

# **IDY spinning**

## Sustainable solutions and technologies

From Melt to Yarn

# Your benefits

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|--|----|
| <b>From Melt to Yarn – Solutions along the textile value chain</b> ..... | 4  |
| <b>What is IDY production ?</b> .....                                    | 6  |
| <b>Key benefits</b>  |    |
| ■ <b>High yarn quality</b> .....   | 8  |
| ■ <b>Savings in Opex</b> .....   | 10 |
| ■ <b>High efficiency</b> .....   | 12 |
| ■ <b>Customized solutions</b> .....                                      | 14 |
| ■ <b>Flexible processes</b> .....  | 16 |
| <b>Plant Operation Center (POC)</b>                                      |    |
| <b>Industrie 4.0 optimizes processes</b> .....                           | 18 |
| <b>Partnering for Performance</b> .....                                  | 20 |
| <b>Our promises</b> .....  | 22 |









# From Melt to Yarn

## Solutions along the textile value chain

Place your business ideas in professional hands! Consulting, engineering, plant construction, high-tech machinery and lifecycle management – 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.

### **Define your yarn properties from the very outset**

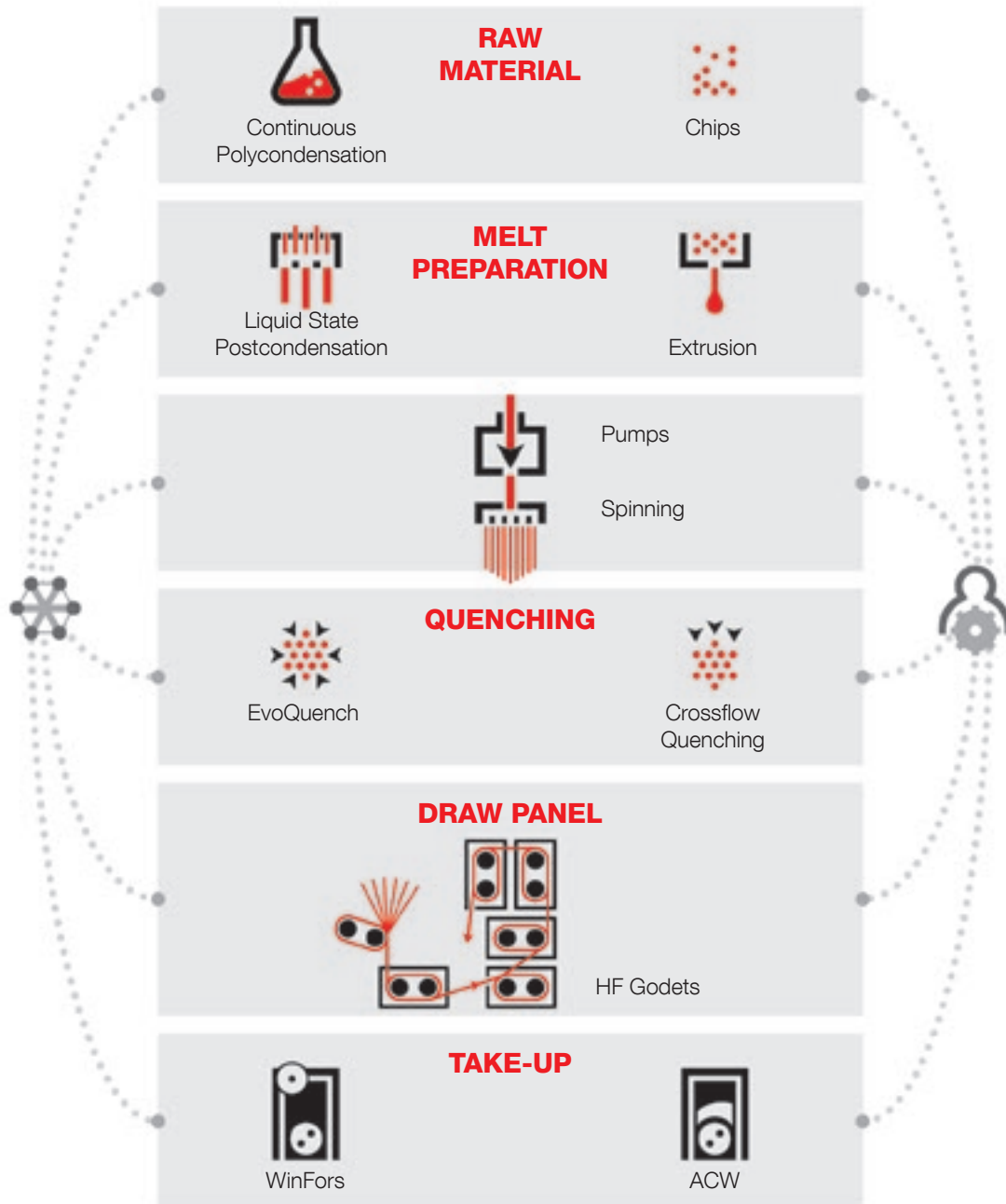
From chemicals or chips to manmade fibers, from melt to yarn, from polycondensation or extrusion to the industrial yarn package – we have your value-added chain under control. And you increase your profits. Because an optimized manufacturing process encompassing all production steps provides you with the greatest-possible influence on the quality of your end product. And your production costs. Add to this the

