

BARMAG

POY spinning with WINGS

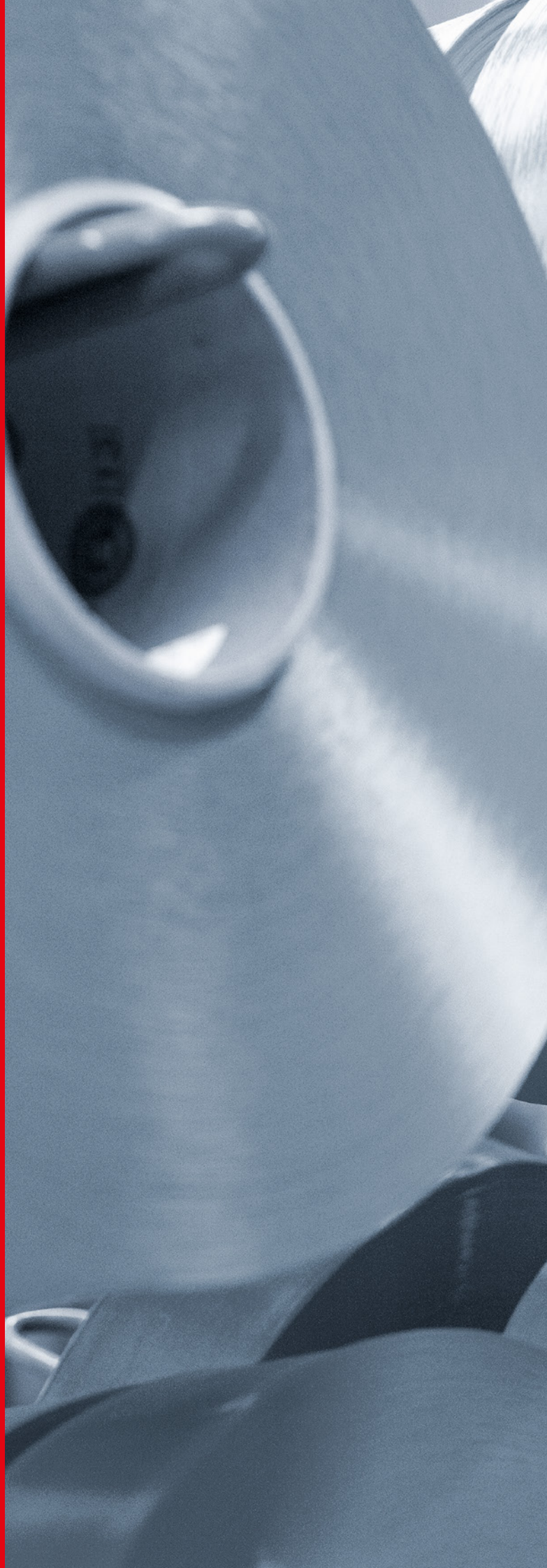
Value-added solutions



From Melt to Yarn

Your benefits

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From Melt to Yarn

Solutions along the textile value chain

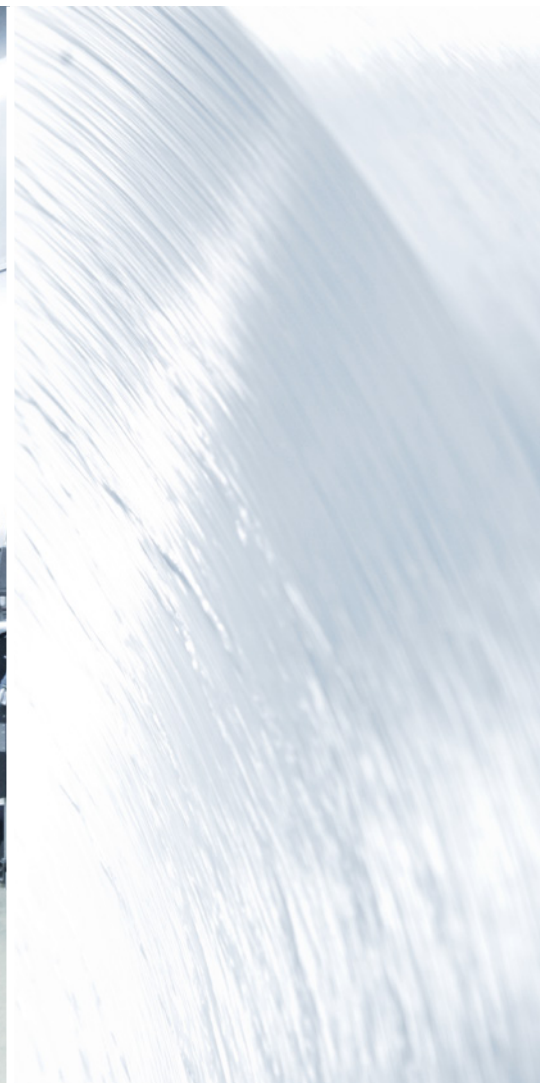
Place your business ideas in professional hands! Consulting, engineering, plant construction and high-tech machinery – the whole package from a single source. Many years of experience in textile machine construction and our strong global network form a solid basis and the perfect prerequisites for us as your solutions provider.

Increase your process efficiency, improve your yarn quality!

