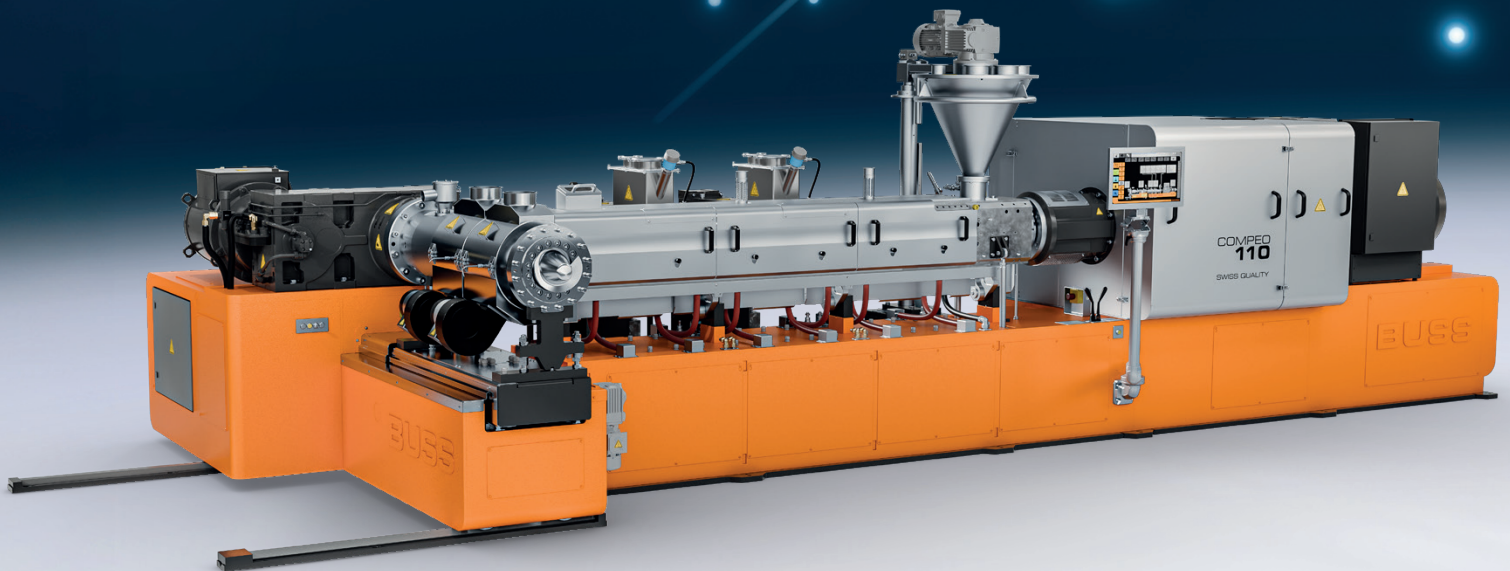


COMPEO Co-Kneader Series

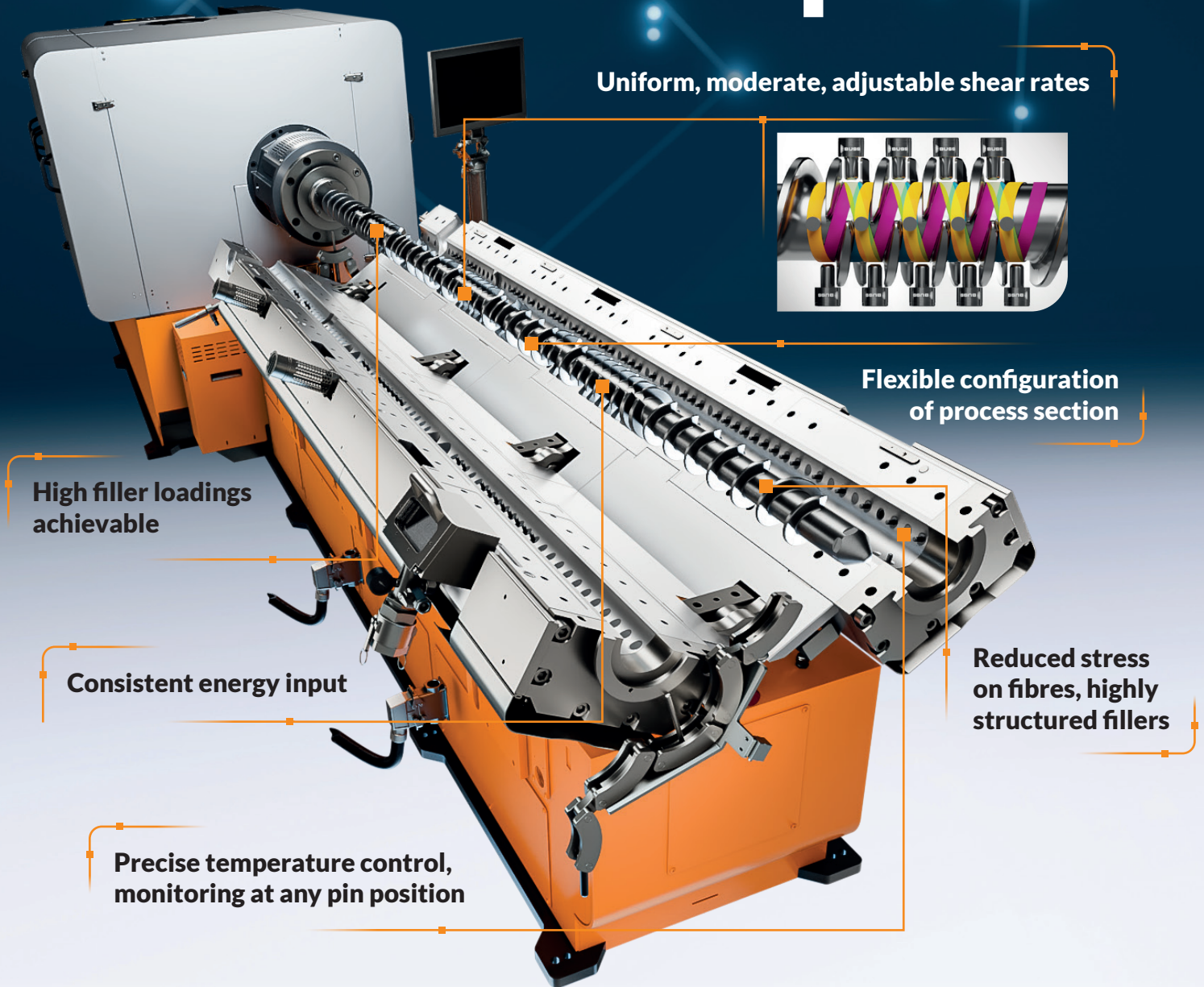


Pioneering compounding technology

The polymer industry's innovation and earnings potential lies in the production of extremely high-quality compounds. This requires a compounder which easily and thoroughly mixes in significant amounts of additives.

Meet COMPEO: greater flexibility in process engineering, and increased value added in compound manufacturing.

Co-Kneader Principle



Unmatched process geometries

The configurable COMPEO process zone opens up unmatched process engineering possibilities through the use of mixing and kneading elements with two to four rows of flights. By combining conventional kneading elements with specifically developed mixing elements, previously conflicting goals can be achieved – such as high specific throughput with controllable energy input.

On the other hand, the COMPEO's process window is significantly larger than that of previous BUSS Co-Kneader series. That allows the throughput to be varied in a ratio of 1:6. This increases both the system flexibility and user-friendliness.

Compounding Technology



The BUSS technology

Oscillating screw shaft, optimal mixing, extremely short process length, superior temperature control. The excellent mixing capabilities of the BUSS Co-Kneaders are owed to the unique working principle, characterized by simultaneous rotation and axial back-and-forth movement of the mixing and kneading screw shaft.

