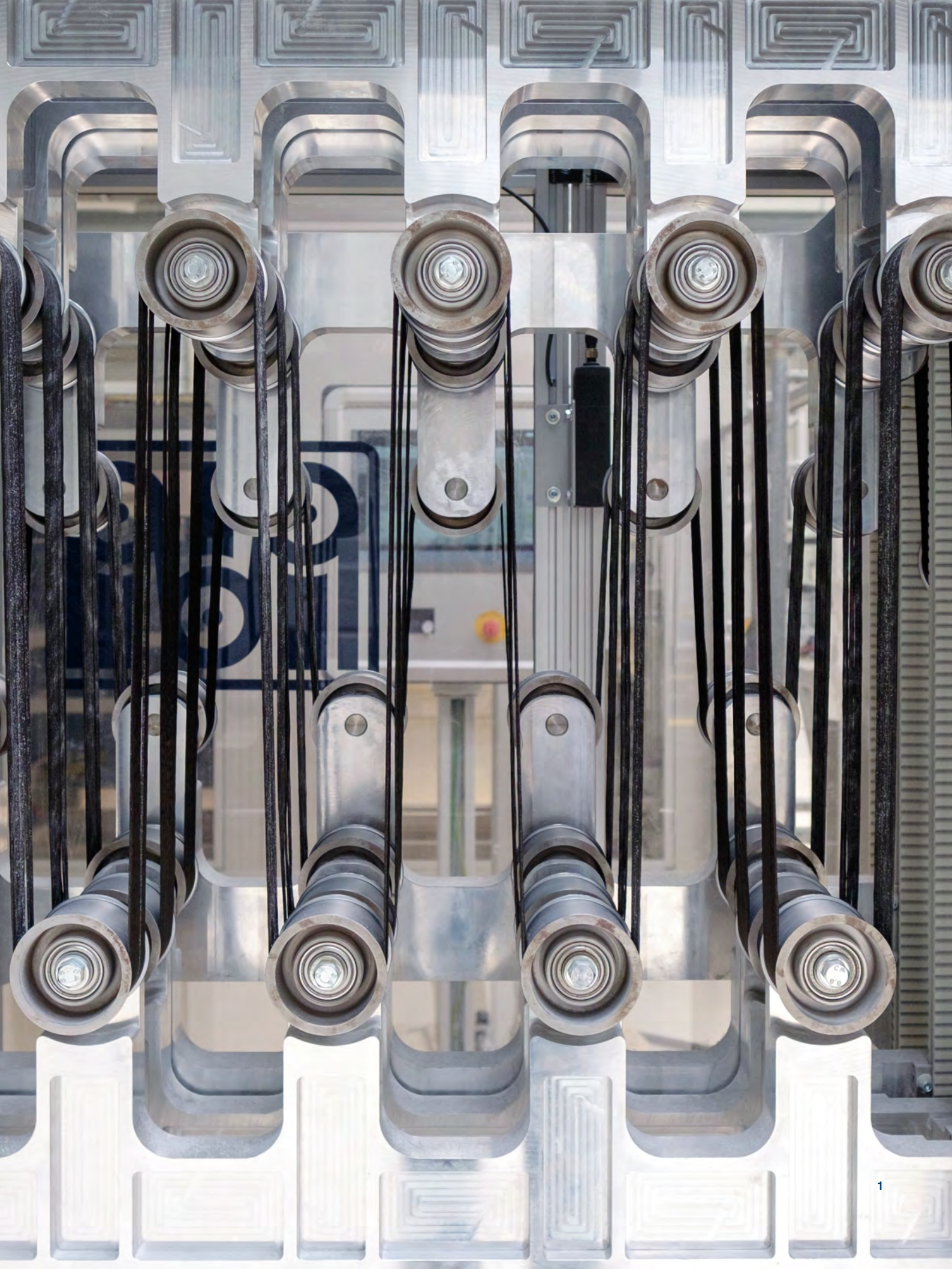


More than lightweight Voith Composites



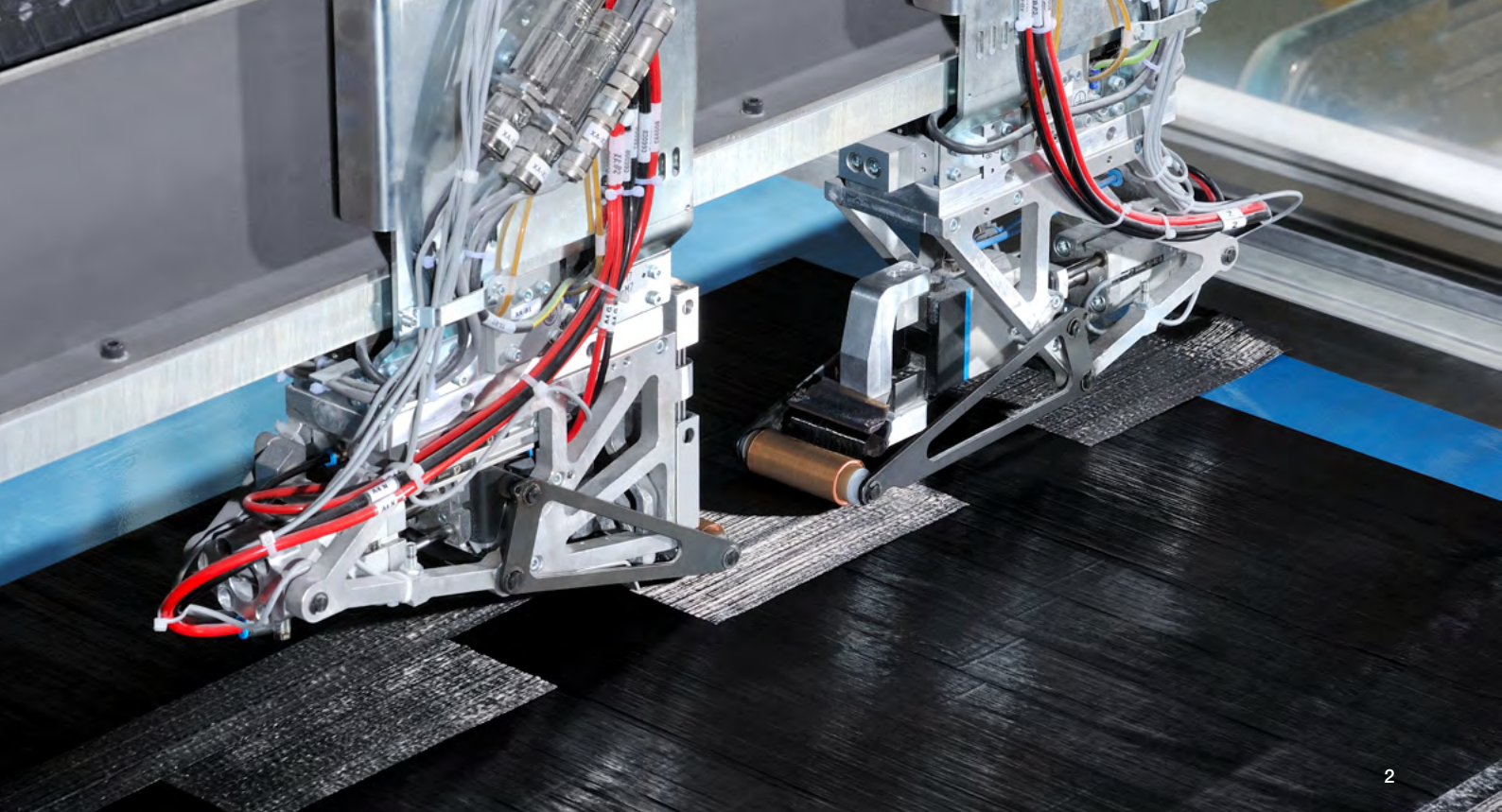


Realize your vision in fiber composite construction

Voith Composites is the one-stop-shop manufacturer of high-quality composite materials and components for automotive, aerospace and industrial applications. As a young but experienced company in the Voith Group, we introduce groundbreaking concepts for carbon fiber-reinforced composites (CFRP) manufacturing. We work closely with you, from the initial sketch all the way to industrialization and large-scale production. Our target is to find the best balance between performance and cost – making composites viable for future mass production.

Our innovative process begins with a spool of dry fiber and delivers a ready-to-paint component.