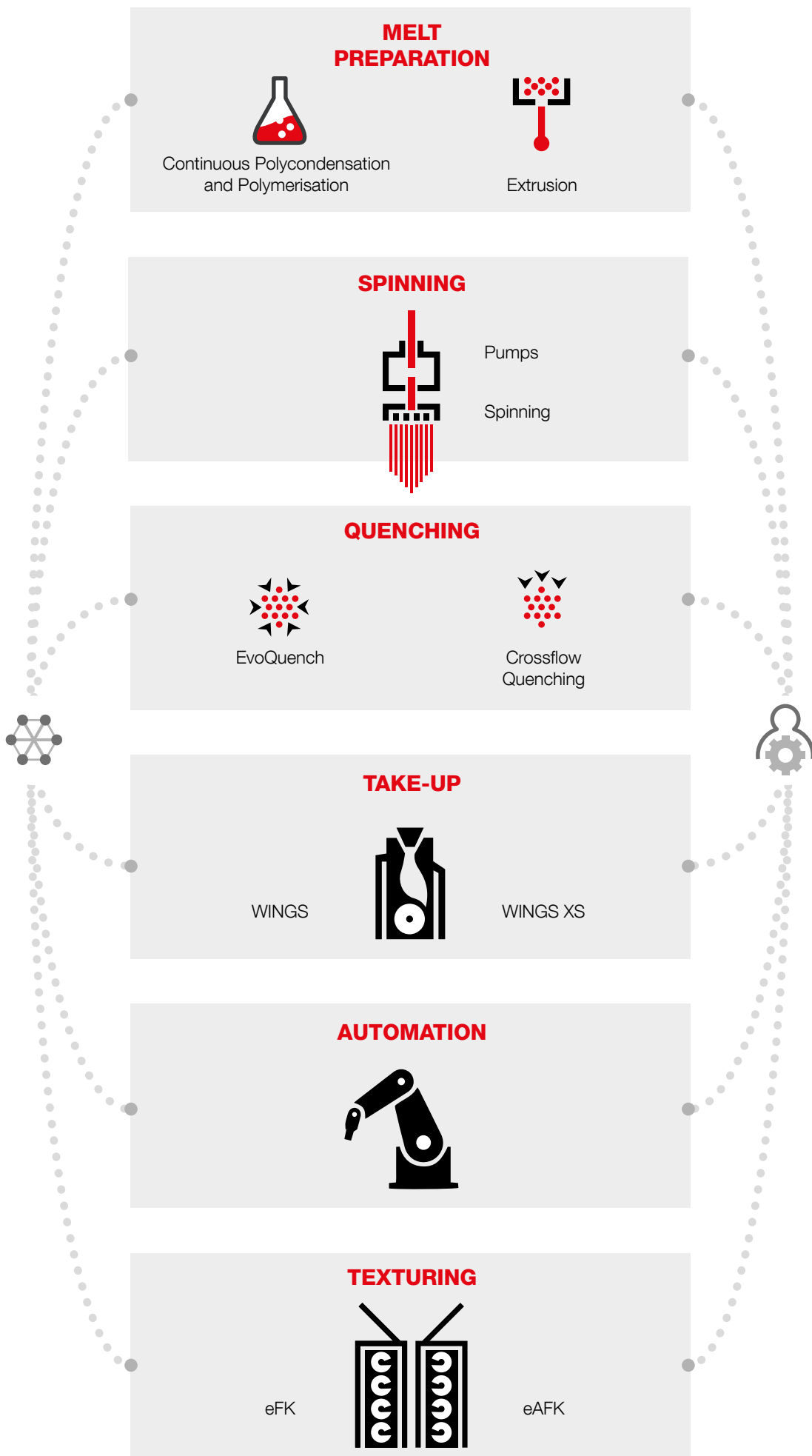
From chemicals to manmade fibers, from melt to yarn, from polycondensation and polymerization to the packaged end product – we optimize your process chain. And you increase your profits. Our digital products and solutions will connect all your process steps. This way, you will always know what

is going on in your production facilities. And this guarantees high efficiency, low conversion costs, first-class packages and satisfied customers.

Extensive experience as well as engineering and management competencies help us deliver even complex projects and processes on time. You can rely on that!



INDUSTRIE 4.0



CUSTOMER SERVICES
Consulting, Lifecycle Management, Technical Support

What is POY production with the WINGS concept?

The POY process with WINGS is the world's most efficient solution for manufacturing pre-oriented yarn (POY). This unique process unites state-of-the-art compact winding technology with innovative spinning concepts. To ensure you can compete within the global market.

The idea

Developed with the aim of increasing the productivity and efficiency of POY systems, the WINGS concept bears its solution in its very name: **W**inding **I**ntegrated **G**odet **S**olution – in short, WINGS. The originally revolutionary idea of integrating draw field and take-up unit into a single system is now the global standard in POY production. It convinces in conjunction with smart core components in the spinning system with

- Reliable technology
- Excellent yarn quality
- Perfect package build
- Outstanding unwinding performance
- Smooth downstream process
- Minimum waste
- Digitally networked production plant

The benefits

Your success is very important to us. For this reason, we always maintain a focus on the benefits to you when developing our products. Profit from

- High yarn quality
- Savings in Opex
- High efficiency
- Solutions for any process

e-save
comprehensive efficiency

e-save provides you with a competitive edge

With e-save, Barmag introduced a label for particularly energy-efficient systems, machines and components back in 2004. Over the past years, e-save has established itself as the trademark of a comprehensive efficiency program. This underlines the preeminent role of Barmag when it comes to commercial success and sustainability. POY spinning systems with WINGS are setting standards. Compared to conventional concepts, this solution convinces in terms of

Economics; with up to 20 % fewer operating staff, more than 25 % shorter string-up times

Environment; with up to 50 % less waste

Ergonomics; due to the reduction in system levels by one and the resulting simpler system operation.



Producing premium yarns with EvoQuench, WINGS and co.

Would you like to manufacture premium yarns? We will help you – with our high-performance spinning and take-up components. Because the quality of the yarn is determined by a smart combination of all key components into a harmonious system concept.

EvoQuench for fine micro-yarns

Within the complex spinning process, the quenching unit ensures even cooling of the liquid filaments at the outlet of the spin pack, therefore guaranteeing excellent yarn evenness. Our patented EvoQuench radial quenching unit covers a further production step: everything from 0.3 to 3.0 dpf is possible for standard yarns all the way through to fine microfilaments. EvoQuench processes both polyester and polyamide. And you can rely on our cross-flow quenching system for coarse and standard titers.

