

**seepex.com**  
all things flow



Your Pump Solution  
for the Milk and Dairy Industry.



# Hygienic, gentle, delicious.

Today, the milk and dairy industry is one of the most important sectors of the food industry. A constantly increasing population, changing consumer preferences and the increased income in many regions of the world all point towards a further increase in milk production and processing in the future.

Due to this, the conveying process of foodstuffs such as milk, butter, cheese, sour milk products and curd, as well as a wide range of intermediate products, also needs to grow. In addition to increasing production, producers must also satisfy increasing quality criteria. The 600 million tonnes of milk and dairy products produced globally provide an ideal medium for growth of micro-organisms such as bacteria and fungi. A situation which contradicts consumer expectations for germ-free, top-quality products.

The milk and dairy industry needs solutions to this problem and as an international leading provider of products and services for pumping and treating liquids, seepex makes a valuable contribution to this. We gladly accept the challenge using state-of-the-art technology, while taking strict hygiene guidelines into consideration and guaranteeing great reliability as well as easy maintenance.

The seepex modular pump system, consisting of 8 product groups and 27 ranges, allows us to offer the optimal solution for any application, from both a technical and an economical point of view. Take the customized hygiene pumps from the CS product group, for example, the design of which is built around their CIP (Cleaning In Place) capability. The CIP cleaning method includes all system components, e.g. pipelines, machines, control organs, etc. In automated dairy processes, it takes place within the closed system, without the need for dismantling parts of the pumping process. As the "heart" of the pumping process, our progressive cavity pumps are perfectly designed for this method.

This is ensured by 400 of the over 700 employees worldwide who work for seepex in Bottrop. They develop, manufacture and market customized pumping solutions – whether progressive cavity pumps, macerators, control systems or our service programs.

Due to their hygienic design, our casing parts, the mechanical seal in the suction chamber which is flushed by the product, the open joints and the quality of the surfaces which come into contact with the product guarantee that cleaning leaves virtually no residue. Consequently, there is no opportunity for bacterial colonies to develop.

To prove this, our pumps are certified in accordance with the "3-A Sanitary Standards Inc.". This American association establishes internationally recognized regulations concerning the design, material properties and application of machines and system components designed for use in the different branches of the food industry. In addition to this, we may also use materials conforming to FDA standards. Amongst other areas, the Food and Drug Administration is responsible for food safety in the USA. Of course, we also support the European Hygienic Engineering & Design Group (EHEDG), whose goals with respect to hygiene-compliant design are similar to those of the 3-A association. Both these associations aim to develop guidelines and test methods for identifying weak points. EHEDG certification also plays a supporting role for the legislator and standardization groups such as CEN and ISO.

So it is no wonder that our pumps have firmly established themselves in the milk and dairy industry.



**Our hygienic pumps are certified according to "3-A Sanitary Standards Inc." (USA) and designed based on the "EHEDG" guidelines.**



### **Milk and dairy industry**

Including pumping of:

- Butter products
- Cheese products
- Cream
- Curd
- Dairy ice cream
- Fruit preparations
- Kefir
- Milk
- Single cream
- Sour cream
- Whey

A BCSO range pump conveys the liquid blancmange into a beater, where it is mixed with nitrogen in order to bring it to a lighter consistency. The conveying solution is mounted on a mobile base frame together with other units so that they can be moved around to wherever they are needed.



# Pumping solutions for the milk and dairy industry.

The consistency and variety of milk products is extremely diverse. Firstly, there are a wide variety of milk types which are pasteurized, homogenized or ultra-heat treated to become fresh milk, long-life milk or UHT milk. Other products such as butter, cheese and whey are made using fermentation or extraction processes. All of these milk products contain important nutrients such as protein, carbohydrates, vitamins and trace minerals.

Extremely gentle conveyance is required to protect these ingredients and their subtle differences in taste. seepex progressive cavity pumps are built with this in mind. Due to their rotation-based displacement and special design, which we have spent nearly 40 years perfecting for your sector, milk and dairy products are pumped through the chambers which form in the conveying elements gently and with practically no shear action at all. This means for example that fruit preparations for mixing into milk products, even those containing whole fruits, reach their destination unharmed.

