



MACHINES AND SYSTEMS  
FOR PLASTICS PROCESSING



# *Product catalogue*



## GOOD REASONS FOR ...



PROJECT PLANNING · DEVELOPMENT & CONSTRUCTION · MANUFACTURE · AFTER SALES



- + More than **30 years** experience in **extrusion technology**
- + Pipes and profiles up to Ø 50 mm, corrugated pipes up to Ø 58 mm
- + **Integrated approach** to the project
- + **Own multi-layer dies**
- + **Strong competitive position in pipe extrusion systems** incl.:  
Process data collection / Line control /  
Siemens Win CC process visualisation system
- + **Optimum project planning through intensive cooperation**  
Technical centre: tests with different material combinations on a  
multi-layer system for smooth and corrugated pipes
- + **Service and remote maintenance**
- + **Synergy effects** (assembly, construction, software, start-up)  
through integration into the Pütz Group



- + Established in 1988, approximately 90 employees
- + Many years of industrial experience
- + Central capital base / local flexibility with the greatest degree  
of freedom and responsibility

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# EXTRUSION

## CORRUGATOR BC 25 / 40 – 120 VE

### Corrugated pipes up to 58 mm

**High-performance corrugator  
for corrugated pipes and demanding  
technical pipes up to a maximum  
outer diameter of 58 mm.**



### Equipment features:

- + Flexible maintenance and operating-optimised setup
- + Central control for extrusion and corrugator
- + Optimised multiple-zone vacuum system
- + Central lubrication
- + Optimised indirect water cooling of the steel forming jaws
- + Extruder and successor units are adjusted to each other.
- + Central recipe management
- + **Digital linking of the systems to our process data recording**  
Through our process data collection module **Bellex 2000** and a separate process data analysis tool enable you to **increase product quality and reduce production costs across the service life.**  
**Optional:**  
Data exchange with superordinate systems and a remote maintenance connection.

## CORRUGATOR BC 25 / 40 – 120 VE

### Technical details:

<b>Length of corrugator</b>	3 504 mm
<b>Height of corrugator</b>	1 997 mm
<b>Width of corrugator</b>	1 300 mm
<b>Length of supply unit</b>	3 000 mm
<b>Height of supply unit</b>	1 300 mm
<b>Width of supply unit</b>	1 500 mm
<b>Max. outer product diameter</b>	58 mm
<b>Min. outer product diameter</b>	12 mm
<b>Form jaw length (tool length)</b>	56.52 mm
<b>Form jaw number in the circulation min.</b>	40 pairs
<b>Form jaw number in the circulation max.</b>	90 pairs
<b>Circulation length of the forming jaws min.</b>	2 260.80 mm
<b>Circulation length of the forming jaws max.</b>	5 086.80 mm
<b>Form channel length (closed area) min.</b>	524 mm
<b>Form channel length (closed area) max.</b>	1 936 mm
<b>Maximal mechanical speed</b>	47 m / min
<b>Drive</b>	AC Servo-Motor Nm 11 kW
<b>Control</b>	via colour display / touch panel
<b>Extrusion height</b>	1 080 mm
<b>Height adjustment</b>	+/- 50 mm
<b>Side adjustment</b>	+/- 15 mm
<b>Pneumatic extension distance</b>	700 mm

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## CORRUGATOR BC 25 / 40 – 120 VE

### Corrugated pipes up to 25 mm

**High-performance corrugator  
for corrugated pipes and demanding  
technical pipes up to a maximum  
outer diameter of 25 mm.**



### Equipment features:

- + Flexible maintenance and operating-optimised setup
- + Central control for extrusion and corrugator
- + Optimised multiple-zone vacuum system
- + Central lubrication
- + Optimised indirect water cooling of the steel forming jaws
- + Extruder and successor units are adjusted to each other.
- + Central recipe management

### + Digital linking of the systems to our process data recording

Through our process data collection module **Bellex 2000** and a separate process data analysis tool enable you to **increase product quality and reduce production costs across the service life.**

#### Optional:

Data exchange with superordinate systems and a remote maintenance connection.

## CORRUGATOR BC 25 / 40 – 120 VE

### Technical details:

<b>Length of corrugator</b>	2 900 mm
<b>Height of corrugator</b>	2 050 mm (with 1 000 mm extrusion height)
<b>Width of corrugator</b>	1 200 mm
<b>Length of supply unit</b>	1 560 mm
<b>Height of supply unit</b>	1 300 mm
<b>Width of supply unit</b>	1 200 mm
<b>Max. outer product diameter</b>	25 mm
<b>Min. outer product diameter</b>	5 mm
<b>Form jaw length (tool length)</b>	37.7 mm
<b>Form jaw number in the circulation</b>	40 - 120 pairs (composition can be expanded)
<b>Circulation length of the forming jaws</b>	4 524 mm (with 120 pairs)
<b>Middle channel (closed area)</b>	1 872 mm (with 120 pairs)
<b>Extrusion height</b>	1 000 mm (950 to 1 050)
<b>Height adjustment</b>	+/- 50 mm
<b>Side adjustment</b>	+/- 15 mm
<b>Pneumatic extension distance</b>	400 mm

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THE WORLD'S  
ONLY COMPLETE  
SYSTEM SUPPLIER  
FOR CORRUGATED  
PIPES!

## BELLEX CONTROLS

**with process data collection module  
and process data analysis tool**

**Collection of all the product and process data produced in the extrusion process.**



The Bellaform operating interface outputs process data such as temperature curves of the extruder heating or pressure curves in the vacuum tank as a trend curve in real time. Diameter and wall thickness, the distance between the nozzle exit and the calibration or the temperatures in the vacuum tank are recorded. All relevant data are provided in a format that permits further processing or archiving in a superordinate central control.

**Bellaform thus provides a decisive contribution so that you can offer your products in the best quality and at a competitive price.**

### Your benefit:

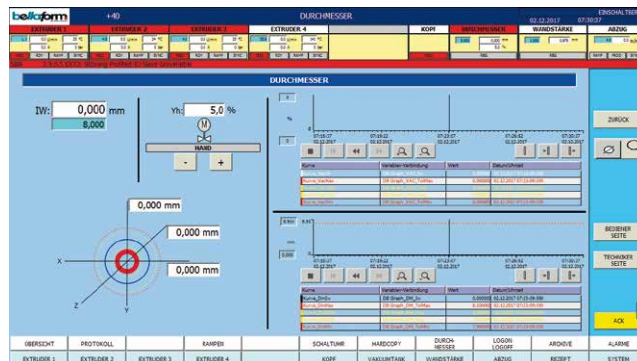
- + **Continually improve the production process** across the entire lifespan of the machine
- + **Substantial reduction of the NOK proportion**
- + **Faster and more meaningful error analysis** for production failures
- + **Complete traceability** of quality and production data
- + **Constant reduction of production costs** through the optimisation of material and media consumption
- + **Constant improvement in quality**



## BELLEX CONTROLS

### Comfortable analysis of the recorded process data:

The **process data storage module** collects all relevant production data cyclically and files them in year/month/day order and by individual product and lot number on the system PC or any other PC as required. The archived production data can be depicted graphically and numerically with the help of the **process data analysis software** that runs on every standard Windows PC.