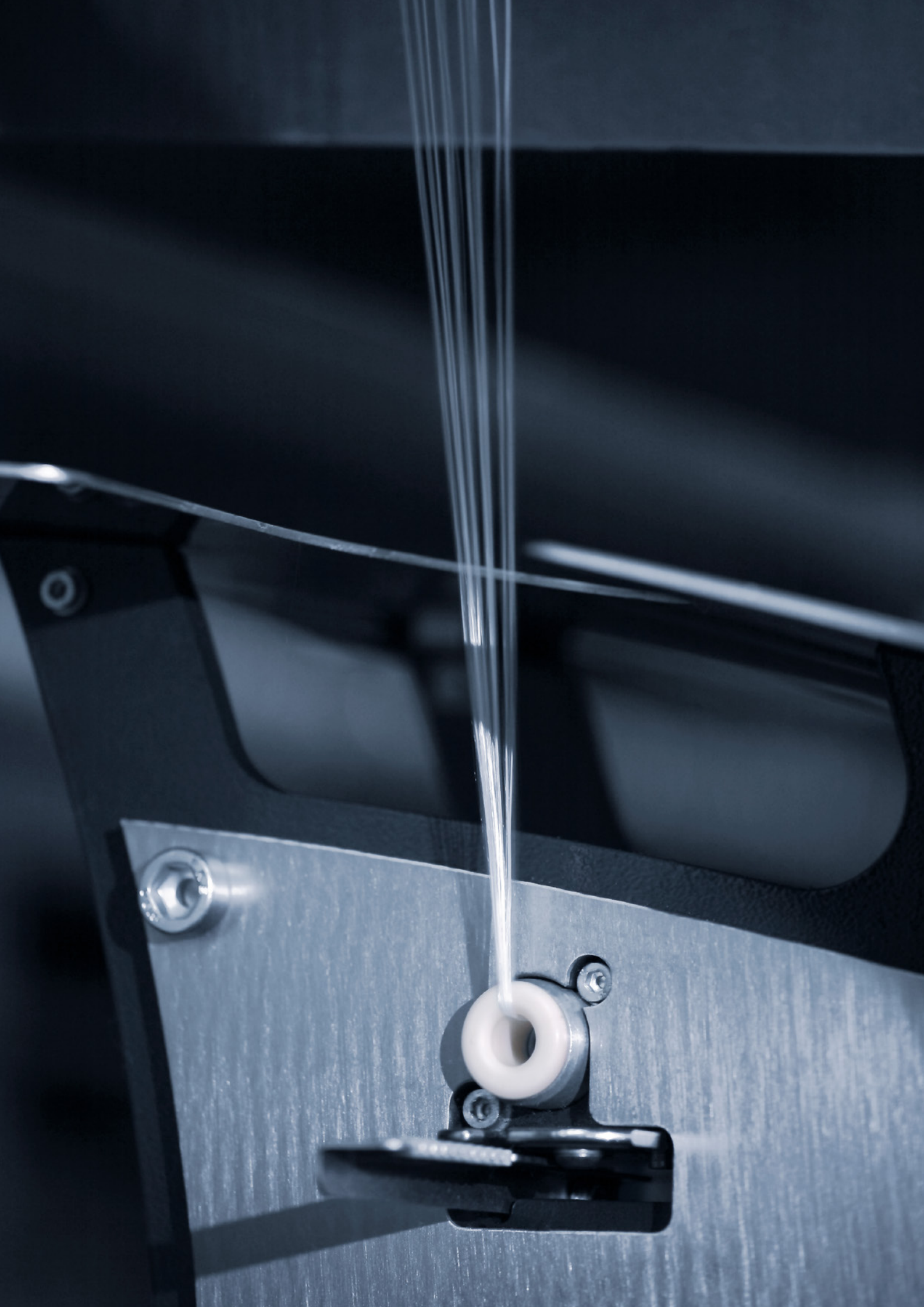
Wiping robot supports process stability

The excellent quality of the spun yarns is further improved by optionally available automation systems for wiping the packages. The wiping robot guarantees that each spinning package is wiped under optimum conditions within a defined cleaning plan with consistent wiping quality. This ensures outstanding production stability – day after day.

WINGS gently places the yarn on the package

The quality yarn has been spun, now it has to be wound. We place the yarn in the hands of WINGS to ensure it is subjected to the correct treatment at this stage. With its particularly gentle yarn path, WINGS guarantees that your yarn maintains the high quality it had upon exiting the spinning system. For this, we have minimized the angle of deflection to 7 degrees in total, which has a positive impact on the yarn evenness, the yarn tension, the CV% values and consequently the dyeability: with grade 5, your yarn fulfills the highest quality requirements.

WINGS no-touch bobbins are perfectly built and ensure excellent further processing properties for the downstream processes. Here, we have paid special attention to the outstanding unwinding behavior of our packages to cater to the high production speeds of our texturing machines. The high full-package rate within the texturing process is testament to the quality of the package build with the WINGS winding concept.



Cost-efficient manufacturing – also in the premium segment

Competition within the yarn markets is becoming more intense. The consequence: constantly rising pressure on costs. The solution: optimized production processes, efficient systems, sustainable technologies. All these are provided by our POY technology with WINGS.

Sustainability saves money

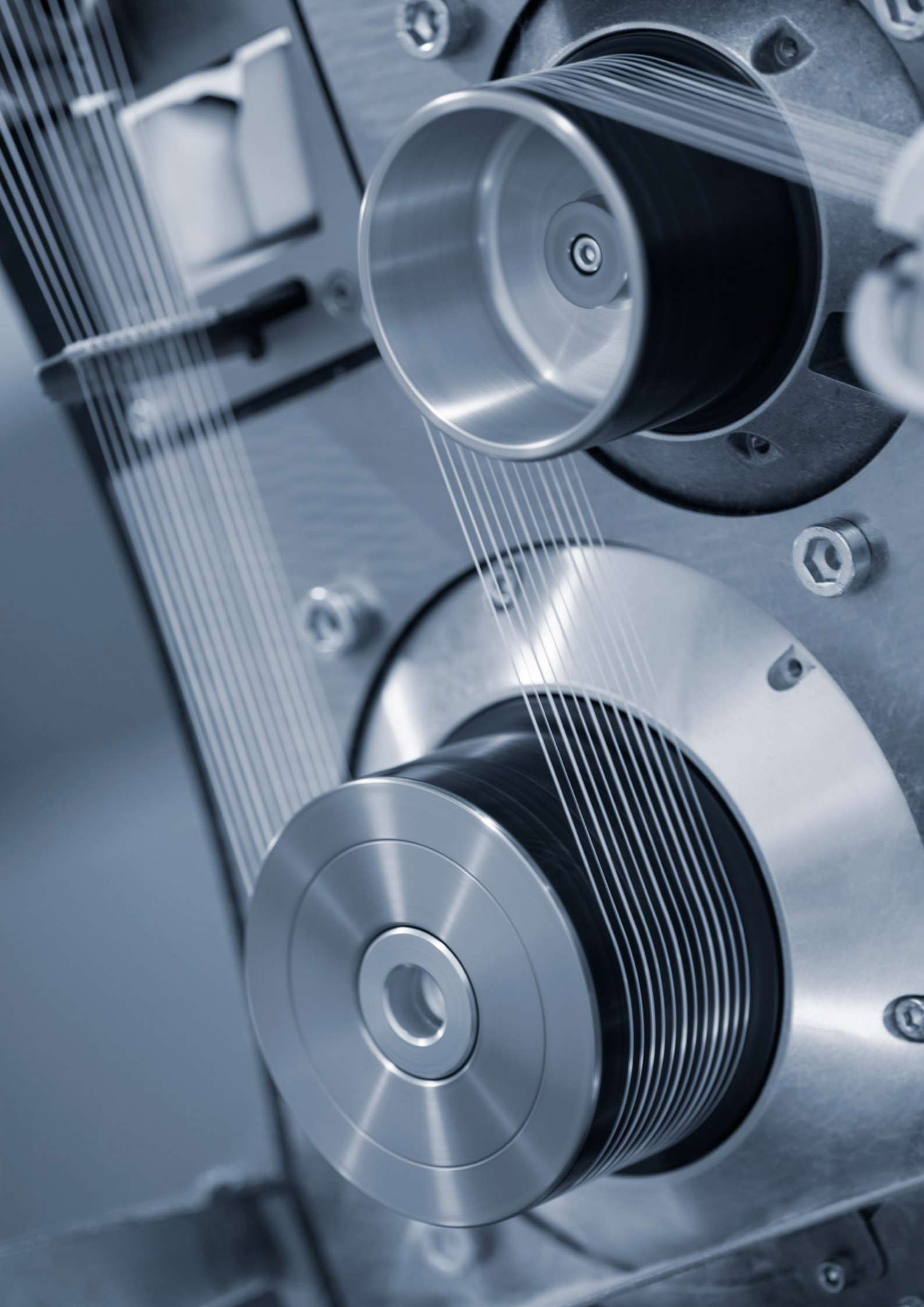
Don't believe us? Energy-efficient components such as the EvoQuench, WINGS and SP8x, to name but a few, showcase this day in, day out. And low wastage and the ergonomic systems design round off the benefits.