fact that our brand strength will make financing your project a profitable investment.

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



**INDUSTRIE 4.0**



**CUSTOMER SERVICES**

Consulting, Lifecycle Management, Technical Support

# What is IDY production?

Tires, safety belts, airbags, coated tarpaulins, conveyor belts – there are countless applications for industrial yarns manufactured on Oerlikon Barmag machines. Correspondingly specific are the demands made on the yarns used.

Decades of research and a constant dialog with customers ensure that our systems produce the perfect yarn for each and every application. From extra-super-low-shrinkage (XSLS) yarns for coated tarpaulins to high-modulus low-shrinkage (HMLS) yarns for high-end tire cords.

## The idea

With our highly-developed components, know-how and proven technology, our industrial yarn machines manufacture extremely fine yarns all the way through to top-quality coarse yarns. Depending on the yarn fineness, up to 16 ends per winding position are possible.

Various concepts for various yarn types – this is the real challenge in industrial yarn spinning. The large variety of end products demands tailor-made process technologies. For your individual needs.

## 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
- Customized solutions
- Flexible processes

## e-save

comprehensive efficiency

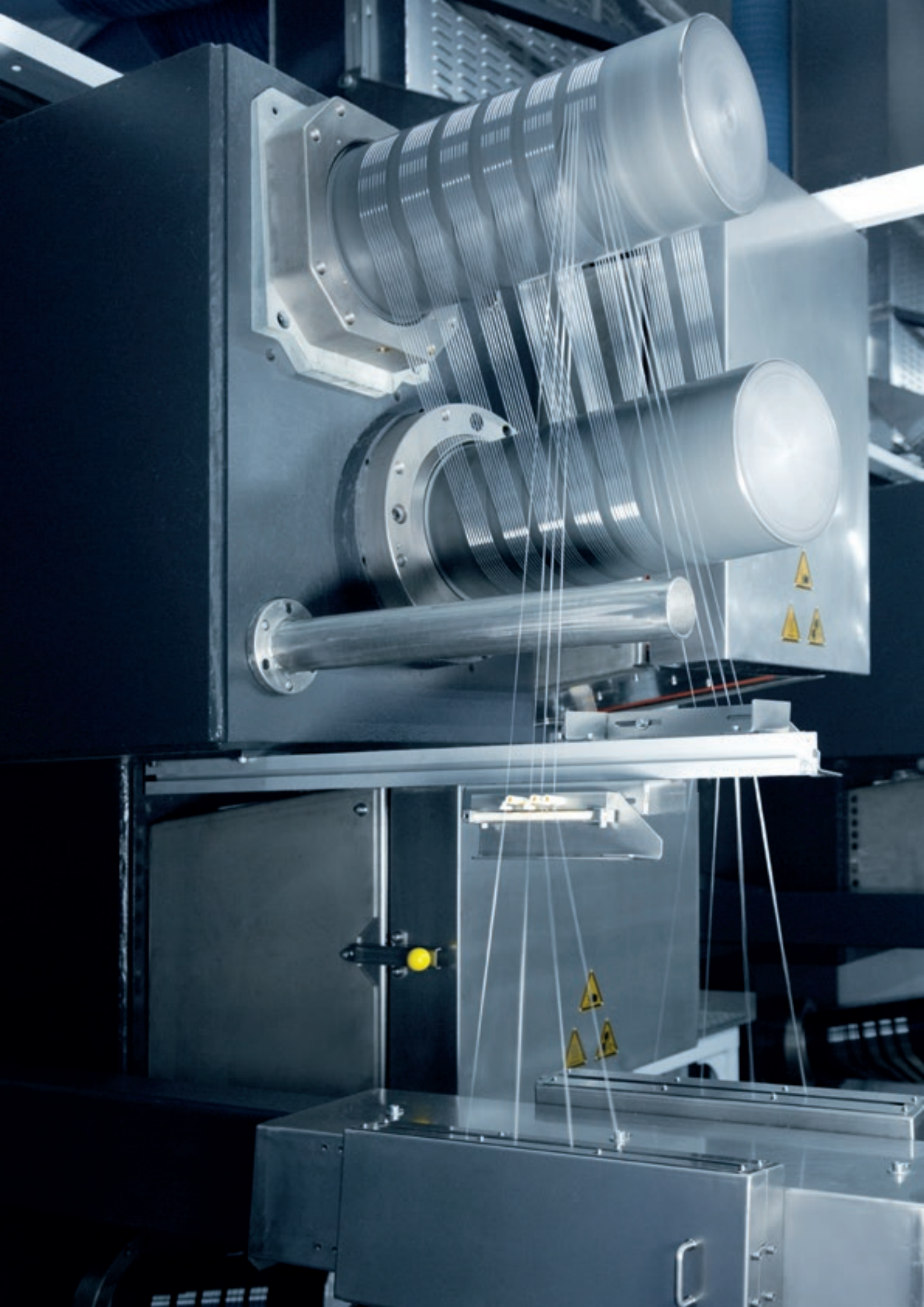
### e-save provides you with a competitive edge

