

Innovating for Future

The new Generation in Plastics Recycling Technology

Made in
Germany



Small enough to Listen.
Big enough to Serve.

From Inspiration to Extrusion Solutions.

Leistritz
EXTRUSION TECHNOLOGY

Our main focus is on your customer, your product and your markets, providing answers to the challenges of today and tomorrow.

The machine doesn't do that. It's the people behind the technology: the application engineers, process specialists, technicians and service crews.

Understanding your targets drives us toward solutions that sharpen your competitive edge and underline your claim to technical leadership.

"Small enough to listen. Big enough to serve" is inspired by the customer focus that is part of our DNA. And by our ingrained passion for creating new technological opportunities.

Leistritz Service Teams are committed to get your production lines running smoothly. And keep them running. All over the world. In Europe, the Americas, in Asia.

We are driven by our commitment to find the best possible answer to your requirements. Technically and economically. We love to inspire you.

Re- and Upcycling: Making it Happen!

Technically feasible & economically worthwhile

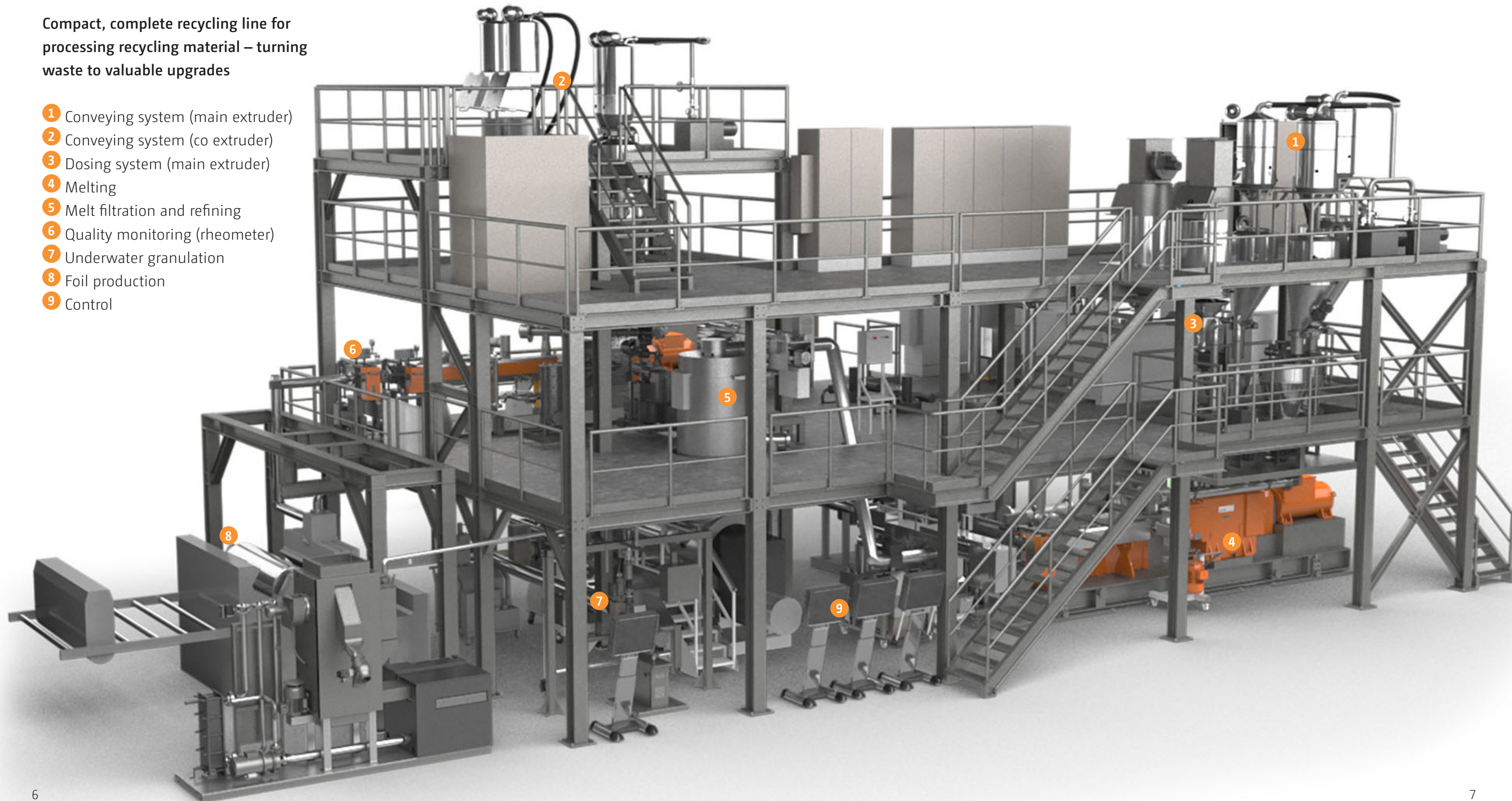
By 2030 global plastics consumption will increase to 500 million tons per year. Rather than end as waste in the ocean, plastics can be used as valuable material for better products.

