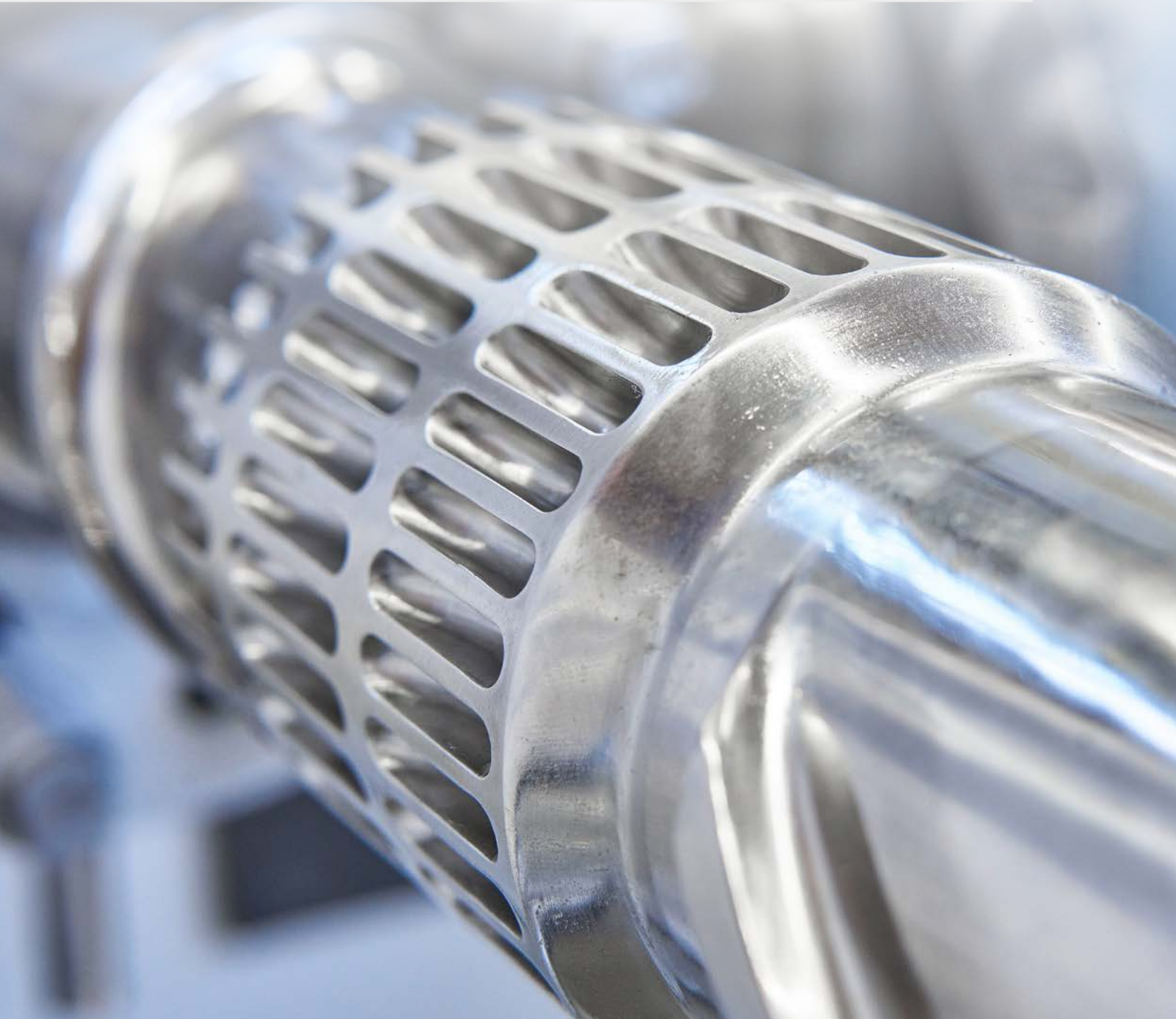
