

A NEW — ERA FOR — SLS



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DEAR TECHNOLOGY COMMUNITY

Amidst a global health crisis, supply chain uncertainties, and resource shortages 3D printing has proven itself to be more relevant than ever. In our increasingly digital world we at Sintratec see Selective Laser Sintering playing a key role in the manufacturing of the future.

With the Sintratec S2 we already set the foundation for our vision: a modular, scalable solution that can process multiple materials on the same production line. Now we are taking the next step on this path.

Presenting the **All-Material Platform** – our solution for next-level throughput and multi-material manufacturing, perfectly tailored to your application.

Dive in and explore the full potential of the **AMP!**



Dominik Solenicki,
Co-founder & CEO

Christian von Burg,
Co-founder & CTO

METAL & POLYMER ON THE SAME SYSTEM

A new era for Selective Laser Sintering

The **All-Material Platform** is the new additive manufacturing solution by leading Swiss SLS company Sintratec. As a world first, the AMP enables processing of all materials on the same production line, marking a new era for industrial 3D printing.

Metal Cycle

The Cold Metal Fusion process expands the field of SLS into the world of metals. The printing material consists of metal powder integrated into a plastic binder matrix. After 3D printing, the green part is debinded in a chemical solution, followed by sintering the resulting brown part into a metal piece in a furnace.

Polymer Cycle

The standard Selective Laser Sintering process makes use of the thermoplastic properties of polymer materials. Inside the 3D printer a powerful laser fuses the powder particles layer by layer into accurate three dimensional objects. Once printed, the parts are cleaned inside peripheral handling stations and post processed if needed.



MEET YOUR FUTURE FACTORY

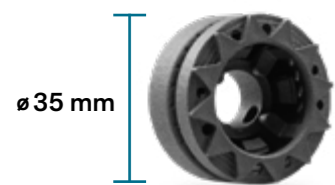
The Sintratec **All-Material Platform** means flexibility: start with one System, and seamlessly scale up depending on your application. All Fusion Modules and Build Modules are fully cross-compatible and can be combined to form small-scale cells for prototyping or large-scale manufacturing setups when combined in a swarm configuration.

Modularity of our solution is a key advantage. Start expanding your fleet with multiple Build Modules dedicated to different materials and increase productivity by adding more powerful Fusion Modules. The goal of the **AMP** is simple: reduce downtimes, increase your throughput, and essentially achieve a lower cost per part.



FACTORY USE CASE CALCULATION

Given a production line of **10** Sintratec S3 Fusion Modules. Printing with 80% utilization rate and high print job density results in a throughput of:



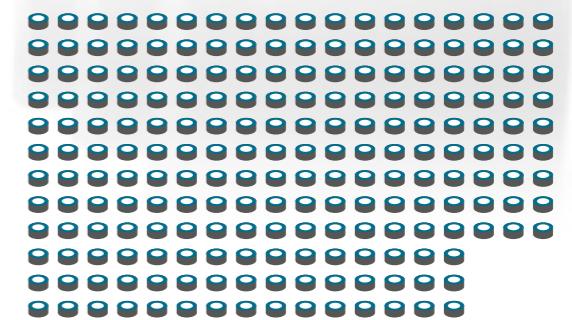
SLS PART
Cable Drive Pulley



PRINT JOB
315 parts
(MCU-220)



45'384
PARTS PER MONTH



552'172
PARTS PER YEAR

FUSION AMP MODULES



LASER SINTERING MODULES FOR ALL YOUR MANUFACTURING NEEDS

Unique and patented in the field of Selective Laser Sintering (SLS), the Sintratec **All-Material Platform** separates the cutting-edge Fusion Module (3D printer) from the movable Build Module (powder container). Thanks to this modularity both polymers and metals can be processed on the same system and exchanged rapidly without cross-contamination or lengthy cleaning processes.

