

Twin-screw
extrusion system.



PRIOtwin™

PRIOtwin™ – the flexible twin-screw extruder. The economical solution for numerous industries.

Wide range of applications

The *PRIOtwin™* twin-screw extruder has been designed for a wide variety of applications in many different industries. The system ensures easy and reliable production of breakfast cereals, snacks, food ingredients, high-quality pet foods, and a number of other products.

The lean design of the *PRIOtwin™* is especially suitable for trouble-free production of high volumes of a given product and product formula. The functional control system of the extrusion system ensures dependable production and enables easy selection of the production parameters of the feeder, preconditioner, and extruder.

The extruder is available in two sizes: 62 mm screw diameter with a throughput capacity up to 1000 kg/h and 93 mm up to max. 4000 kg/h. The modular design and the lean concept of the system enable particularly easy operation and maintenance in addition to highly sanitary operation.

The *PRIOtwin™* is based on proven Buhler extrusion technology. It can be combined with the modules of the *POLYtwin™* extruder. It incorporates newly developed

components as well as existing elements from proven machine series. The extruder has been designed for a maximum process pressure of 150 bar, a temperature of 200 °C, and a maximum specific torque of 11.5 Nm/cm³.

Design allowing flexible expansion

As an option, the barrel is available in a temperature-controlled version. The barrel of the process unit will in this case be heated or cooled by a separate temperature control unit. Wear elements in the barrels are easy to exchange. The addition of water and steam in the process section is controlled by local closed control circuits. A separate, single-stage preconditioner moistens and heats the raw materials. The preconditioner can be easily detached. It is mounted on a traveling base and can be removed from the system for easier cleaning.

The proven cutter, which can be moved to the side, enables the operator to exchange the knife head even during ongoing operation. The cutter knives can be adjusted during the production process, making for a consistently high quality of the end products. The attachable hydraulic screw extraction device allows smooth removal of the shafts.

Application examples.



Breakfast cereals, snacks

- Cornflakes
- Multigrain flakes
- Direct-expanded cereals and snacks



Petfood

- Kibbles for dogs and cats
- Foods for small pets
- Semi-moist pet food



Food ingredients

- Breadcrumbs
- Modified flours and starches
- Texturized soy proteins
- Reconstituted/fortified rice