Innovating for Future. From Waste to Value.

Highly flexible PET Recycling Line

Compact, complete recycling line for processing recycling material – turning waste to valuable upgrades

- 1 Conveying system (main extruder)
- 2 Conveying system (co extruder)
- 3 Dosing system (main extruder)
- 4 Melting
- 5 Melt filtration and refining
- 6 Quality monitoring (rheometer)
- 7 Underwater granulation
- 8 Foil production
- 9 Control



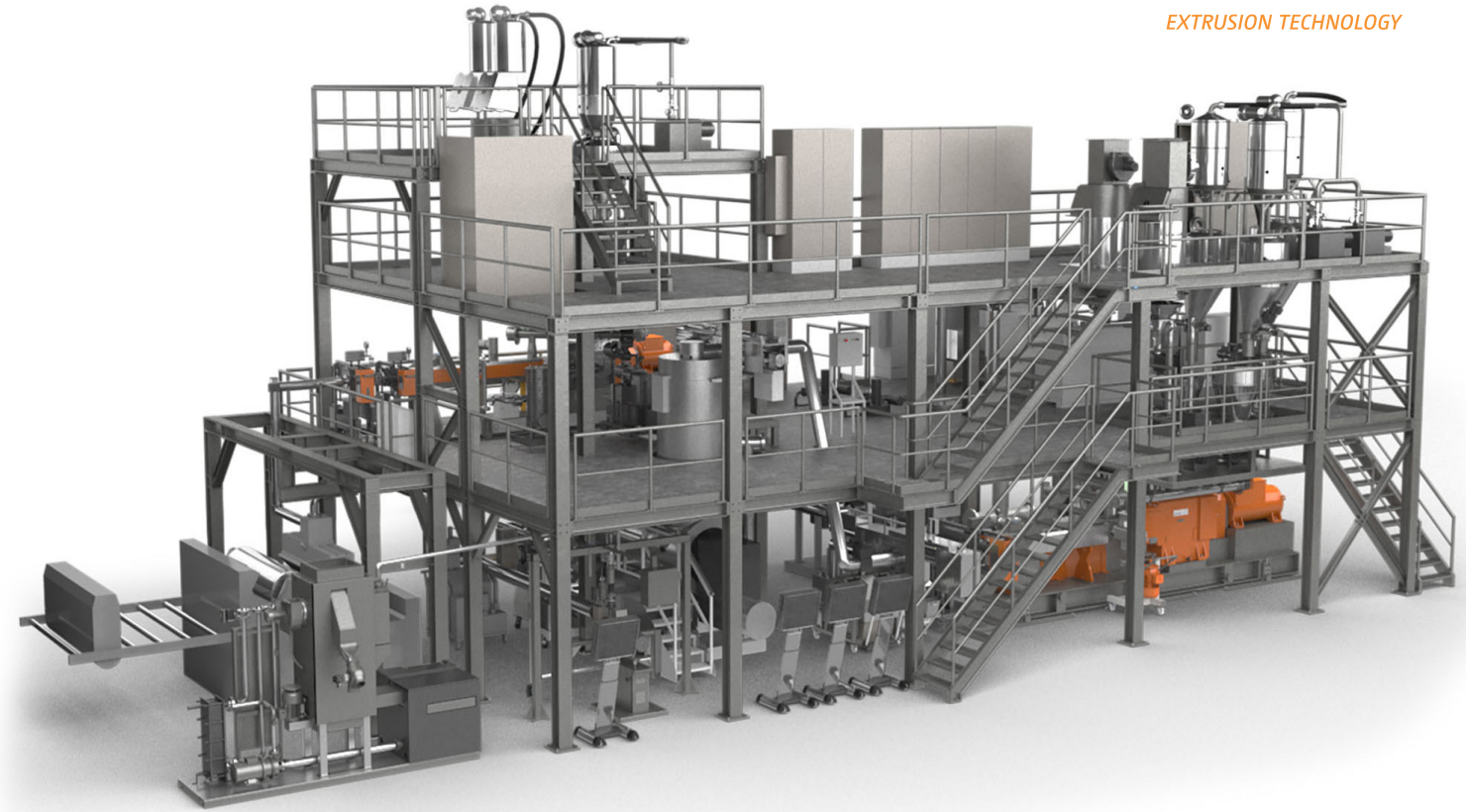
Compact. Complete. Consistent in Quality