Individual Solutions for Compounding Systems

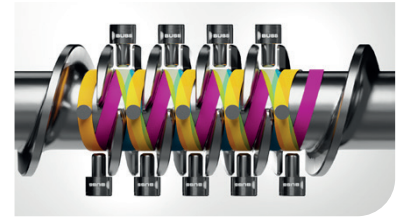
The modular machine concept of the COMPEO series is so versatile that a specially configured compounding system is available for almost any compounding application, regardless of the temperature range. **One compounder and over 30 different compound types producible through plug and play.** That is true flexibility in process technology!

Features overview

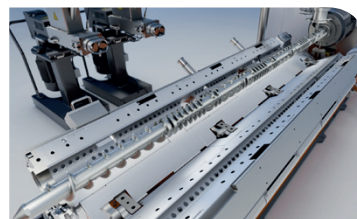
Why COMPEO is your solution (for almost every problem)

Uniform, moderate, adjustable shear rates

They enable controlled mixing at lower temperatures with minimal energy input. The narrow shear rate distribution ensures consistent shear for every individual particle, resulting in high-quality processing with reduced energy consumption. By adhering to clearly defined temperature limits, reliable and reproducible product quality is guaranteed.



Flexible configuration of process section



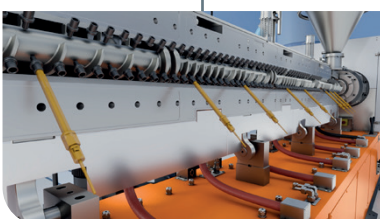
The modular design enables COMPEO to meet demanding and specific material requirements. The hinged process section provides easy access to all components (screw elements, liners, restriction rings, kneading pins), which can be quickly replaced without removing the casing or screw shaft. This exceptional configurability allows precise adaptation to even the most challenging process specifications while minimizing downtime and maximizing operational flexibility.

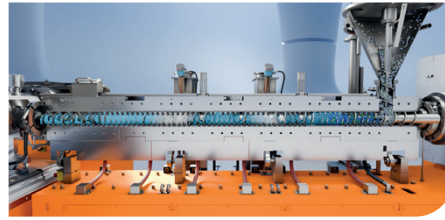
Reduced stress on fibres, highly structured fillers

The even, moderate and defined shear input allows to minimize mechanical damage to the structure of fillers. The retained structure leads to better e.g. mechanical or conductive properties in the end product. As a result, the proportion of expensive reinforcing materials can be reduced and the costs for the formulation lowered.

Precise temperature control, monitoring at any pin position

The combination of configurable process design and unique operating principle enables precise temperature control, complemented by external heating and cooling systems. This prevents temperature spikes while maintaining constant, exact energy input and temperature levels. Flexible thermocouple monitoring complements the system, allowing safe compounding of shear-sensitive and temperature-sensitive plastics with consistent quality.



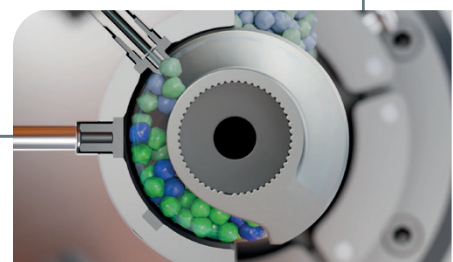


High filler loadings achievable

The unique oscillating screw principle with simultaneous rotation and axial movement creates intensive material exchange through multiple splitting, folding and reorientation. This intensive but gentle processing allows highly viscous compounds to be processed and the maximum possible filling levels to be achieved. Depending on the filling level, the fillers are fed by a split feed using a side feeder or an inlet screw. This allows customers to meet demanding specifications for both high filler content and superior product quality.

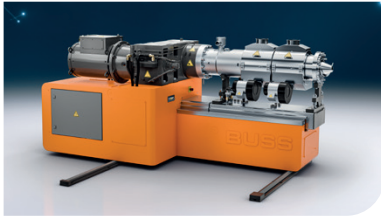
Consistent energy input

Our unique Co-Kneading principle achieves intense mixing with low overall energy input through high-frequency mixing cycles optimally tuned to each process zone. Energy introduction occurs almost exclusively through gentle mechanical shear, ensuring consistent energy distribution for uniform product quality. This gentle, constant energy approach makes the system ideal for processing sensitive materials and saves production costs through lower energy costs.



