

**oerlikon**  
barmag

# **POY spinning with WINGS**

Value-added solutions

From Melt to Yarn

A close-up, low-angle shot of a POY spinning machine. The focus is on a dark, metallic, cylindrical component with a central circular opening. A thin, clear filament is visible emerging from the center. The background is blurred, showing other parts of the machine and a bright, overexposed area at the top, suggesting a factory setting.

# 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!**

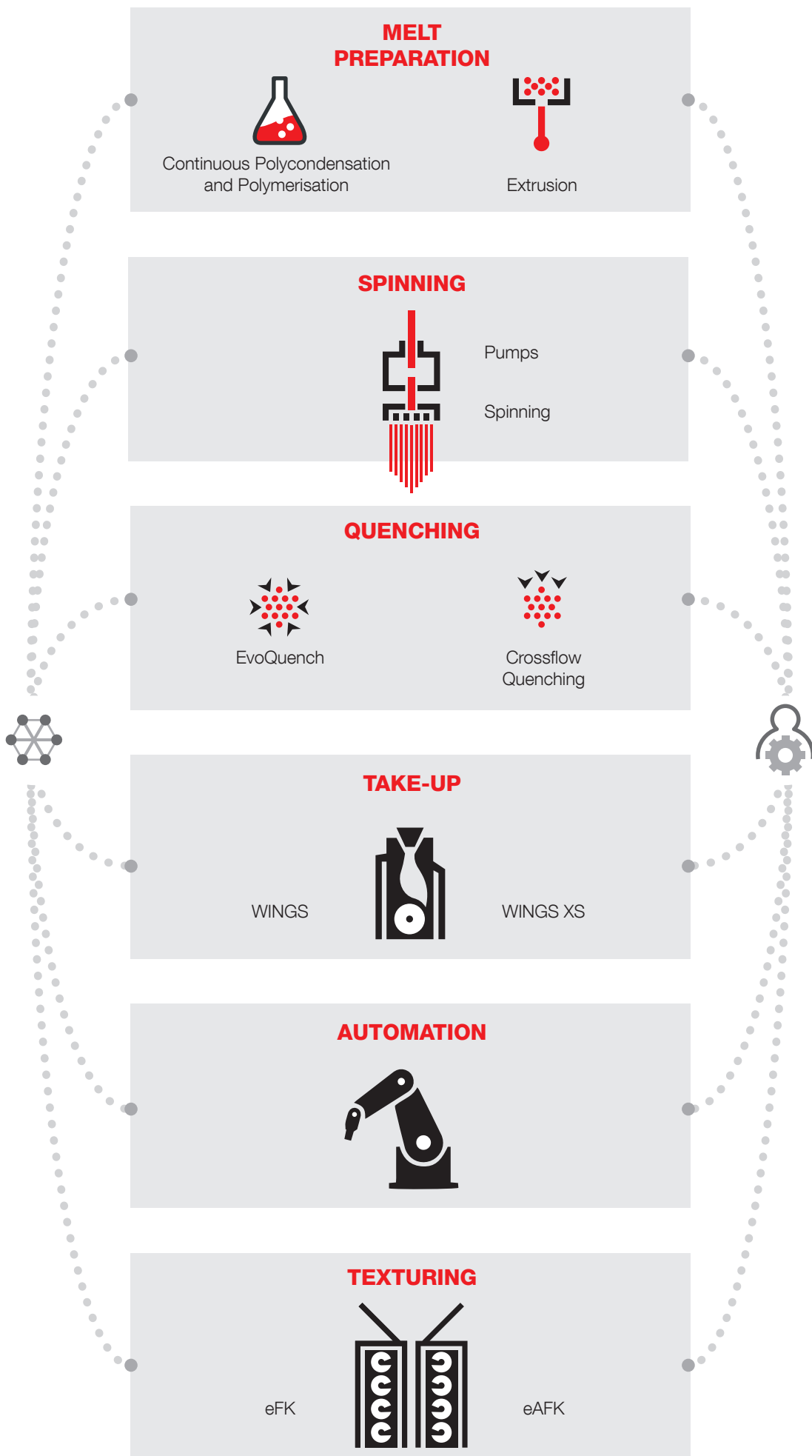
From chemicals to manmade fibers, from melt to yarn, from polycondensation and polymerization to the packaged end product – we optimize your process chain. And you increase your profits. Our digital products and solutions will connect all your process steps. This way, you will always know what

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

Energy, Environment, Ergonomics, Economics – we are committed to these four objectives. As a sustainability pioneer, they are the cornerstones that we must, and want to, keep on refining. This is precisely how we develop our systems and design our processes. And at the very core of our activities: people.