Commitment to your needs, cost efficiency and quality are our founding pillars. We adopt advanced processes and machines in one of the first fully automated 4.0 factories for composite manufacturing.



2

Tailored stacks – but how?

Voith Roving Applicator (VRA)

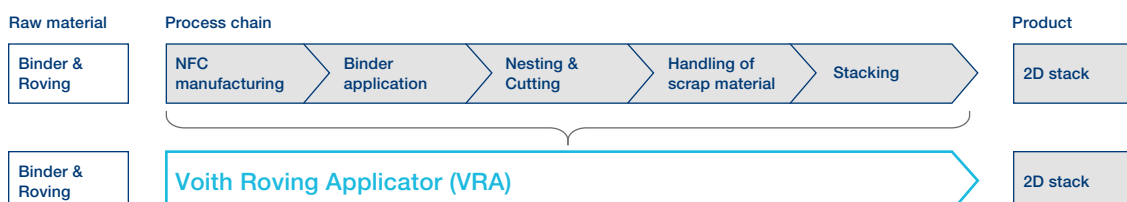
At Voith, we developed the Voith Roving Applicator (VRA) fiber placement machine, able to lay down automatically dry or pre-impregnated tapes. With the near net shape and local reinforcements, scrap is dramatically reduced, thus minimizing material costs. Following fiber placement, the two-dimensional stacks can be formed using the die forming or double-diaphragm process.

You can choose from a range of fibers and resins, customize the grammage, and create an optimized layup.

“We provide innovative solutions to reduce the cost of composite materials and make higher production rates viable.”

Matthias Odrobina,
CEO Voith Composites

Comparison of process chains





- 2 VRA Next Generation using pre-impregnated fibers
- 3 Structural component made by the VPW

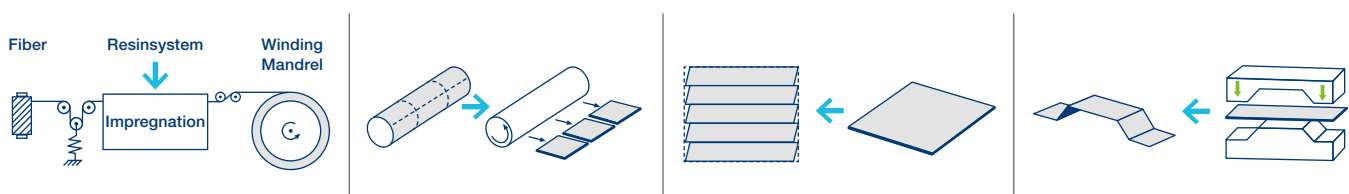
Tailored stacks – there is more Voith Prepeg Winding (VPW)