Liquid injection at any position

Injection pins, which can be mounted in the BUSS Co-Kneader at any position along the process zone, allow liquid components to be injected directly into the molten polymer at the optimum location for the process. The mixing process begins immediately, without smearing on the barrel wall and enables mixing over the shortest possible process length.



Compounding and pressure build up separated through BUSS Discharge Units

Mixing in the Co-Kneader is independent of the pressure build-up in the downstream discharge unit, allowing an individual optimization of both process steps. This allows processing at low pressure and temperatures as well as optimum pelletizing, whilst temperature control remains guaranteed at all times.

CIS Inlet Screw – Efficient material feeding

COMPEO Inlet Screws (CIS) ensure the uniform and reliable transfer of a wide variety of bulk materials – from powders and granulates to challenging mixtures – directly into the compounder. Their modular design, simple handling, and virtually maintenance-free operation make them particularly user-friendly.

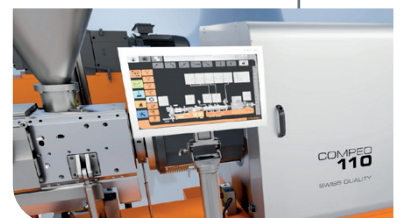


CSF Side Feeder – Feeding for high filler loadings and bulk materials

The COMPEO Side Feeder (CSF) feeds solids into the side feed zones of our compounders. Material conveyance remains stable and the filling degree consistent even when feeding slightly fluidized powders or high filler contents.

Modern controllers and OPC-UA interface – Industry 4.0 compatible

The control panel allows for intuitive operation and ensures an ergonomic working position. Thanks to modern controllers and OPC-UA interface, the plant control is Industry 4.0 compatible. And thanks to a recipe management system integrated into the plant control, these can be changed at the push of a button. Essential process parameters are visualized and monitored. Remote diagnostics and maintenance are optionally possible.



Technical data

	BUSS Compounder			Discharge units*			
	Screw diameter [mm]	Process length* [L/D]	Screw speed max* [rpm]	CSS-F Screw dia. [mm]	CSS-C Screw dia. [mm]	CDP Screw dia. [mm]	Process length* [L/D]
COMPEO LAB	45.5	25	up to 600	70	---	---	6
COMPEO 55	55	14/18/25	600	110	110	70/2	4/6
COMPEO 88	88	14/18/25	600	160	200	100/2	4/6
COMPEO 110	110	14/18/25	600	200	250	140/2	4/6
COMPEO 137	137	14/18/25	600	250	300	200/2	4/6
COMPEO 176	176	14/18/25	600	300	320	---	4/6

*Dependent on raw materials and formulation

Throughput rates in kg/h¹

	COMPEO 55	COMPEO 88	COMPEO 110	COMPEO 137	COMPEO 176
PVC Pelletizing – Unfilled	150 – 400	600 – 1600	1200 – 3200	2400 – 6000	4800 – 11000
PVC Pelletizing – Filled	200 – 500	800 – 2000	1600 – 4000	3200 – 7400	6400 – 13200
PVC-Calendering – Sheet, film	---	450 – 1400	900 – 2700	1700 – 5100	3000 – 9000
PVC-Calendering – Flooring, LVT	---	800 – 2000	1600 – 4000	3200 – 7400	6400 – 13200
Cable – HFFR	150 – 250	600 – 850	1200 – 1700	2400 – 3500	4800 – 7000
Cable – Semiconductives	150 – 250	600 – 850	1200 – 1700	2400 – 3500	4800 – 7000
Cable – Silane Crosslinkable	175 – 225	600 – 850	1300 – 1700	2500 – 3500	5500 – 7000
Cable – Peroxide Crosslinkable ²	---	---	600 – 800	1200 – 1600	2800 – 3200
Black Masterbatch	150 – 250	600 – 850	1200 – 1700	2400 – 3500	4800 – 7000
Filled & Reinforced Thermoplastics	150 – 250	600 – 850	1200 – 1700	2400 – 3500	4800 – 7000
Natural Fiber Composites	150 – 250	600 – 850	1200 – 1700	2400 – 3500	4800 – 7000
Polyamide	150 – 200	600 – 800	1200 – 1600	2400 – 3200	4800 – 6400
Polycarbonate	150 – 200	600 – 800	1200 – 1600	2400 – 3200	4800 – 6400
PBT, PET	150 – 200	600 – 800	1200 – 1600	2400 – 3200	4800 – 6400
Thermosets ²	50 – 150	200 – 500	400 – 1000	800 – 2000	1600 – 4000
Bioplastics	75 – 150	300 – 600	600 – 1200	1200 – 2400	2400 – 4800
Thermoplastic Elastomers	100 – 225	400 – 850	800 – 1700	1600 – 3500	3200 – 7000
Rubber Compounds ²	40 – 100	150 – 400	300 – 800	600 – 1600	1200 – 3200
Hotmelt	100 – 150	350 – 500	750 – 1000	1500 – 2000	3000 – 4000