The result? Energy-saving components, environmentally-friendly production processes, maximum automation, digitally-networked factories and artificial intelligence. For the benefit of our customers and a healthy environment.



## 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 string-up, for example, are assumed by robots – relieving your specialist staff. The automatic warehousing solutions supplied by our subsidiary AC Automation 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.

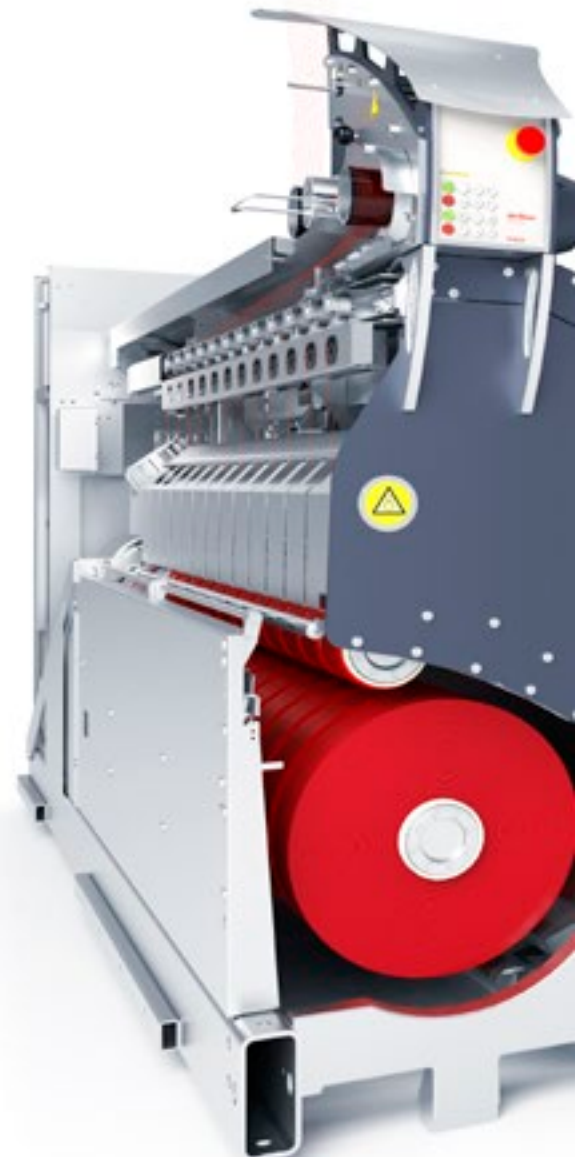
### Variety of processes with WINGS

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@oerlikon.com](mailto:service.barmag@oerlikon.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](mailto:sales.barmag@oerlikon.com)

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



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# 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.

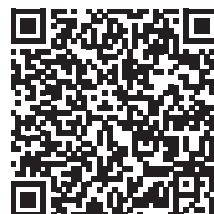
## **Doffing system for spinning machines**

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 Oerlikon Manmade Fiber Industrie 4.0 solutions, the result is a digital manmade fiber production plant.

## **More on Oerlikon Barmag Plant Automation**



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aerlikon  
barnag

# Digital plants

## Industry 4.0 optimizes processes

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

In the future, people, machines, systems, logistics and products will communicate 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.

### **POC**

The Plant Operation Center (POC) has for many years been an established process and production management system for the Oerlikon Manmade Fibers machines and systems deployed to manufacture textile yarns. For this, we adapt the Plant Operation Center precisely to the respective requirements of each customer.

This is made possible by the modular character and the scalability of the system. And retrofitting additional modules is very simple. But the Plant Operation Center is capable of far more: the entire installed process chain can be connected. With this, the Plant Operation Center 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 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 the Plant Operation Center and continually updated and displayed. The MES provides you with a clear overview of each order and each product at all times. This is valid both for currently running and already completed manufacturing orders. And the Plant Operation Center is also becoming mobile: in addition to the desktop- and web-based workstations available since its launch, mobile devices are increasingly supported. To this end, you have the current key performance indicators (KPIs) available to you on your smart phone at all times and wherever you happen to be. And critical situations and conditions and urgent tasks are also relayed to your operating staff using mobile devices.

