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RAMPF MACHINE SYSTEMS

EPUMENT[®]

Mineral casting for cutting-edge machine beds and components

RAMPF

#DiscoverTheFuture



Chemical and Engineering Solutions



Advanced Polymers



Composite Solutions



Machine Systems



Production Systems

RAMPF Machine Systems is a company of the international RAMPF Group. Find out more on page 16.

RAMPF Machine Systems

Innovative solutions for highly dynamic production technology

We are the market-leading development partner and system supplier of complete machine beds and machine systems.

Our product portfolio encompasses

- > System solutions, trunk and base machines, as well as multi-axis positioning and motion systems built on machine beds and frame components made from high-performance materials such as mineral casting, hard stone, and ultra-high-performance concrete
- > Contract grinding of high-precision machine components

With this holistic approach, RAMPF Machine Systems serves as the ideal partner for the development and manufacture of pioneering machinery and production technology in a wide range of industries, including electronics, semiconductor, and solar module production, laser, woodworking and textile machines, measuring, testing, and inspection technology, as well as machine tool manufacturing.



Your industry | Your application

Customized, sustainable and used worldwide in a variety of applications.



MACHINE TOOLS

EPUMENT® mineral casting for productive and precise machine tools used in applications such as milling, turning, grinding, and eroding



LASER TECHNOLOGY

EPUMENT® mineral casting for innovative laser applications, including cutting, removing, coating, joining, scoring, testing, and marking



PRODUCTION

EPUMENT® mineral casting for cutting-edge production equipment in electronics, photonics, display, solar, and battery applications



Battery production



Display technology



Dispensing technology



Food technology



Graphics machinery



Medical technology



Microproduction



Measuring, testing, and inspection technology



Optics production



Packaging machinery



Pick & place applications



Power machines



Solar module production



Textile machinery



Woodworking machinery





EPUMENT®

Mineral casting

A vibration-damping machine bed material for highly dynamic mechanical engineering applications and technologies

EPUMENT® mineral casting is a high-tech material that is perfect for the primary machine bed functions, such as precisely securing the geometric position of the individual machine elements, and the static, dynamic, thermal, and acoustic absorption of forces and moments.

It boasts high media resistance, e.g. to cutting oils and coolants, flawless ecological credentials thanks to resource-saving manufacture, and environmentally sound disposal and recycling options.