Automation makes processes more efficient

Automation has long ceased to be limited merely to doffing. And automation simplifies work within the production process as well: activities such as wiping and doffing, for example, are assumed by robots – relieving your specialist staff. The automatic warehousing solutions supplied by our partner IG Automation GmbH round off the portfolio.

Digital plants help you maintaining the overview

Digitalize your production – and maintain the overview of your processes at all times. Digitally connecting the individual process steps within your production facilities creates maximum transparency. Identify and alleviate problems quickly, avoid errors and learn from them, influence quality at an early stage – our digital products help you take advantage of artificial intelligence.



Easy maintenance, faster start-up

There is no such thing as a maintenance-free POY system. However, we supply systems requiring minimum maintenance. And it is once again the WINGS take-up concept that gives you an edge.

As a plug-and-produce unit, the complete take-up unit can be removed from the system for maintenance in just a few minutes. Each one individually and independent of the others. This minimizes the downtimes for the respective position or even the entire system.

Start manufacturing sooner

WINGS simplifies and shortens the installation of the system. The entire WINGS take-up concept is delivered from our technology hub in Germany as a completely pre-installed and tested unit. This makes assembly and commissioning of the POY system of today child's play. All that is required onsite is the connection of the power and compressed air supplies. With this, we have dramatically reduced the assembly and commissioning times. The benefit to you: you can start manufacturing POY up to two weeks sooner.



Unlimited possibilities – product diversity for your premium yarns

Our POY technology offers you a comprehensive process window – without compromises in terms of the yarn quality.

Our spinning and quenching concepts in conjunction with WINGS enable all standard yarn products.

WINGS concept covers virtually all processes

The POY spinning system is a family matter. The WINGS family has increased in size over the years and meanwhile covers virtually all processes. Standard, high-denier or micro-yarns, polyester or polyamide, POY or HOY, 10-, 12-, 20- or even 24-end – whatever you wish to manufacture, we have the right WINGS for the job.

As a platform-based component, WINGS guarantees state-of-the-art technology here.