### **Agile production**

Particularly interesting for the efficient and transparent production process: in a network of Plant Operation Centers, information can be securely exchanged between the various manufacturing sites in a controlled manner. Here, the architecture of the Plant Operation Center guarantees that your data is kept secure.



Item	Value
Business Efficiency	85%
Productivity Efficiency	82%
Project Status	90%
Team Performance	88%
Customer Satisfaction	92%

# Partnering for Performance

Our Customer Services department of Oerlikon Manmade Fibers segment 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@oerlikon.com](mailto:service.barmag@oerlikon.com)**

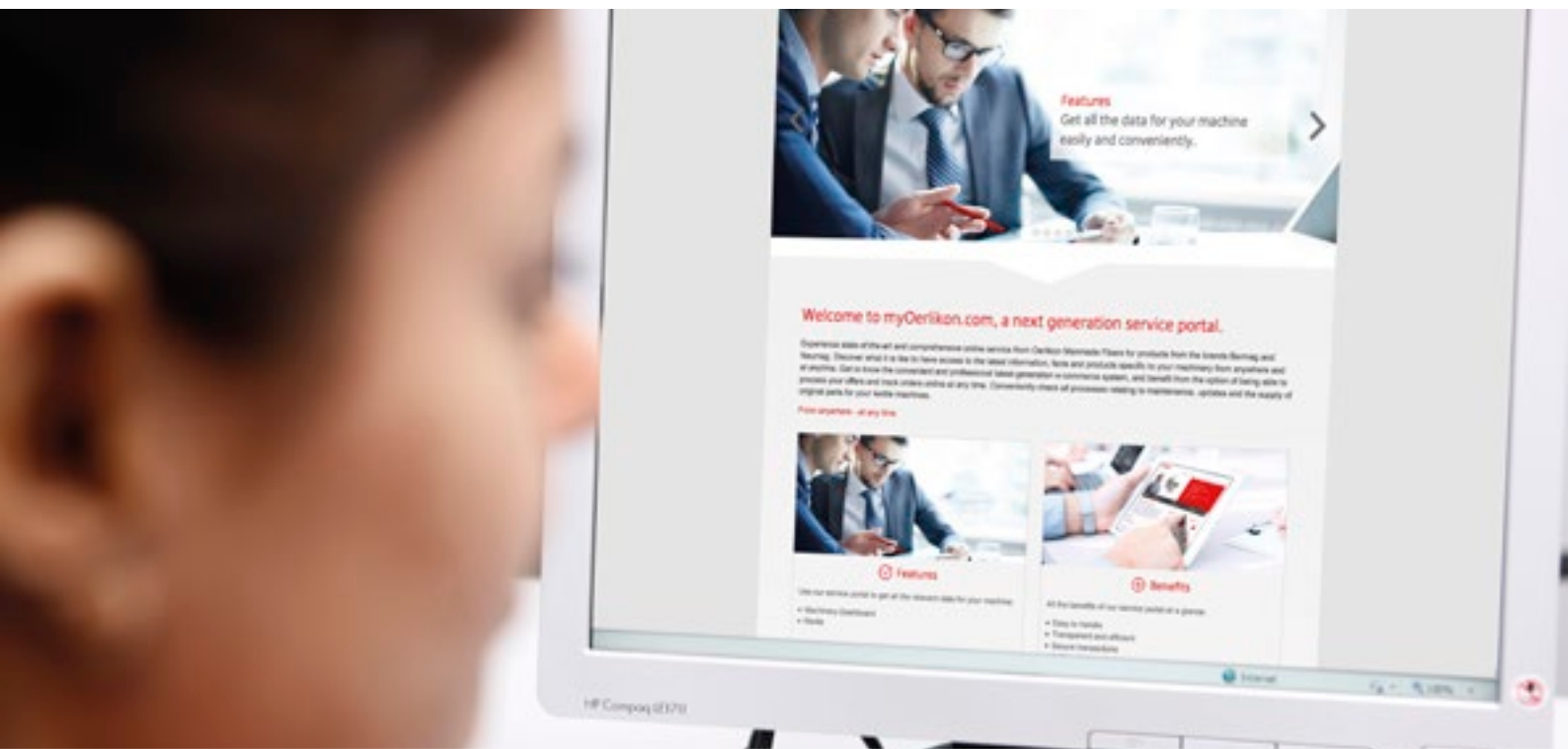
## **Our goal: your operational efficiency**

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 [myOerlikon.com](http://myOerlikon.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!

