

Discover our PCS Series



BUSS kneading technology
for powder coatings



BUSS

excellence in compounding



BUSS kneading technology for powder coatings

Low specific energy input, particle integrity, temperature control, variable shear rates, and short changeover time

In answer to the increased requirements on processing powder coatings, BUSS has succeeded in significantly improving performance aspects of previous BUSS Kneader models. Especially in the areas of high-gloss, clear coatings and thin-film applications, the advantages of the extended PCS Kneader series fully come into their own.

The latest development from BUSS places customer benefits at the heart of things

The extended BUSS Kneader series PCS sets benchmarks for profitability, availability and user-friendly handling. Whilst it retains the proven operating principle of the BUSS Kneader, the process section in particular has undergone distinct modification.

As a result of extended processing length and higher screw speed, output and product quality have been considerably increased, with more favourable specific costs of investment.

BUSS customers benefit in several respects from the new PCS generation

The combination of increased output, higher process stability, optimized use and simple installation results in an excellent cost/performance ratio. In addition, the robust design and continuous improvement in construction materials ensure that the equipment retains its longevity.

BUSS PCS Series



PCS 30



PCS 46

Process section

The process section is available in 8, 11, or 15 L/D. The extended process length increases residence time by another 35% resulting in optimized product qualities, especially for high-gloss, clear coatings and TGIC-free formulations. The extended PCS geometry allows to process an extremely broad range of formulations, from high gloss to textured coatings, without changing the screw configuration (see table). The proven BUSS Kneader working principle ensures excellent self-cleaning to allow for quick colour and formulation changes.

Temperature control

Thermocouples can be mounted in drilled kneading pins at various different points along the process section. Precise feedback on the melt temperature is ensured since the thermal sensor pins are in direct contact with the product melt.

The combination of a liquid heating and cooling system and an extremely precise monitoring of the melt temperature are beneficial for the quality control of compounding of thermo-sensitive materials – especially for highly reactive formulations.

Service-friendly

Easy handling and the fast adjustment times when changing products further increase the high availability of the PCS Kneader series. For cleaning and inspection, the Kneader barrel can be opened completely in just a few minutes.

Features and advantages at a glance

- ✓ Extended processing length
- ✓ Increased residence time
- ✓ Optimized product quality
- ✓ Low specific energy input
- ✓ Improved wear-resistant materials
- ✓ Easy inspection and cleaning
- ✓ Short changeover times
- ✓ Rapid installation and start-up
- ✓ Wide range of formulations processed with one machine set-up

PCS 70-11 R Process section



PCS 70

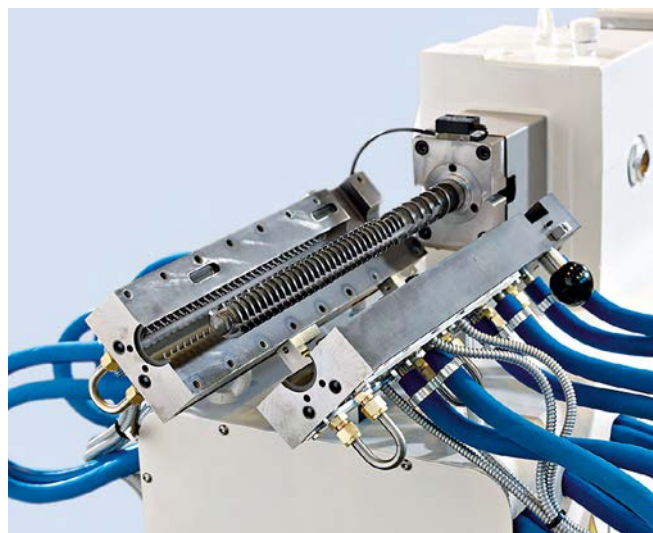


PCS 100

Laboratory Kneader PCS 30

Features and specific advantages

- ✓ Representative data from laboratory samples
- ✓ Split barrel design for easy access and cleaning
- ✓ Accurate temperature control
- ✓ Wide range of formulations with one screw configuration
- ✓ Various options to optimize process parameters
 - segmented screw
 - variable screw speed
 - independent heating/cooling zones



Technical data

Throughput rates	Samples from 300g/h up to 40 kg/h
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Inlet hopper

Hopper volume	1 litre
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Inlet screw (option for hopper or as 2nd inlet)