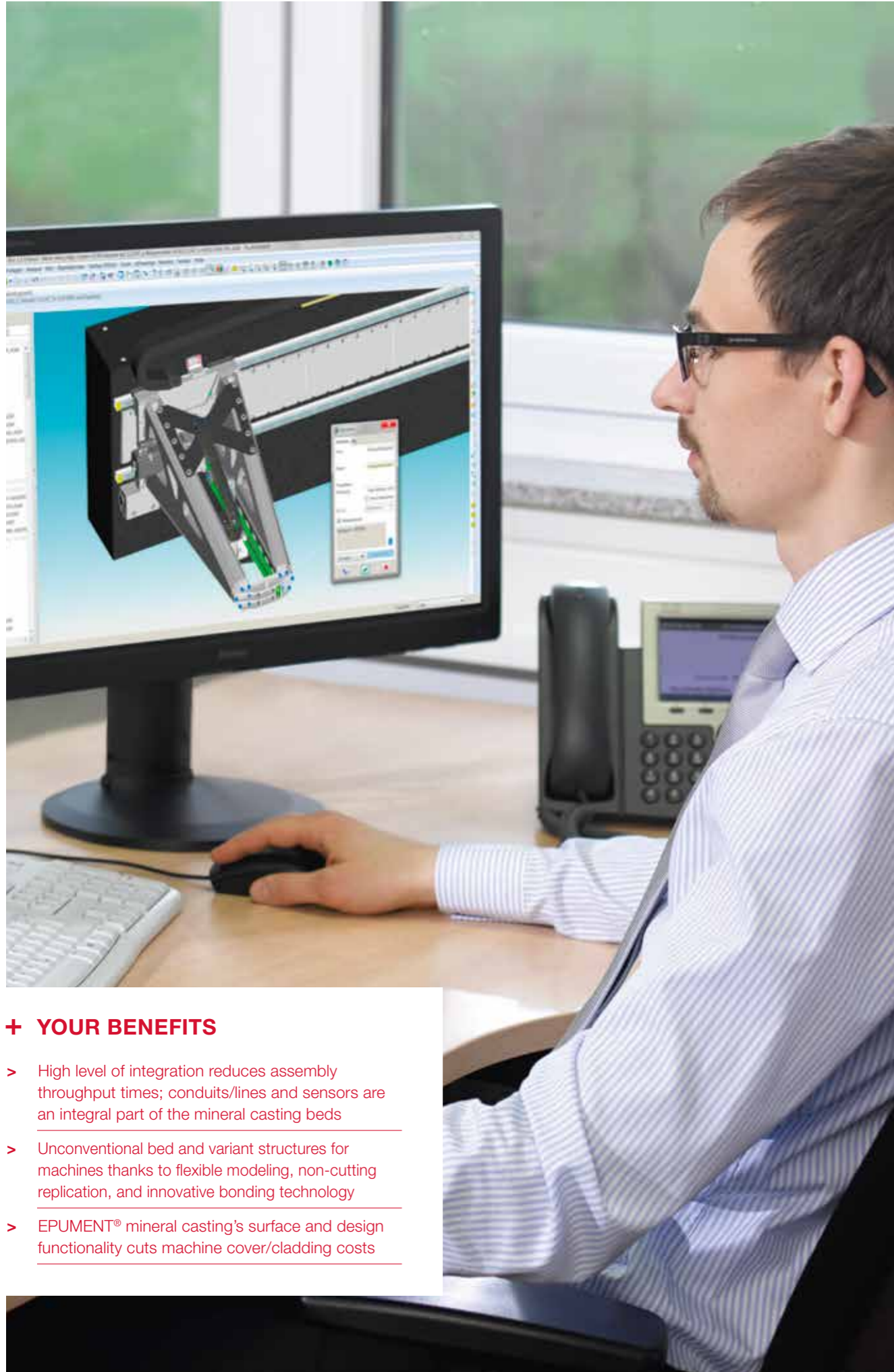
	MEASURE	EPUMENT® 145/B	EPUMENT® 140/8B	EPUMENT® 140/5
Density	g/cm ³	ca. 2,4	ca. 2,3	ca. 2,3
Modulus of elasticity (compression testing)*	kN/mm ²	40–45	35–40	30–35
Poisson's ratio		ca. 0,30	ca. 0,29	ca. 0,28
Compressive strength*	N/mm ²	130–150	130–150	140–160
Flexural strength	N/mm ²	30–35	30–45	35–45
Coefficient of thermal expansion (20 °C)	10 ⁻⁶ K ⁻¹	ca. 15	ca. 16	ca. 19,5
Logarithmic decrement		0,022	0,03	0,035
Maximum particle size	mm	16	8	5
Minimum castable wall thickness	mm	80	50	40

* Measured on Form + Test Seidner testing machine, model 502/3000/100SP

+ YOUR BENEFITS

- > Superior damping to metal materials improves the dynamic stability of the machine bed structure in fast and accurate production machinery
- > Machine beds and machine bed components with an excellent mass/rigidity ratio
- > Fewer faults when subjected to thermal loads thanks to high thermal inertia





EPUMENT® | Engineering, design, modeling

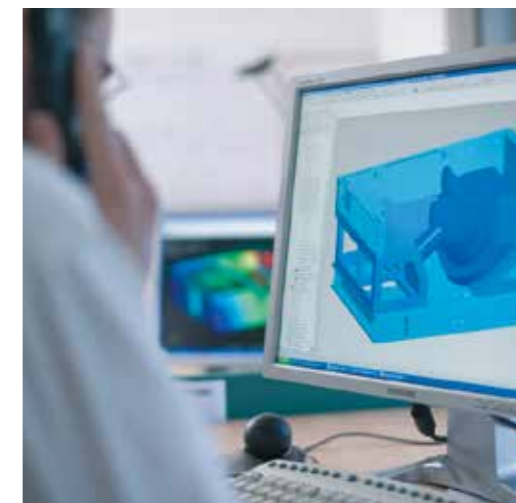
Services for material-specific design of mineral casting beds and bed components

