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From Melt to Yarn, Fibers and Nonwovens

Solutions for polymer
processing



Who we are

"We create innovative industrial solutions for a better world. That is why we are looking ahead to the challenges of tomorrow. Environment, social & governance are important cornerstones in this regard."

Georg Stausberg

CEO Oerlikon Polymer Processing Solutions &
CSO of the Oerlikon Group






The Polymer Processing Solutions Division is one of two divisions of the Swiss Oerlikon Group. Our claim: From Melt to Yarn, Fibers and Nonwovens. Our core business is machine and system solutions for the processing of various polymers in the area of filament yarn and staple fiber production as well as nonwoven production. We are one of the leading companies in this field. Our portfolio also includes upstream engineering, the production of relevant core components and comprehensive customer services.

What can we do for you?





The quality of your end product is at the heart of our work. To achieve this, we develop and design resource-saving technologies, perfectly coordinated processes and future-oriented industrial solutions for the benefit of our customers that have been setting standards for over 100 years – and will continue to do so in the future. That's our promise!

Along the textile value chain

With Oerlikon's manmade fibers solutions, you have a strong partner at your side. We take responsibility for the quality of your products, which are manufactured in a production solution tailored to your needs. We not only develop and design your systems, we also install and maintain them at your site. For the life of the system. You can rely on our comprehensive customer services - in line with our motto: Partnering for Performance.

One of the leading suppliers

The Oerlikon Manmade Fibers Solutions business unit with its product brands Oerlikon Barmag, Oerlikon Neumag and Oerlikon Nonwoven is one of the leading suppliers of filament spinning systems for the production of manmade fibers, texturing machines, BCF systems, staple fiber spinning and nonwoven solutions and, as an engineering service provider, offers solutions along the entire textile value chain. As a future-oriented company, our research and development is driven by energy efficiency and sustainable technologies. Our product range includes continuous polycondensation systems, extrusion lines and their key components. We cover the entire production process - from monomer to textured yarn, fibers and nonwovens.

Shaping the future

We have solutions for a whole range of pressing challenges in the chemical fiber industry. And we are working on the others. With partners who share our vision: to make the textile world more sustainable and hence to accompany our customers into a successful future. We assure you: **Oerlikon is the answer** to many challenges.

Today's challenges

- Climate change
- Demographic development
- Energy prices
- CO² neutrality
- Waste

We have answers to

- Circular economy
- Energy efficiency
- New materials
- Digitalization
- Traceability
- Recycling

Our technologies

- Polycondensation plants
- Extrusion technology
- Filament spinning plants (POY, HOY, FDY & industrial yarn)
- Texturing machines
- Carpet yarn production plants (BCF)
- Staple fiber spinning plants
- Nonwoven plants (Meltblown, Spunbond, Airlaid)
- Digital Solutions
- Comprehensive customer services





Polycondensation plants for textile and bottle grade

The efficient and high-end continuous polycondensation plants of our subsidiary company Oerlikon Barmag Huitong Engineering (OBHE) produce a homogenous melt using a chemical reaction which converts different monomers into polymers. During this process, side products such as water are created. A high-end melt like this is the basis for high-quality yarn used for fiber-grade and bottle-grade polyester. The benefits of an in-house polycondensation system are clear to see: in addition to independence from external granulate manufacturers, short-term price fluctuations within the raw materials market and immediate influence on polymer quality, it is - above all - the additional value added that promises further profits.

Recycling solutions in the polymer processing chain are also among the capabilities of our affiliate Oerlikon Barmag Huitong Engineering.

Our systems process

- Polyethylene terephthalate (PET)
- Polybutylene terephthalate (PBT)
- Polytrimethylene terephthalate (PTT)
- Polyacrylonitrile (PAN)



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Extrusion technology

Not all polymers can be prepared in a polycondensation system for the spinning process suitable for all spinning processes. In such cases, we rely on the tried and tested Barmag Brückner Engineering (BBE). Incidentally, BBE also complements our product range.

The product range of BBE comprises

- Extruders
- Filters
- Compact spinning lines
- Recycling systems
- Air-texturing machines





process. Likewise, such a system is not
extrusion technology of our subsidiary
duct range when it comes to recycling.

Textile filament spinning plants

The principle behind manufacturing a thread is always the same: spinning pumps press the polymer melt through micro-fine spinnerets under extremely high pressure. The filaments created are then bundled into threads, drawn over godets and wound using a winder.

Essential to the spinning process is the gentle treatment of the yarn by all components throughout the entire process. This is just as much a driver of our development process as the requirement to design sustainable solutions. One example of this is our take-up machine WINGS, which has literally given wings to the textile filament spinning processes. Hardly any other product on the market combines sustainability and product quality to such an extent.