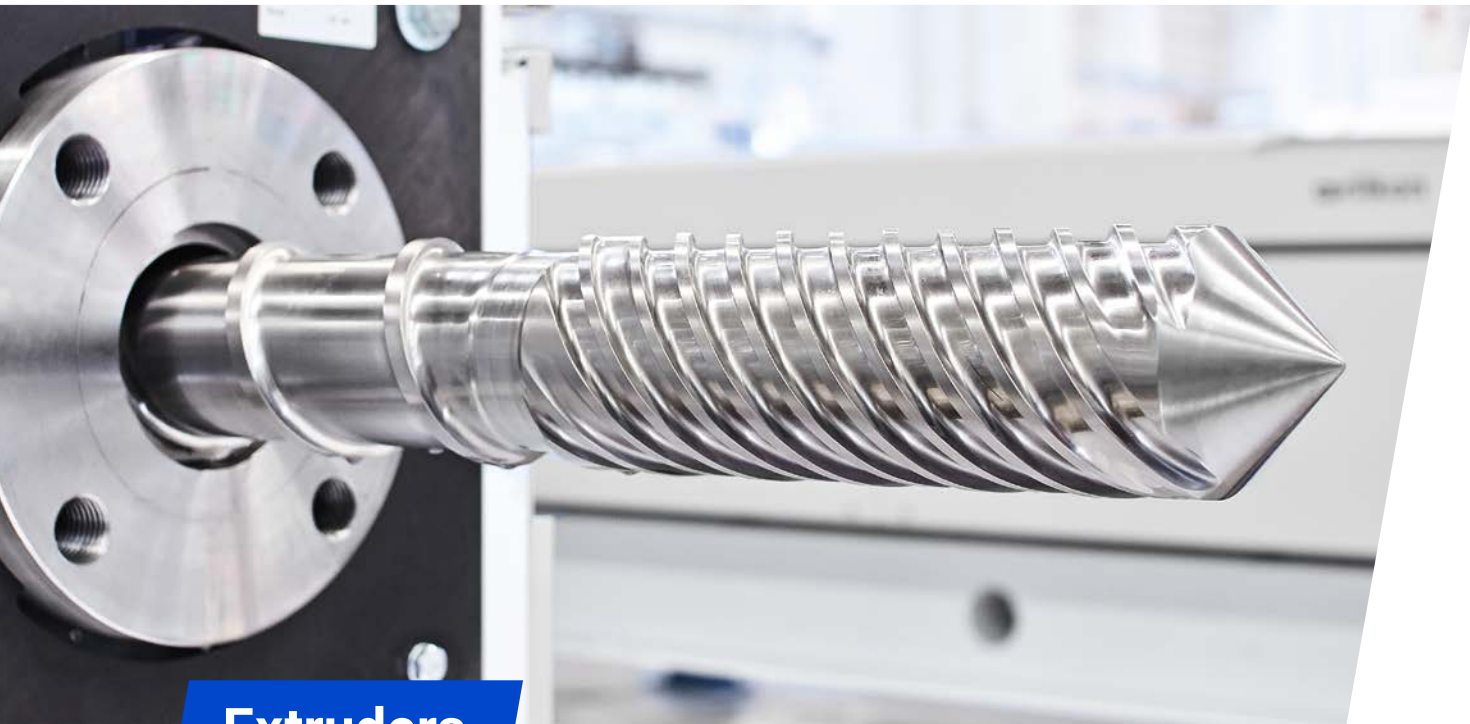


