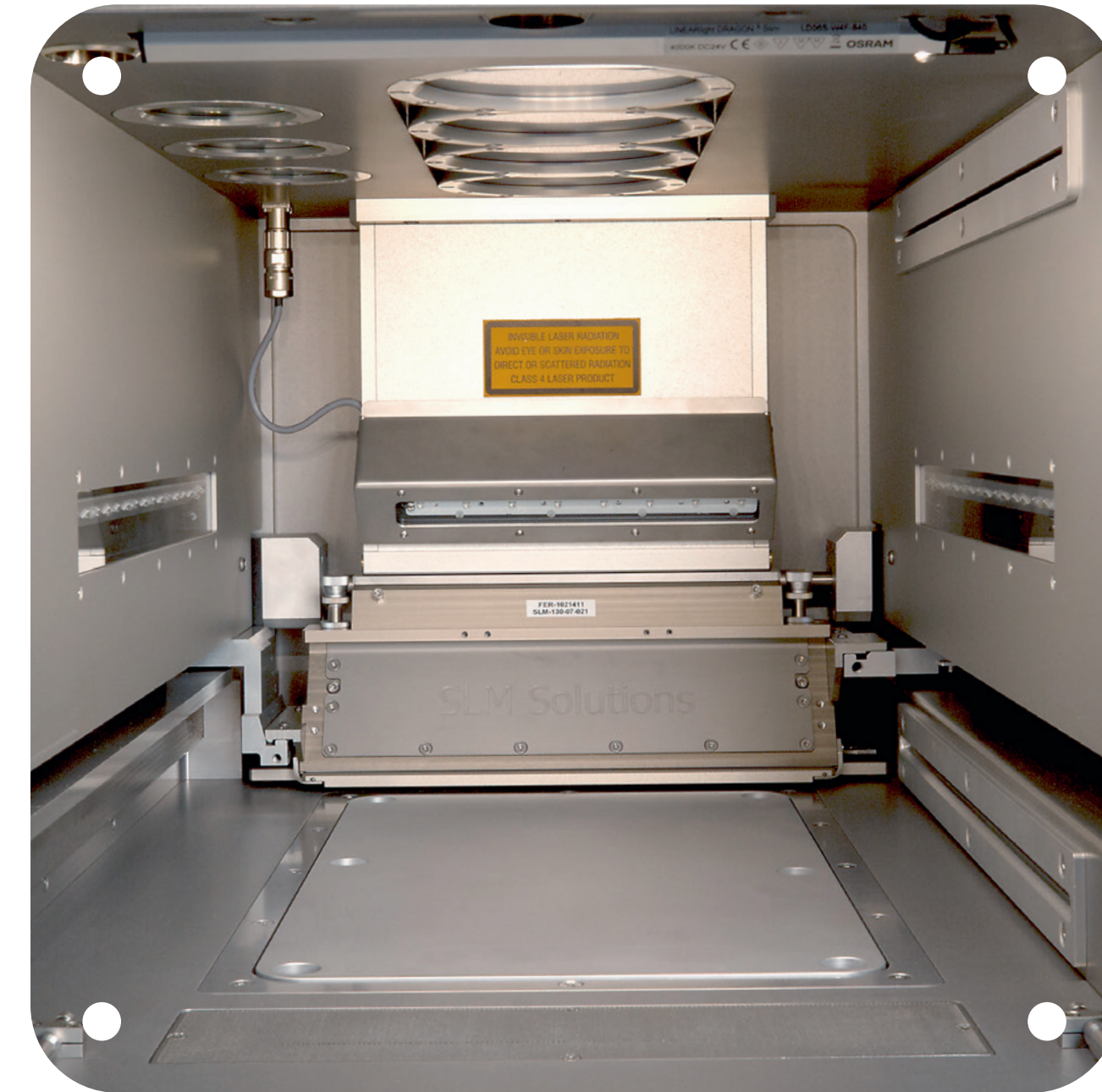


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SLM 500

Selective Laser Melting Machine



Create complex and large build parts efficiently
A step towards production technology in additive manufacturing



Technical Specifications	
Build Envelope (L x W x H)	500 x 280 x 365 mm ³ reduced by substrate plate thickness
3D Optics Configuration	Twin (2x 400 W), Quad (4x 400 W) Twin (2x 700 W), Quad (4x 700 W) IPG fiber laser
Build Rate (Quad 400 W)	up to 105 cm ³ /h
Variable Layer Thickness	20 µm - 75 µm
Min. Feature Size	150 µm
Beam Focus Diameter	80 - 115 µm
Max. Scan Speed	10 m/s
Average Inert Gas Consumption in Process	5 - 7 l/min (argon)
Average Inert Gas Consumption Purging	70 l/min (argon)
E-Connection / Power Input	400 Volt 3NPE, 64 A, 50/60 Hz, 8 - 10 kW
Compressed Air Requirement / Consumption	ISO 8573-1:2010 [1:4:1], 50 l/min @ 6 bar
Dimensions (L x W x H))	5200 mm x 2800 mm x 2700 mm (inkl. PSX, PRS)
Weight (without / incl. powder)	approx. 2400 kg / approx. 3100 kg
System configuration for all types of metal powders / Technical changes reserved	

The Selective Laser Melting Machine SLM 500 provides a build envelope of 500 x 280 x 365 mm³ and the patented multi-beam technology. In the high-performance SLM 500 Machine, four quad fiber lasers (4x 400 W or 4x 700 W) are in action simultaneously, increasing the build-up rate by up to 90% compared with the twin configuration (2x 400 W or 2x 700 W).

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The universally usable SLM 500 Selective Laser Melting Machine is a high-performance winner, thanks to its large build envelope and quad laser technology. An extremely comprehensive basic configuration and the large choice of options enable application-oriented machine configuration. The machine's patented multi-beam technology is a central component of the SLM 500. With the twin (2x 400 W or 2x 700 W) and optional quad (4x 400 W or 4x 700 W) optical configuration, this machine is specifically designed for use in the production environment.



The machine has fully automated powder management located between the SLM Machine and the Powder Supply Unit (PSX). The metal powder is continually sieved and fed to the construction process. This eliminates time-consuming manual filling of the machine. Tasks like cleaning the cylinder and removal of the build parts are efficiently performed in the separate Part Removal Station (PRS). The subsequent construction process can be started in parallel with a second build cylinder.



The build parts are prepared with the software Magics RP and the module support generator SG+, as well as the SLM Build Processor. The data formats used in the industrial environment can be loaded and processed. As well as this, a comprehensive monitoring and quality assurance system enables a high degree of process control in the machine.