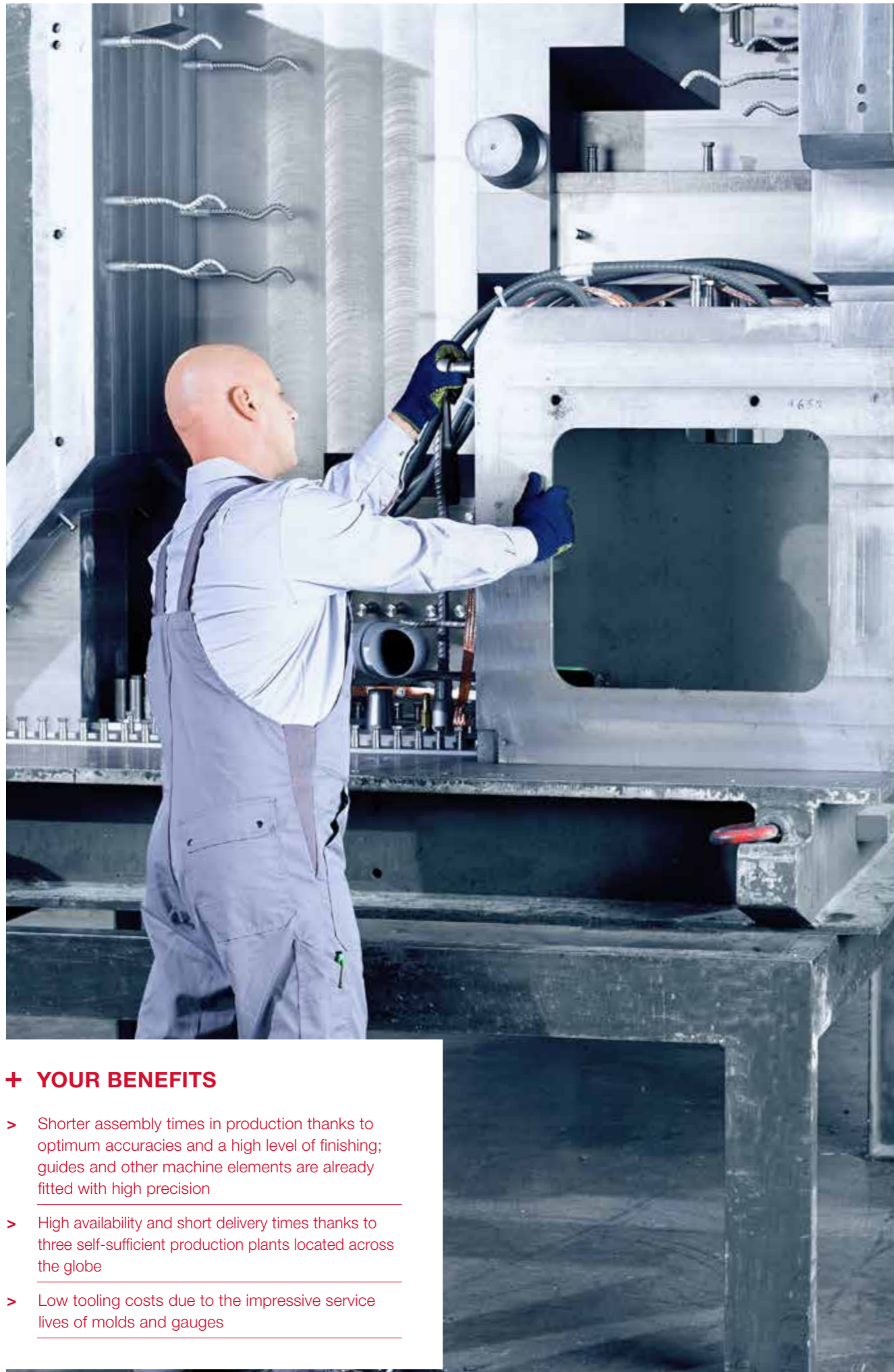
RAMPF Machine Systems is the end-to-end development partner for system solutions made of EPUMENT® mineral casting — from material-specific design and engineering to FEM modeling and the design of casting molds, replication gauges, and fixtures.