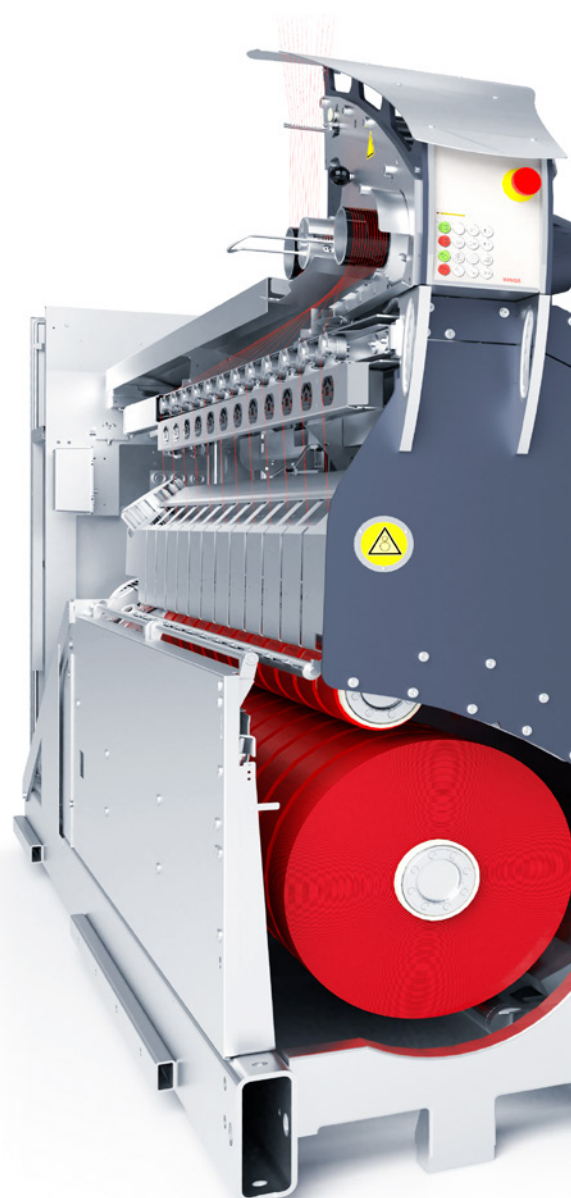
Variety of processes with WINGS

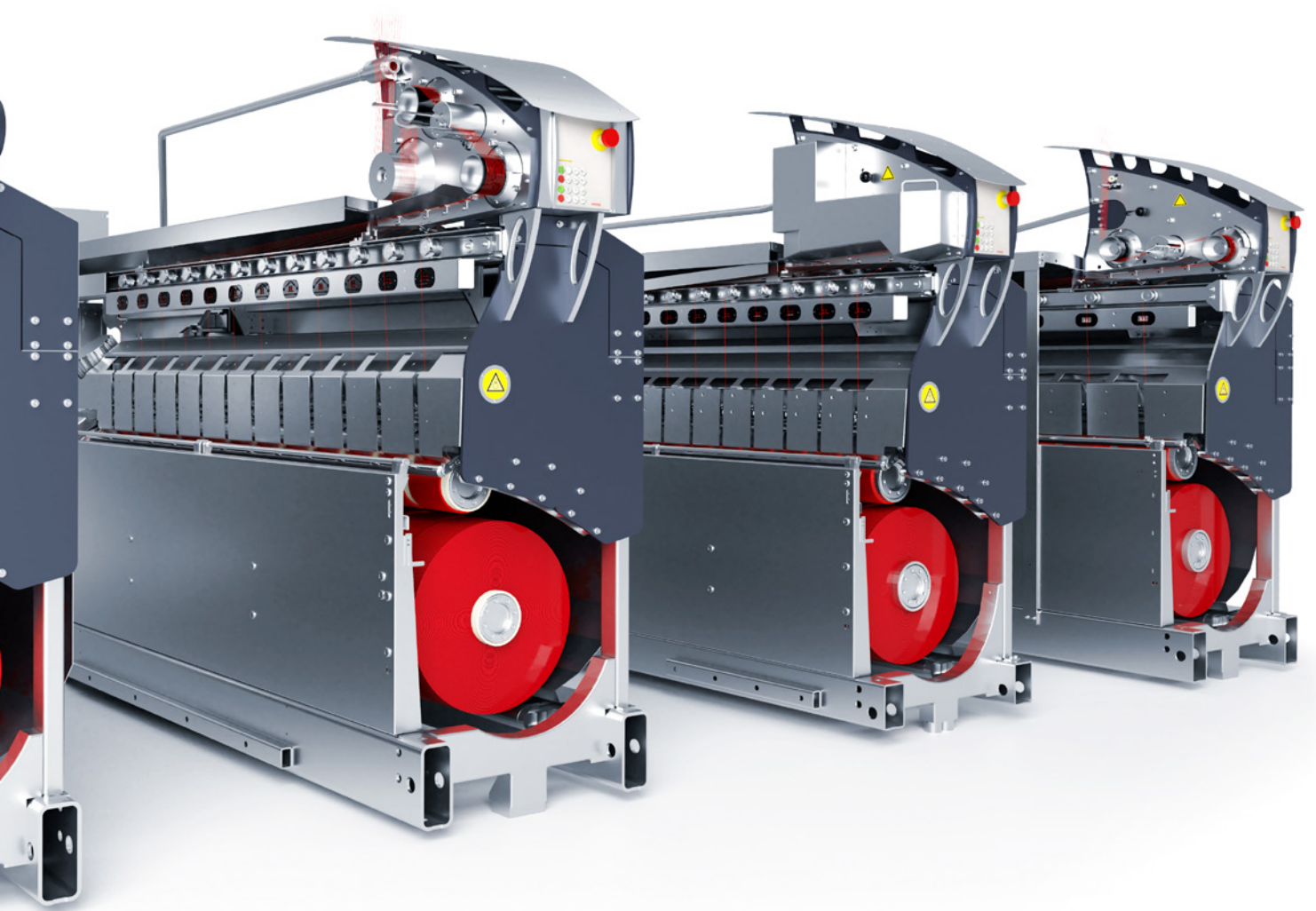
Process / threads	8	10	12	20	24
PET POY	X	X	X	X	X
PA6 POY			X		X
PA6.6 POY			X		
PA6 HOY			X		

Modernizations with WINGS XS

And you do not have to do without the WINGS take-up technology when modernizing existing spinning systems either. With our special 8-end RetroFit design, you can also make older POY systems competitive again.

For more information, please contact our service department: service.barmag@barmag.com.





Microfiber yarns

The finer the yarn, the better it feels. Hardly surprising that virtually half of all yarns manufactured are now made from microfibers. We support you with the right spinning system and the right take-up unit. Regardless of whether polyester or polyamide.

Spun-dyed yarns

Spun-dyed yarns are in demand above all when the end-product needs to be colorfast and lightfast. Spun-dyed yarns are standard particularly in the demanding automobile industry. If microfilament yarns are required, our EvoQuench radial quenching system – especially tailored to the requirements of the spinning process for spun-dyed yarns – makes its mark. For manufacturing yarns with higher dpf, we recommend using our cross-flow quenching system.

Bicomponent yarns

Bicomponent yarns have many benefits: here, even finer titers per filament (dpf) are possible than in the case of microfiber yarns, for example. The application possibilities are virtually unlimited. Here, the most varied cross-sections are available – from orange type, side-by-side all the way through to islands-in-the-sea. And what about manufacturing? Let's talk about it! sales.barmag@oerlikon.com

**More on Barmag
microfiber, spun-dyed and bicomponent yarns**



**Or contact us:
sales.barmag@barmag.com**



Automated plants

Automation of the manmade fiber process is becoming an increasingly important part of modern manmade fiber production plants. Rising quality requirements are driving the demand to provide non-touch POY bobbins for texturizing as the next process step to ensure optimum performance and product quality in DTY production

With our automation concepts, you can connect your POY production to your DTY production – ensuring not only a high yarn quality level and quality tracking, but also an efficient and economical production process.

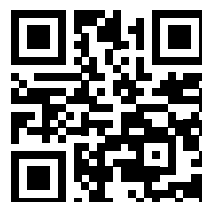
Doffing system for spinning machines

The doffing process is the first step of automatic filament handling lines. As the doffing system is directly connected to the production line, its design must adapt best to the surrounding conditions. This means matching the needs in terms of doffing efficiency and doffer availability as well as providing the flexibility to cover a broad range of different products spun in a typical production line. Furthermore, operator safety and ergonomics in working areas are key issues for us.