SINTRATEC S3



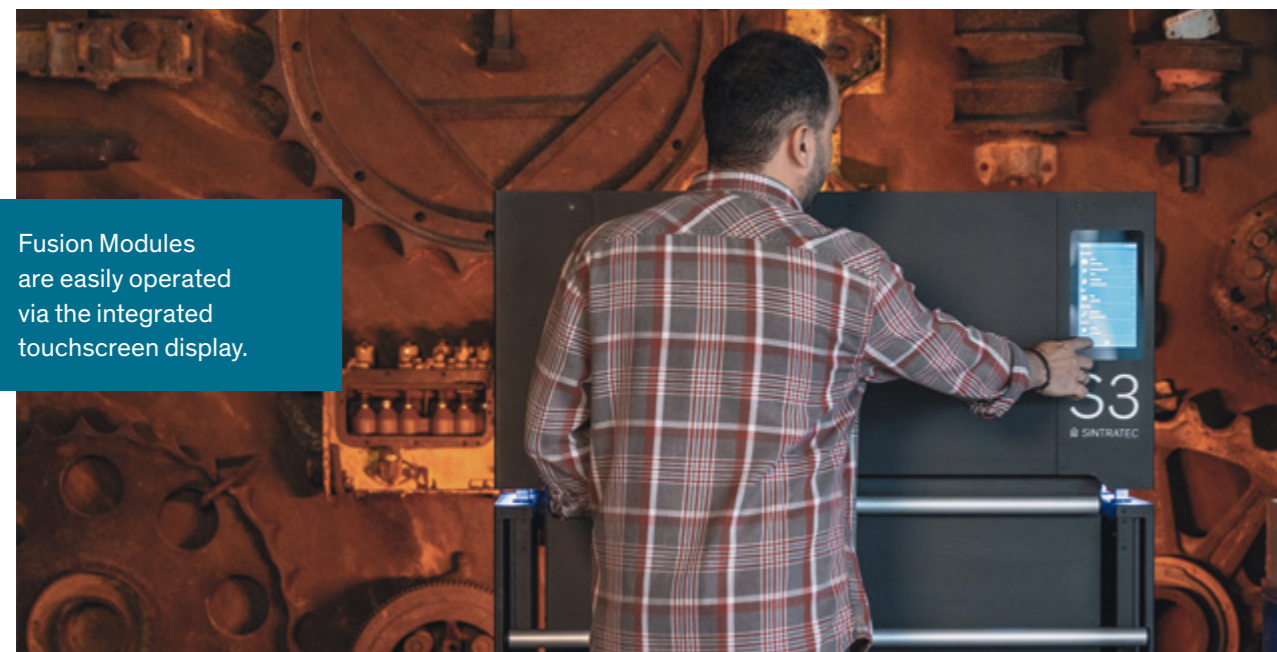
New laser power for your production

The Sintratec S3 is the latest Fusion Module for the Sintratec **All-Material Platform**. Developed for around-the-clock SLS 3D printing, the S3 is a workhorse that packs a punch. Its 30-watt fiber laser fuses powder particles into precise, industrial-grade objects at unprecedented speeds.

- Powerful 30-watt fiber laser
- Three times faster laser speed
- Next-level productivity and throughput
- Ideal for larger manufacturing setups and series production
- Compatible with all **AMP** materials and Build Modules

Technical Specifications

| | |
|------------------------|---|
| Dimensions (h x w x d) | 1,490 x 990 x 600 mm |
| Power supply | 230 V 11 A max 50 – 60 Hz |
| Laser Type | 30W CW Fiber Laser (1064 nm wavelength) |
| Laser Spot Size | 145 µm |
| Weight | 80 kg |



Fusion Modules are easily operated via the integrated touchscreen display.

SINTRATEC S2



More than just a 3D printer

The Sintratec S2 is the first-generation **AMP** Fusion Module and offers an excellent entry into the world of industrial 3D printing. Since its introduction in 2019, the Sintratec S2 has proven itself in a broad variety of industries worldwide for production, prototyping, and research.

- Precise 10-watt fiber laser
- Entry-level SLS 3D printer
- Ideal for rapid prototyping to small and mid-sized series production
- Successfully in use worldwide since 2019
- Compatible with all **AMP** materials and Build Modules

Technical Specifications

| | |
|------------------------|---|
| Dimensions (h x w x d) | 1,490 x 990 x 600 mm |
| Power supply | 230 V 11 A max 50 – 60 Hz |
| Laser Type | 10W CW Fiber Laser (1064 nm wavelength) |
| Laser Spot Size | 145 µm |
| Weight | 72 kg |



The Sintratec S2 delivers parts with great quality at an exceptional speed and allows us to develop much faster at a lower cost.

Valentin Vergnes
Prototyping technician at INFACO



MOVABLE BUILD MODULES FOR EFFICIENT OPERATION

The AMP Build Modules are designed to carry all Sintratec printing materials. The units come with integrated powder mixing and sieving functions and are easy to move. Their cylindrical build volume and multi-zone heating ensure an even heat distribution and consistent results.

BU — ILD AMP MOD — ULES

SINTRATEC MCU-220



Build Module for higher throughput

The Sintratec Material Core Unit 220 is the new Build Module compatible with all Fusion Modules of the **All-Material Platform**. The build volume of 15.2 liters makes the MCU-220 the ideal choice for large objects and high-throughput manufacturing.