# Extrusion & Mixing

Even more even.



**Decades of experience for absolutely homogenous melt**



## Extruders

Decades of experience and more than 17,000 extruders built so far speak for themselves – BB Engineering is an expert in building extruders for different applications, especially spinning and film production, and highest demands with regard to melt quality.

Extruder range	
Screw diameter	30 – 360 mm
L/D ratio	24, 27, 30, 33
Throughput	From 3 – 6,000 kg/h (depending on viscosity and polymers)
Drive systems	belt or direct drive
Polymers	PP, PET, PA, PE (others on request)
Product	
Film lines	BO-PA, BO-PET, BO-PP
Spinning lines	POY, FDY, IDY, BCF, non-woven

### High quality output

- Optimized polymer homogenization
- Low thermal and mechanical stress
- Precise temperature and process control
- Short residence time
- Applicable for a wide range of processing and product requirements
- Different, additional mixing systems available
- Lowest possible energy consumption

### Long lifetime

- Robust design and state-of-the-art machinery
- Bimetallic cylinders
- Long-lasting drive layout
- Long-term trouble-free operation
- Above-average service life
- Low maintenance costs

### 100% tailor-made

- Customised screw geometry in every project
- Computer-aided screw design perfectly adapted to polymers and products
- Large range of fine-graded sizes, processible polymers and possible end products
- Different heights available
- Different drive arrangements available
- Extrusion cascade systems incl. filters, booster pumps, melt pipes, drain valves, melt mixers and others





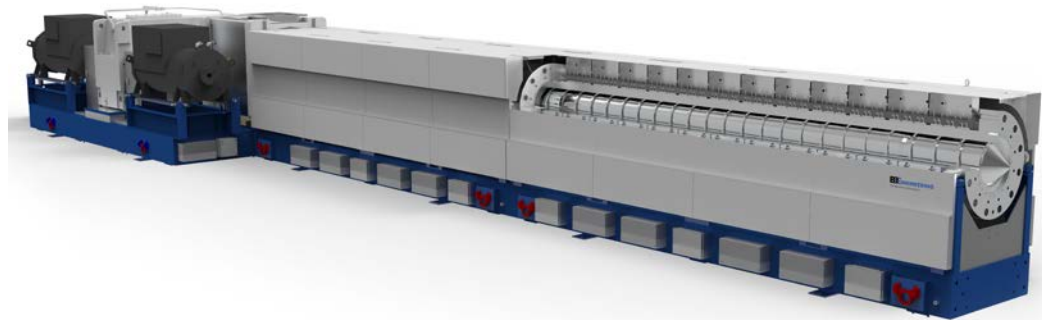
Proven design

## Spinning line extruder



Configuration	
Screw diameter	45 mm
L/D ratio	24
Drive system	Single AC drive
Throughput	70 kg/hr at IV ~0.64
Polymer	PET textile

## Film line extruder



Configuration	
Screw diameter	300 mm
L/D ratio	30
Drive system	Tandem AC drive
Throughput	4,000 kg/hr at IV ~0.64
Polymer	PET BO-film

Tailor-made and limitless variations

## Cascade and co-extrusion system



Configuration	
Screw diameter	200 – 360 mm for PET, 105 – 360 mm for PP
L/D ratio	PET: 30 – melting extruder 17 – metering extruder PP: 24 – melting extruder 20 – metering extruder
Throughput	100 – 6,000 kg/h (depending on polymer & viscosity)
Polymers	PP, PET, PA, PE (others on request)
Customised line configuration, incl. filters, booster pumps, melt pipes, drain valves etc.	

## Mixing

BBE extruders can be equipped with mixing heads for both better homogeneity regarding viscosity, temperature and colour, and for the addition of colours and other additives, e.g. antistaticum, UV protection, flame retardent.

BBE offers different types of mixing concepts. Depending on your raw material and your end product, BBE will recommend the mixing head which is the best for your product.

### Pin mixer

for basic mixing tasks

### Rhomboid mixer

for shear sensitive polymers, prevention of dead zones

### Barrier mixer

ensured separation of melt and solid particles, no loss in pressure, increased melting capacity

### 3DD mixer

for highest homogeneity and most effective mixing (more information on following pages)

## 3DD Mixing

### Complex melt mixing and modification for high quality products

The 3DD (3 Dimensional Dynamic) mixer principle by BBE provides excellent distributive and dispersive blending, hence fulfils a variety of mixing and thereby ensures your products' quality. Primary applications are e.g. blending dyes, stabilizers, fillers, master batches, and liquid dyes.