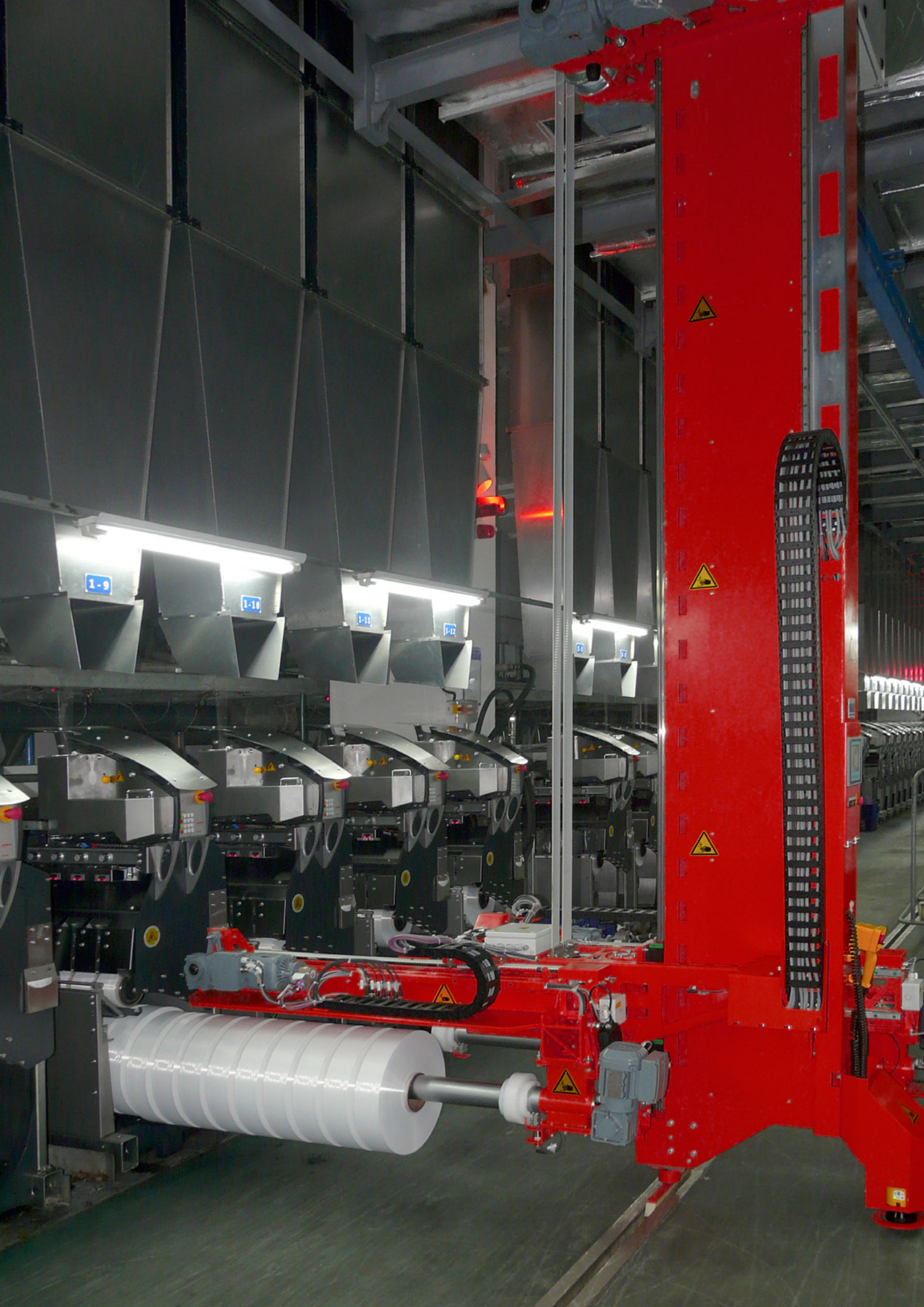
Automated bobbin transport and supply

Doffing is followed by the transferring of the POY bobbin to an interim storage facility or directly to the DTY machines. This can be carried out using various tried-and-tested transport systems. The integration of inspection and laboratory loops with automatic data exchange of testing results ensure 100% error-free quality tracking and bobbin tracking through to the DTY creel. When combined with Barmag's atmos.io digital solutions, the result is a digital manmade fiber production plant.

**More on IG Automation
Plant Automation**



**Or contact us:
sales.barmag@barmag.com**



atmos.io

Digitalisation optimizes processes

Within the context of the comprehensive digitization of our environment, production processes are increasingly interlinked with modern information and communication technologies.

Today, people, machines, systems, logistics and products are communicating and cooperate with each other, simplifying many processes as a result. Digital transformation is creating whole new dimensions. With a unique combination of experience and knowledge, we are at your side in conquering precisely these new dimensions.

atmos.io

atmos.io is the connectivity platform which provides the hardware infrastructure, software architecture and data models for all digital solutions for Barmag machines. Providing seamless data connectivity between shopfloor and the IT and ERP landscape at each customer, atmos.io ensures a secure and scalable integration. The platform functionalities can be tailored according to the requirements via the Barmag online solutions.

Reports and Analysis

The Plant Operation Center (POC) has for many years been an established process and production management system for the Barmag machines and systems deployed to manufacture textile yarns. Today, this functionality is included in the modules of the scalable atmos.io platform.

This is made possible by the modular character and the scalability of the system. And retrofitting additional modules is very simple. But atmos.io is capable of far more: the entire installed process chain can be connected ensuring also post doff data visibility. With this, the platform networks the entire production solution and the corresponding workflow.

Quality guarantee

What are the benefits of such a process and production management system? All process values relevant to the quality of your product are continually recorded and form the basis of online quality monitoring. The criteria and rules of quality assessment and warning are defined by you. This applies both to online quality assessment (pre-doffing) and offline quality assessment (post-doffing).

Clear overview

Your manufacturing orders are set up in atmos.io and continually updated and displayed. The MES (Manufacturing Execution System) always provides you with a clear overview of each order and each product. This is valid both for currently running and already completed manufacturing orders. This is including full and centralized transparency for all connected manufacturing sites.

However, not only data integration, but also distributed workflows are possible, such as approval workflows and other tasks. This also includes tasks resulting from continuous condition monitoring, where atmos.io provides real-time notifications and dashboards when something happens or is predicted to happen.

Agile production

atmos.io not only enables the plant management to react fast and target oriented to indicated deviations from expected process settings. Modules such as AIM4DTY also provide clear problem-solving guidelines based on expert know how to automatically detected deviations or lower efficiency. This supports the industry in solving reaction problems, increases profit margins and reduces waste.



Partnering for Performance

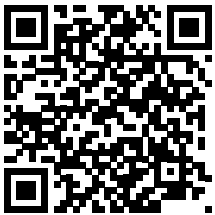
Our Customer Services department has one all-embracing mission: we want to make your production increasingly efficient and productive, and your business increasingly competitive and profitable. To do this, we offer you a close working relationship – Partnering for Performance.

Our services for your success

Textile technologies are becoming ever more efficient and flexible, opening up great opportunities to enhance your competitiveness. At the same time, this progress accelerates the race in the market. To be able to keep up and react swiftly to a changing market situation, it is important to maintain and expand your technical capabilities and to utilize them properly.

To achieve these, we place emphasis on a close, trusting service partnership with you to ensure reliable production and gain a technological edge, to secure your investment and to guarantee success in the future. Together, let us exploit the strengths of our technologies for your business.

