POWERFUL. EFFICIENT. DURABLE.

INDUSTRIAL LARGE SCALE ADDITIVE MANUFACTURING WITH POWERPRINT FLEX

KraussMaffei

Pioneering Plastics

PRINTCORE –
INDUSTRIAL ADDITIVE MANUFACTURING EXTRUDER

Built on decades of pioneering innovation a high-performance Extruder offering unmatched versatility and efficiency. Developed using our extensive expertise, the extruder sets new industry standards, allowing for a broad range of discharge rates tailored to any production need.

The highlights at a glance:

– Maximum output	30 and 70 kg/h*
– Screw diameter	35 mm
– Weight	140 kg and 180 kg**
– Maximum extruder temperature	400 °C
– Adjustable heating zones	4
– Nozzle diameter	2-20 mm
– Melt temperature measurement	0-450 °C
– Required time for nozzle change	< 15 min
– Dimensions WxDxH	230 x 260 x 1900 mm
– Electric heating power (400V)	5 kW
– Drive System	Servo Drive

– Processes medium and high temperature materials like Glass and Carbon Fiber filled PC and PEI reliable and durable due to selected metal alloys for screw and barrel design

* The maximum output rate depends on the system load capacity, the material conveying process, and the design of the material feeder system.

** Depending on maximum output

YOUR BENEFITS:

- Broad range of integration possibilities
- High wear resistance Screw design
- Performance Motion Control Servo Motor for high requirements in terms of dynamic response and precision
- High range of technical polymers and high-performance composites
- Tested and Qualified with over 180 years engineering experience

POWERPRINT FLEX – **INDUSTRIAL ADDITIVE MANUFACTURING WITH A ROBOT**

The powerPrint Flex is a compact and powerful robot solution offering maximum flexibility. It combines modular architecture, compact motors, and advanced control technology for maximum efficiency and reliability.

Key facts of powerPrint Flex

3D printing technology	Fused Granular Fabrication (FGF)
Machine footprint	5100 x 5650 x 6450 mm
Printing space	Thermally insulated and closed
Maximum part size	2,0 x 2,5 x 2,5 m
Extrusion output	Up to 70 kg/h
Extrusion melt temperature	Max. of 400 °C
Print bed	Heatable up to 180 °C with vaccuum fixed printing plates
Dryer volume	150-350 dm^3
Drying temperature	50-140°C
Material conveying volume	30kg or 70kg per hour
Fill capacity material silo	1500 dm^3

POWERPRINT FLEX
INDUSTRIAL ADDITIVE MANUFACTURING WITH A ROBOT

The powerPrint Flex is a highly flexible, powerful system for industrial additive manufacturing with a robot. Its modular architecture, combined with proven components, advanced control technology, and compact motors, enables customized production solutions that are reliable, efficient, and adaptable to a wide range of requirements.

powerPrint Flex – a highly flexible, powerful system for industrial additive manufacturing with a robot.

Flexible and modular engineering

Built for industrial use, powerPrint Flex offers a fully modular system architecture. From a standard cell to a fully integrated production line, it scales effortlessly with proven components like printCore and ePrintTable for maximum reliability and flexibility.

By integrating additional linear and external axes, we offer greater flexibility, enabling tailored automation setups that enhance efficiency and productivity. With a global footprint and a commitment to innovation, KraussMaffei is your trusted partner for advanced automation and individualized industrial solutions.

Feeding system and dryer
Material drying is connected with the material supply by a vacuum supply system. This allows for continuous production without intervention by an operator.

Robotic system
Industrial standard and high payload capacity and modular working areas. Precise path control accuracy and repeatability, crucial for creating detailed and complex structures.

printCore – Industrial HP Extruder
With melt flow control for a higher production speed, high part quality and precise material output in continuous operation.

Robot Control Panel
Siemens SINUMERIK ONE and Run MyRobot/Direct Control PLC concept integrates seamlessly into your machine tool environment, utilizing the full spectrum of CNC and drive functionality. With this advanced control system, additional robot control units are unnecessary, allowing for streamlined operations.

Heated vacuum printing table
16 individually controllable zones allow for optimal use of the space. Depending on requirements, multiple mounting surfaces can be configured with a pre-settable printing table temperature. Max. printing bed temperature 180 °C.

Robotic safety cell
State-of-the-art robotic safety cell, equipped with durable PC panels, ensures maximum protection and visibility for operators. Designed with advanced safety features, it provides a secure environment for automated processes, while maintaining clear oversight. The modular design allows for easy integration into any production line, ensuring both flexibility and compliance with the highest safety standards.

OUR EXPERTISE
FOR MATERIAL VARIETY AND SERVICE SOLUTIONS

With our AM services, we offer you individual services to help you get the best out of additive manufacturing: We print your individual components, offer you the opportunity to qualify your material with us or train you in the basics of additive manufacturing.

Material variety for quality components
High-performance plastics such as ABS, PC, PEI, and PP are processed and used in various applications including molds & tools, jigs & fixtures, end-use parts, and design. This wide range of materials offers versatile application possibilities tailored to specific industrial requirements.

Our expert support
We offer comprehensive support in material testing and qualification phases for unknown materials and customer-specific compounds to achieve the desired process parameters. Furthermore, we assist our customers in material qualification, ensuring optimal results for their production processes.

Build your own business case with us
Create your own additive manufacturing or hybrid system. Thanks to the modular design and integration of our proven components, such as our industry-leading printCore extruder and innovative ePrintTable, you can develop your own customized industrial-grade system with us.

POWERPRINT FLEX
AREAS OF APPLICATIONS

Typical applications

Molds & tools, e.g.
- composite layup tools
- autoclave tools
- sand casting patterns

Jigs & fixtures, e.g.
- custom assembly fixtures
- transport retention fixtures
- positioning jigs

Design parts, e.g.
- architectural structures
- customized furniture
- room dividers

End use parts, e.g.
- machine housing
- pipe & fitting components
- underbody panels

POWERFUL. EFFICIENT. DURABLE.

INDUSTRIAL LARGE SCALE ADDITIVE MANUFACTURING WITH POWERPRINT FLEX

kraussmaffei.com

0.0 FS 1st edition 07/25 AM 000 BR 05/2025 ··· Subject to technical changes ··· Printed in the Federal Republic of Germany.