#### Basic functions:

- Communication via Profinet with all system components
- Extruders and positions can be freely activated and deactivated
- Extruder visualisation: Temperature, Speed, Mass temperatur, Mass pressure
- Weekly timer
- Set-back temperature
- Vacuum tank visualisation: Water temperature, Vacuum, Pump speed, Nozzle distance
- Recipe administration with all relevant parameters for each product
- Synchronous operation or ramp function for all drives in the system
- Trend graphic for all relevant process parameters
- Diameter regulation via the vacuum
- Scrap cut function
- Batch print out
- Fault report page with archive
- Access authorisation to the screen pages using a password

#### Options:

- Remote maintenance system: short global reaction times in the event of machine standstill
- Integration into visualisation: Measurement systems of all known manufacturers, Gravimetry with metre weight regulation for the extruder, Flame impingement system
- Drying systems
- Conveying systems

#### New Functions:

- Process storage module
- Process data analysis tool

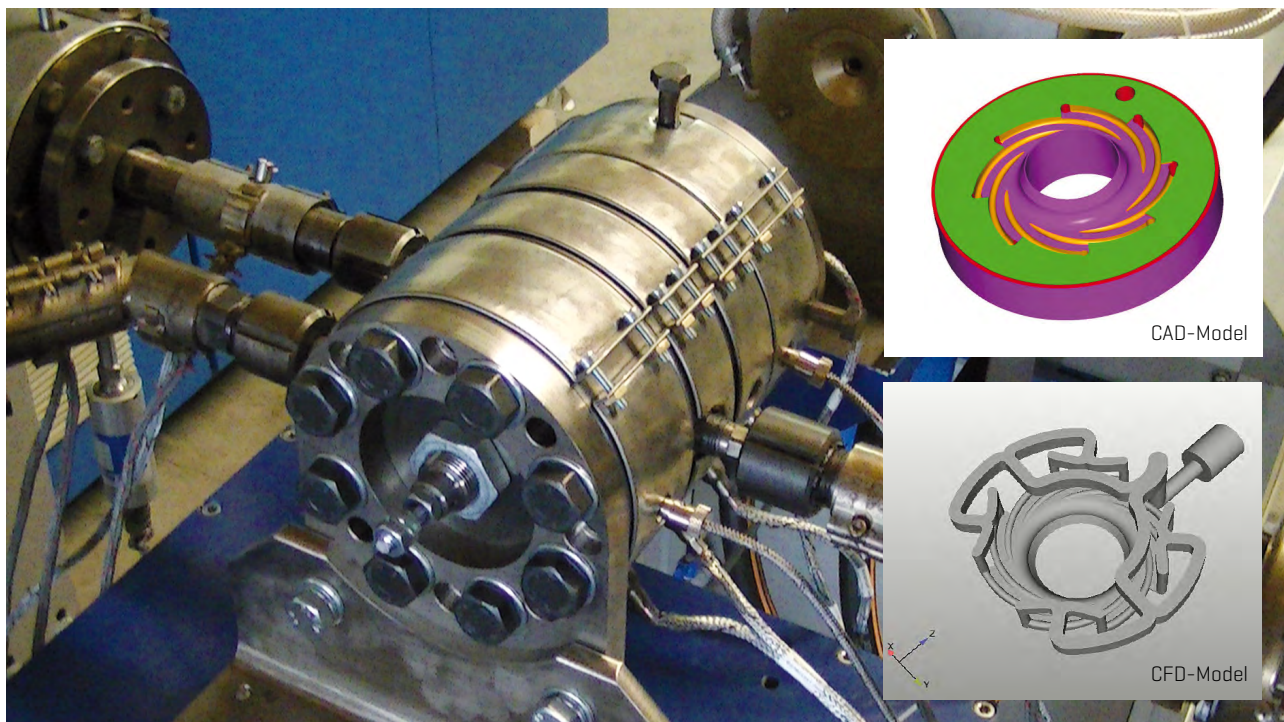
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## MULTI LAYER SPRAY HEAD WITH TANGENTIAL DISTRIBUTOR TECHNOLOGY

**Latest tool technology.  
Highest level of precision.**



### Equipment features:

- + 2 to 7 layers:**  
Identical dimensions in the intermediate and distribution plates enable **fast and simple conversion** to more or fewer layers.
- + Compact and space-saving:**  
The diameter is 180 mm.  
The low proportion of melt contents ensures **reduced flushing times**.
- + Easy to clean:**  
The multilayered spray head is easy to clean because the melt delivery can be **removed completely**.
- + Simple components:**  
All plates are centred by two **continuous guide rods** and fixed with **continuous screws**. **Simple components** and **small dimensions** make the multilayered spray head **particularly good value**.
- + Modular structure:**  
Adjustments to different plate **variations** can be carried out **easily**.

## MULTI LAYER SPRAY HEAD WITH TANGENTIAL DISTRIBUTOR TECHNOLOGY

### QUESTIONNAIRE FOR TENDER PREPARATION: Fax +49 6725 91925-200

**We work closely with our clients to make our projects a success.**

Tell us which requirements your products have to fulfil and we will work with you to develop an individual system adapted to the ideal raw material.

#### Product description:

Layer:	Thickness:	Material:	Producer:
Layer 1			
Layer 2			
Layer 3			
Layer 4			
Layer 5			
Layer 6			
Layer 7			

#### Required ejection:

Metres / minute	
-----------------	--

#### Further processing:

Cutter  
Winder  
Laydown belt  
Packaging  
Buffer line  
Palettising

#### Your contact details:

Please include a **drawing of the product**. Thank you!

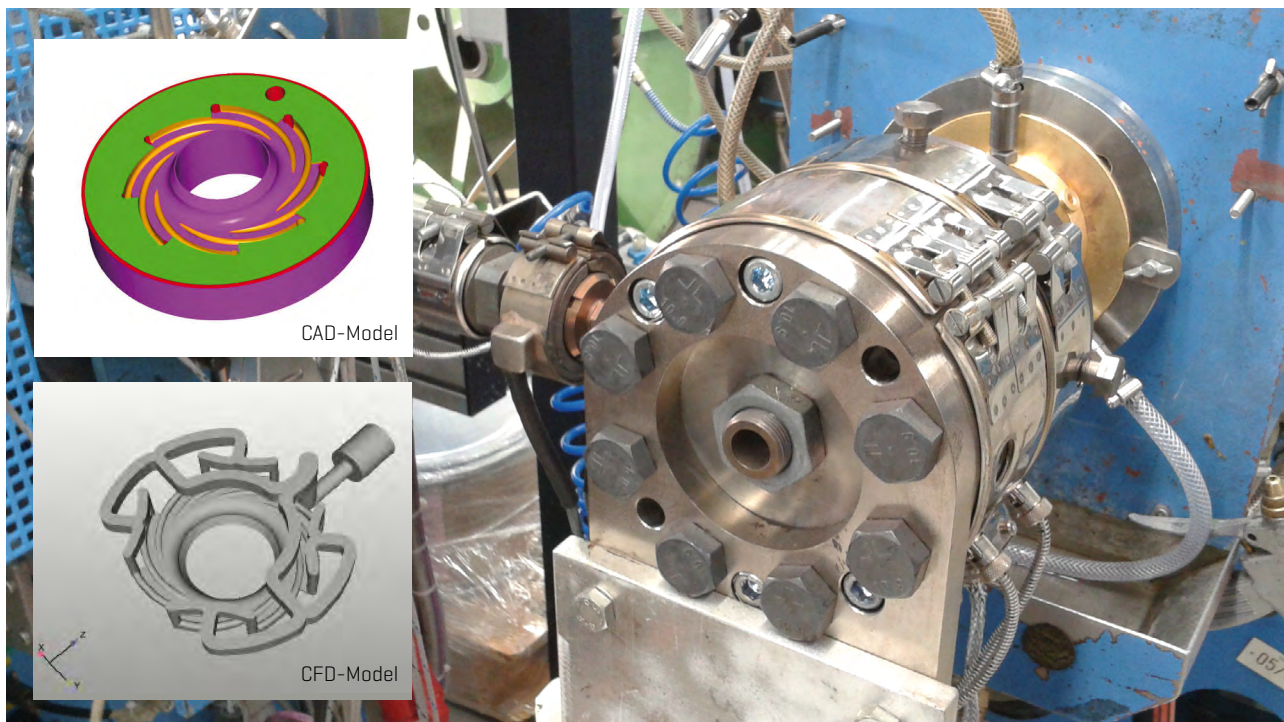
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## COATING HEAD

**Specially designed for fluoropolymers**



### Equipment features:

- + Up to 2 layers:**  
Identical dimensions in the intermediate and distribution plates enable **fast and simple conversion** to more or fewer layers.
- + Compact and space-saving:**  
The diameter is 180 mm.  
The low proportion of melt contents ensures **reduced flushing times**.
- + Simple components:**  
All plates are centred by two **continuous guide rods** and fixed with **continuous screws**. **Simple components** and **small dimensions** make the coating head **particularly good value**.
- + Modular structure:**  
The base parts can be combined freely and can be installed at any position in the head.  
**Adjustments** to different plate variations can be carried out **easily**.
- + Easy to clean:**  
The coating head is easy to clean because the melt delivery can be **removed completely**.
- + Material: Inconel**



## COATING HEAD

### QUESTIONNAIRE FOR TENDER PREPARATION: Fax +49 6725 91925-200

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#### Product description:

Layer:	Thickness:	Material:	Producer:
Layer 1			
Layer 2			

#### Required ejection:

Metres / minute	<input type="text"/>
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#### Further processing:

- ☐ Cutter
- ☐ Winder
- ☐ Laydown belt
- ☐ Packaging
- ☐ Buffer line
- ☐ Palettising

#### Your contact details:

<input type="text"/>
<input type="text"/>
<input type="text"/>

Please include a **drawing of the product**. Thank you!