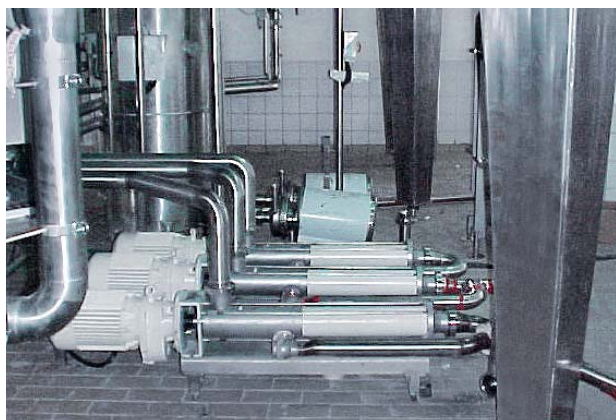
Conveying viscous milk products with low or zero flowability such as curd, cream cheese, and butter is no problem for our pumps, either. Our open hopper design pumps with integrated feed screw perform these pumping jobs not only gently and reliably, but also with practically no pulsation.

## Applications (see flow chart on next page)

- 1 BCSB range pumps transport sour whey for further processing
- 2 BCSO range pumps transport low-fat curd from the separator through the cooler to the buffer tank
- 3 BCSO range pumps transport low-fat curd from the buffer tank to the mixer
- 4 BCSO range pumps transport cream out of the cream tank
- 5 BCSO range pumps transport fruit out of the fruit tank to be mixed in with the cream and the low-fat curd
- 6 BCSO range pumps transport the fruit curd mixture into the filling machine and then for cold storage

## Features

- Low pulsation conveyance of shear sensitive media
- Conveyance and precise dosing of very small quantities
- Conveyance of highly viscous products
- Non-destructive conveyance of fruits contained in the conveying product
- Simple and quick cleaning
- Hygienic closed system