¹ Expected maximum throughputs dependent on raw materials and formulation

² Expected maximum throughputs at 300 rpm

COMPEO System

The COMPEO System translates BUSS' engineering know-how into customer value. Modular units form a platform that adapts to industry-specific needs while safeguarding process stability. Precise control, long service life, and seamless integration of peripherals make COMPEO the trusted choice for demanding compounds and continuous high-quality production.

CPS-F Pelletizer*

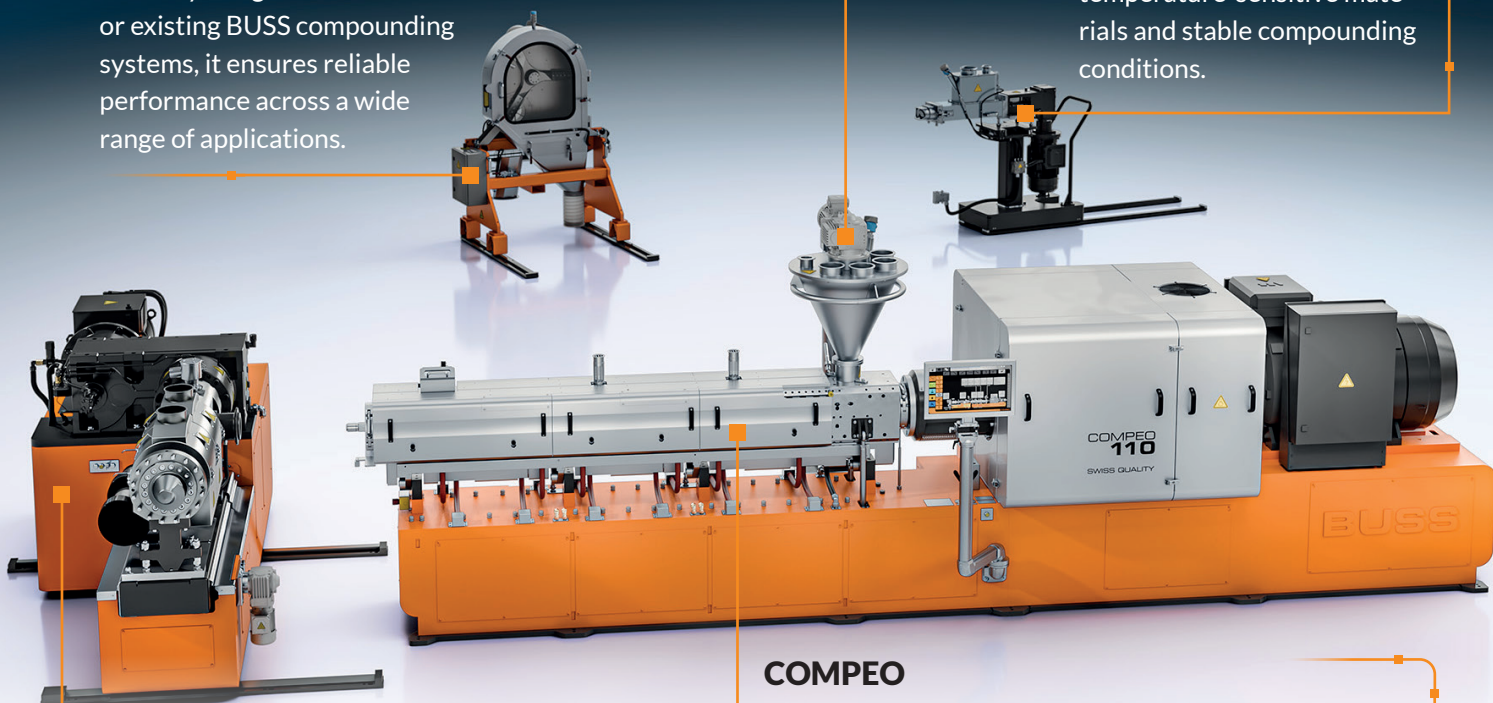
Pelletizing with precision: CPS-F delivers uniform, high-quality pellets through intelligent flow design and consistent cutting. With its compact, modular layout and easy integration into new or existing BUSS compounding systems, it ensures reliable performance across a wide range of applications.