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## EXTRUDER SERIES BH

### Robust, compact and variable

The Bellaform extruders are your perfect partner for hoses, profiles and tubes up to a max. of 50 mm in diameter.

BH series extruders are the basis of our plant. Depending on plant size our extruders can function as main or co-extruders.

They easily process all hermoplastics and natural rubber materials.



### Your Benefits:

- + Compact**
- + Great flexibility thanks to modular design:**  
extruder lines can be economically modified or extended at any time.
- + Choice of left or right designs**
- + Easy handling**
- + Profitable:**  
Designed for permanent three-shift operation
- + Additional equipment can be integrated into a common visualisation**

### Overview of equipment features:

Model*	Co Extruder	Main extruder	Piping/hosing production	Panel production	Cable sheathing
BH 25-25D	●	●	●		●
BH 30-25D	●	●	●		●
BH 30-30D	●	●	●		
BH 35-25D	●	●	●		
BH 35-30D	●	●	●		
BH 35-30DN	●	●	●		
BH 45-25D	●	●	●	●	●
BH 45-30D	●	●	●	●	
BH 45-30DN		●	●	●	
BH 60-25D		●	●	●	
BH 60-30D		●	●	●	
BH 60-30DN		●	●	●	
BH 75-25D		●	●	●	
BH 75-30D		●	●	●	
BH 75-30DN		●	●	●	

\* higher performance on request

**EXTRUDER SERIES BH**

**BH 25 / 30**



Model		25-25D	30-25D	30-30DN
Screw RPM	min-1	155	155	155
L / D		25	25	30
Heating/cooling zones		3/3	3/3	3/3
Drive	kW	10.5 AC	10.5 AC	10.5 AC
Heating capacity	kW	3	3.6	4.2
Extrusion capacity:				
PP	kg/h	8	14	16
LDPE	kg/h	12	16	18
HDPE	kg/h	8	14	16
PS	kg/h	10	15	17
PA6	kg/h	8	14	-
PA11 / 12	kg/h	8	14	-
Soft PVC	kg/h	-	16	18
Length	mm	1 500	1 600	1 600
Width	mm	500	500	500
Height	mm	1 800	1 800	1 800
Weight	kg	370	390	400

**BH 35**



Model		35-25D	35-30D	35-30DN
Feed zone		glatt	glatt	Nutbuchse
Screw RPM	min-1	225	225	225
L / D		25	25	25
Heating/cooling zones		3/3	4/4	5/4
Drive	kW	19 AC	19 AC	19 AC
Heating capacity	kW	5.1	6.8	6.8
Extrusion capacity:				
PP	kg/h	25	30	32
LDPE	kg/h	30	33	35
HDPE	kg/h	25	30	32
PS	kg/h	30	33	36
PA6	kg/h	32	-	-
PA11/12	kg/h	32	-	-
Soft PVC	kg/h	30	33	35
Length	mm	1 806	1 981	1 981
Width	mm	680	680	680
Height	mm	1 770	1 770	1 770
Weight	kg	420	450	460

## EXTRUDER SERIES BH

Model		45-25D	45-30D	45-30DN
Feed zone		glatt	glatt	Nutbuchse
Screw RPM	min-1	227	227	227
L / D		25	30	30
Heating/cooling zones		3/3	4/4	5/4
Drive	kW	31 AC	31 AC	31 AC
Heating capacity	kW	6.5	7.8	13.4
Extrusion capacity:				
PP	kg/h	45	55	70
LDPE	kg/h	50	60	75
HDPE	kg/h	55	55	55
PS	kg/h	60	70	80
PA6	kg/h	55	–	–
PA11 / 12	kg/h	55	–	–
Soft PVC	kg/h	50	70	80
Length	mm	1 685	1 952	1 952
Width	mm	840	840	840
Height	mm	1 920	1 920	1 920
Weight	kg	800	820	830

Model		60-25D	60-30D	60-30DN
Feed zone		glatt	glatt	Nutbuchse
Screw RPM	min-1	196	196	196
L / D		45	30	30
Heating/cooling zones		4/4	5/5	6/5
Drive	kW	61 AC	61 AC	61 AC
Heating capacity	kW	13.2	16.5	19.0
Extrusion capacity:				
PP	kg/h	90	120	130
LDPE	kg/h	110	120	130
HDPE	kg/h	90	140	150
PS	kg/h	110	125	140
PA6	kg/h	120	–	–
PA11 / 12	kg/h	120	–	–
Soft PVC	kg/h	110	140	160
Length	mm	2 280	2 280	2 280
Width	mm	910	910	910
Height	mm	2 192	2 192	2 192
Weight	kg	1 070	1 070	1 200

### BH 45



### BH 60





**EXTRUDER SERIES BH**

**BH 75**



Model		75-25D	75-30D	75-30DN
Feed zone		glatt	glatt	Nutbuchse
Screw RPM	min-1	200	200	200
L / D		25	30	30
Heating/cooling zones		5/5	6/6	6/6
Drive	kW	130 AC	130 AC	130 AC
Heating capacity	kW	22.5	27	27
Extrusion capacity:				
PP	kg/h	220	270	290
LDPE	kg/h	240	280	290
HDPE	kg/h	170	200	230
PS	kg/h	180	220	280
PA6	kg/h	190	-	-
PA11 / 12	kg/h	190	-	-
Soft PVC	kg/h	220	270	290
Length	mm	3 110	3 110	3 110
Width	mm	1 140	1 140	1 140
Height	mm	2 410	2 410	2 410
Weight	kg	2 200	2 400	2 500

**We work closely with our clients to make our projects a success.**

Tell us which requirements your products have to fulfil and we will work with you to develop an individual system adapted to the ideal raw material.

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SYSTEM SUPPLIER  
FOR CORRUGATED  
PIPES!

## EXTRUSION LINES WITH DIRECT DRIVE

**Individual solutions for the production of profiles, hoses and tubes**



### Processing:

- **Directly driven** screw with torque motor
- **Screw-cylinder combinations optimised** for the application and made of high-quality nitriding steel
- Special **high-temperature heating** for the processing of engineering plastics
- Four axial fans per heating zone to achieve a **high cooling performance** and an even air-flow onto the cylinder
- Cylinder jacket made of stainless steel with **integrated cable duct**

### Drive:

- **Maintenance-free drive.**  
No gear box means no more oil changes.
- **Fail-safe.** No oil leaks if the seals are damaged or fail.
- **Higher efficiency** and improved internal efficiency of the motor
- **Low-noise operation** in accordance with European Directive 2002/10/CE due to water jacketing of the motor
- **Compact design** thanks to reduction of major components



### The perfect solution for your project:

Extrusion lines from Bellaform excel in precision and speed.

## Technical details:

<b>System:</b> Dimensions [L x W x H] Extrusion height	Integrated control cabinet with additional control unit 2 350 x 620 x 1 500 1 100 mm
<b>Drive:</b> Screw Output Torque	Direct drive with torque motor TMW 205 33.5 kW 1 560 Nm over the entire speed range
<b>Processing:</b> Screw diameter Processing length Material Heating zones	45 mm 30 D Screw and cylinder made of steel 1.8550, nitrided 4 cylinder heating zones with ceramic heating elements, Heating performance per zone: 3 000 watt, designed for temperatures of up to 400°C, 4 axial fans per zone

## EXTRUSION LINES WITH DIRECT DRIVE

### QUESTIONNAIRE FOR TENDER PREPARATION: Fax +49 6725 91925-200

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Tell us which requirements your products have to fulfil and we will work with you to develop an individual system adapted to the ideal raw material.