Fish feed

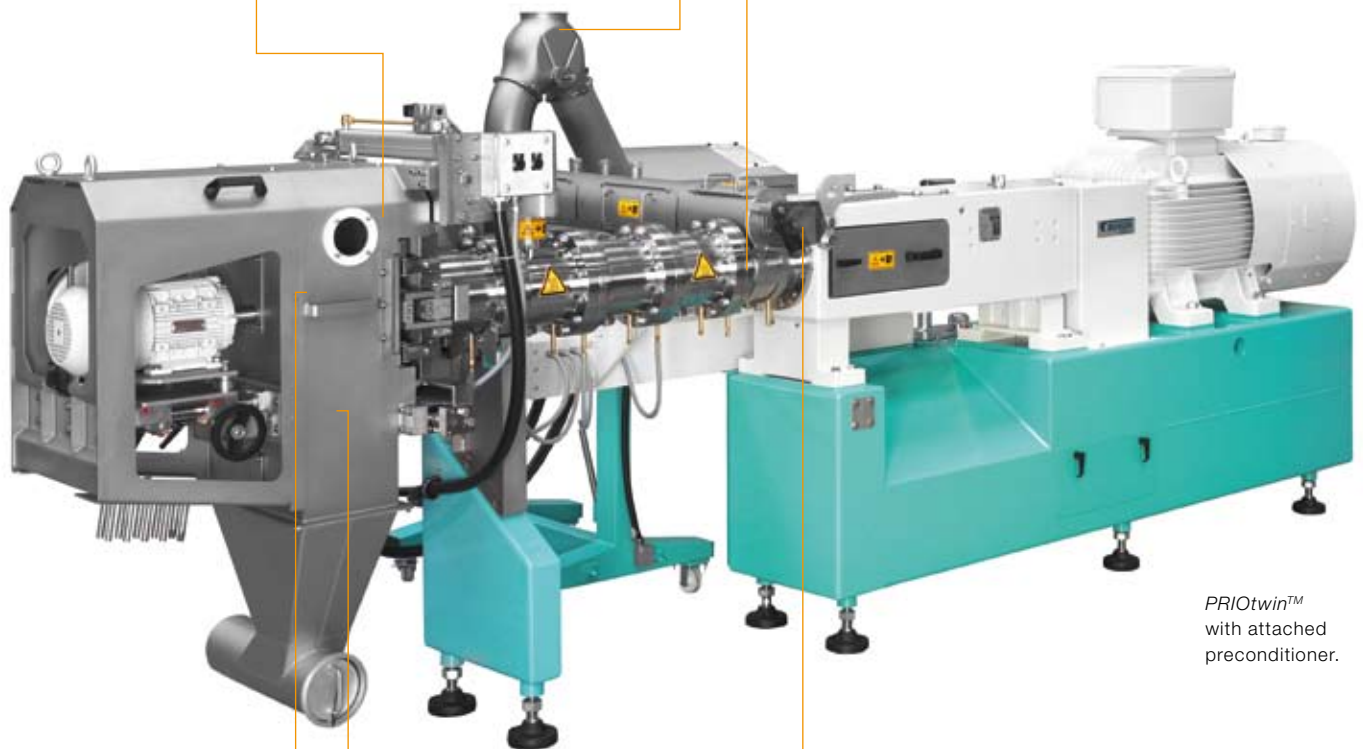
- Floating
- Sinking

Modular technology ensures success. Performance features at a glance.

Screw extraction requiring little effort thanks to a simple device.

The separate preconditioner can be detached from the extruder. The unit can be simply rolled away for cleaning.

Process pressure of 150 bar. Maximum specific torque 11.5 Nm/cm³ at a temperature of 200 °C.



PRIotwin™
with attached
preconditioner.

The entire knife head can be exchanged during operation.

Proven cutter design which can be moved to the side: the cutter knives can be adjusted even during production. This prevents deformation of the extruded products as a result of inaccurate knife settings.

New transition design: the product is fed to the extruder without requiring any scrapers.

Expansions allowing new challenges to be met

The modules of the *PRIotwin™* extruder can be combined with the modules of the *POLYtwin™* extruder. This enables users to expand a *PRIotwin™* extruder as required and thus to make additional products which are not possible with the existing setup. It enhances the level of flexibility and allows the

process to be adapted to higher requirements at any time. Also the retrofit packs allow the performance of an extruder to be increased without requiring the entire machine to be exchanged. Only certain components of the extruder need to be retrofitted, resulting in higher economy.

Single-stage *PRIOtherm*TM preconditioner. Perfect for short retention times.



*PRIOtherm*TM mounted on movable base.



Practical lifting and lowering device.



Exact locking into place by two bolts.

The newly developed single-stage *PRIOtherm*TM preconditioner is a customized solution designed for processes which do not require long retention times in the preconditioner. The *PRIOtherm*TM is the ideal solution for fast and efficient moistening and heating of the raw material.

Inside the preconditioner, the raw material is fluidised and uniformly mixed with steam or added liquids. A new configuration of the preconditioner relative to the extruder, for which a patent is pending, eliminates the need for

an additional transition between the two machines. The preconditioned product is fed directly into the extruder.

The preconditioner is mounted on a separate, traveling base and can be quickly and easily attached to the extruder. The *PRIOtherm*TM is connected to the control system and the power supply through a plug-in coupling. This user-friendly concept allows the *PRIOtherm*TM to be detached without effort from the extruder for cleaning.

User-friendly control system *PRIOcontrol*TM.