- 90 % larger build volume than the MCU-160
- High level of process reliability
- Integrated re-coating and multi-zone heating system
- Compatible with all AMP materials and Fusion Modules

Technical Specifications

| | |
|-------------------------|---------------------|
| Dimensions (h x w x d) | 1100 x 850 x 530 mm |
| Build cylinder height | 400 mm* |
| Build cylinder diameter | 220 mm* |
| Build cylinder volume | 15.2 l |
| Weight | 65 kg |



The Build Modules are easy to move and require no heavy lifting.

SINTRATEC MCU-160



Material switches within seconds

The MCU-160 is the first generation **AMP** Build Module and well suited for the production of small to mid-sized pieces. Multiple units dedicated to different powders allow you to increase the material variety and reduce downtimes of your system.

- Entry-level Build Module
- High level of process reliability
- Integrated re-coating and multi-zone heating system
- Compatible with all AMP materials and Fusion Modules

Technical Specifications

| | |
|-------------------------|---------------------|
| Dimensions (h x w x d) | 1100 x 850 x 530 mm |
| Build cylinder height | 400 mm* |
| Build cylinder diameter | 160 mm* |
| Build cylinder volume | 8 l |
| Weight | 59 kg |

* The actual print range depends on the used material and printing parameters.



The SLS process by Sintratec meets our key requirements – namely tolerances, dimensional stability and heat resistance

Benjamin Kaubeck
Head of Apprenticeship Training at LISEC

MATERIAL HANDLING



COMPLEMENTARY HARDWARE FOR CLEANING AND POST-PROCESSING

In addition to the 3D printing modules, Sintratec offers material handling and peripheral solutions that are specifically tailored to the Selective Laser Sintering technology. Easily depowder your objects, improve the surface finish of your parts, and collect recyclable material for your next print job.

MATERIAL HANDLING STATION



Dedicated station for preparing & depowdering

Once your print job is completed, simply move the **AMP** Build Module into the dedicated Material Handling Station for further processing. The freely accessible work area with an air filtration system gives you a clear view of the object while depowdering. Additionally, it allows you to easily collect, sieve and recycle the unused powder for your next print.

- Powerful air filtration system
- Integrated screening & mixing function
- High-resolution camera for real-time evaluation
- Compatible with all **AMP** materials and Build Modules

Technical Specifications

| | |
|----------------------------|------------------------------|
| Dimensions (h x w x d) | 1,570 x 990 x 600 mm |
| Power supply | 230 V 5 A max 50 – 60 Hz |
| Available motorized sieves | 140 µm 314 µm (mesh size) |
| Touchscreen | 7" (3280 x 2464px) |
| Weight | 57 kg |



Step-by-step instructions on the touchscreen assist the user with material handling.

BLASTING STATION

Fast post-processing of your 3D prints

The Sintratec Blasting Station enables you to quickly and easily depowder your SLS parts and improve their surface finish. The sandblaster is equipped with a high-quality ceramic nozzle and is suitable for different materials such as quartz and glass beads.



- Dust reduced work due to circumferential seals
- Clear view of the parts being processed
- Ergonomic and efficient operation

Technical Specifications

| | |
|-----------------------------|--------------------|
| Dimensions ext. (h x w x d) | 590 x 485 x 490 mm |
| Working pressure | 2.8 – 8 bar |
| Connection | 3/8" |
| Weight | 17.25 kg |

POLISHING STATION

Magnetic tumbler for an optimal surface finish

With the Sintratec Polishing Station your prints get a modern surface look. Remove surface impurities of your SLS pieces and provide them with a smooth, stainless steel like finish.



- Easy-to-use magnetic tumbler
- Ideal results in a short amount of time
- Simultaneous processing of several parts

Technical Specifications

| | |
|------------------------|--------------------|
| Dimensions (h x w x d) | 360 x 400 x 370 mm |
| Polishing chamber size | ø290 x 160 mm |
| Motor Speed | 2,800 rpm |
| Weight | 28 kg |

INDUSTRIAL-GRADE POLYMER MATERIALS

The Sintratec materials allow you to print highly precise parts that can be used for functional prototypes as well as end-use components. Our first-class SLS powders have proven to be the right choice for mechanically demanding applications across a wide range of industries.



SINTRATEC PA12-GF

PA12 GF is a glass-filled polyamide 12 variant that produces parts with an exceptionally high stiffness and great impact strength. The powder is the perfect choice for mechanical applications that require dimensional stability.



SINTRATEC PA12

PA12 nylon is the most commonly used material for industrial SLS 3D printing. The polyamide powder produces strong and durable parts that are ideally suited for prototypes as well as for end-use applications.



SINTRATEC TPE

TPE is an elastomer that results in flexible, rubber-like parts. With an impressive elongation at break of up to 438 %, the industrial-grade material works well for applications that require a high degree of ductility.