#### Product description:

--

Layer:	Material:	Producer:	Desired production output:
--------	-----------	-----------	----------------------------

Layer 1			Parts / minute	
Layer 2			kg / hour	
Layer 3			Metres / minute	
Layer 4				
Layer 5				
Layer 6				

#### Product dimensions:

Outer diameter		Tolerance ±	
Inner diameter		Tolerance ±	
Length		Tolerance ±	

#### Further processing:

Cutter  
Winder  
Laydown belt  
Packaging  
Buffer line  
Palettising

#### Your contact details:


Please include a **drawing of the product**. Thank you!

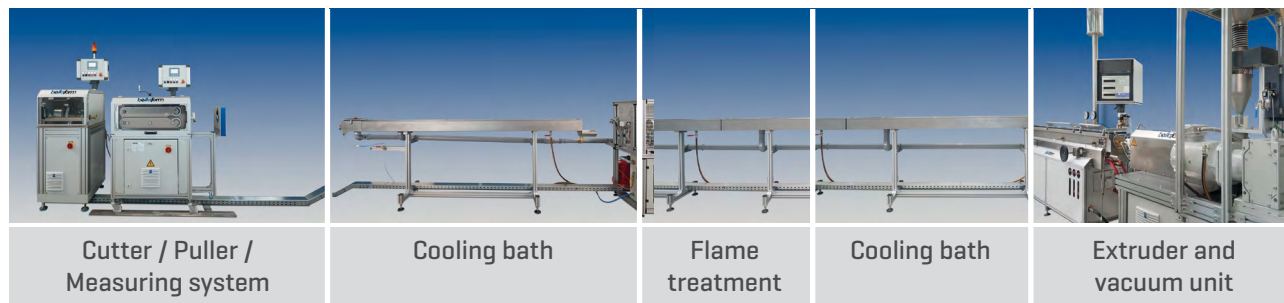
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## MONO-EXTRUSION LINES SERIES E

**Optimal solutions in manufacturing hosing, piping  
and sectioning up to a maximum diameter of 50 mm**



### Possible components

- Vacuum tanks
- Cooling troughs
- Cutting tools
- Winders
- Stacking and packing equipment
- Drinking straw grooving plant
- Diameter and wall thickness measurement
- Further automation equipment

### Production of mass products, such as:

Q-tips / Lolly sticks / Drinking straws / Mine piping

### Production of high-precision products, such as:

Medical hosing and piping / Fuel and compressed air hosing for the automobile industry / Piping and hosing for the cosmetics industry

### Technical details:

Typ	Extrusion (kg/h)	max. external diameter (mm)	max. extrusion speed (m/min)*
<b>E 20</b>	20	10,0	50
<b>E 40</b>	40	20,0	100
<b>E 60</b>	60	50,0	300
<b>E 80</b>	80	50,0	300
<b>E 100</b>	100	50,0	500

\* Depends on material and on product dimensions

**Our extrusion plant are suitable for processing all thermoplastics and natural rubber materials, including:**

PP / ABS / LDPE / HDPE / Hard PVC / soft PVC / Polyamide 6, 11, 12 / SEBS / SBS / PS / PEEK / POM / PPA / PVDF / ETFE / EFEP / TPEE / TPX / THV / Organic plastics

### Your benefit:

#### + High flexibility by module design:

Jederzeit können Extrusionsanlagen kostengünstig modifiziert und erweitert werden.

#### + High productivity:

With its high production performance of max. 250 m/min, our lines ensure the high productivity of your production. All plant designed for constant use on a three-shift basis.

#### + Individual systems:

Our large variety of components let us assemble a tailor-made line for each customer, which gives everyone a complete production process with only one line.

#### + Quantity and quality alike – anything goes:

Depending on equipment, our plants are suitable for cost-efficient mass production as well as for manufacturing very precise products.

## MONO-EXTRUSION LINES SERIES E

### QUESTIONNAIRE FOR TENDER PREPARATION: Fax +49 6725 91925-200

#### We work closely with our clients to make our projects a success.

Tell us which requirements your products have to fulfil and we will work with you to develop an individual system adapted to the ideal raw material.

#### Product description:

--

#### Product dimensions:

Outer diameter		Tolerance $\pm$	
Inner diameter		Tolerance $\pm$	
Length		Tolerance $\pm$	

#### Desired production output:

Parts / minute	
kg / hour	
Metres / minute	

#### Further processing:

Cutter  
Winder  
Laydown belt  
Packaging  
Buffer line  
Palettising

#### Your contact details:


Please include a **drawing of the product**. Thank you!

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## MULTI LAYER-EXTRUSION PLANT SERIES ME

**The optimum solution if you wish to produce multi layer piping or hosing whatever the intended use!**

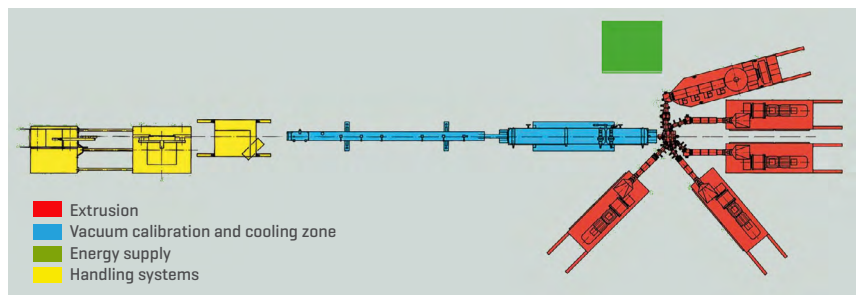
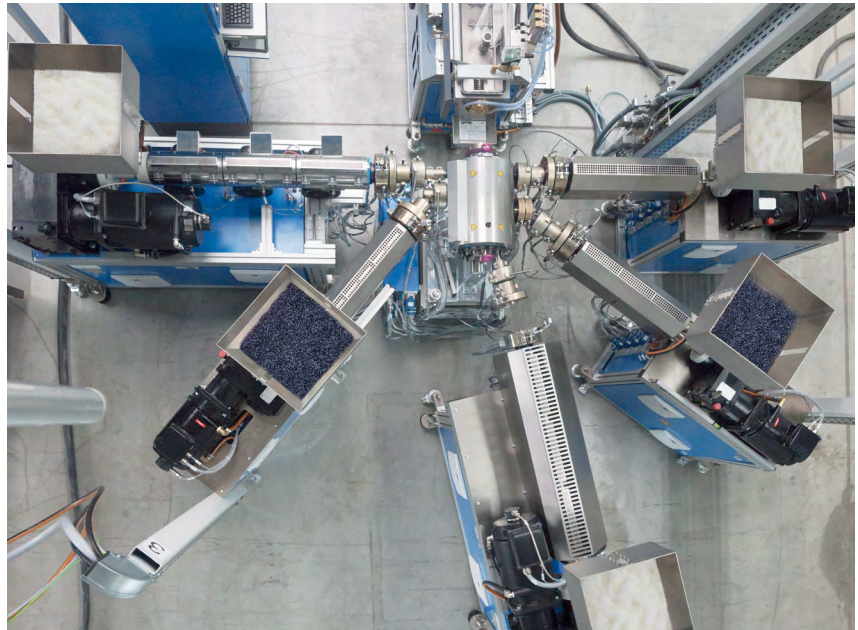


Our co-extrusion plant is based on the E series.

The **ME series** extruders have an additional co-extrusion adaptor and an extrusion head for multi-layer extrusion. They can also be combined with several additional co-extruders.

### Wide product range – no problem with Bellaform

- For products in various colours and of different materials (e.g. tubes and hoses with barrier properties for the automotive industry)
- The benefits of a wide range of different materials can be combined using this special extrusion process.
- This also applies to products with optical effects (e.g.: pens and pencils, drinking straws, products with contrasting stripes, makeup pencil sleeves)



### Structures and uses for multi-layer systems:

Number of layers	Number of materials	Effects	Typical spheres of use
2	1	Colour design	Writing means, Drinking straws
2	2	Contrast stripes	Medical technology
3	3	Polished layers Barrier layers	Tubular hosing, Fuel lines, Medical technology, Underfloor heating, Piping
5	3	Barrier layers	Tubular hosing, Fuel lines, Medical technology Underfloor heating, Piping
7	5	Barrier layers	Medical hosing

## MULTI LAYER-EXTRUSION PLANT SERIES ME

### Technical details:

Type:	ME 40	ME 60	ME 100
Extrusion (kg/h)	40	60	100
max. external diameter (mm)	20.0	40.0	40.0
max. extrusion speed (m/min)*	200	300	350

\* Depends on material and layer design

### QUESTIONNAIRE FOR TENDER PREPARATION: Fax +49 6725 91925-200

**We work closely with our clients to make our projects a success.**

Tell us which requirements your products have to fulfil and we will work with you to develop an individual system adapted to the ideal raw material.

