Graft 3D
Healthcare Solutions

INTAMSYS

Industrial FFF 3D Printers

High Performance Production Solutions

About INTAMSYS

INTAMSYS is a world-leading additive manufacturing company, providing industrial 3D printers, software, high-performance materials and printing services. It was co-founded by a team of engineers from high-tech companies which were engaged in precision equipment development and high-performance materials research for many years.

INTAMSYS offers comprehensive additive manufacturing solutions including rapid prototyping, functional test prototyping, tooling, jigs and fixtures, end-use parts, and small batch production parts. These solutions are sought out on a widespread basis and provided to a variety of industries such as aerospace, automotive, electronics, manufacturing, consumer goods, healthcare, research and more.

Self-Developed FFF (Fused Filament Fabrication) Core Technology

01

Advanced thermal design to support high performance, composite and engineering material printing

- Multi-point temperature gradient optimization in thechamber
- High temperature, high speed extrusion nozzle
- Liquid Cooling System on the printheads and motion motors

02

High-speed, high-precision drive and control technology, making large-size modeling more precise

- Closed-loop servo motor drive system
- High precision screw guide drive system
- Overall high stability with structure

03

Intelligent monitoring and closed-loop control technology to support continuous material process improvement

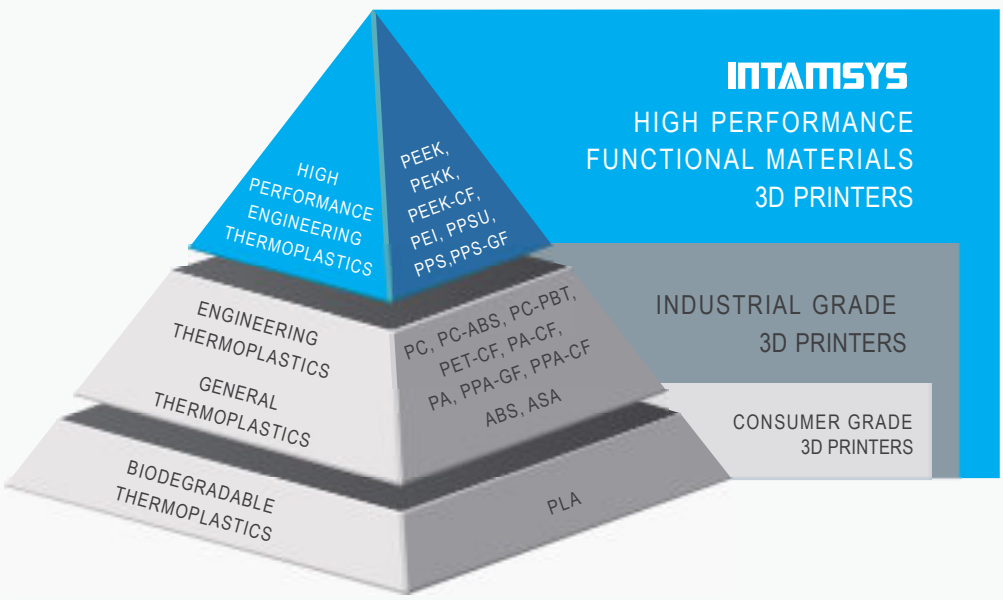
- Multi scenario intelligent sensors
- In-line feed quality monitoring system
- Accurate monitoring of printing process flow

04

Full-process slicing software providing an integrated collaboration platform for additive manufacturing

- DFAM-based manufacturability inspection and analysis
- Integration of intelligent algorithms and process knowledge base
- Multi-objective based print path planning

High-performance 3D printing solutions



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FUNMAT PRO 410

High Performance and Fiber Composite 3D Printer

Smart Design

Dual nozzle, auto-leveling, auto-feeding, jam warning, remote monitoring.

Advanced Thermal Design

90 °C (194 °F) heated chamber and 500 °C (932 °F) nozzle, uniform chamber with liquid cooling system.

Multi-material Printing Capability

High Performance: PEEK, PEKK, PPS Fiber Composite: PA-CF, PEEK-CF Engineering: ABS, PC.

Dry Filament Chamber

Overall sealing design, built-in molecular sieve, can keep filament dry for over 30 days.

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The FUNMAT PRO 410 is an industrial-grade FFF (Fused Filament Fabrication) 3D printer system characterized by its high-performance capabilities. Combining a respectable build volume with excellent print quality, the systemis a great choice for professional and industrial users looking to 3D print high-performance parts with engineering-grade materials.