CIS Inlet Screw

Whether powders, granulates, or blends: the CIS ensures uniform and reliable feeding into the compounder. Its compact, modular design, optional cooling for temperature-sensitive materials, and integrated sensor technology deliver long-lasting stability and process safety.

CSF Side Feeder

Even powders with low bulk density or high filler contents are fed reliably and with constant throughput. Integrated venting reduces air and dust, while cooling and sensor options ensure safe handling of temperature-sensitive materials and stable compounding conditions.



CSS-F Discharge Unit**

Decoupling compounding from pressure build-up means more stability and gentle handling of the melt. The CSS provides reliable pressure for filtration and pelletizing, while securing consistent compound quality.

COMPEO

At the heart of every system: COMPEO delivers gentle yet thorough compounding with superior temperature control. Its versatility across polymers, elastomers, and specialties ensures consistently high quality — even with shear- and temperature-sensitive materials.

* Please note that we also offer our CSS-C Pelletizer for cascading discharge units.

** Please note that we also offer our CSS-C and CDP discharge units. Refer to page 7 for more info.

Process Engineering Competence

With decades of process expertise, our engineers develop compounding systems precisely tailored to our customers' applications. In our Test Centers we optimize your compounding process based on our COMPEO series and find new, individual solutions. Before assembling the perfect setup, we also guarantee the scalability of concept and the test results.



COMPEO and its components in the context of a full compounding plant

The shown example is derived from an HFFR compounding setup. It shows how our COMPEO becomes the reliable heart of your production. The COMPEO system integrates easily into your production process. And comes with an unmatched addition: our BUSS Service. From commissioning throughout your Co-Kneader's full lifetime, we are by your side – in person, remote, as OEM spare part supplier, and 24/7 digitally through our SenseHUB® platform.



COMPEO 110 and BUSS components integrated in a complete HFFR compounding plant

Your Benefits with BUSS — Life Cycle Management

Our engineering excellence goes beyond the compounding system itself. We support our customers throughout the entire machine life cycle. This complete service is our approach to secure availability, maximize productivity, and ensure sustainable long-term value.

Technical Center

Our technical centers provide hands-on trials and process development. Customers benefit from our expertise in developing, testing and optimizing formulations, scaling processes, and validating performance before investing in full-scale compounding systems.

Purchasing Process

Every COMPEO system is tailored to your requirements and are engineered for reliability, efficiency, and long-term success.

Service / SenseHUB®

Global service teams support our customers with quick responses, fast and effective solutions, and OEM spare parts for maximum reliability and uptime. Our connectivity and smart services platform – SenseHUB – offers condition monitoring, predictive maintenance, and integrated ticketing for your stable and cost-efficient compounding operation.