Further information on our comprehensive Customer Services can be found here



**Or contact us:
service.barmag@barmag.com**

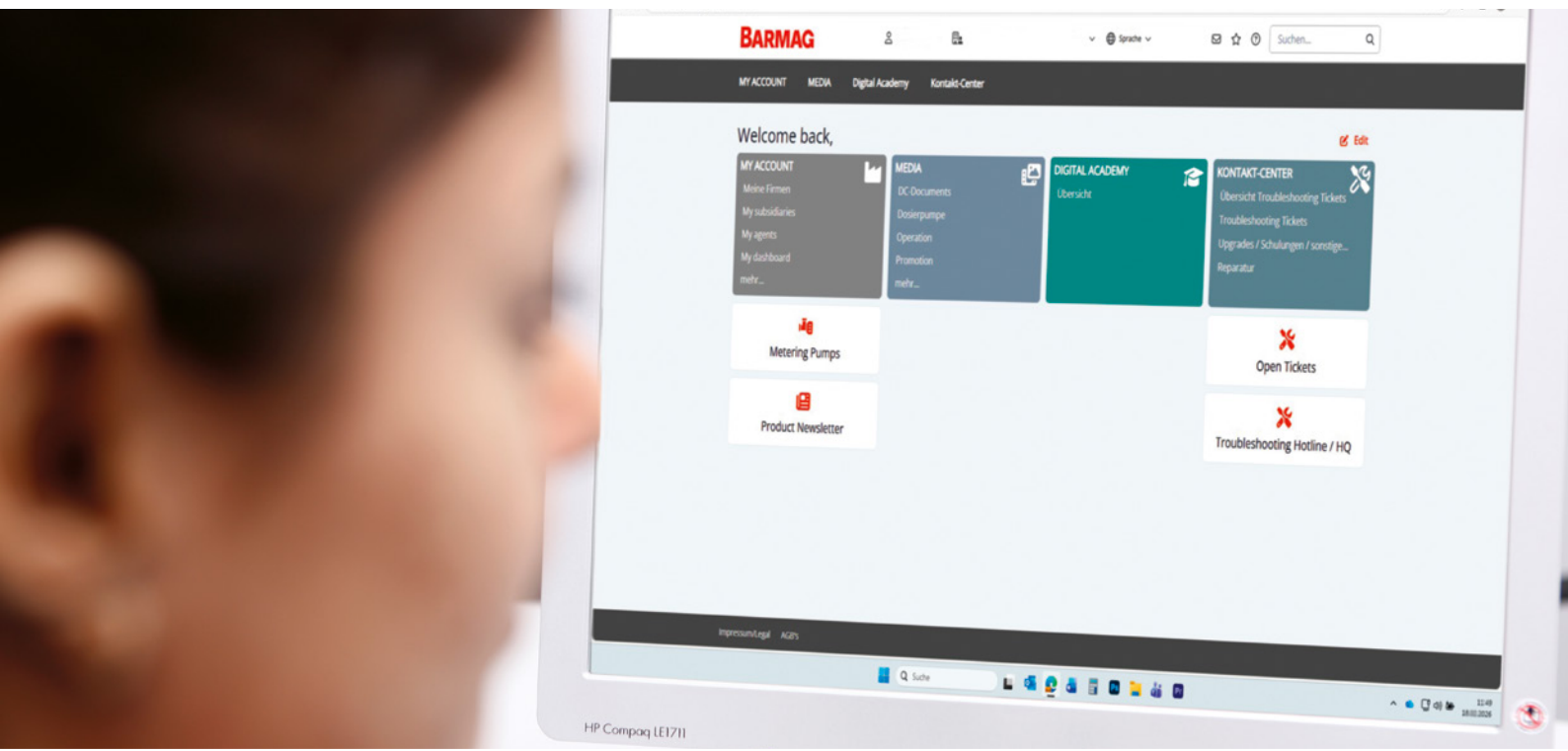
Our goal: your operational efficiency

Through our partnership, we want to increase your operational efficiency to the best effect. With this in mind, we focus on optimizing your operating and manufacturing processes, your system and logistics management and the acquisition of further skills by your staff. Your success grows with the interplay of all the factors involved.

For this, we offer you the performance of a technology leader with a unique global service network, along with highly-qualified service and engineering experts. We will advise and support you in all phases of your business along the entire value creation chain of fiber production:

- With start-up services for the installation or relocation of your systems,
- With technical support around the clock,
- With modern services for maintenance and repair, performance enhancement and staff training,
- With modernization and upgrades from the manmade fiber specialist;
- With constantly developed original parts with long-term availability as well as optimized consumables,
- With individual solutions for obsolete components and
- With our unique web-based customer portal myBarmag.com.

Whatever you need, you can select services tailored to those requirements from a service portfolio that is unique in the industry.



Downstream process

We know how ...

Allow your high-quality yarn to be further processed on our texturing machines. Our systems look forward to receiving perfectly-wound WINGS POY packages with outstanding take-off performance.

And we will support you here: we have also been experts in this process step since the 1950s.

DTY – are you ready to evolve?

Manual or automatic, single or multiple – choosing the right texturing solution for customized yarn production depends on many factors. With our eFK manual texturing machine and its automatic counterpart, the eAFK, we have the answer to all your needs. And help you produce first-class DTY, as we know what the requirements are for POY to ensure perfect DTY. This is what you get when you choose a solutions provider who feels at home in the entire textile value added chain!