#### Product description:

--

#### Product dimensions:

Outer diameter		Tolerance ±	
Inner diameter		Tolerance ±	
Length		Tolerance ±	

#### Desired production output:

Parts / minute	
kg / hour	
Metres / minute	

#### Layer:

#### Material:

#### Producer:

Layer 1		
Layer 2		
Layer 3		
Layer 4		
Layer 5		
Layer 6		
Layer 7		

#### Further processing:

Cutter  
Winder  
Laydown belt  
Packaging  
Buffer line  
Palettising

#### Your contact details:


Please include a **drawing of the product**. Thank you!

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## MULTI LAYER-EXTRUSION LINES SERIES PE

### For polymer pencils

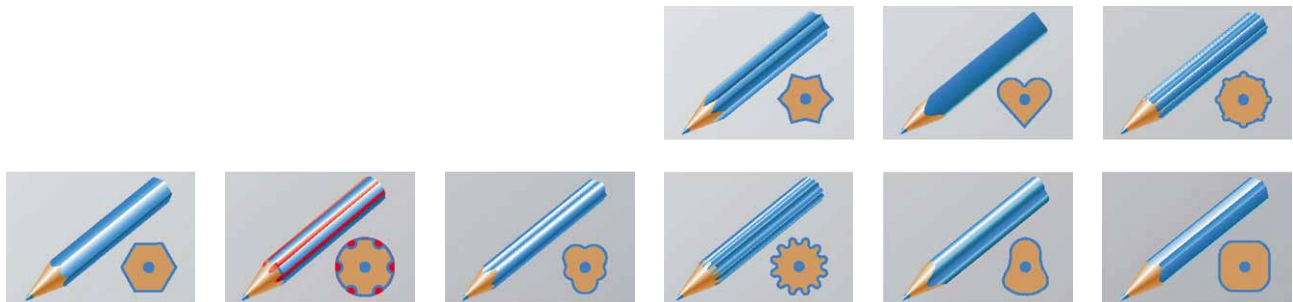
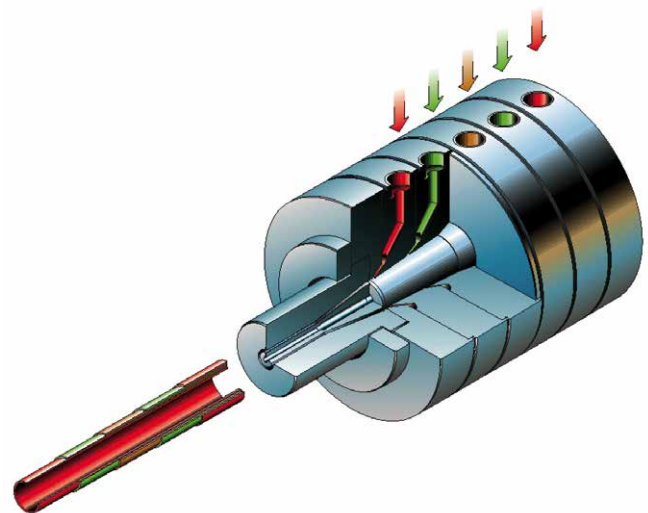
#### Bellaform extrusion lines - the optimal way from raw material to finished packaged product!

Manufacturing wooden pencils requires over 30 work steps. With our extrusion plant PE pencils can be made in a single continuous step.

#### Special patented technology

The special process for extruding polymer pencils was developed and patented by Bellaform. It guarantees outstanding adhesion between pencil and lead as well as between pencil and exterior coating.

Polymer pencils are characterised by high breakage resistance and rigidity and are sharpened as are wooden pencils. Development of the polymer pencil means consumption of valuable timber can be cut.



### Your benefit:

- + Our plant manufacture **continuously** and **highly efficiently** from graphite and plastic.
- + The Bellaform process offers **many shape, colour and design options**.
- + Our plant manufacture at high speed – **120 units a minute** at an average length of 168 mm
- + Polymer pencils are **much more rugged** than their wood equivalents.
- + In many fields they are **far better** than wooden pencils.
- + **Bellaform can supply you with a complete compact pencil factory** for use as a production facility including all the necessary additional equipment for printing, sharpening, adding erasers and packaging the goods.



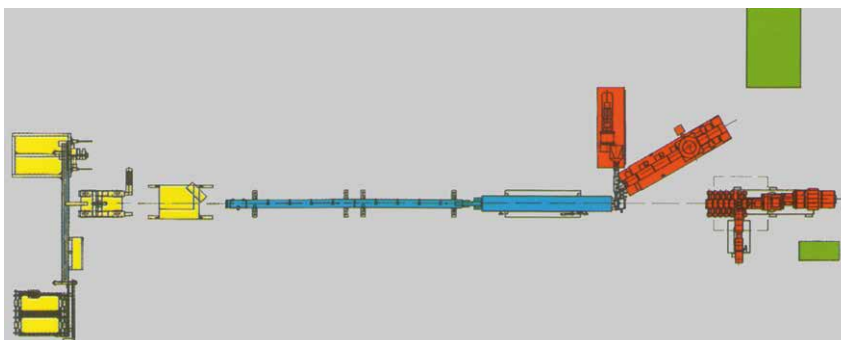
## MULTI LAYER-EXTRUSION LINES SERIES PE



### Technical details:

Type	Extrusion (kg/h)	Extrusion speed (m/min)	Performance* (items/min)
PE 7000	50	20.0	120

\* Product length: 168 mm



Scheme of Extrusion line PE 7000

- Extrusion
- Vacuum calibration and cooling zone
- Energy supply
- Handling systems

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THE WORLD'S  
ONLY COMPLETE  
SYSTEM SUPPLIER  
FOR CORRUGATED  
PIPES!

## VACUUM TANKS

**Produced entirely in Germany.**  
**Robust and maintenance-compatible.**



Bellaform has already delivered more than 500 vacuum tanks for extrusion systems around the world. The tanks are characterised by a robust and maintenance-compatible design, in which the vacuum is produced via Venturi nozzles.

The vacuum tanks additionally have a water collection tank with control and pump that ensure that the cooling water is returned to the cooling system.

Bellaform offers two vacuum tanks for different product diameters each [25–50 mm]. Both versions can be combined easily with any of our extrusion lines.



### Expansions:

- + The longer retention time permits better diameter control** with a longer trough of 3.00 m.
- + More space for work on the format set and the calibration tool** by increasing the movement range [extrusion direction] to 250 mm.
- + Both chambers are equipped with an electrical temperature measurement and electrical pressure monitor.**  
These data are also displayed and saved for analysis purposes.
- + The longitudinal adjustment is motor-powered and can be moved with integrated path measurement.**
  - + Within the scope of the complete production data recording, the position is displayed and stored.
  - + The vacuum tank adjusts independently to a vacuum loaded from the recipe and the matching distance from the spraying head.
  - + Manual fine adjustment is possible additionally, which may also be taken over to the product list.
  - + The tank is moved to the end position in case of faults or stop in order to prevent materials flowing in from being pressed into the calibration tool.
- + The water pump for the Venturi system is speed-controlled.**
  - + Only the vacuum that is actually needed will be produced [power saving].
  - + Noise development will be reduced.
  - + A constant vacuum is preserved at a low vacuum.
- + More space to collect „dripping material“** by increasing the front protrusion [extrusion side].
- + The product diameter control that has been tried and tested for many years** via laser outer diameter measurement and vacuum control has been preserved.