The arc-shaped cavities of the internal rotating section and the stationary section in the cylinder divides the axial melt streams into extremely fine layers, which are constantly rearranged in the tangential and axial directions and then reunited.

The melt stretching, folding and flow characteristics inside the mixer combine the principles of mixing:

1. Dispersive mixing – cut agglomerates
2. Distributive mixing – improve the spatial distribution of the components
3. Thermal mixing – improve thermal homogeneity

### Improve your ecological footprint:

By colouring your melt before spinning it e.g. in your spinning line you can skip subsequent dyeing/bath, hence reduce water and chemicals consumption.





## Why use 3DD for melt mixing and modification?

- Most effective mixing technique
- Handles complex mixing tasks and barely mixable polymers
- Adding of colours or other additives **after** the polycondensation process
- Therefore, extended product range and specific change of melt characteristics possible, e. g. special colours or modified yarn types
- Highest flexibility and efficiency for new or existing extrusion and polycondensation plants
- adjustable mixing effect
- tunable pressure and melt temperature



## Your requirements:

**100% customized**  
**100% approved**

We offer different 3DD systems to fulfill the various feeding and mixing requirements in order to meet the demands of flexible production in the best way. At the same time, we focus on reliable, long-life design.

## Your options:

### 3DD mixer – flanged

Additional feature for single-screw extruders for highest mixing efficiency flanged at the front end.

### 3DD mixer – standalone

Standalone mixing unit for flexibilisation of condensation plants, as well as extrusion systems, allowing the addition of colours and additives into the melt pass at various points of the polymer system.

The system for your perfect mix

## 3DD mixing standalone unit



### Configuration

Rotor diameter	60 – 300 mm
Throughput	50 – 4,000 kg/hr (for textile PET)
Polymer	PET, PE, PP, masterbatches
With tailored additive feeding system consisting of mixer, metering pump and side extruder	





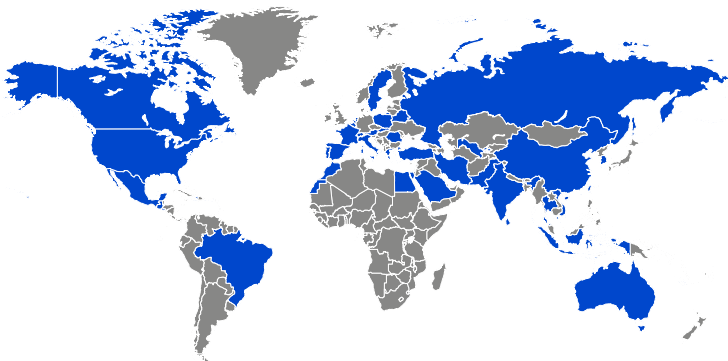
## BBE Valueneering

**Innovative services in the field of machines and plant design for more than 25 years.**

Our business is development, engineering, design and manufacturing of extrusion and filtration technologies as well as complete spinning (VarioFil®) and recycling (VacuFil®) machines for the plastics and textile industry. The services offered range from the design and planning phases all the way through to the implementation of projects. Innovation, quality and trust are our greatest strengths from which you will benefit. Founded in 1997 as a joint venture between Oerlikon Barmag, a subsidiary of Oerlikon Textile GmbH & Co. KG and Brückner Group GmbH, the company nowadays employs more than 160 members of staff at its Remscheid-Lennep location.

## Worldwide operation

All over the world companies trust in our products and services. Closely partnered with Oerlikon Barmag Customer Services, we provide a global service network comprising about 20 service stations, over 60 agencies and hotline support for finding solutions to the challenges you face.



● Countries with BBE customers



## Let's get in touch

Our experts look forward to hearing from you and are ready to answer any questions you may have.

@ sales@bbeng.de

+49 21 91 95 10 300

www.bbeng.de

BB Engineering GmbH  
Leverkuser Str. 65  
42897 Remscheid  
Germany  
Fon +49 2191 9510 - 100  
[sales@bbeng.de](mailto:sales@bbeng.de)  
[www.bbeng.de](http://www.bbeng.de)