### Pump of range BCSO 17-6L

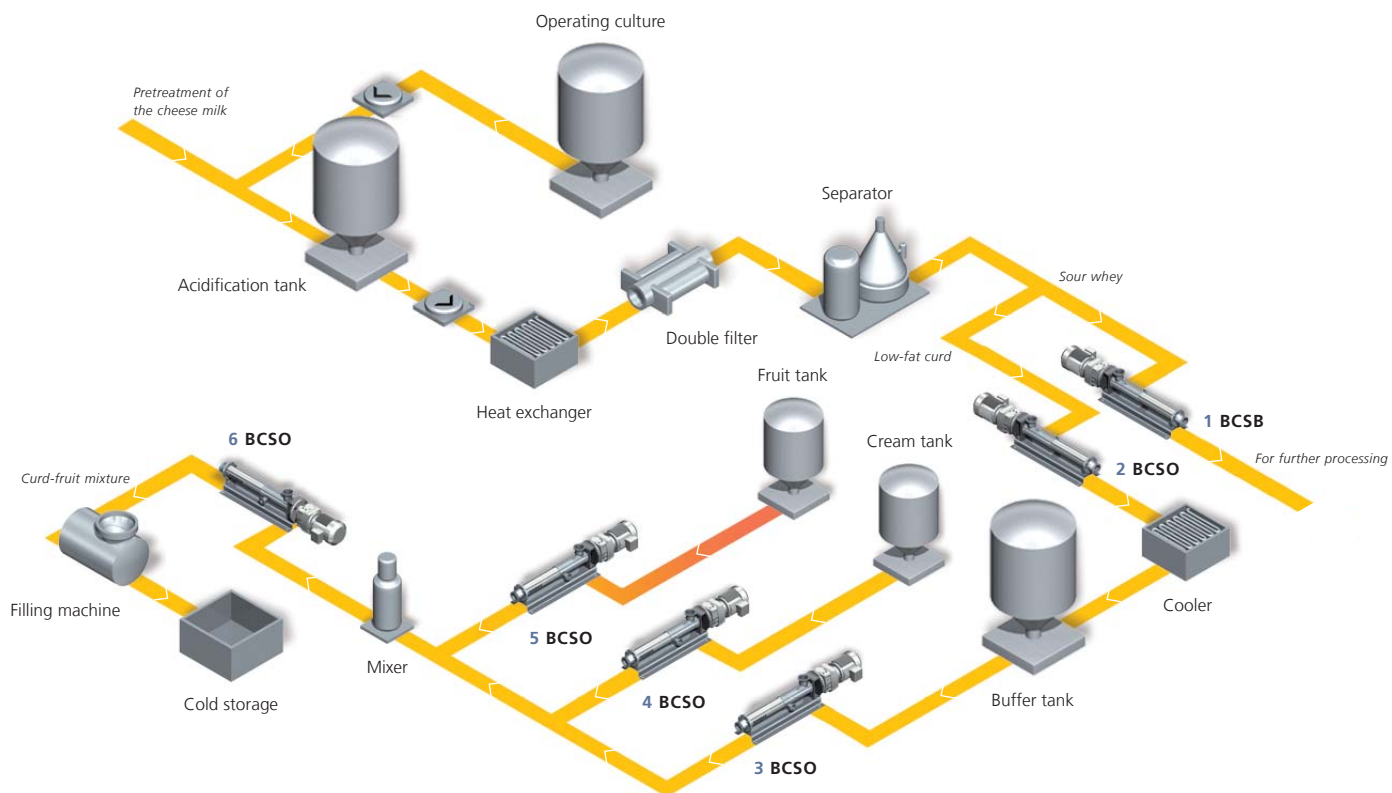
Conveying product: Curd-fruit mixture  
Conveying capacity: 3.5–16 m<sup>3</sup>/h (15–70 GPM) • Pressure: 4 bar (58 PSI)  
Temperature: 5–20 °C (41–68 °F)



### Pump of range BCSO 5-6L

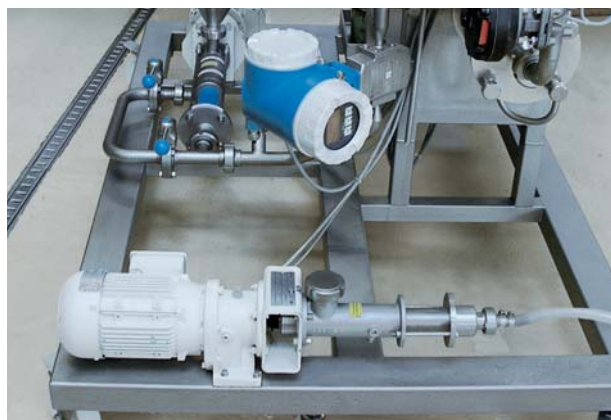
Conveying product: Cheese spread with vegetable pieces  
Conveying capacity: 0.1–1.5 m<sup>3</sup>/h (0.44–6.6 GPM) • Pressure: 4 bar (58 PSI)  
Temperature: 60 °C (140 °F)

Flow chart based on the the manufacturing of curd-fruit mixtures



**Pump of range BTCS 1-12**

Conveying product: Fruit mass  
Conveying capacity: max. 380 l/h (1.6 GPM) • Pressure: 6 bar (87 PSI)  
Temperature: 5–40 °C (41–104 °F)



**Pump of range MD 006-12**

Conveying product: Blancmange  
Conveying capacity: max. 120 l/h (0.5 GPM) • Pressure: 4 bar (58 PSI)  
Temperature: 20 °C (68 °F)

# Pumping solutions for other applications.

Due to their specific pumping properties, our progressive cavity pumps are successfully used in other areas of the food industry as well. You will therefore find seepex conveying solutions both in production processes and in the area of waste disposal.

Thanks to our pump module system and numerous different material combinations, we can make a pump which ideally suits your individual technical and economical requirements. This guarantees top performance, reliable processes and lowest life cycle costs.