## VACUUM TANKS

### Technical details:

	VT 40/II	VT 80/II
Max. product diameter [mm]	25	50
Number of chambers	2	2
Vacuum system	Venturi	Venturi
Pump output [kW]	2 x 2.2	3 x 2.2
Number of Venturi nozzles	2	2
Trough cross-section [mm]	200 x 200	300 x 300
Trough length [m]	3.0	3.0
Weight [kg]	410	480
Spray cooling [optional]	–	optional



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## Cooling troughs

**Rugged and maintenance-friendly design**



### **Cooling Trough in extrusion line:**

*The modular build in 2 m and 3 m length units permits flexible use.*

### **Special sizes? No problem:**

We would also be glad to produce special sizes customised for your productions line. Please do not hesitate to speak with us!

### **Minimal energy consumption:**

To optimise your use of energy, we can equip our cooling troughs with a cover and insulation. This lets you achieve the best results in energy consumption.

## Cooling troughs

### Technical details:

Options	KW 40-2	KW 40-3	KW 80-2	KW 80-3
Max. product diameter (mm)	40	40	80	80
Trough cross-section (mm)	150 x 150	150 x 150	250 x 250	250 x 250
Trough length (m)	2	3	2	3
Weight (kg)	80	100	160	190
Spray cooling	–	–	optional	optional
Cover	optional	optional	✓	✓

### Everything from a single source

Thanks to our integration into the **Pütz Group** and the resulting **synergy effects**, we are able to offer you not just machines and systems for plastics processing, but also the appropriate test technology to test surfaces for dimensional accuracy.

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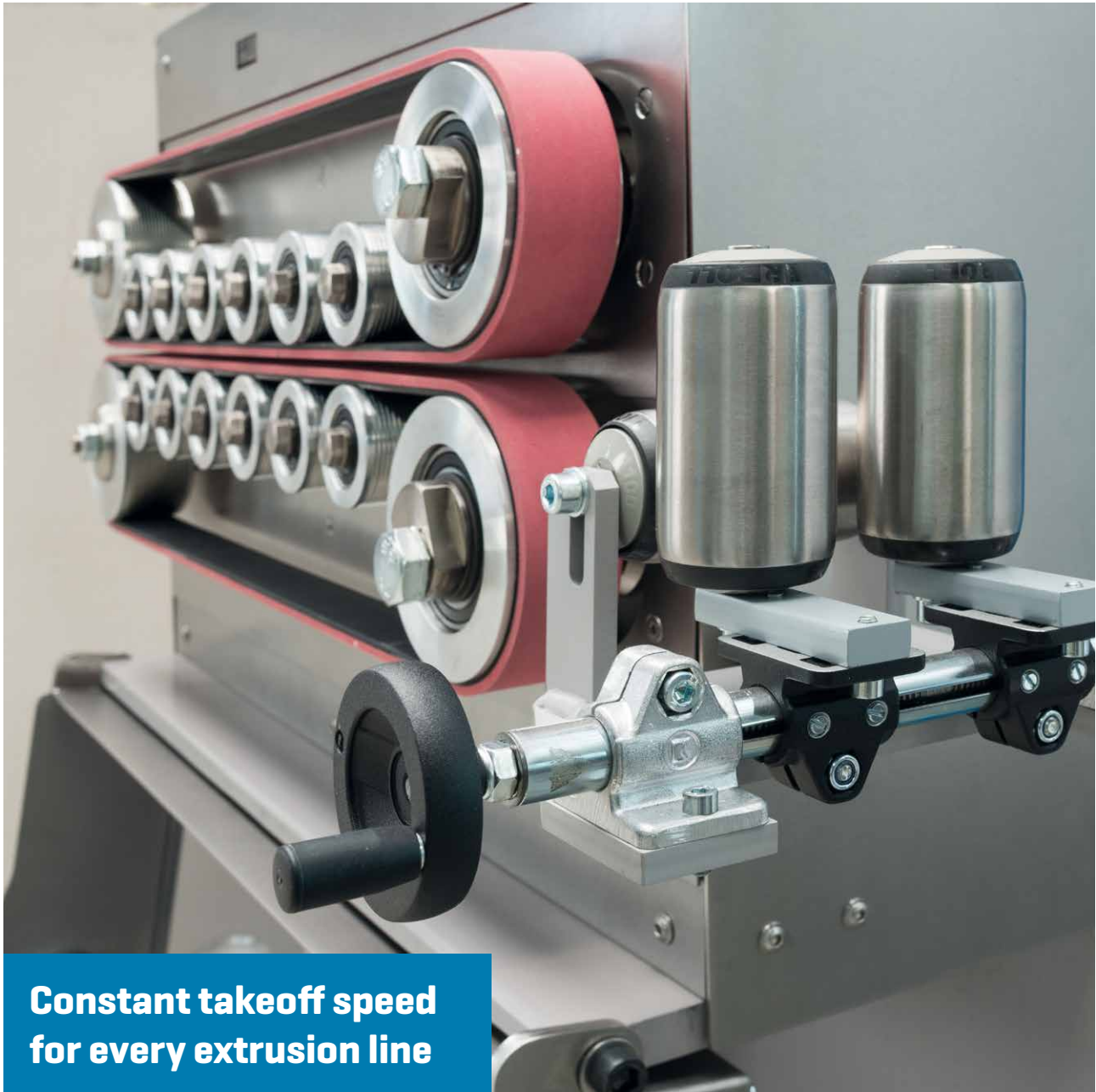
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## Takeoffs

Bellaform takeoffs have a precise speed regulator and always run at a constant takeoff speed thanks to the servo drive - even with your plant at full capacity.

We offer takeoffs with different speeds, contact lengths and exerted forces.



**Constant takeoff speed  
for every extrusion line**



## Takeoffs

### Takeoff A 275

Compact size. Ideal for low production speeds.



#### Standard configuration A 275:

- Operating elements at the switch cabinet
- Poly-V belt
- Door with locking switch
- Manual setting of the minimum distance

#### Optional:

- Additional roller guide for central product guidance at product inlet and outlet
- Product recognition by a sensor
- Dancer control using sonar: for uniform tension for feed to a further component, such as e.g. a knitting or braiding machine
- All in one: Rollers for increased mobility, adjustable feet for increased stability
- Adjustable contact pressure using a proportional valve
- Pneumatic belt feed

### Takeoff A 600



#### Standard configuration A 600:

- Synchronous gap adjustment
- Movable upper and lower carriage
- Takeoff belts in the familiar Bellaform configuration
- The products are guided by side rollers
- Mechanical adjustment
- Individually driven belts via 2 directly installed servo motor
- Direct drive without toothed belt
- Internal protective housing optical (and mechanical) division of the belt area

#### Optional:

- Product throughput monitoring via a counter wheel
- Belt gap measurement and display of the gap
- Quick opening: in the event of a malfunction, the lower and upper carriage return to their maximum gap positions
- Contact pressure of the belts – automatic setup from the product list (in conjunction with BELLEX)
- Pneumatic belt feed

## Takeoffs

### Takeoff A 1000



#### Standard configuration A 1000:

- |   |  |
|---|--|
| <ul style="list-style-type: none"><li>• Synchronous gap adjustment</li><li>• Movable upper and lower carriages</li><li>• Takeoff belts in the familiar Bellaform configuration</li><li>• The products are guided by side rollers</li><li>• Mechanical adjustment</li><li>• Individually driven belts<br/>via 2 directly installed servo motor</li><li>• Direct drive without toothed belt</li><li>• Pneumatic belt feed</li></ul> | <ul style="list-style-type: none"><li>• Belt gap measurement and display of the gap</li><li>• Contact pressure of the belts – automatic setup from the product list (in conjunction with BELLEX)</li><li>• Quick opening:<br/>in the event of a malfunction, the lower and upper carriage return to their maximum gap positions</li><li>• Internal protective housing optical (and mechanical) division of the belt area</li></ul> |
|---|--|

#### Optional:

- Product throughput monitoring via a counter wheel



## Takeoffs

## Technical details:

Series	A 275	A 600	A 1000
Drive power, servo drive (kW)	0.5	2 x 1.1	2 x 1.1
Power transmission	Toothed belt	Direct drive	Direct drive
Belt width (mm)	60	40/80	80
Belt gap (mm)	0 – 40	0 – 50	0 – 60
Contact length (mm)	285	680	980
Maximum takeoff speed (m/min)	15	300	50
Pneumatic belt feed (optional)	✓	✓	✓
Length x Width x Height (mm)	710 x 650 x 1,500	1,100 x 860 x 1,920	1,600 x 800 x 2,000
Weight (kg)	250	495	700