With e-save, Oerlikon Manmade Fibers 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 Oerlikon Manmade Fibers when it comes to commercial success and sustainability.

Compared to other industrial yarn concepts available on the market, this solution convinces in terms of

- **Energy;** for HMLS processes for example, our 4 x 1500 den process requires more than 25% less energy per kg produced yarn compared to other machine concepts in the market.
- **Economics;** its special yarn path has a positive impact on yarn quality, which in return permits higher yarn prices.
- **Environment;** lower raw materials consumption, and a better carbon footprint due to energy efficiency.





## No compromises in terms of quality – better safe than sorry

Yarn quality is the decisive criterion, particularly in industrial applications. After all, our lives frequently depend on it. Here, we are by your side – with our high-performance spinning system components: from the extruder and the spinning pump, the spin beam and the spin packs all the way through to the quenching system and the winder.

To this end, the reverse yarn path in the draw unit ensures even heat input and thus an especially gentle treatment. And this particularly benefits your seatbelt yarn.

### **EvoQuench for HMLS**

Within the complex spinning process, the quenching unit ensures even cooling of the liquid filaments at the outlet of the spin pack. And therefore guarantees excellent yarn evenness. Our EvoQuench radial quenching unit is the perfect option for HMLS processes with a high number of filaments. However, for other industrial yarn processes you can rely on our cross-flow quenching system.

### **HF godets for gentle yarn treatment**

Good yarn is the result of good yarn treatment. Our HF godets guarantee this: their even heating ensures highly-accurate and constant yarn temperature. 4 to 8 heating zones optimize the heating profile over the complete godet length. Your benefit: the godet heats the yarn exactly where it is needed.

### **ACW produces excellent quality yarn packages**

Packages wound using the ACW are of excellent quality. The full package protection feature ensures fluff-free packages. A high quality take-off in downstream processing is guaranteed as a result of the possibility of varying the contact pressure along the entire running time of the package as well as the perfect package build-up by the Helicont system and step precision winding programs tailored to the specific denier ranges. The shape of the packages can be influenced as a result of the electrically-driven bailer rolls, hence enabling a high quality level in downstream processing. All yarn guiding elements are designed with the latest low-friction surfaces – ensuring the highest yarn quality level. A sensor-controlled transfer tail device guarantees 100% uniformity of the transfer and the end locator bunch.





## Cost-efficient manufacturing – in all spinning processes

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

### Reduced heat loss: SP8x

Heat is a very considerable factor in polymer spinning systems. Generally, the polyester melt is conveyed to the spinning system at temperatures of up to 300 degrees Celsius. This harbors potential for energy optimization: in our SP8x spinning head series, we have considerably reduced the heat-radiating surface. Simultaneously, we have substantially improved the insulation compared to the predecessor models. The result: up to 75% less heat loss producing high-tenacity yarn using our 8 x 1500 den concept.