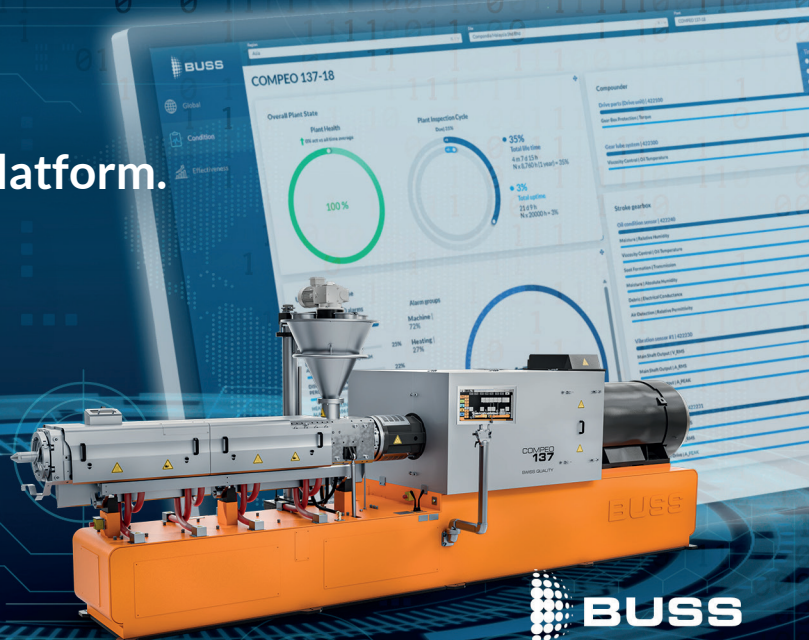
Modernization / Refurbishment

BUSS systems are built for longevity. With modernization and refurbishment packages, we extend your COMPEO's life-time even further, integrate new technologies, and secure consistently high product quality while reducing lifecycle costs.

SenseHUB®

Connectivity and smart service platform.

With SenseHUB®, BUSS adds a digital dimension to its service. The platform combines condition monitoring, predictive maintenance, and integrated service workflows into one intuitive dashboard. For our customers, this means greater transparency, smarter decisions, and maximum availability of your BUSS Co-Kneader.



Why BUSS? Our mission to better compounding.

We are BUSS. We stand for "Excellence in Compounding".

That is more than a slogan — it is a promise, which we keep daily as an innovation driver, partner and doer at our partners' side. Our claim is to always provide our customers with the best possible compounding technology.



Our claim. Why we do, what we do.

Day by day we strive to improve compounding technology and develop advanced materials together with our customers. Why? So that they can optimize their products through innovation and develop future-proof material applications based on polymers that are more efficient, sustainable, environmentally friendly, resource-efficient, economical... simply better.



Our vision

How we reach our targets

Our claim is to be the leading global supplier of compounding technology for demanding materials. Outstanding know-how, modern facilities, stringent quality policy and highly motivated employees are our key to success. Performance and security for our customers as a result.

Our mission

What makes us special

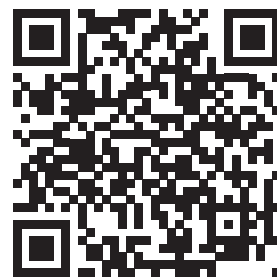
At BUSS, customers encounter an excellent team with genuine enthusiasm for the task and a high sense of responsibility for their production processes. All BUSS compounding systems are characterized by their durability, reliability and design optimized precisely for the respective application, while meeting the highest quality criteria. Today and in the future, we strive to be the valued sparring partner for our customers through our actions.



BUSS.

Excellence in Compounding.

BUSS is 80 years of knowledge, innovative strength and experience in the development of compounding systems. It all stems from our highly experienced employees, who bring maximum quality and professionalism to all our services. BUSS' core competence is customer- and product-specific solutions of processing tasks. Always analogous to the high demands on process technology and product quality as well as the constantly increasing technological market needs. The performance strength and investment security in our systems can be summarized in two words: Swiss quality. All of this makes us a leading supplier of high-quality compounding technology.



Get in touch with us.

Scan the QR to contact us. Or talk to our team on site.

Buss AG
Hohenrainstrasse 10
4133 Pratteln
Switzerland

P +41 61 825 66 00
F +41 61 825 68 58
info@busscorp.com
www.busscorp.com



BUSS

excellence in compounding