Low casting temperatures combined with innovative precision and bonding technologies produce precise machine components with high functionality and an exceptional level of integration.

+ YOUR BENEFITS

- > High level of integration reduces assembly throughput times; conduits/lines and sensors are an integral part of the mineral casting beds
- > Unconventional bed and variant structures for machines thanks to flexible modeling, non-cutting replication, and innovative bonding technology
- > EPUMENT® mineral casting's surface and design functionality cuts machine cover/cladding costs





EPUMENT®

Production, accuracy, precision assembly

Complete service offering with ready-to-use mineral casting bed as a system solution

RAMPF Machine Systems is the system supplier of complete mineral casting beds with high-performance production technology. State-of-the-art foundry equipment, climate-controlled replication halls, and an in-house precision grinding center underline the outstanding position of the world market leader.

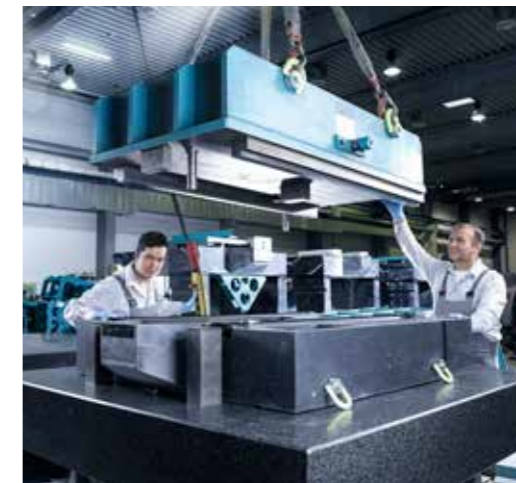
Based on the latest technologies and a reliable quality assurance system to ISO 9001 :2008, the company supplies complex mineral casting structures and assemblies with excellent dimensional accuracy, top quality, and the best possible price/performance ratio.

+ YOUR BENEFITS

- > Shorter assembly times in production thanks to optimum accuracies and a high level of finishing; guides and other machine elements are already fitted with high precision

- > High availability and short delivery times thanks to three self-sufficient production plants located across the globe

- > Low tooling costs due to the impressive service lives of molds and gauges





+ ADDITIONAL INFORMATION

- 1** Machine bed of a high-speed milling machine (11,920 kg; precision-ground surfaces, fitted guides, high-precision bonding of bed and gantry)

- 2** Bed of a tool grinding machine (3,520 kg; non-cutting replication of precision surfaces, fitted guides, high-precision bonding of bed with chip tray and stand)

- 3** Inclined lathe bed (8,630 kg; precision-ground surfaces, complex conduit system integrated)

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EPUMENT®

Industrial applications and references

for machine beds and machine bed components made from mineral casting

Machines have a bed base, regardless of whether they form, remove, join, apply, assemble, test, or install materials.

Today's production equipment needs to satisfy growing demands in terms of process accuracies under static, dynamic, and thermal loads. Machine beds and machine bed components made from EPUMENT® mineral casting play a key role in meeting these high

expectations thanks to their minimum deformation under maximum loads.

Every working day, up to 20 mineral casting machine beds with unit weights of between 200 kilograms and 20 metric tons leave our facilities.



+ ADDITIONAL INFORMATION

- 1** Bed of a die bonder (800 kg; cast in one piece; non-cutting replication of precision surfaces in three planes)

- 2** Bed of a jet printer for electronics production (1,680 kg; non-cutting replication of precision surfaces, fitted guides, cladding and design functions integrated in mineral casting)

- 3** Mineral casting base of a flip-chip bonder (330 kg; precision-ground surfaces)

- 4** Base of a tool presetting unit (840 kg; non-cutting replication of precision surfaces, cladding and design functions integrated in mineral casting)