PET Recycling Line UPAX

The complete process implemented with reduced space, optimised costs and consistent in quality and output. Moving from plastic waste to valuable new material in food-standard quality:

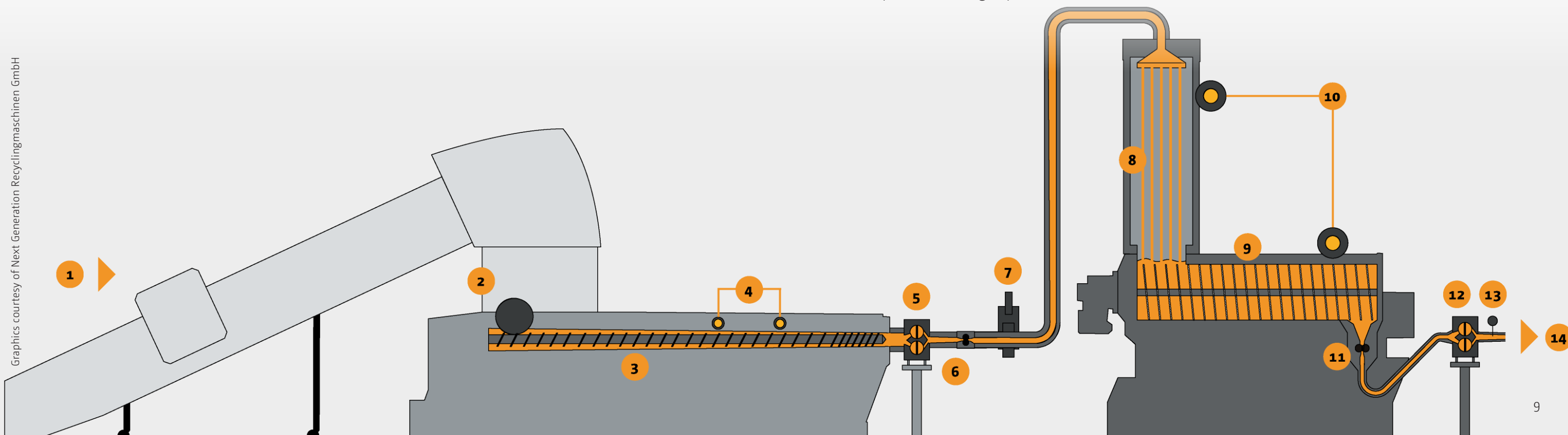
- 1 Material feed
- 2 Gentle shredding
- 3 Plastification
- 4 Degassing / devolatilising
- 5 Filtration
- 6 Melt pump
- 7 Switch
- 8 Vacuum unit (melt reactor)
- 9 Horizontal drum
- 10 Discharge of contaminants
- 11 Melt discharge pump
- 12 Filtration
- 13 Continuous viscosity measurement (Leistritz inline rheometer)
- 14 Transfer to end product finishing