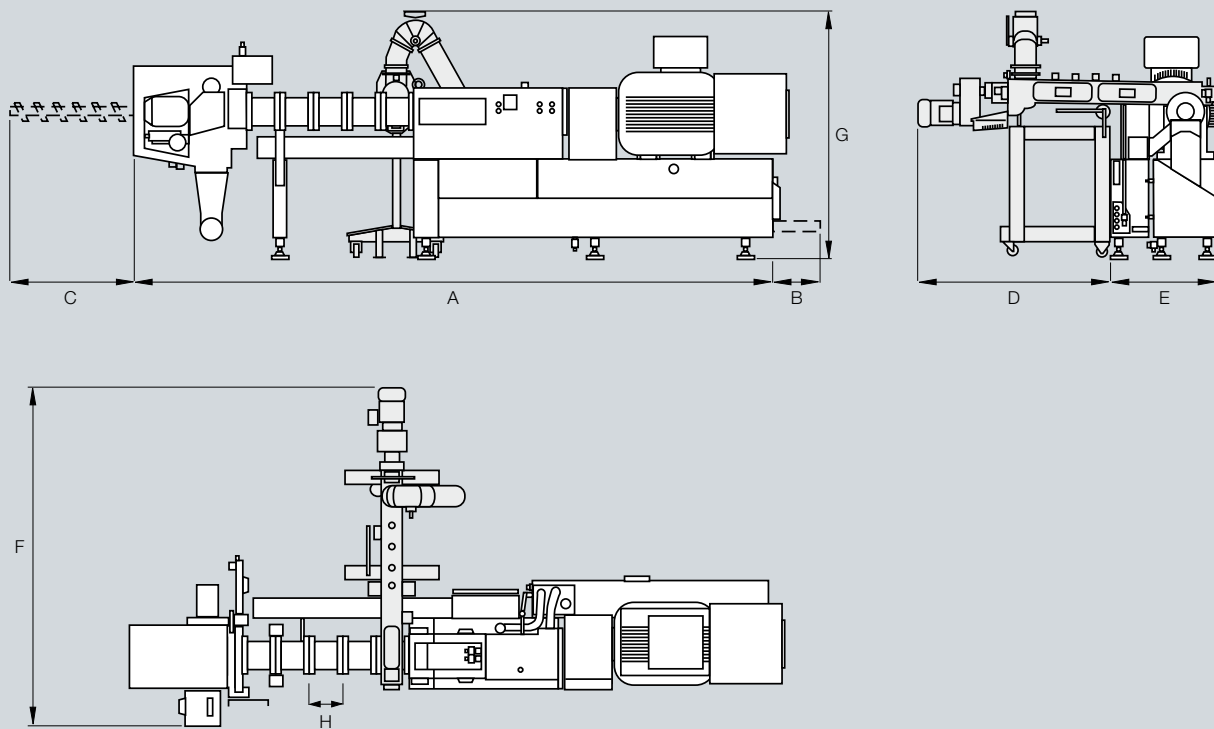
***PRIOcontrol*TM – tight control over all process parameters**

The *PRIOtwin*TM extruder is equipped with a user-friendly *PRIOcontrol*TM relay control system. This rugged and easy-to-understand control system allows users to select the required settings such as feed rate, screw speed, or cutter speed in a quick and easy manner. Safety circuits prevent damage due to improper use. Emergency situations will lead to fully automatic self-stopping of the extruder.

***POLYcontrol*TM – optional touch-screen control system**

If required, the *PRIOtwin*TM extruder can also be supplied with a fully automatic *POLYcontrol*TM touch-screen control system.

Technical data.



Process length 20D				
Extruder <i>PRIOtwin™</i>	Extruder screw diameter	Preconditioner diameter	Throughput subject to product	Maximum electric power
Preconditioner <i>PRIOtherm™</i>				
<i>PRIOtwin™</i> 62 / <i>PRIOtherm™</i> 170	62 mm	170 mm	max. 1000 kg/h	max. 132 kW
<i>PRIOtwin™</i> 93 / <i>PRIOtherm™</i> 250	93 mm	250 mm	max. 4000 kg/h	max. 250 kW

Process length 20D								
Extruder <i>PRIOtwin™</i>	Dimensions of planning-in sketch in mm							
	A	B	C	D	E	F	G	H
Preconditioner <i>PRIOtherm™</i>								
<i>PRIOtwin™</i> 62 / <i>PRIOtherm™</i> 170	4768	1000	925	1437	795	2507	1841	248
<i>PRIOtwin™</i> 93 / <i>PRIOtherm™</i> 250	6521	1000	1250	1858	895	3377	1945	372

All data are approximate values. Subject to technical changes without notice.

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