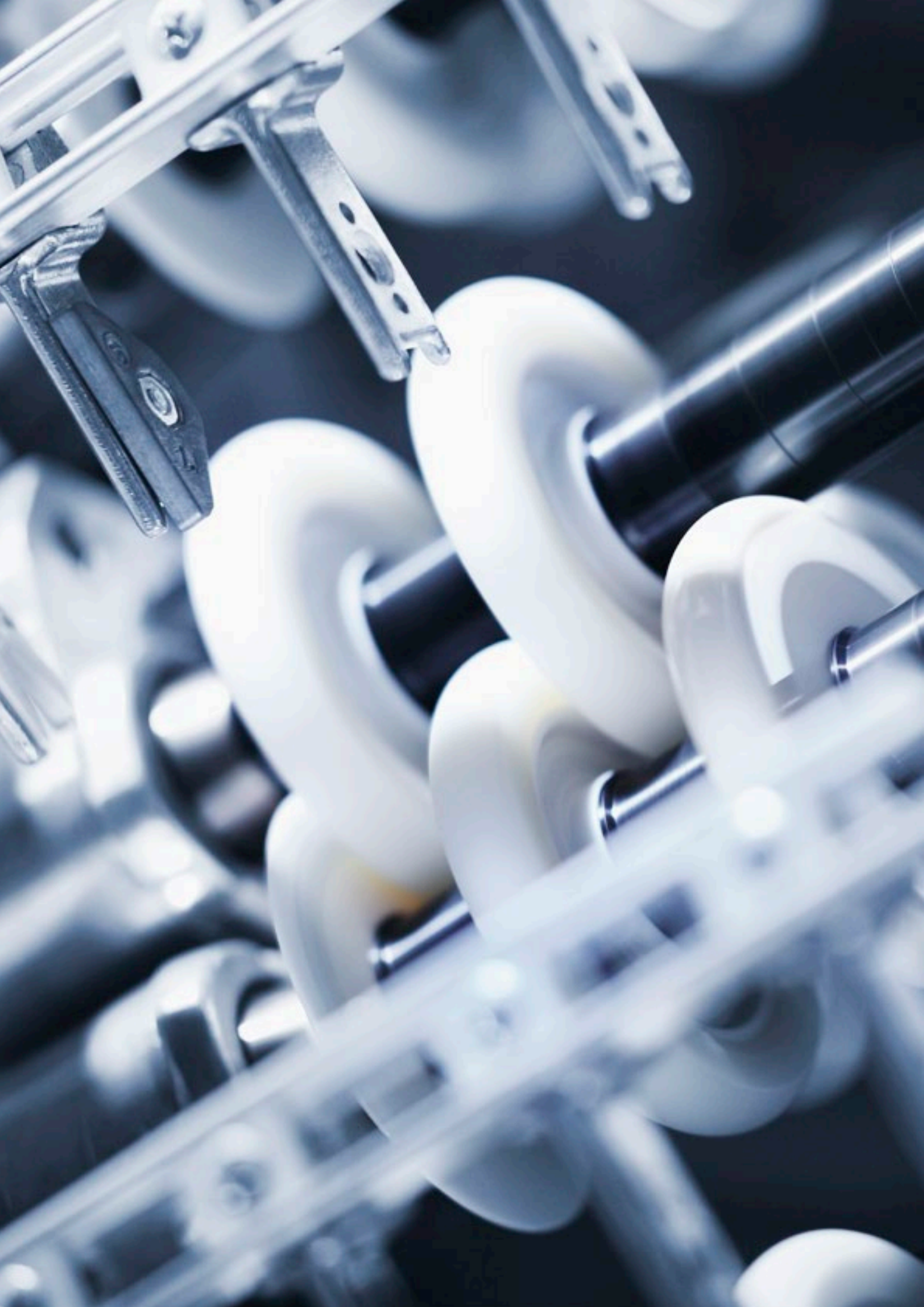
Needless to say, we also look beyond the horizon: our expertise in weaving and warp-knitting processes helps you offer your customers perfect yarn. And we also focus on yarn and textile trends. Speak to us! [sales.barmag@oerlikon.com](mailto:sales.barmag@oerlikon.com).