INTRODUCING METAL SLS 3D PRINTING

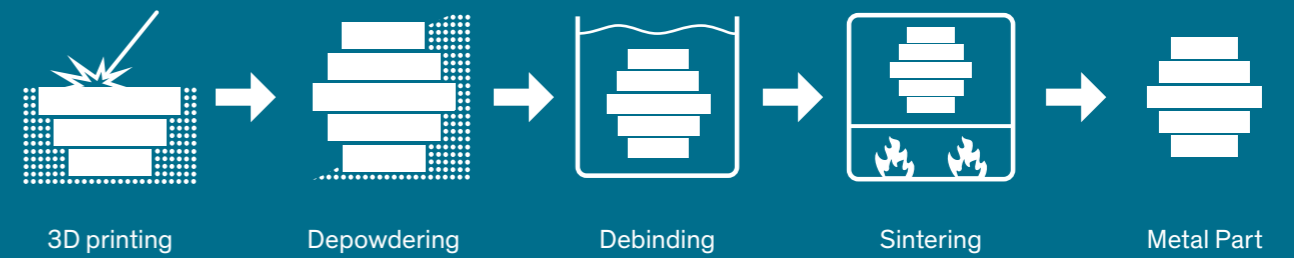
Today's metal additive manufacturing systems are restricted by a number of factors. The printers are very large compared to their usable build volume, the material selection is limited, the process costs are high and the manufacturing throughput is low. This is about to change with the so-called Cold Metal Fusion process – a completely new approach designed for the series production of metal parts through SLS.

The metal SLS process

The printing powder consists of metal particles integrated in a plastic binder-matrix, which allows for a high material variety and significantly reduces safety requirements. Inside the **AMP** Fusion Modules the green parts are directly 3D printed with a low temperature below 70° Celsius. Afterwards, the cleaned green parts are debinded using solvent debinding. The resulting brown parts are then sintered into the final metal pieces inside a furnace.



A bicycle chainstay designed by SturdyCycles. Left: PA12 Nylon. Right: M2 Tool Steel. Both pieces were 3D printed on a Sintratec Fusion Module.



ENTER INTO OUR BETA PROGRAM

Do you want to be among the first to unleash the full potential of the Sintratec **All-Material Platform** and venture into the realm of metal? Then do not hesitate to contact us and enter into our beta program. Make sure to apply fast via info@sintratec.com as the number of participants is limited. In the first phase two metals will be available (M2 Tool Steel and 17-4PH) with more materials and peripheral solutions to be introduced in the near future.



SOFTWARE AND ADDITIONAL FEATURES

3D printing hardware is only as efficient as its software. That is why Sintratec has always been developing its own software to provide you with the best possible printing experience. Apart from the Sintratec Central Software that comes freely with every system, we offer additional features to suit your needs perfectly.



CENTRAL

Sintratec Central is the essential tool that transforms 3D designs into print data for your SLS system. The basic software includes import, auto placement and slicing functions, as well as remote controls and a live camera view of your printerlet.

PRODUCTIVITY UPGRADE

The Productivity Upgrade offers you a powerful nesting function developed for an unprecedented throughput. With a single click imported 3D objects are automatically placed inside the build volume to achieve an ideal print job density and to save up to 40% material and time.



MATERIAL DEVELOPER UPGRADE

The Material Developer Upgrade is a software feature that opens up next-level research possibilities. With over 100+ configurable parameters and unlimited freedom for laser strategies the upgrade allows you to adapt existing powder materials or to transform new ones into applications.



GET IN TOUCH WITH SINRATEC

We would love to hear from you

No matter if you require an individual quotation, need further consulting about the Sintratec technology, or simply like to receive a sample print – the Sintratec team is happy to advise you.

Call us for general inquiries:

Drop us an e-mail:

Visit us online:

+41 56 552 00 22

info@sintratec.com

[sintratec.com](https://www.sintratec.com)

Would you like to see fascinating examples brought to life with SLS?
Then visit our social media channels and discover the possibilities first-hand!



Sintratec



Sintratec_3dprinters



Sintratec



Sintratec, founded and based in Switzerland, created the first Selective Laser Sintering (SLS) desktop 3D printer in the world - the highly praised and awarded Sintratec Kit. Since then, we have been continuously improving our machines and developing new solutions. Our Swiss made high-tech systems enable companies and research institutes from various industries around the world to create outstanding applications and products.

Last updated: 11/2022 | Disclaimer: This brochure represents the current state of development of the Sintratec products and loses its validity once a new version is published. Misprints, changes and errors are reserved. Pictures and listed specifications may vary from the final products.



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