### Reduced production costs: double-in-one as DIO or 6LA

The DIO spin pack reduces your production costs. How that works? Simply by increasing productivity. Because the DIO unites two independent spin packs in a single housing, hence providing the same performance as two single-end spin packs. A beneficial side effect of the DIO is reduced energy consumption due to the lower heat loss. DIO is available for low-denier industrial yarn systems.

Spinning lines producing high-denier yarns with a high number of ends rely on the 6LA spin pack: major advantages are the reusability of the filter as well as the longer lifespan. The latter results in fewer machine downtimes, reduces operating costs and thus makes your investment even more profitable.

### Reduced energy consumption: HF godets

Compared to other godet heating concepts, our well-proven HF godets have 20% lower power consumption than alternative systems. This is the result of the skin effect, which directly takes the energy to the location that has to be heated. Furthermore, the HF technology allows a significantly more compact godet design. To achieve the same power output, the godet shell diameter can be reduced by 40 mm. Thus, the HF godet achieves energy savings of between 20 and 30%, even with high numbers of yarn ends per position.

Lower energy consumption also reduces the investment in the air conditioning system, power distribution units, etc. This is further supported by the power management, which ensures a uniform distribution of the maximum startup energy load for a take-up position. With the lower heat loss of the godets plus the water-cooled electrical control system, the A/C system power consumption can also be significantly reduced.





## On the winning side

Efficiency is the most important characteristic of Oerlikon Barmag's industrial yarn spinning lines. Its core components convince with regards to economic maintenance, efficient operation and production speed.

### HF godets score highly with their fast availability

As a result of their fast heating-up, our HF godets are swiftly back at production temperature following an interruption – for instance, due to cleaning. So that you can immediately start manufacturing excellent yarn quality again. And if the process conditions change, HF godets support you with short reaction times. For greater efficiency in your production.

### Efficient operating with ACW

An extended parking time makes our ACW winder the perfect choice when it comes to auto-doffing systems. And, moreover, ACW is best-in-class for high speed processes and high-denier products. Its robust design catering to the demanding industrial yarn process results in

- High reliability;
- Low maintenance requirements;
- Long lifetime;
- High utilization rate.

Smooth surfaces and the carefully considered layout of its components ensure that the ACW is a maintenance-friendly, easy-to-clean unit.

### HMLS speed record

When it comes to the challenging HMLS process, the ACW sets the benchmark high with regards to efficiency: it clearly beats the competition with production speeds that are up to 10% higher. Hence ensuring particularly low conversion costs.





## Customized consultation, tailor-made concepts

No other filament yarn process is quite as special as the industrial yarn process. Numerous potential applications require diverse yarns, each with different properties. This is where we are your partner: you determine the end applications for your yarn. We ensure that your investment caters to these. With customized process consultation and tailor-made systems concepts.

### **We intuitively know what your production requirements are!**

The automotive market is booming. Growth rates for car sales are currently at more than 7% per annum. Today, every car has approximately 30kg of textiles. Do you want to be part of this promising business? Then we have the perfect solutions for you: with our tailored machine concept – optimized for yarn path and winders – you will quickly be one of the top players in the sector.

### **Consultation and implementation**

Needless to say, we also supply systems for airbag yarn, low-denier polyester yarn, HMLS, geotextiles, low-shrinkage yarn... Talk to us: our strength lies in process consultation in conjunction with our in-house R&D Center, where ideas are transformed into tangible products, and optimized. Together with you, our process specialists develop your specific solution, your tailor-made systems concept, the optimum investment in your future.







## Unlimited possibilities – product diversity for your premium yarns

Our IDY technology offers you a comprehensive process window – without compromises in terms of the yarn quality. Our flexible spinning concepts allow for a variety of possible yarn products for numerous applications.

### **Diverse processes for all applications**

Heavy or low denier? High-tenacity, low-shrinkage or even super-low-shrinkage? HMLS or safety yarns? Polyester or polyamide? We have the right systems configuration for all your requirements.

### **Reacting flexibly to trends**

And whenever you change your production range? We can help you here, too. In addition to SLS yarns, you can also manufacture HT and HT-LE yarns with our flex concept. So, what does this mean? You can manufacture yarns for truck tarpaulins, geotextiles and airbags with one and the same system. Allowing you to quickly react to trends. Such as the rise in substituting polyamide for polyester in the production of airbag yarns.





# Plant Operation Center (POC)

## Industrie 4.0 optimizes processes

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 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, the increasing functionality and the scalability of the system. And retrofitting additional modules is very simple. Numerous convinced customers speak for themselves. 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. Hundreds of yarn manufacturers rely already on POC.