Screw speed	140 rpm
Drive rating	0.09 kW

Laboratory Kneader PCS 30

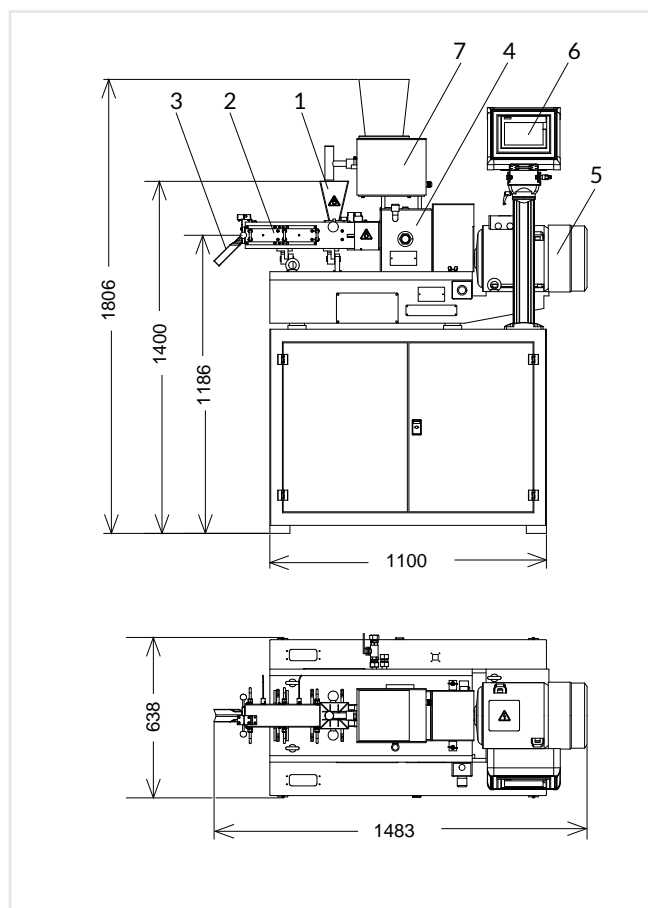
Process length	8 or 11 or 14 L/D
Screw diameter	30 mm
Screw speed	up to 500 rpm
Drive power	5.5 kW

Temperature control

Temperature range	up to 140 °C
Heating capacity	6 kW
Heating sections (electrical)	2 zones
Cooling sections (water)	3 zones

Components

1	Inlet hopper
2	Process section
3	Round die with chute
4	Gearbox
5	Main drive
6	Operator panel
7	Volumetric feeder (option)
8	Chill rolls (option)



Dimensions PCS 30 11 L/D (standard)

Pilot plant PCS 46

Features and specific advantages

- ✓ For laboratory or small batch productions
- ✓ Extended processing length
- ✓ Increased residence time
- ✓ Short changeover times
- ✓ Maximum plant availability
- ✓ Rapid installation and start-up
- ✓ Wide range of formulations from texture to high gloss processed with one machine set-up

Technical data

Throughput rates	up to 250 kg/h
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Inlet hopper

Hopper volume	3 litres
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Inlet screw (option for hopper or as 2nd inlet)