Leistritz
EXTRUSION TECHNOLOGY



The Highlights at a Glance:

- End product: food standard multilayer and stripe foil from 100% recycling material
- Upgrade of PET recycling material with unstable input quality to 100% food standard conformity
- Production of granulate and foils in the same line
- Compact design, reduced space footprint, cost reduction
- Independence from third party suppliers: autonomous, stand-alone solution
- Inline quality control fulfills premium customer specifications in the end product (IV-value > 0,8)
- Superior cleaning capabilities



Quality in Control for a Perfect End Product

PET Recycling: the complete Solution

1. WASHING, SORTING, DRYING

PROCESS STEPS	FUNCTION & BENEFITS
Fine washing and fine sorting	Washing, processing and fine sorting with smart sensor technology. Efficient and gentle cleaning of PET flakes, precise detection of reject material and removal of conaminants.

2. FEEDING & DOSING

Material feed	Supply feed to the Leistritz twin screw extruder ZSE 87 MAXX
Dosing	Constant feed of mass flow to the extruder

3. MELT PROCESSING: MELTING

Polymer melting	Melting in two twin screw extruders ZSE 87 MaXX and ZSE 60 MaXX: Gentle material processing, opmised product quality.
	High specific torque (up to 15,0 Nm/cm³): High output and reduced energy consumption.
	Da/Di ratio of 1,66 ensures higher volume in the screw: Higher degassing / devolatilisation performance

4. CONTROL

Control of the entire production line including all devices	Customised control system, implemented by in-house Leistritz teams: Continuous control of all process parameters.
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5. MELT PROCESSING: FILTRATION & DECONTAMINATION

Melt filtration & melt pumpinge	Removal of foreign particles. Close knit fine filtering, consistent high pressure level for continuous melt flow.
Decontamination: high performance vacuum system	Removal of harmful chemicals, volatile substances to achieve consistent high quality levels in the end product. No clouding, high clarity and purity standards in the foil ouput.

6. MELT PROCESSING: REFINING

PROCESS STEPS	FUNCTION & BENEFITS
Upgrading of PET recycling material to high quality rPET, decontamination of harmful chemicals	Rapid increase in IV values in the Liquid State Polycondensation Reactor (LSP): Upgrade to 100% food standard quality level. Consistent quality output thanks to controllable, consistent IV parameters.

7. FEEDING, DOSING, DEGASSING/DEVOLATILISATION

Material conveyance (co extruder)	Constant raw polymer feed to the ZSE 60 MAXX
Dosing (co extruder)	Controlled dosing of material flow to the extruder.
Feed from co extruder ZSE 60 MAXX to main extruder ZSE 87 MaXX	Raw polymer feed into the process at 300 kg/h: Premium quality homogenisation of the melt at low energy levels.
Degassing / devolatilisation	Vacuum system: Highest level degassing performance resulting in high and stable melt quality.

8. INLINE QUALITY CONTROL

Monitoring and control of melt quality with the Leistritz inline rheometer	Control of melt quality in real time by measuring both longitudinal and shear viscosity: detects fluctuating process parameters inline, enabling immediate remedial intervention without material and time loss.
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9. GRANULATING

Reggranulation unit	Enables production of ready-to-market granulate specifications in virgin quality straight from recycled and upgraded PET.
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10. FOIL PRODUCTION

Foil finishing	Production of multi-layer, stripe and food standard foils: Highest quality standards achieved with 100% recycling material.
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Moving Ahead.

Staying Ahead.

Partnership. Your Advantage

A wealth of experience combined with consistent focus on engineering excellence plus a dedicated team bring you the best possible solution. For plastics processing, recycling, compounding, masterbatch applications. For fascinating new materials and exciting new products that help shape the future.

The heart of the extrusion solution is engineered by Leistritz and made in Germany.



Our pledge

Your compitive edge

Intelligent solutions help you to align and scale your production to market needs. That is our fervent commitment.

Your cost advantage

Productivity, flexibility, efficiency, performance and spot-on delivery to your customer add up to more profit. We are passionate about that.