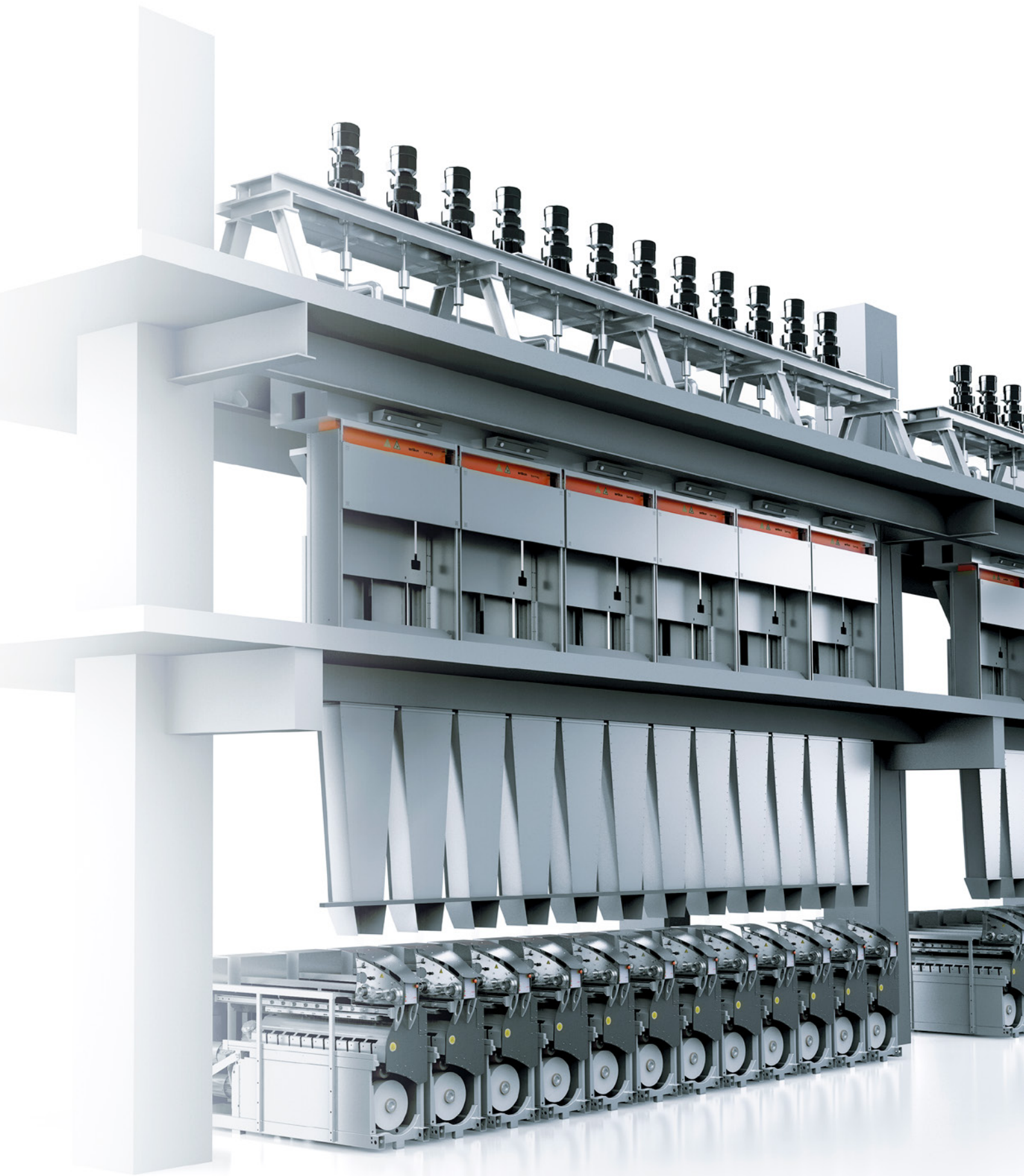
Needless to say, we also look beyond the horizon: our expertise in weaving and warp-knitting processes helps you offer your customers perfect yarn. And we also focus on yarn and textile trends. Speak to us! sales.barmag@barmag.com.

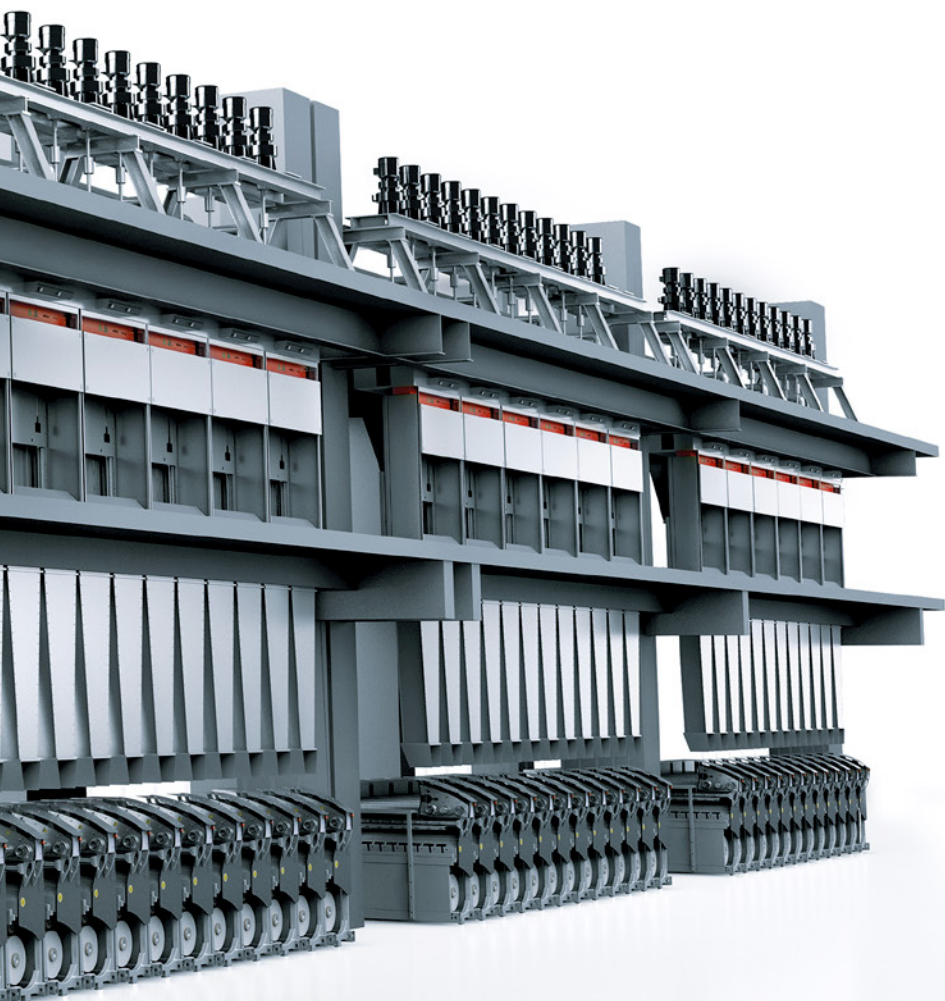
More on Barmag texturing



Or contact us:
[**sales.barmag@barmag.com**](mailto:sales.barmag@barmag.com)







Our promises

With our Barmag and Neumag competence brands, we are the world market leader for manmade fiber filament spinning systems, texturing machines, BCF systems, staple fiber systems and nonwovens. As a service provider for engineering and aftersales services, we offer total solutions for the entire textile value added chain. We attach great importance to energy efficiency and sustainable technologies in all our developments.

To what extent do you profit from this? Our market position guarantees you the benefits and quality of leading technologies, our sustainable products save you money and our comprehensive services save you time and hence increase your profit.

More on Barmag
POY spinning with WINGS



Or contact us:
sales.barmag@barmag.com

Barmag GmbH & Co.KG

Leverkuser Str. 65
42897 Remscheid
Germany

T +49 2191 67 0

F +49 2191 67 1204

sales.barmag@barmag.com

www.barmag.com