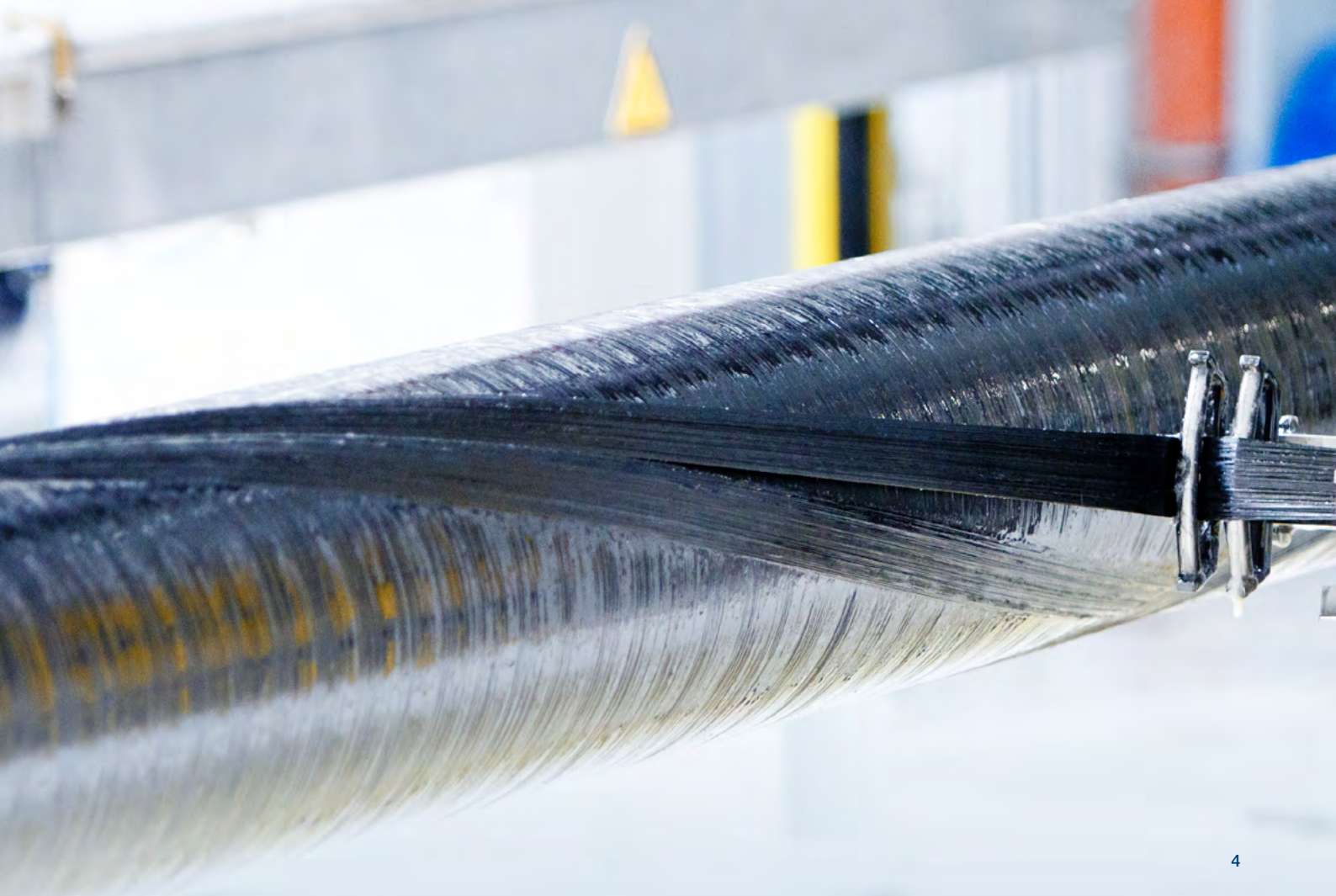
Could you imagine taking the stacking rate of a filament winding machine and using it to produce a laminate ready for molding?

That's the idea of our Voith Prepeg Winding (VPW), a winding technology for the mass production of composite preforms and components without costly resin injection.

The VPW method produces blankets that are especially efficient. It processes several rovings at the same time, impregnates them with resin and then uses a special winding process to produce two-dimensional preforms. These are preformed three-dimensionally and subsequently cured. Depending on the winding pattern, the winding process achieves a lay-up rate of up to 140 kilograms per hour.

Structural components – B-pillar





4

Our roots

Filament winding

Our mother company is one of the largest producers of paper machines. In the paper industry, large composite rolls are used to improve performance, production speed and maintenance. Ten years ago, we began to manufacture our own CFRP rolls, up to 12 meters long ... and we have never stopped since.

Today, we also extend our production capabilities to smaller diameters and lengths. We produce cardan and transmission shafts for marine and automotive, rolls and shafts for various machines, pressure vessels and tanks, and anything else that can be wound to a mandrel.