Your quality advantage

As requirements rise and complexity grows, your process stability becomes even more crucial. We have a deep and inspired understanding of that.

Your confidence advantage

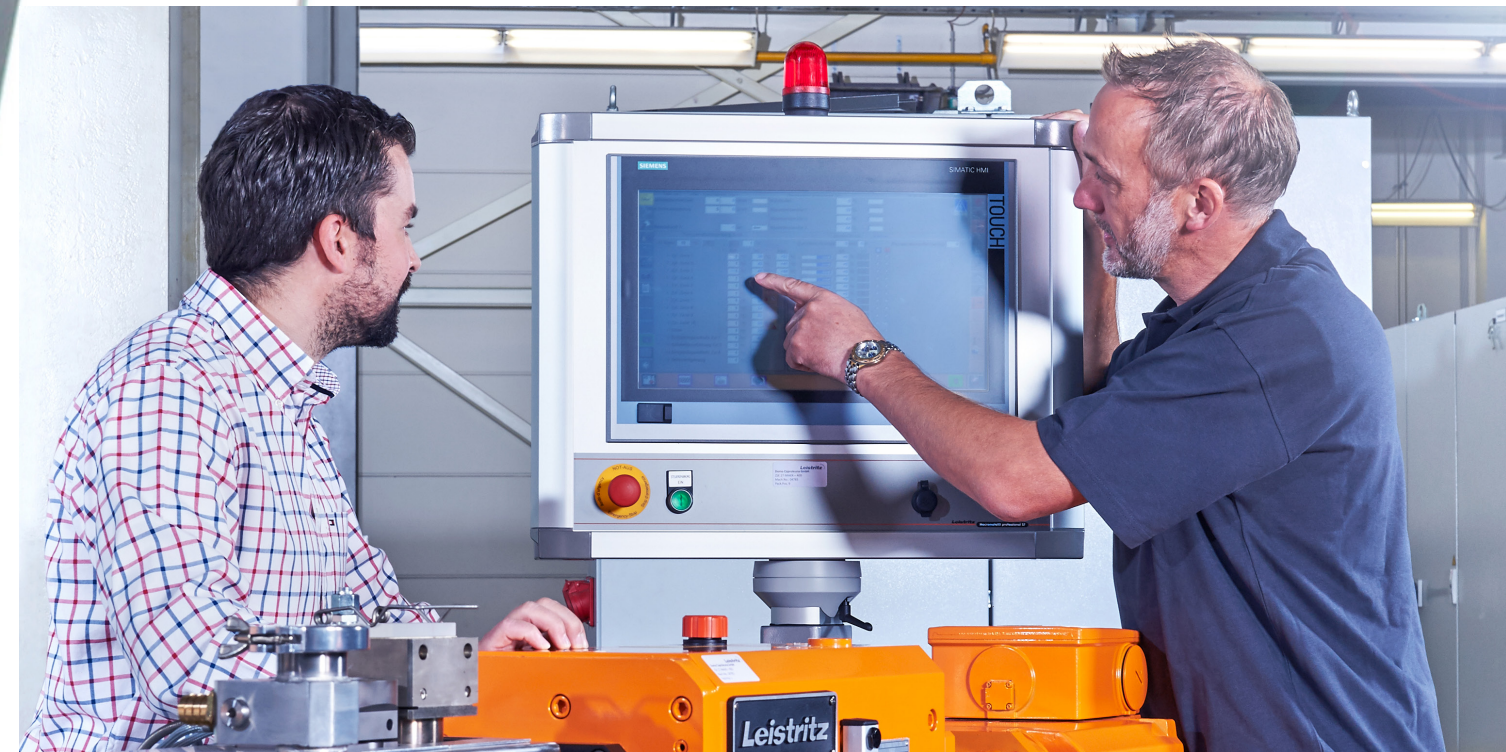
We're at your side. And on your doorstep. Whenever you need our support to get – and keep – your production running smoothly.



Our Strength is Service.

Not just Portfolio

Leistritz Extrusion Global Services



Commissioning, support in operation

Leistritz extrusion engineers support you in your production run to guarantee punctual start up and hassle-free operations. We train your operators hands-on. And on the job. Our service is yours to keep your production lines running as smoothly as clockwork.