Screw speed	70 rpm
Drive rating	0.18 kW

Buss Kneader PCS 46

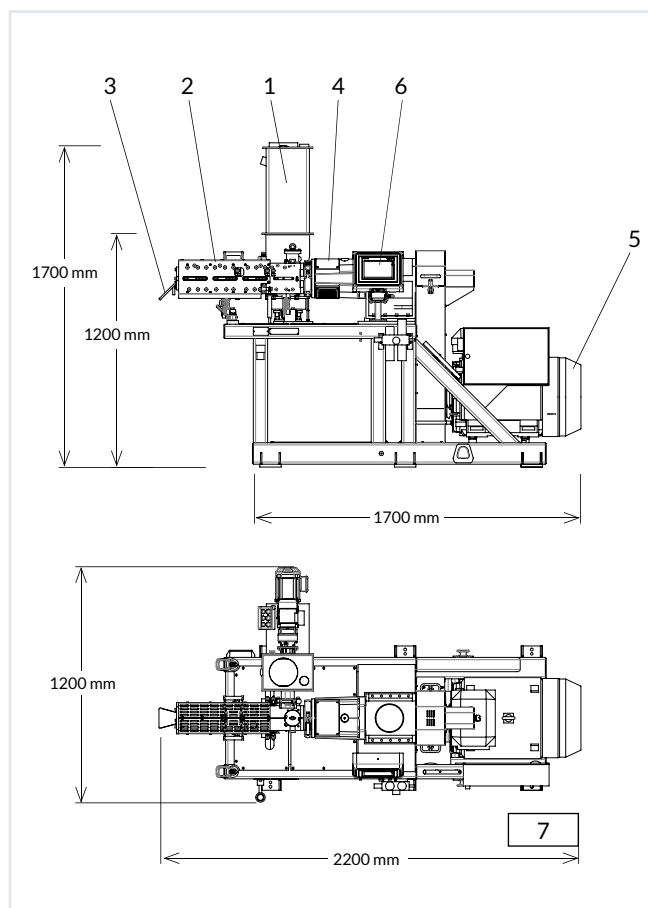
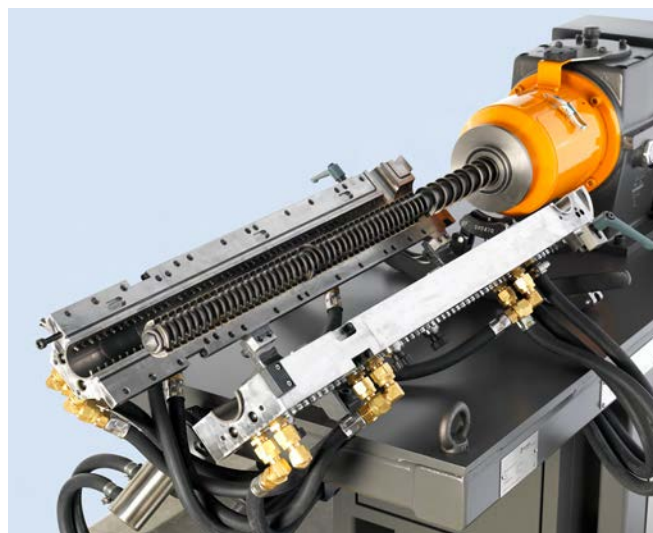
Process length	8 or 11 or 15 L/D
Screw diameter	46 mm
Screw speed	up to 650 rpm
Drive power	30 kW

Temperature control

Temperature range	140 °C
Heating capacity	2 x 12 kW
Cooling capacity	2 x 60 kW

Components

1	Inlet hopper
2	Process section
3	Round die with chute
4	Gear box
5	Main drive
6	Operator panel
7	Control/drive cabinet



Dimensions PCS 46 11 L/D (standard)

PCS 70 / PCS 100

Features

- ✓ Extended processing length 11L/D or 15L/D
- ✓ Increased residence time
- ✓ Short changeover times
- ✓ Variable shear rate through kneader shaft speed up to 650 rpm
- ✓ Low specific energy input
- ✓ State-of-the-art user interface
- ✓ Highly wear-resistant materials

Advantages

- ✓ Quick installation and commissioning
- ✓ Processing of a wide range of formulations with the same screw configuration including:
 - High-gloss formulations
 - Highly reactive formulations
 - Clear coats
 - Textured and matte formulations
- ✓ Maximum plant availability
- ✓ Easy inspection and cleaning

Technical data

PCS 70

PCS 100

Dimensions

Length	L1	2950 mm	3474 mm
	L2	11000 mm	13760 mm
Width	W1	1479 mm	2500 mm
Height	H1	1320 mm	1324 mm
	H2	2270 mm	2630 mm

Throughput rates	up to 700 kg/h	up to 1500 kg/h
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Side feeder

Feeder volume	50 l	130 l
Screws diameter	40 mm	60 mm
Drive rating	1.1 kW	2.2 kW

Inlet screw (option)