- 4 Manufacturing of a CFRP roll
- 5 Audi A8 CFRP rear wall



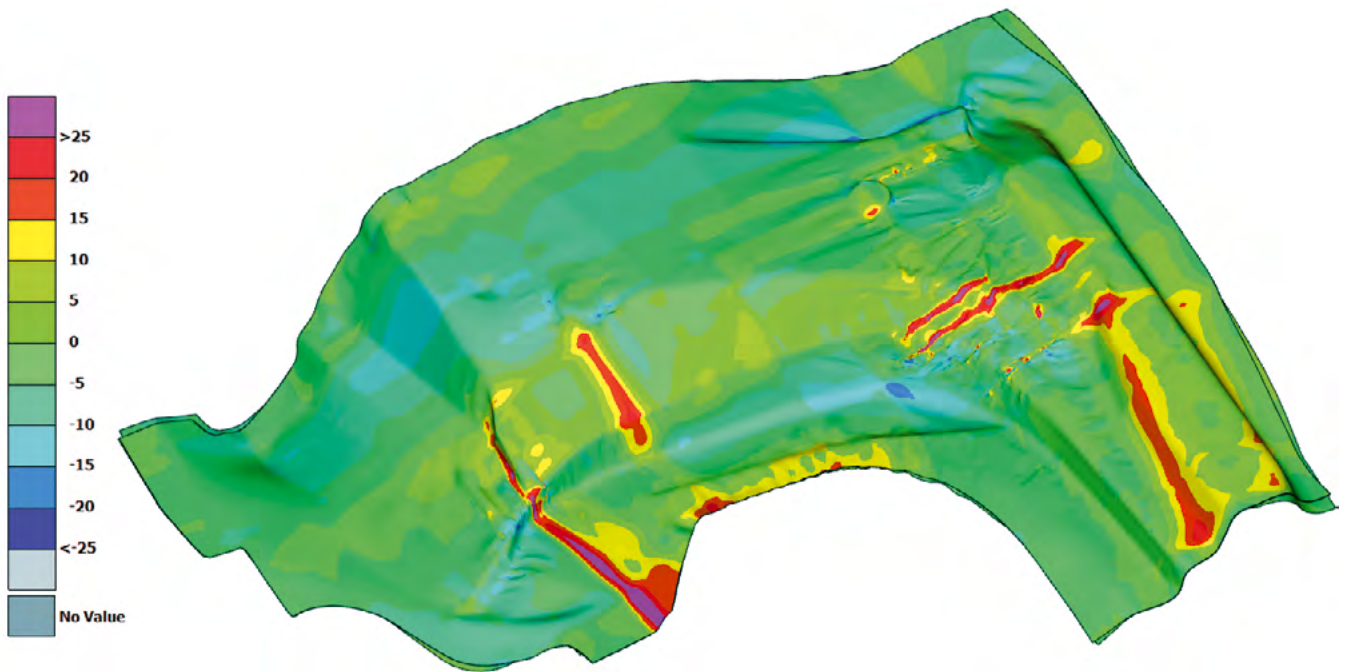
5

From the bottom of our hearts Engineering as a service

We can't hide it, we are engineers.

Being a manufacturing company in our own right, we have been through a long learning process comprised of both mistakes and successes. Today, we are able to support you in various aspects of your project, from simulation to industrialization and automation, prototyping and part design. We love sharing our knowledge and hands-on experience with you, being truly a one-stop-shop for your project.

- 6 Draping simulation of complex textile structures
- 7 Robots implement automatized preform handling