## Everything from a single source

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## Servo-Cutter

For pipes and tubes in continuous and discontinuous operation



**Servo-Cutter**

## Equipment features:

- **Cutting guidance with quick-change system**
- **Scrap cutting**  
Production rejects are ejected either via a pneumatically switchable slide or at the end of the depositing belt
- **Reinforced design for cutting plastic pipes with larger diameters and thicker walls**  
Outer diameter: 1 – 40 mm  
Wall thickness up to 2.5 mm

**Optional:**

- *Spraying the blade with coolant/lubricant*
- *Intelligently controlled take-off conveyor*
- *Blade heating / blade cooling*



## Your benefits:

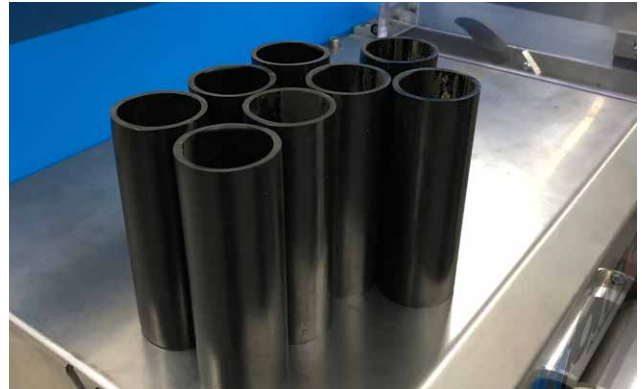
- + **A variety of cutting devices** to suit your production needs
- + **Can be freely combined** with any of our stacking and packaging systems
- + **Fast integration** in your extrusion line

## Servo-Cutter

### Details:



*Cutting guidance with quick-change system.*



*Thanks to the **reinforced construction** of the machine frame, cutter bar, cutter holder and servo motor, larger and thicker plastic pipes can also be cut.*

#### Optional extension:

#### **Servo-Cutter and take-off conveyor are perfectly matched:**

The Take-off conveyor is integrated into the existing Servo-Cutter control system.



- ✓ Delivery table with continuously adjustable take-off speed
- ✓ Ejector table with adjustable ejection delay
- ✓ Flexible drop positions
- ✓ Orderly depositing of assembled/cut-to length products
- ✓ Sorting, counting and picking in different storage positions
- ✓ Buffer storage in the extrusion line
- ✓ Rejection of products that are outside the specified tolerance (scrap cut)

## Servo-Cutter

## Technical details:

Servo-Cutter	
Length x Width x Height (mm)	600 x 800 x 2,000
Max. outer diameter (mm)	40
Max. wall thickness (mm)	2.5
Drive servo motor (kW)	11.9
Operation	Continuous and discontinuous
Cuts/min	4,000
Adjustable cutting length (mm)	20 – 6,000
Rotation speed (cutting speed 1/min)	800 – max. 4,000
Max. supply speed from the belt extension (m/min)	120

## Everything from a single source

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# **SHEAR ROLLER MIXING SYSTEMS (FOR CIM AND MIM)**

## SHEAR ROLLER MIXING SYSTEMS

**High-purity, contamination-free, continuous processing of feedstocks**



### Plastics processing:

- Making peroxide and propellant concentrates
- Making duraplast compounds
- Making cable and floor covering mixtures

### Ceramics:

- Making ceramic injection moulding materials using various binder systems

### Main uses:

- Mixing
- Material recycling

They also have many other uses – from plastics production to foodstuffs.

### Rubber processing :

- Processing thermoplastic rubber and polyurethane

### Chemical industry:

- Making nitrocellulose colour chips
- Desensitising nitrocellulose

### Powder metallurgy:

- Making MIM injection moulding substances
- Dispersion of special binders in metal powder substances

## Your benefit:

- ⊕ **Highly homogenous mixing** substances of medium to high viscosity
- ⊕ **High economic efficiency from very fine dispersion** – up to 25% of the expensive colour pigments can be saved.
- ⊕ **Easy cleaning** when material is changed
- ⊕ **Very tough substances can be processed**, as can mixtures on a metal or ceramic basis [MIM and CIM uses]
- ⊕ **The open shear roller system** makes ejection of liquids feasible, e.g. damp, gasses and solvents, without de-gassing equipment being needed.
- ⊕ **Easy visual control** of all process stages



## SHEAR ROLLER MIXING SYSTEMS

### Optimal technical and financial results in processing mixtures of solids

**Shear rollers are the best  
constantly functioning open  
design processing means for :**

- Melting
- Homogenising
- Dispersing
- Compressing, and
- Granulating

substances of medium  
to high viscosity.

**Our shear rollers are in use  
all over the world.**



#### Highly homogenous mixing and granulation

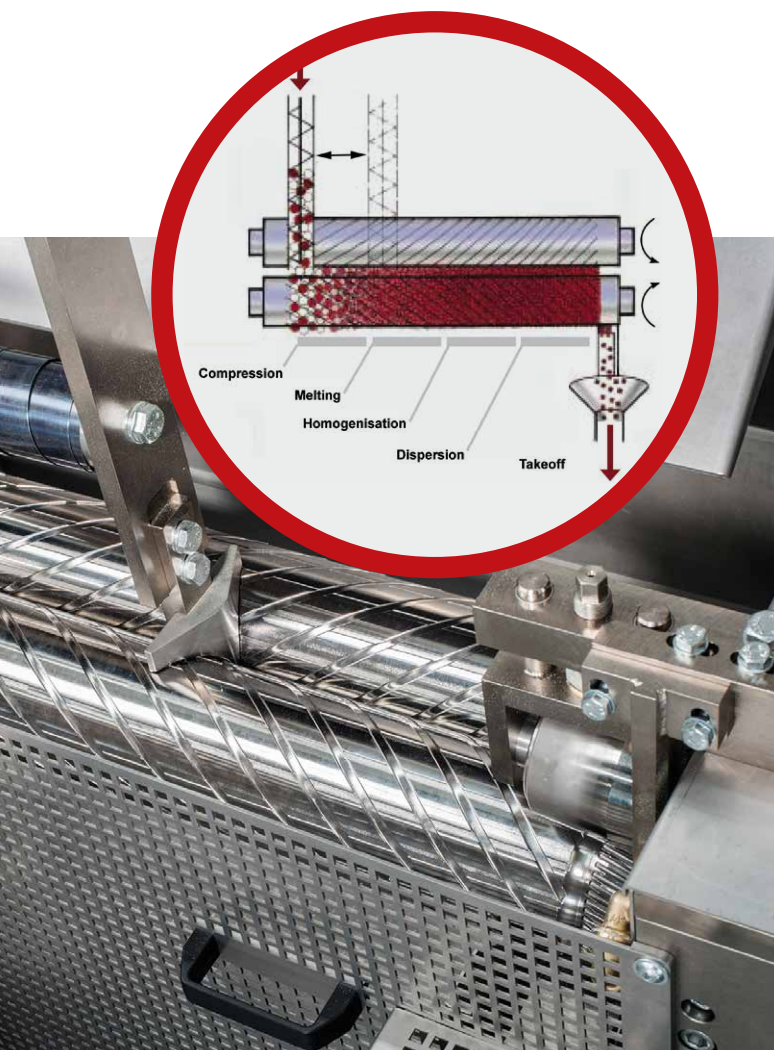
In many fields processing with shear rollers mobilises hitherto unrealised potential characteristics. Intensive rolling, shearing and kneading using shear rollers yields finely dispersed particles. This in turn saves money through economical use of additional substances and excipients.

A good example is the manufacture of paint consistencies. As it's difficult to distribute paint evenly when adding it some major characteristics are neglected.

Shear rollers can improve matters here greatly. The paint particles are distributed well and all major characteristics are retained e.g., in further processing using extrusion or injection moulding. Our technology thus saves you up to 25% of pigments and other expensive materials.