In addition to this brochure, please also see our other printed material for the beverage industry, the baking and confectionery industry and for the handling of waste from the food and beverage industry.



## **Pump of range BTM 10-12**

Conveying product: Various fruits  
Conveying capacity: max. 7 m<sup>3</sup>/h (31 GPM) • Pressure: 12 bar (174 PSI)  
Temperature: 10–20 °C (50–68 °F)



## **Pump of range BTCS 5-12, heated design**

Conveying product: Melted blocks of fat for deep-fried pastries  
Conveying capacity: 400 kg/h • Pressure: 8 bar (116 PSI)  
Temperature: 15 °C (59 °F)

# Pumping solutions at a glance.

seepex pumps gently transport low to highly viscous products with and without solids, as well as low and high-temperature products, with low pulsations and low shear action. They are also characterised by a high dosing accuracy, and can be cleaned leaving virtually no residue.

Food pumps of product group CS meet the highest standards with respect to gentle conveyance, hygiene and cleaning. Thanks to their open joints and casing parts constructed according to the principles of “hygienic design”, they can be cleaned leaving virtually no residue and in accordance with CIP. Consequently, there is no opportunity for bacterial colonies to develop. The pumps are certified according to the high requirements of 3-A Sanitary Standards (USA) and designed based on EHEDG guidelines.

The BCSB range pumps differ from the BCSO range in the design of the joints. The established closed and wear-resistant pin joints from our BN/NS range are used in the BCSB range. They are suitable for use with abrasive conveying products and high operating pressures.

- > Conveying capacity: 30 l/h–130 m³/h (0.13–575 GPM),  
Pressure: up to 24 bar (360 PSI)

The BTCS range feature a feed hopper with a cylindrical/conical compression zone. Highly viscous conveying products with a low flowability are conveyed to the rotor and stator conveying elements using the auger feed screw on the coupling rod. Optimum filling of the conveying chambers is achieved by the primary pressure generated in the compression zone. The pumps feature either open, easy maintenance joints, or the established closed pin joints.

- > Conveying capacity: 30 l/h–130 m³/h (0.13–575 GPM),  
Pressure: up to 24 bar (360 PSI)

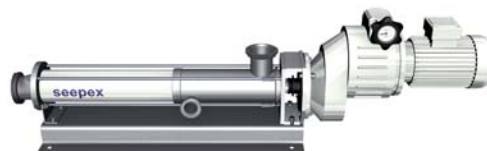
Metering pumps of product group D are used for conveying and precisely dosing small quantities. They are especially suited to the low pulsation conveyance of low to highly viscous media, and media containing solids. Highest metering accuracy is guaranteed. The MDC range, which features open joints and casings constructed according to the principles of “hygienic design”, is designed to meet the highest hygiene standards. Consequently, there is no opportunity for bacterial colonies to develop.

- > Conveying capacity: 0.2 l/h–1.000 l/h (up to 380 GPH),  
Pressure: up to 24 bar (360 PSI)

See our “Product groups and ranges” brochure for further solutions for a wide range of applications.

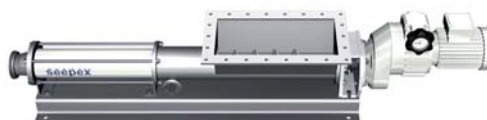
## Ranges BCSO/BCSB

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## Range BTCS

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## Range MDC

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And what can we get flowing for you? Your nearest contact:



t (08) 8234 2090  
f (08) 8443 4184  
amepumps.com.au

**Head Office** | 65 -- 67 Ashwin Parade, Torrensville, South Australia, 5031  
**Northern Service Centre** | Lot 141 Industry Drive, Whyalla Playford, 5600  
ABN 24 250 583 833 | AU736-QC-HSE | ISO 9001:2008 | TQCSI QHSE:2013 | [sales@asseteng.com.au](mailto:sales@asseteng.com.au)

Or visit [www.seepex.com](http://www.seepex.com)