Technical Parameters

Printing

Technology	FFF (Fused Filament Fabrication)	**Materials***	PEEK, PEEK-CF, PEEK-GF, PEKK, PPS, PC, PC-ABS,PPA-CF,PPA-GF,PA6/66, PA6-CF, PA12,PA12-CF,ABS,ASA,HIPS,SP3030 etc.
Build Volume Layer	305 × 305 × 406 mm(12 × 12 × 16		
Thickness Number	in) 0.1-0.5 mm		
of Nozzles Number	2	**Nozzle Temperature**	Max.500°C(932 °F)
of Spools Filament	2 (Max 3 Kg/pc)	**Build Plate Temperature**	Max. 160 °C (320 °F)
Diameter Print	1.75 mm	**Chamber Temperature**	Max. 90 °C (194 °F)
Speed Nozzle	Max. 120 mm/s	**Functions**	Auto-cleaning Nozzles, Filament Jam Warning, Filament Absence Warning, Remote Monitoring, Remote Printing, Printing Recovery fromPower Loss
Diameter	Default: 0.4 mm (Optional: 0.25/0.6 mm)		
Leveling	Auto Leveling, Manual Leveling		

Machine

Voltage	200-240 V, 15 A,	**Filament Chamber**	Overall Sealed Design, Built-in Reusable Molecular Sieve to Keep Dry, Temp. and Humidity Real-time Monitoring, Auto Filament Feeding
Max. Power	50/60Hz 3 kW		
Connectivity	WiFi, Ethernet, USB		
Screen	7″ Touch Screen		
Build Plate	Ceramics Glass Plate with Magnetic Fixations	**Travel Speed**	Max. XY300 mm/s, Max. Z 50 mm/s
		Resolution	XY: 15.6 μm; Z: 1.56 μm
Build Chamber	Fully Enclosed Printing Chamber	**Printer Size**	728 × 684 × 1480 mm(35.0 x 34.6 × 66.5
Motor System	High-precision Closed-loop Drive	**Printer Weight**	in) 230 Kg (507 lb)
Cooling	Liquid Cooling System & Fan		

Safety

Safety Design	Electromagnetic Safety Door Lock, Over Temperature Protection, Overload Protection, Leakage Protection, Warning Labels
Safety Standards	EN60204
Certification	CE, FCC, SGS

Slicing

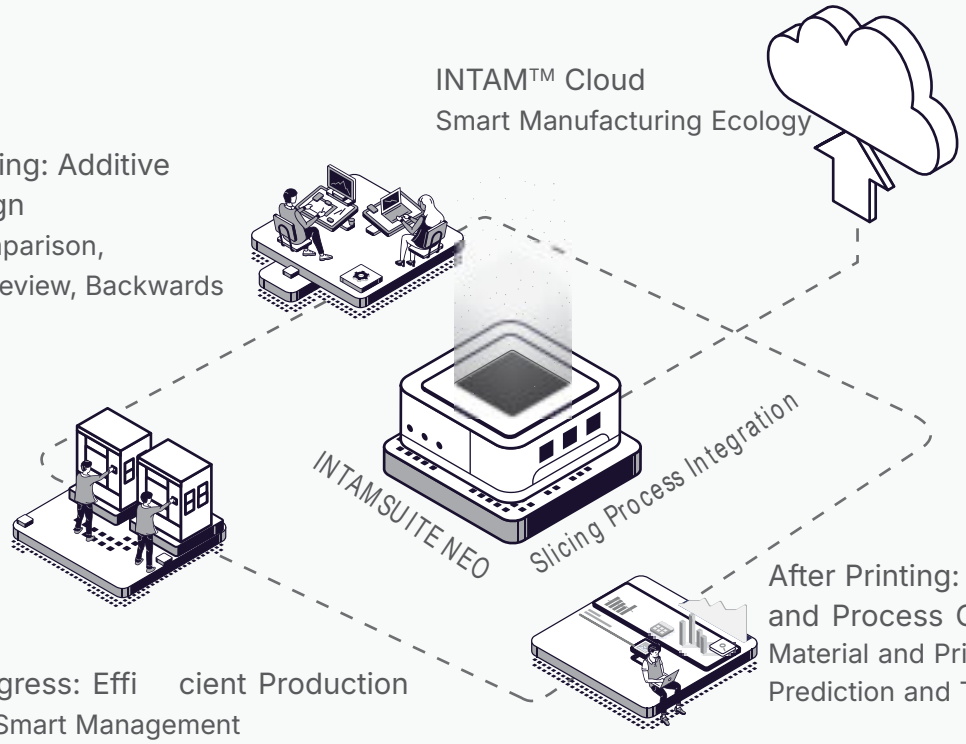
Slicing Software	INTAMSUITE NEO
Supported File Types	.stl/.3mf/.obj/.x3d/.g/oltp/. stp/ .step/.iges
Operating System	Windows

Operating Environment

Working Temperature	15 °C ~ 30 °C (59 °F ~ 86°F)
Working Humidity	30 ~ 70 %
Storage Temperature	0 °C ~ 35 °C (32 °F ~ 95 °F)
Storage Humidity	20 ~ 90 %

*Printing materials are not limited to this table, recommended printing materials are fully validated on the printer.