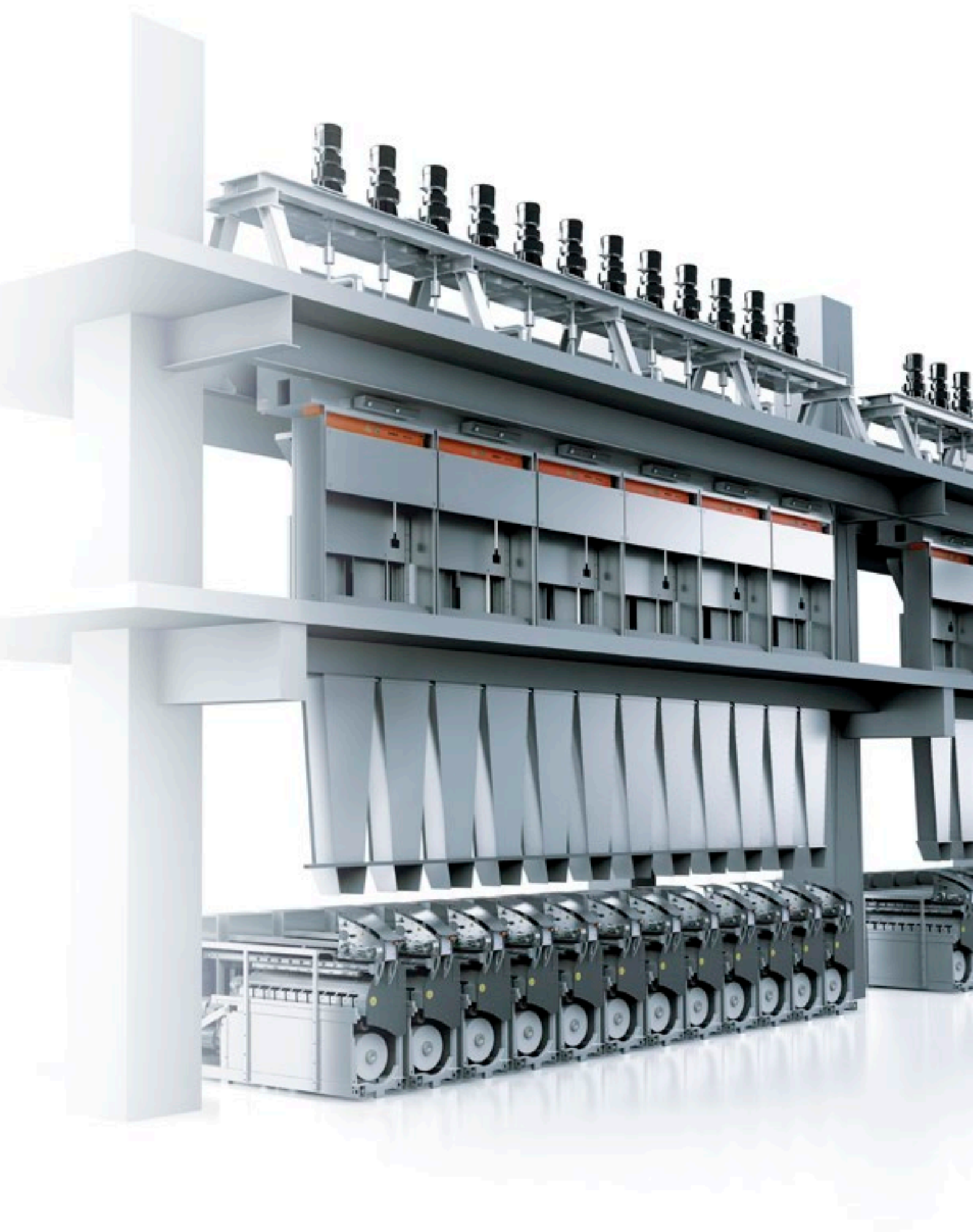
### **More on Oerlikon Barmag texturing**



**Or contact us:**  
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# Our promises

Our mantra: from melt to yarn.

Our contribution towards this: cutting-edge technologies, cross-process polymer processing solutions and customized services.

And the benefit to you: you manufacture high-end yarn that allows you to play in the top league of producers.

**More on Oerlikon Barmag  
POY spinning with WINGS**



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**Oerlikon Barmag**

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