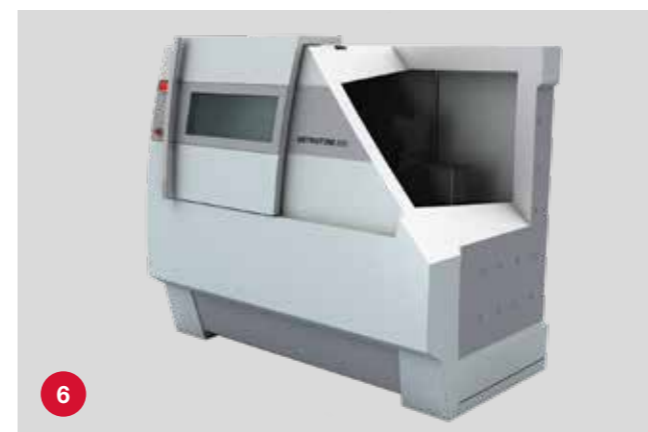
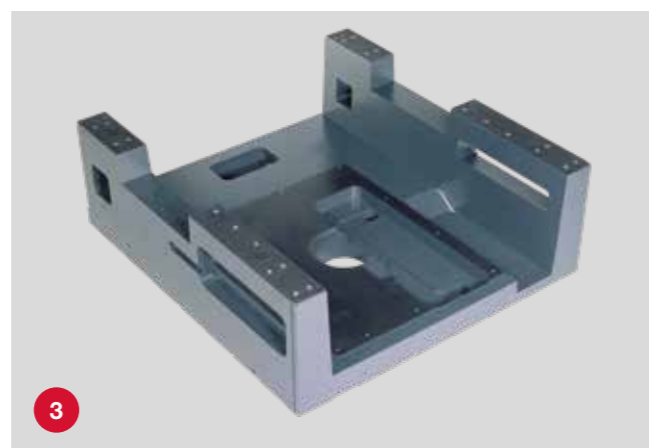
- 5** Bed of a laser machining unit (840 kg; cast in one piece; non-cutting replication of precision surfaces, cladding and design functions)

- 6** Cabin of an X-ray-based measuring device made from radiation-absorbing EPURAM mineral casting (4,800 kg, mineral casting assumes load-bearing, vibration-damping, radiation-absorbing, and design functions))

- 7** Bed of a diamond-wire wafer saw (3,870 kg; cast in one piece; non-cutting replication of precision surfaces)

- 8** Bed of a high-speed milling machine (3,760 kg; precision-replicated surfaces, guides fitted, high-precision bonding of bed and gantry)

- 9** Bed of a 5-axis universal machining center (4,180 kg; precision-replicated surfaces in two planes, bed and upper section screwed together; non-cutting replication of contact surfaces; integrally cast cooling system for X-axis)



We are inventors. Team players. And a strong partner.

RAMPF stands for pioneering chemical solutions and visionary engineering. Worldwide.

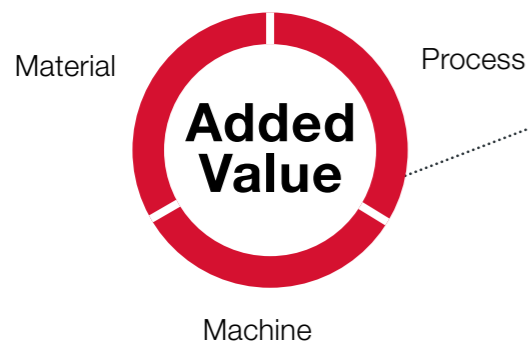
From a one-man operation to an international group with twelve sites spread across three continents – with our products and solutions centered around reactive resins, machine systems, and lightweight construction with composites, we rank among the market leaders in a whole host of industries.

Discover the future – this is both our corporate slogan and the foundation of our long-standing success story. In close cooperation with our customers and partners, we develop tomorrow's products and solutions today – for the decisive competitive advantage.