Core Functions



- Projects and Studies based workflow
- Detecting and repairing geometry errors
- DAM based manufacturability analysis
- Powerful material and process management library
- Open process parameter settings
- Multiple support types
- Adaptive line width function
- Slicing results previewand comparision
- Printer remote monitoring and control

Industry and Application Solutions

Aerospace

3D printing technology enables metal substitution of some aerospace products for shape verification of prototype, direct product manufacturing and mold making to meet "lighter, faster, lower cost, higher performance" design and manufacturing needs.

Sample name: Aviation Environmental Control Pipeline Solution: Traditional processing methods have pain points of high cost and low material utilization when dealing with thin-walled pipeline structures in aircraft environmental control systems. The high-temperature FFF 3D printing process combined with PEI 9085 material that meets airworthiness requirements (FST certification) provides an innovative solution.

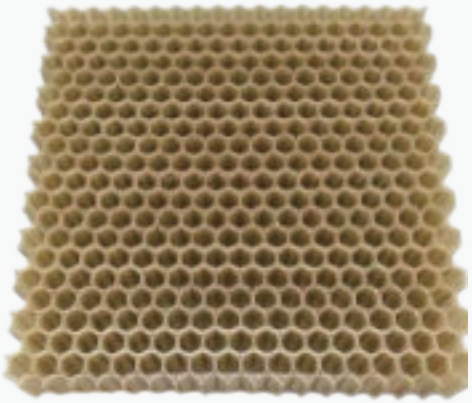
Defense Industry

Based on the characteristics of the military industry which are research and development, single prototypes, small and medium batch, multi-variety and defense production. 3D printing solves the painful problems of high price and low effi ciency of traditional processing and rapid production of spare parts druing regular maintenance, bringing high added value to on-demand manufacturing.

Sample Name: Turbine
Solution: This underwater turbine structure is complex, requiring high and lowtemperature resistance, anti-corrosion, and low water absorption. Still, traditional processing is more diffi cult. PEEK material can meet the demanding situation, while by 3D printing，users can significantly reduce costs and cycle time.

Education and Research

Additive manufacturing processes, new material researches, cross-disciplinary researches, and cutting-edge application- related disciplines have contributed to the maturing of additive manufacturing. It has also contributed to the training of high-end talents in the manufacturing industry.



Sample Name: Research on wave-absorbing materials and structures
Solution: Prototype testing of different materials (PEEK, PA, etc.) and structures combined with rapid validation and iteration to find materials and structures that meet the needs of the application.

Medical

PEEK material itself has excellent biocompatibility, and mechanical properties very close to bone. It has been widely used in human implantation. The use of 3D printing technology can perfectly match the individual needs of patients and has huge market potential.

Sample name: Sternal bone repair implant
Solution: PEEK is biocompatible for medical implantation. It has a density similar to bone, and can be clearly imaged under X-ray for post-operative observation. 3D printing can be customized and processed on an individual patient basis.

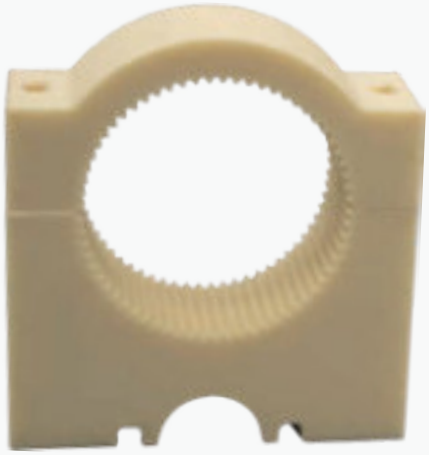
Automotive

3D printing technology is used throughout the entire automotive production cycle. It covers rapid prototyping, functional prototype verification, tooling and other auxiliary tools such as customized modifications and production of spare parts for small batch models.

Sample name: Steering wheel prototype
Solution: Large scale/batch printing shortens the iteration cycle. Rapid prototyping at a time, Only 2-3 days for monolithic manufacturing. PC-ABS material was chosen to bring out the best benefits of the combination of PC and of ABS. PC brought temperature resistance and strength to the part while ABS gave to the part its smooth surface quality.

General Manufacturing

Unlimited design freedom, customization, lightness, intuitiveness, precision, and efficiency help companies achieve flexible production of complex structures and rapid iterations.



Sample name: Pipe joint bracket
Solution: This pipe joint bracket printed of nylon material embodies high wear-resistance and toughness. Fixing methods can be designed according to the pipe size and site conditions.

Global Presence

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