## SHEAR ROLLER MIXING SYSTEMS



### The principle of shear rollers – from raw material to granulate

#### Heating and cooling using water or oil temperature adjustment

The roller surface temperature must be precisely controlled – an important pre-condition in producing high quality mixtures. Bellaform shear rollers therefore have two zones per roller and a total of four independently adjustable temperature zones.



**The material is processed** in the gap between two contra-rotating rollers. This gap can be continuously adjusted.

The material is added by:

- Metering worm
- Dosing troughs
- Conveyor belts

The components needed (such as paints, additional substances, etc.) can be fed in individually or in separate portions. During processing of the raw material to finished granulate the mixture can be heated or cooled as required at any time. Roller temperature can be adjusted between 20 and 260 degrees Celsius for the purpose.

Thereafter the finished material consistencies can be taken off variously:

#### **Constant takeoff:**

An endless material strip is cut by a strip cutter

#### **Cutter takeoff :**

For tough materials a multiple cutting wheel (cutter) is used to cut the material strips into easily handled pieces.

#### **Granulation :**

The material from the roller is pressed through the granulation ring grooving and cut at the end with a knife to cylindrical granulate.

## SHEAR ROLLER MIXING SYSTEMS

### Model overview:

The Bellaform models differ in production capabilities from 0.5 to 500 kg/h.

		BSW 100	BSW 135	BSW 200	BSW 300
<b>Dimensions L x W x H</b>	mm	1 800 x 600 x 1 300	2 500 x 1 700 x 1 300	5 300 x 1 700 x 1 200	6 000 x 2 000 x 3 000
<b>Working height</b>	mm	1 000	1 000	1 000	1 000
<b>Weight</b>	kg	ca. 950	2 000	5 000	12 500
<b>Roller diameter</b>	mm	80 -100	135	201	305
<b>Roller power</b>	kW	2 x 5	2 x 10	2 x 20	2 x 60
<b>Approximate roller RPM</b>	min <sup>-1</sup>	20 - 120 (adjustable)	7.5 - 100	7.5 - 75	7.5 - 75
<b>Fine gap adjustment*</b>	mm	0.3 - 1	0.5 - 5	0.5 - 5	0.5 - 5
<b>Maximum roller gap</b>	mm	35	40	40	40
<b>Electrical supply power**</b>	kW	12	25	45	130
<b>Scrap / scrapped parts</b>	kg/h	2 - 12	5 - 50	15 - 150	75 - 500

\* mechanical, without load

\*\* shear roller without temperature control units

**We work closely with our clients to make our projects a success.**

We'd be happy to test the performance that's right for your product in our facilities.

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## LAB SHEAR ROLL BSW 100

For Highly-homogenous mixtures



### Equipment features Basic machine:

- Individual roll drive with frequency-controlled AC gear motors
- Parallel or conically adjustable gap between rolls
- Pneumatic roll gap adjustment with toggle lever reinforcement
- Controlled from operator panel
- Protective clothing with door monitoring in operating range of rolls
- Controls integrated in machine room
- Material feed: hopper
- Material output: slide

### Technical details:

Dimensions (L x W x H)	mm	2 600 x 1 200 x 2 000
Working height	mm	1 100
Weight	kg	approx. 1 300
Roll diameter	mm	100
Width of roll barrel	mm	600
Drive capacity	kW	2 x 7
Roll speed	min <sup>-1</sup>	20 – 120 [adjustable]
Roll gap	mm	0.5 – 1 max. 40 [with quick release]
Roll pressing force	N	max. 2 x 60 000
Electrical connection power	kW	16
Output	kg / h	2 – 12 [depending on the material being processed]



### Materials:

- Duroplast compounds
- Thermoplastic rubber
- Ceramics
- Powder metallurgy (MIM / CIM)
- Nitrocellulose

## LAB SHEAR ROLL BSW 100

### Options:

#### Basic machine:

- Electrical roll adjustment
- Machine can be moved on rolls
- Electrical material jaw

#### Control:

- Electrical roll gap measurement
- Measurement of pressing force
- Measurement of roll drive output
- Product parameter lists for 40 parameter records
- Data memory and interface for reading
- Cleaning mode
- Material feed and output interface
- Interface for temperature adjusters (including all displays)

#### Material feed:

- Vibrating chute (firm mounting on machine frame) with 10 litre material hopper and drop shaft for the rolls, conveyor volume can be controlled via potentiometer.
- Conveyor belt (firm mounting on machine frame) with 10 litre material hopper, supply pipe for the rolls, conveyor volume can be controlled via potentiometer.

#### Material output:

- Drain tray
- Vibrating chute (firm mounting on machine frame), conveyor speed can be controlled via potentiometer
- Cooled vibrating chute (firm mounting on machine frame), conveyor speed can be controlled via potentiometer
- Conveyor belt (firm mounting on machine frame), conveyor speed can be controlled via potentiometer

#### Temperature adjustment:

- Water temperature adjusters (4 pcs.) with 4,5 kW heat output, for maximum supply temperature of 160°C; each device has its own control panel for temperature pre-selection, including materials for connecting to the shear roll (hose length 4 m)
- Temperature adjusters for heat transfer oil (4 pcs.) with 8 kW heat output, maximum supply temperature of 280°C; each device has its own control panel for temperature pre-selection, including connecting pipes.

### QUESTIONNAIRE FOR TENDER PREPARATION: Fax +49 6725 91925-200

#### We work closely with our clients to make our projects a success.

Tell us which requirements your products have to fulfil and we will work with you to develop an individual system adapted to the ideal raw material.

Requirements/ options		Temperature of the melting point	
		Binder	

**Material:** CIM MIM **Acceptance:** Granulate Stripes

#### Your contact details:


We will gladly schedule a test on our lab shear roll with you.

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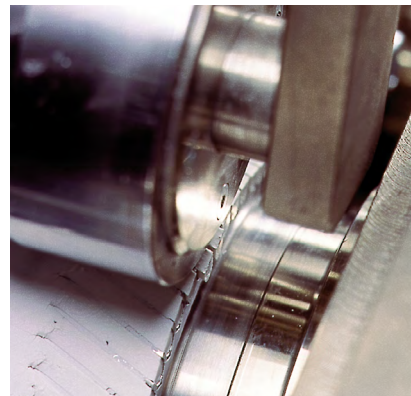
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## LAB SHEAR ROLL FOR POWDER INJECTION MOULDING APPLICATIONS

**High-purity, Contamination-free, Continuous  
Processing of Feedstocks**



### Functions:

Functional ceramic components or components from medical technology and nanotechnology are manufactured from special **high-purity** materials.

With our new laboratory shearing roller, you can manufacture **ceramic or powder metallurgical injection moulding feedstocks** for these new applications yourself.

Synchronise the feedstocks for your **multifunctional components** precisely and be flexible in the preparation of your raw materials!

### Your benefit:

- + **Fast, economical preparation** of tailored feedstocks with low material outlay.
- + Particularly suitable for development departments thanks to the **processing of small quantities** and the compact dimensions of the equipment.
- + Equipment either with **Jet-Cote-coated rolls** or **carbide rolls**.
- + Ceramic or carbide metal rollers bring about **greater resistance to abrasion**.
- + Greater resistance to abrasion brings about longer **service life and higher purity**.

## LAB SHEAR ROLL FOR POWDER INJECTION MOULDING APPLICATIONS

### Technical details:

<b>Dimensions</b>	2 500 mm x 2 500 mm, with integrated electrical system
<b>Roller</b>	
<b>Roller diameter</b>	100 mm
<b>Roller body length</b>	500 mm
<b>Smallest roller gap</b>	0.2 mm
<b>Roller construction</b>	option of ceramic or carbide metal
<b>Preparation system</b>	open
<b>Feed and discharge</b>	Vibrating trough or twin screw feed system
<b>Minimum processing quantity</b>	500 g
<b>Maximum output</b>	10 to 20 kg, depending on the material
<b>Driver input</b>	2 x 5.5 kW
<b>Cooling</b>	water and oil

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<b>Requirements/ options</b>		<b>Temperature of the melting point</b>	
		<b>Binder</b>	

**Material:**    CIM    MIM    **Acceptance:**    Granulate    Stripes

#### Your contact details:


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*MACHINES AND SYSTEMS  
FOR PLASTICS PROCESSING*



## ***Contact***

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