Processes we master include

- Pre-oriented yarn (POY)
- Highly oriented yarn (HOY)
- Fully drawn yarn (FDY)



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Texturing machines

Ever since manmade fibers were created, man has been attempting to give the smooth, synthetic filament a natural fiber-like character. Texturing is a finishing step that transforms POY feed yarn into draw textured yarn. The pre-stretched yarn is permanently crimped by friction. This increases elasticity and heat retention, and the yarn has a pleasant feel. At the same time, heat conduction is reduced.

Clothing, home textiles, automotive - there are countless applications for textured yarns. 70 years ago, Oerlikon Barmag developed its first texturing machine. Today, the company offers both manual and automatic texturing machines - and is outpacing the competition with its innovative ideas.

Our machines are branded

- eFK
- eAFK
- eAFK evo
- eAFK HQ



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Industrial yarn spinning plants

Industrial yarns are considered to be the ultimate discipline in filament manufacturing. High tenacities, extreme dimensional stability, tremendous durability along with a large range of titters – although the demanding production process promises high-margins, it is however also simultaneously a huge challenge both for the yarn manufacturer and the systems constructor.

With a operation window of between 50 and 12,000 den per filament, Oerlikon Barmag industrial yarn systems cover an extremely-wide titer range. Depending on the application and the required yarn characteristics, our systems produce 'strong' yarns for all applications: from high-tenacity high-modulus yarn for safety belts, HMLS yarns for tire cords all the way through to low and ultra-low shrinkage yarns for tarpaulins. Yarn quality is the decisive criterion, particularly in industrial applications.

We support you in the production of

- Geotextiles
- Tires
- Seatbelts
- Airbags
- Coated fabrics
- Sewing yarn



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BCF S8

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Carpet yarn production plants

Oerlikon Neumag is mastering the process of carpet yarn production. An exceptionally high market share – and has been for decades – shows that our technology and our problem-solving skills convince customers around the globe. We address the issues that move the world: sustainability, efficiency, product quality.

Our product portfolio has the system that is tailored to our customers' individual needs. The systems that have what it takes are called

- BCF S8
- BCF S+



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Synthetic staple fiber plants

More than 4 million tons installed production capacity worldwide speak for themselves. Oerlikon Neumag staple fiber plants stand for the highest product quality, enormous flexibility and absolute reliability. Sustainability is also very important to us.

That is why we have had our latest development BlueSign certified: the EvoSteam process scores particularly well with significantly lower water and energy consumption, minimized waste rates and, at the same time, even greater efficiency.

Processes provided are

- One-step process
- Two-step process
- EvoSteam process



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Nonwoven production lines

Individual machines and turnkey production lines for almost every type of nonwoven product – this describes the portfolio that our competence brand Oerlikon Nonwoven provides. What can you manufacture with this? From disposable products to filter media to technical nonwovens, our systems enable a broad range of nonwovens.

Our focus lies on the challenging applications such as technical nonwovens, e.g. roofing or geotextile materials, and of course ever more efficient filter media. Our latest innovations to ensure this are electrical as well as hydro charging units, both patented.

Our high-performance technologies include

- Spunbond
- Meltblown
- Airlaid



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Pumps for textile and industrial applications

Oerlikon Barmag gear metering pumps are used worldwide as process engineering components in applications involving chemicals, plastics, paints and dyes, and PUR.

Our gear pumps for the textile sector have been a constant in the market for decades. That's because we offer exactly the right solution for every application. Precision, durability, resilience and cost efficiency – these are the characteristics of our pumps.

We also offer a wide range of gear metering pumps for a variety of industrial applications. With our highly efficient pumps, we cover a wide range of applications – from silicone casting to dynamic mixing and oil spraying.

Our pumps serve various industries:

- Aerospace
- Automotive
- Chemical
- Energy
- Paints & lacquers
- Plastics
- Protective equipment
- Textile



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Digital solutions

As part of the comprehensive digitalization of our environment, production processes are increasingly being networked with modern information and communication technologies.

People, machines, systems, logistics and products now communicate and cooperate with each other, thereby simplifying many processes. The digital transformation is creating completely new dimensions. With a unique combination of experience and knowledge, we are at your side as you conquer precisely these new dimensions. With our digital solutions, we make your factory smart – and your everyday life easier.

Talk to us about

- [atmos.io](#)
- [vioSPUN](#)



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A

NOT TURNING



CONTROLLER TEST



R6

R7

Control panel with a red emergency stop button, a green button labeled 'A', and several indicator lights.



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EFK



F6

F7

ES 20

080 22

Customer services with Partnering for Performance

Everything for your success – our customer services have an overriding goal. We want to make your production more and more efficient and productive, and your business more and more competitive and profitable. To do this, we offer you close cooperation – a Partnering for Performance.

Our business relationship does not end with the commissioning of your plants. Quite the opposite: it is just the beginning. We will support you throughout the entire service life of your plants. Always with one goal in mind: your best possible productivity. To achieve this, we focus on optimizing your operating and manufacturing processes, your system and logistics management, and the further qualification of your personnel.



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