### 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).

**Further information on POC Plant Operation Center can be found here**



**Or contact us:**

**[sws-info.textile@oerlikon.com](mailto:sws-info.textile@oerlikon.com)**

### Clear overview

Your manufacturing orders are set up in the Plant Operation Center and continually updated and displayed. You can track 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. Which in turn helps improve 'operational performance'.

### Networked 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 structure of the Plant Operation Center guarantees that your data is kept secure.



| Item                    | Percentage |
|-------------------------|------------|
| Maximize Efficiency     | 84%        |
| Improve Efficiency      | 82%        |
| Top Quality Plan        | 80%        |
| Health Plan             | 78%        |
| Top Quality Health Plan | 75%        |

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# 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.

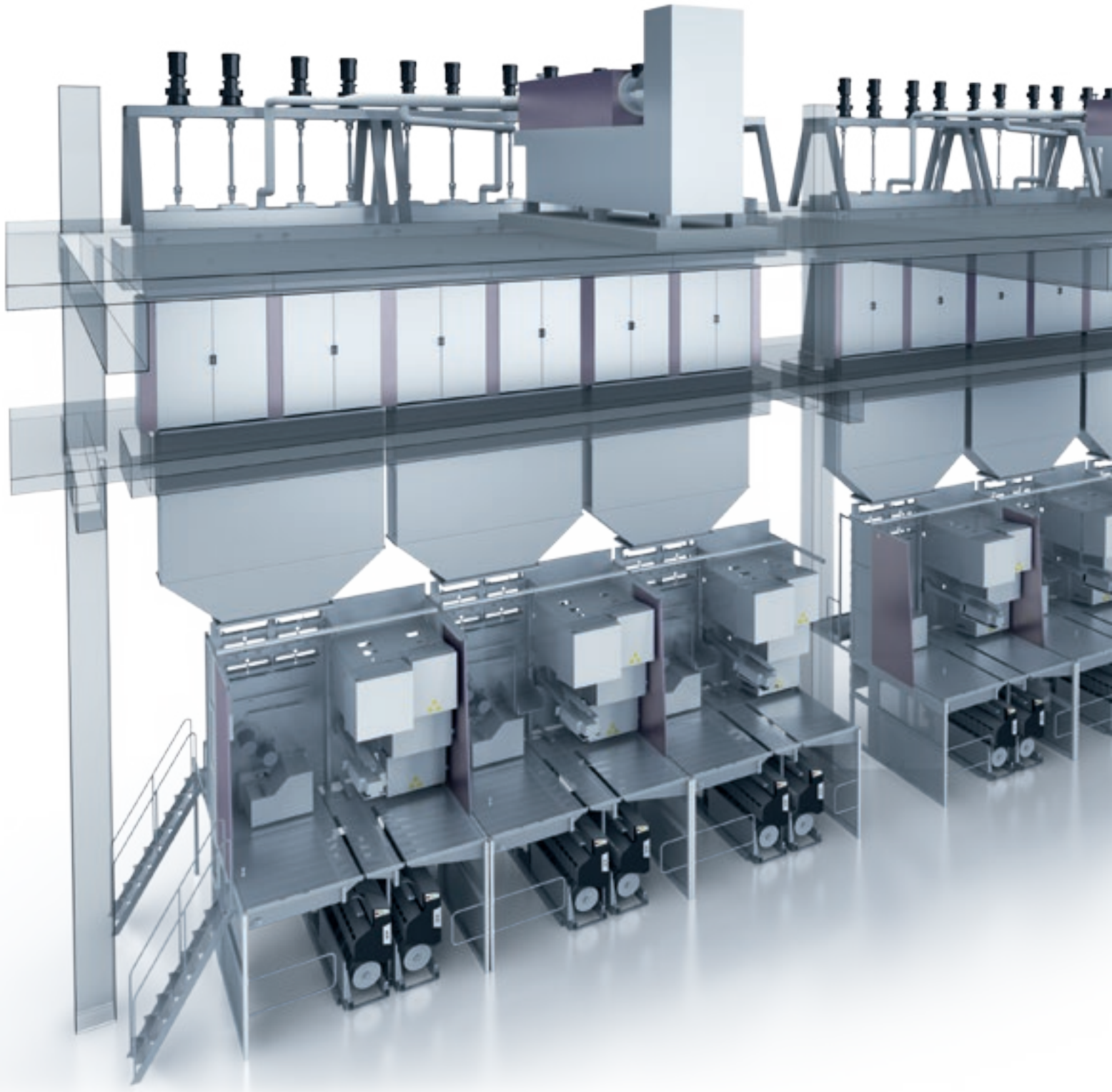
For this, we offer you the performance of a technology leader with a unique global service network, along with highly-qualified service and engineering experts. We will advise and support you in all phases of your business along the entire value creation chain of fiber production:

- 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 longterm maintenance contracts for a continuously troublefree systems performance,
- With individual performance checks for an optimized plant operation, and
- With modernization and upgrades from the manmade fiber specialist.