Training, Services, Maintenance and Spare Parts

Your fool-proof recipe against costly down times and disruptions in your production lines is our international service and support provided from Leistritz Extrusion Service Hubs in Nuremberg, Somerville, Shanghai, Taicang and Singapore. That's Germany, France, USA, China and, of course, Singapore.

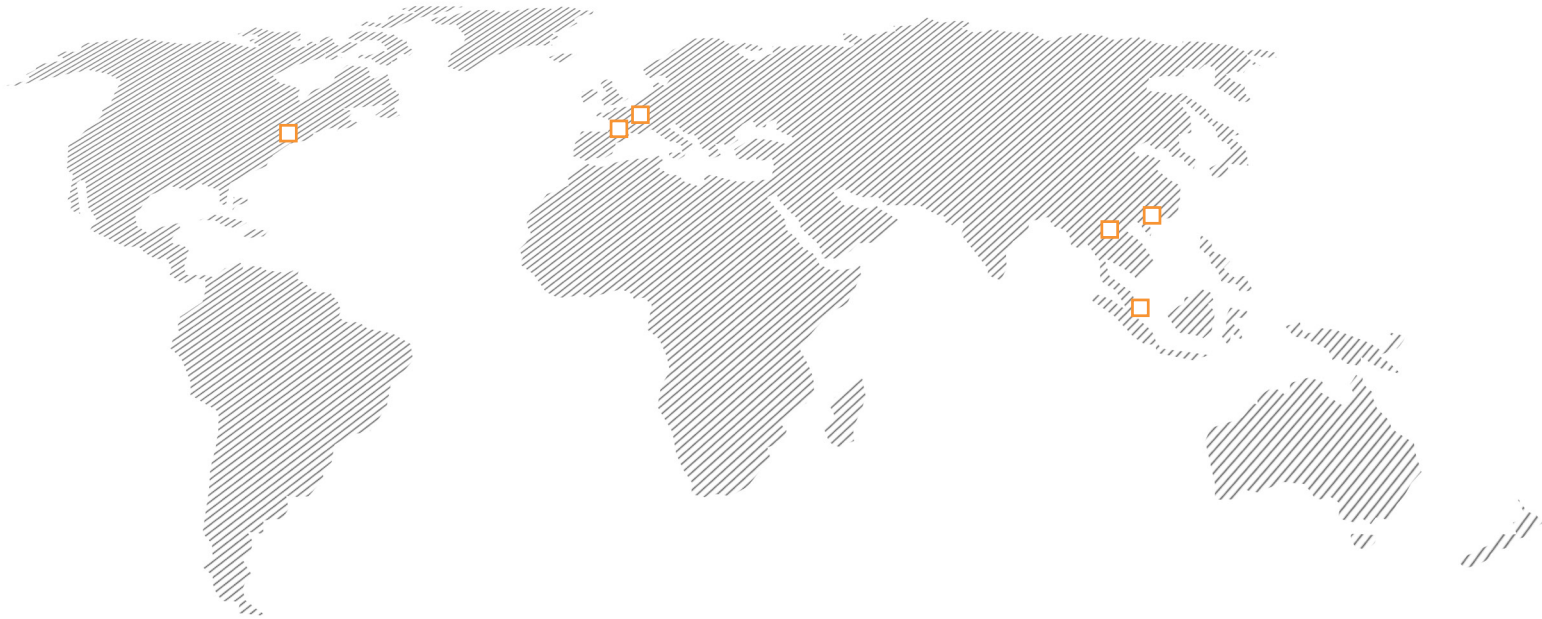
At a Glance

- Planning and design
- Plant commissioning
- Process optimisation
- Modernisation / upgrades
- Machine optimisation
- Customer training
- Extrusion Academy
- Extended Warranty
- Support hotline
- Maintenance
- Digital / remote services
- Repair services
- Spare parts

extruders.leistritz.com/de/service



EXTRUSION TECHNOLOGY - AT YOUR SERVICE, GLOBALLY



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