6

From the idea to the finished product

FEM and simulation

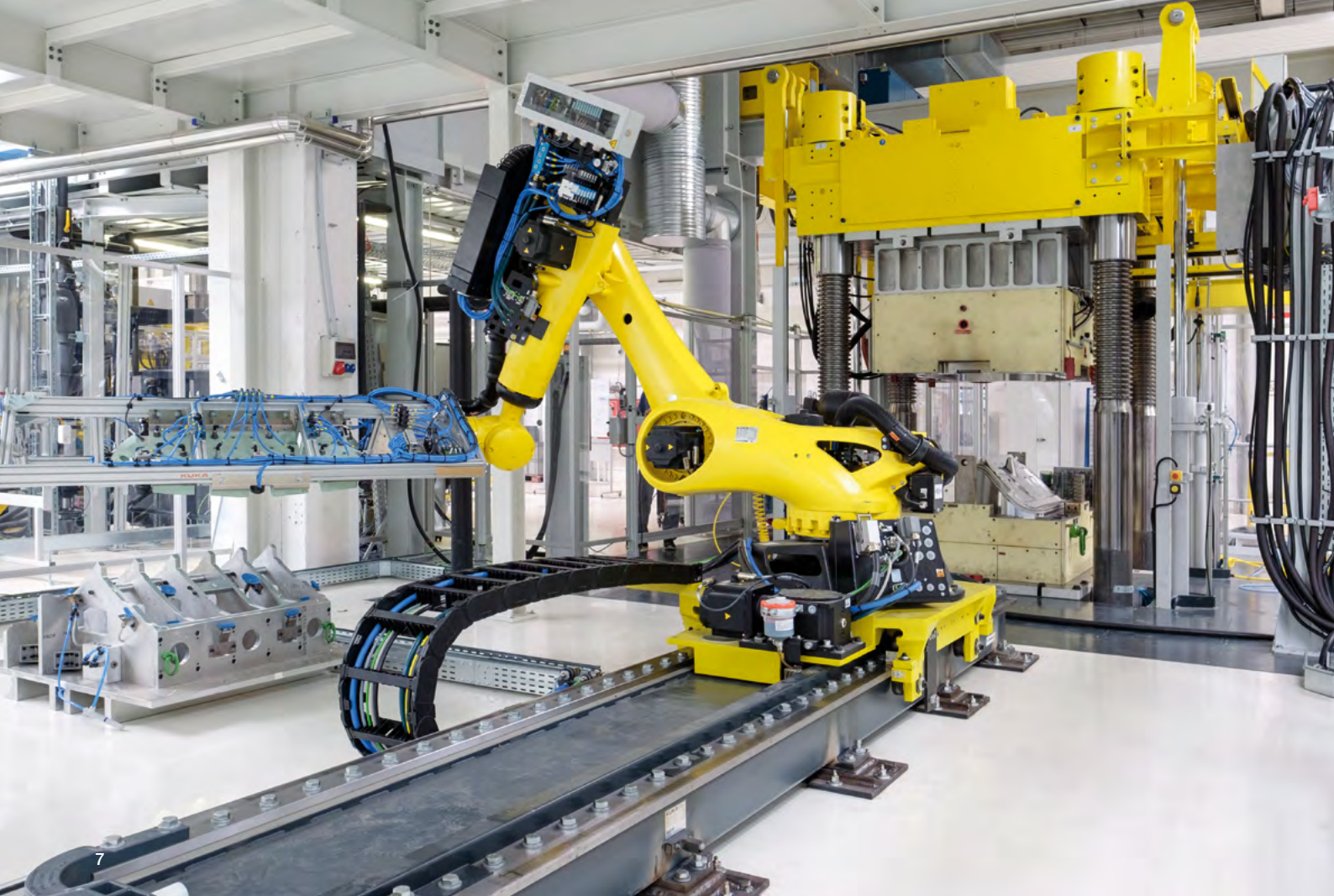
At Voith, we invested a long time in designing our own simulation tools to predict draping, preforming, performance, injection patterns and more. We offer our services in mechanical design, structural and process simulation as well as virtual layup.

You imagine it, we simulate it.

Having our own production just a few steps away from our computers, we know how to correlate our simulations with real-life data, and we are now really proud to put this knowledge to work for you.

“Because we can predict process and parts’ behavior in our simulation process, we are able to guarantee reliability even before the actual manufacturing begins.”

Gordej Klein,
CAE Engineer at Voith Composites



Digital production brought to life

Voith Composites 4.0

Our production facility is in accordance with Industry 4.0 standards: Machines communicate and interact with one another, and a central management system elaborates all data allowing traceability and long-term data archiving.

The result is a paperless shop floor management, where every part number contains the entire production history of the part, and where data analysis provides an improved control of our manufacturing process. It is one of the first composite productions in 4.0. Let's talk about it!



The Voith Group as a partner 150 years of experience

Voith Composites is the R&D and production center for carbon fiber-reinforced composites in the Voith Group.

The Voith Group is a global technology company. With its broad portfolio of systems, products, services and digital applications, Voith sets standards in the markets of energy, oil & gas, paper,

raw materials and transport & automotive. Founded in 1867, the company today has more than 19 000 employees, sales of € 4.3 billion and locations in over 60 countries worldwide and is thus one of the larger family-owned companies in Europe.



Get in touch

Voith Composites SE & Co. KG
Daimlerstr. 27
85748 Garching, Germany
Phone +49 89 32001 800
Fax +49 89 32001 801
composites@voith.com
www.voith.com/composites

Certified according to:

- ISO9001
 - ISO14001
 - EN9100
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Voith Group
St. Poeltener Str. 43
89522 Heidenheim, Germany

Contact:
Phone +49 89 32001 800
composites@voith.com
www.voith.com/composites



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for Generations