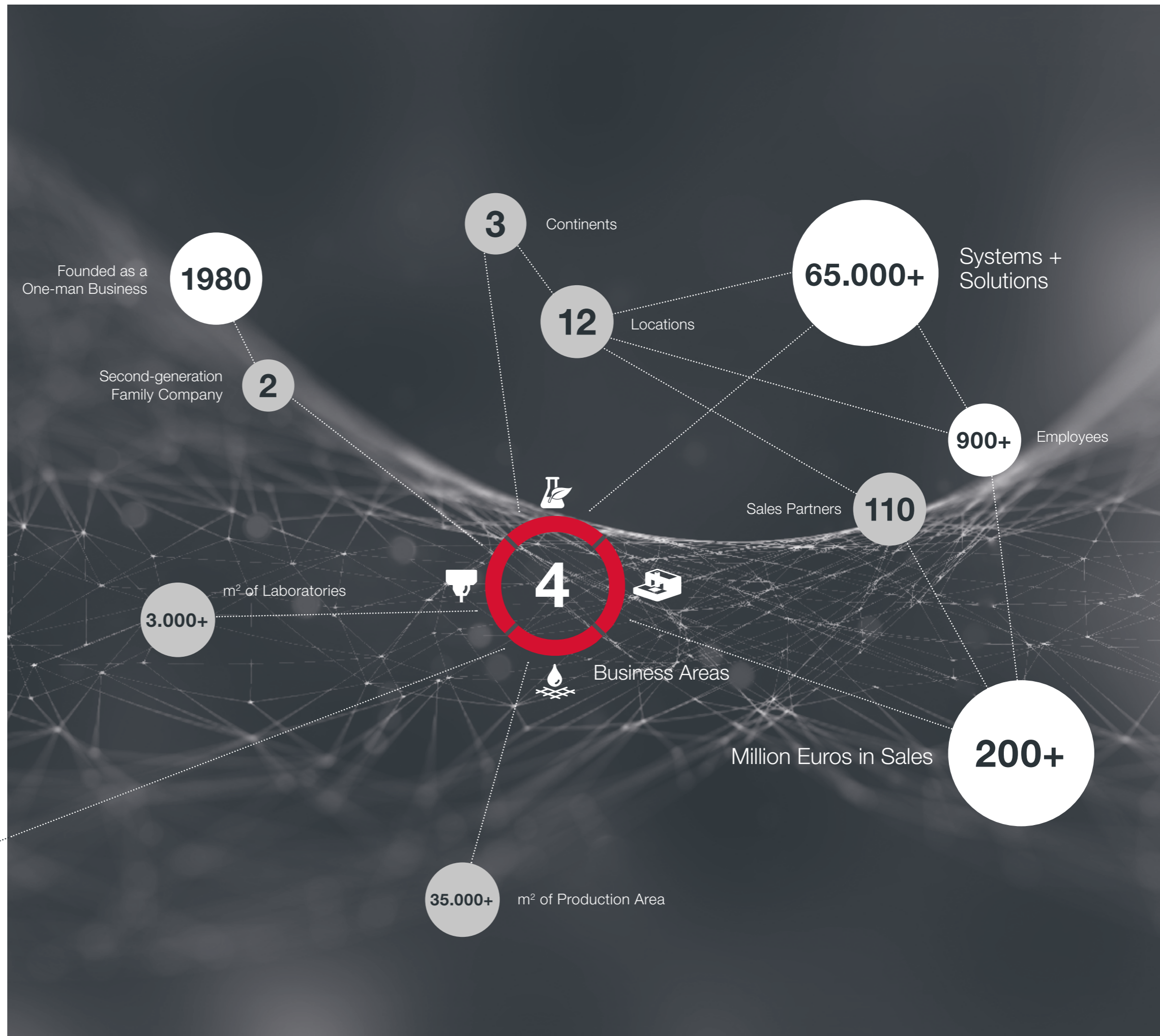
Sustainability has been a priority right from the outset. This is no mere buzzword but an integral part of our day-to-day activities. As pioneers of chemical recycling, we have been contributing to an effective circular economy for decades. The raw materials that we recycle are used both by our customers and within our Group.

We are also a sustainable employer. RAMPF grows with its employees – we invest in our staff and are keen for them to work with us in the long term. We achieve this by openly showing appreciation and offering extensive training and development opportunities.

A forward-looking, sustainable, and value-creating family-run business – as a partner to industry and as an employer, we attach the greatest of importance to trust and reliability. These qualities are an absolute must when it comes to establishing long-term, successful partnerships.



RAMPF – Chemical and Engineering Solutions.
Utilize our wide-ranging innovative potential for **Added.Value.**





RAMPF –

discover the future

Developing the Solutions
of Tomorrow – Today.

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Mass production?
Not at RAMPF.

**We engineer
made-to-order solutions.**