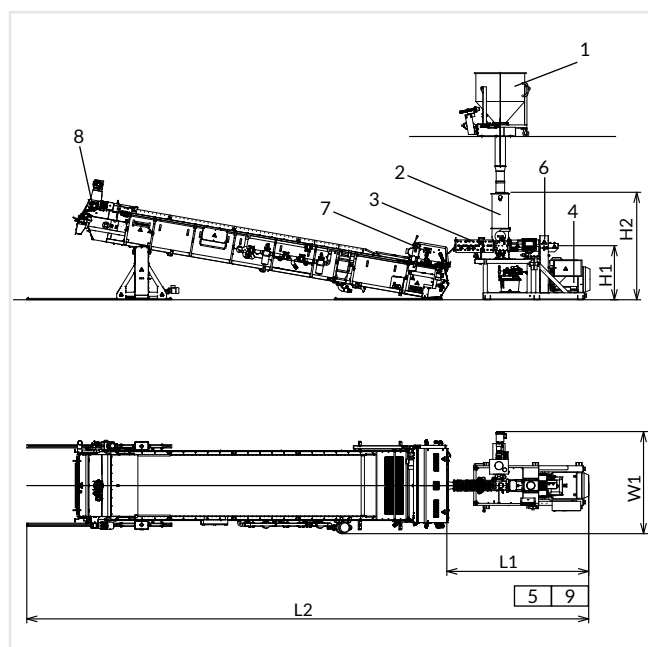
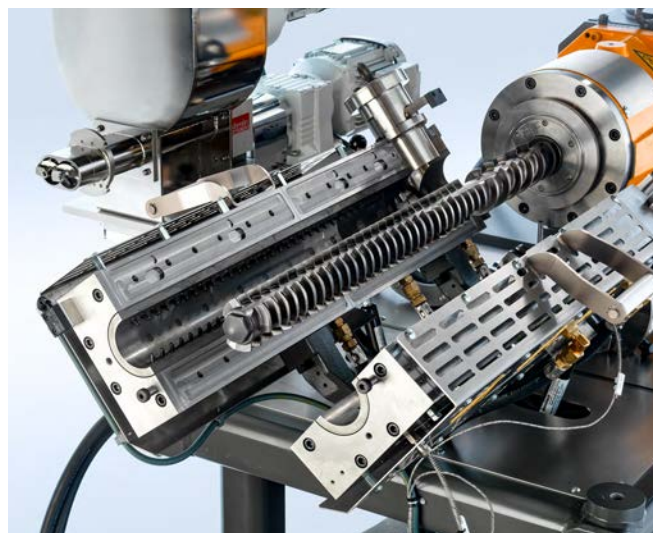
Screw speed	100 rpm	140 rpm
Drive rating	0.75 kW	2.2 kW

Process

Process length	8 or 11 or 14 L/D	8 or 11 or 14 L/D
Screw diameter	70 mm	100 mm
Screw speed	up to 650 rpm	650 rpm
Drive power	65 kW	110 kW

Temperature control

Temperature range	140 °C	140 °C
Heating capacity	2 x 12 kW	2 x 12 kW
Cooling capacity	2 x 60 kW	2 x 60 kW



Dimensions PCS 70 11 L/D (standard)
Dimensions PCS 100 11 L/D (standard)

Components

- 1 Premix discharge station
- 2 Side feeder
- 3 Process section
- 4 Main drive
- 5 Heating/cooling units
- 6 Gear box
- 7 Cooling rolls
- 8 Crusher
- 9 Control/Drive cabinet



Spare Parts and Service

PCS Kneading elements, pins, and liners. Material selection depends on process section and the product to be manufactured.

Optimized selection of process materials for powder coating production systems

The selection of the best suitable materials for the process section of your PCS Co-Kneader has a significant impact on investment cost, but **even more on maintenance and downtime cost**. Especially in applications with high wear such as seen in

compounding of powder coating materials, the results can differ enormously. On <https://busscorp.com/news/pcs-kneader-series-optimizations/> more detailed information on possible differences in process section materials can be found.

Sourcing spare parts and service from BUSS results in the following benefits:

- ✓ Long-term availability: even after many years, customer will get the right spare parts
- ✓ Excellent technical support by BUSS experienced service experts
- ✓ Worldwide delivery: The right part in the right place at the right time

Complete information on our services and service level agreements are available on our website:

busscorp.com/service/

BUSS.

Excellence in Compounding.

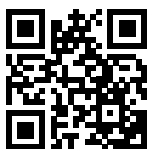
BUSS is 75 years of knowledge, innovative strength and experience in the development of compounding systems. It all stems from our highly experienced employees, who bring maximum quality and professionalism to all our services. BUSS' core competence is customer- and product-specific solutions of processing 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.

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 Compounding Solutions
(Shanghai) Co., Ltd.
Building 8, No. 2317
Shengang Road, Songjiang
District
Shanghai 201611, PRC
P +86 21 64339233
F +86 21 64332793
info.cn@busscorp.com

BUSS Japan Ltd.
Wakura Building 702,
1-5, Fukagawa 1 chome
Koto-ku, Tokyo 135-0033
Japan
P +81 3 5646 7611
F +81 3 5646 7612
info.jp@busscorp.com

BUSS, Inc. USA
743 Kimberly Drive
Carol Stream, IL 60188
USA
P +1 630 933 9100
F +1 630 933 0400
info.us@busscorp.com



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