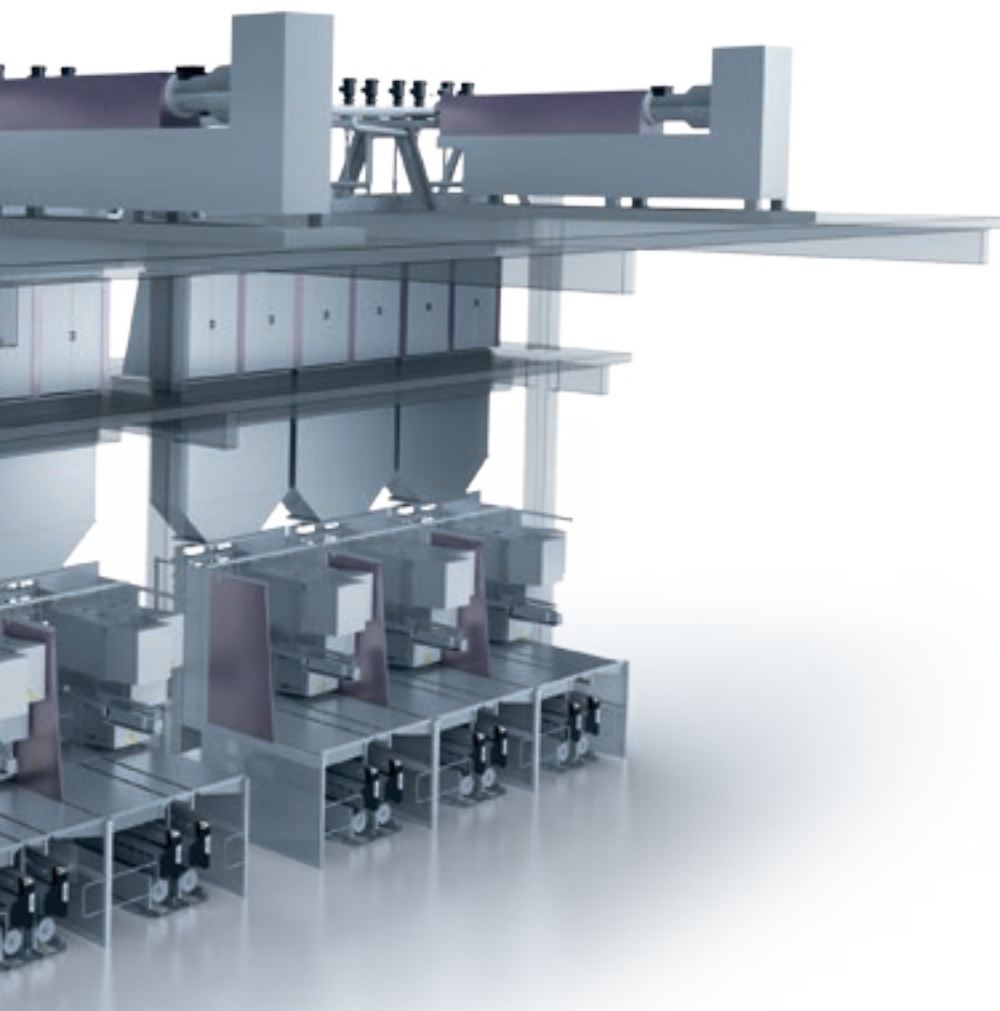
Whatever you need, you can select services tailored to those requirements from a service portfolio that is unique in the industry.







XSLS machines produce super low shrinkage yarns for mechanical rubber goods, e.g. tarpaulins.



# Our promises

With our Oerlikon Barmag and Oerlikon Neumag competence brands, we are the world market leader for manmade fiber filament spinning systems, texturing machines, BCF systems, staple fiber systems and artificial turf systems. 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 Oerlikon Barmag  
IDY spinning**



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