

**seepex.com**  
all things flow

Your Pump Solution  
for the Pulp and Paper Industry.



# Advanced technology – individually manufactured.

The pulp and paper industry ranks amongst the most technically demanding and highly developed industry sectors. A variety of special machines are required for paper manufacturing. The pump constructions are determined by the product to be manufactured – paper or cardboard – and the type of fibrous materials that are to be used.

seepex pumps with their particular benefits are used for the entire range of raw material processing, paper machine forming and conversion in the pulp and paper industry throughout the world. Well known for their use in coating kitchens seepex pumps are also ideal for proportioning systems, bleach plants and all phases of effluent treatment.

seepex supplies to a variety of companies in the pulp and paper industry, as well as numerous suppliers. The pumps in these companies are used for the manufacture of additives and for the filling and emptying of transport and storage containers.

The modular seepex system allows us to offer the optimal technical and economic solution for virtually every application. Each pump is individually selected to the specific requirements of your sector, your company, your installation location and of course your individual application.

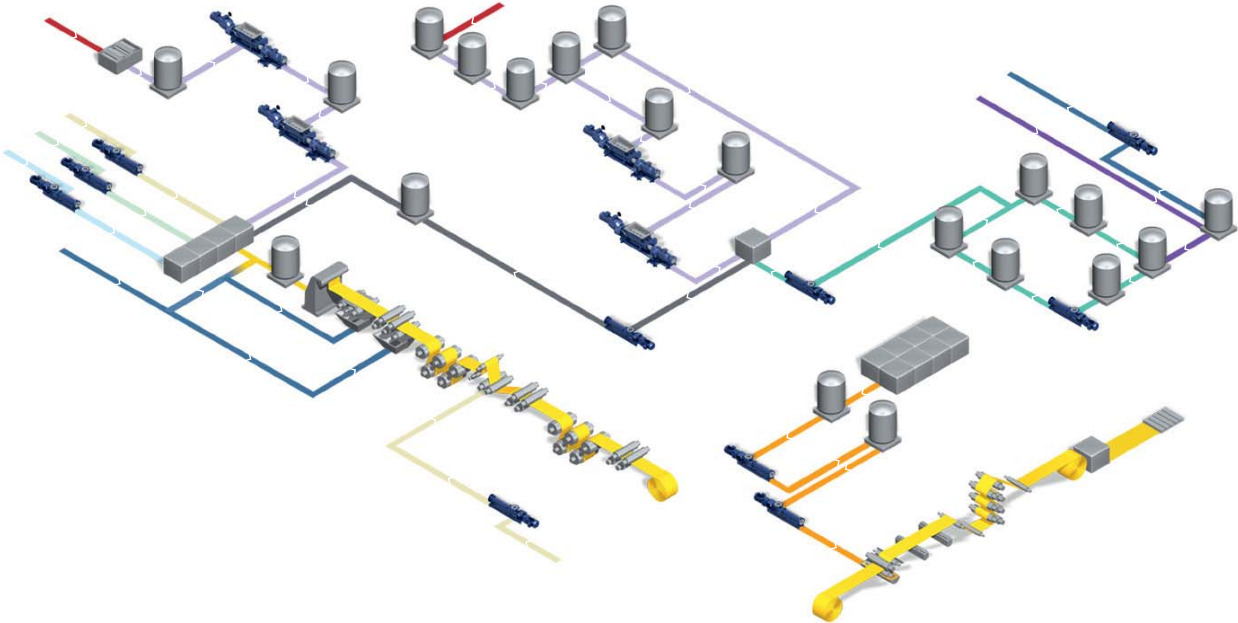
370 of the over 630 employees worldwide work at our headquarters in Bottrop to make sure that this is the case. They develop, manufacture and market your pump solution – whether progressive cavity pumps, macerators or control systems.

No wonder pulp and paper technology without our pumps is inconceivable.

seepex pump for controlling the water and waste water supply within the paper machine. Options like the dry running protection device, seal cage supply unit and a frequency controlled drive increase the manifold pump's versatility.

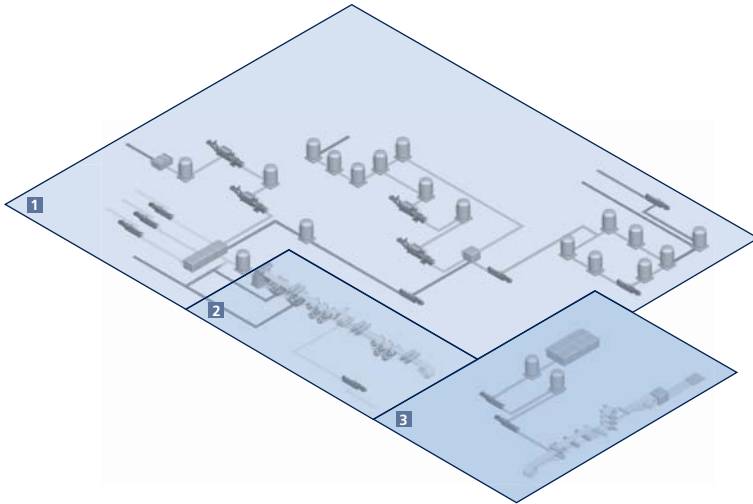


# Paper mill installation – overview.



The pulp and paper industry is amazingly diverse, with each mill producing different types of product, each with its own characteristic challenges. Every type of operation, pulp mill, secondary fiber processor, fine paper producer, board mill or converter is a potential user of progressive cavity pumps. See the following pages to find out all the areas in which our pump solutions are used.

## Several sectors of the paper manufacturing



### 1 Stock preparation

Pumping of:

- Bentonite suspension
- Cellulose
- Coating
- Dye
- Flocculent
- Mechanical wood pulp
- Polymer solution
- Resin size
- Sodiumhydrosulfide
- Starch

### 2 Paper machine

Pumping of:

- Calcium carbonate sludge
- Paper stock
- Waste water

### 3 Coating kitchen

Pumping of:

- Bonding agent
- Calcium carbonate
- Coating
- Coating color
- Miscellaneous agent/additive
- Pigment
- Softener
- Starch

# Pumping solutions for the stock preparation.

During the stock preparation the fibrous materials such as waste paper, wood and cellulose are mechanically and chemically treated and ultimately fed into the proportioning system.

Paper basically consists of fibers, additives and water. Used mineral, animal and synthetic fibers are less common than plant fibers such as cellulose, wood pulp and rags. Waste paper used as fiber is becoming more and more important. Additives, used to produce paper are both natural and synthetic. seepex pumps are used for the transportation of paper stock and the metering of additives in the entire raw material processing procedures.

**Applications** (see flow chart on next page)

- 1 BN range pumps transport dyestuff, fillerstuff and glue to the proportioning system
- 2 BTI range pumps transport barked wood to the proportioning system
- 3 BN range pumps transport rag pulp from the stock preparation to the proportioning system
- 4 BN range pumps transport waste paper rags to the stock preparation
- 5 BN range pumps transport waste paper rags within the de-inking process
- 6 BN range pumps transport waste water to further processing
- 7 BTI range pumps transport bleached fiber to the stock preparation

**Features**

- Accurate metering of additives
- Low pulsation
- Conveying of products with high temperatures



**Pumps of range BN 2-12**

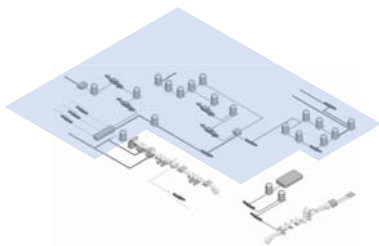
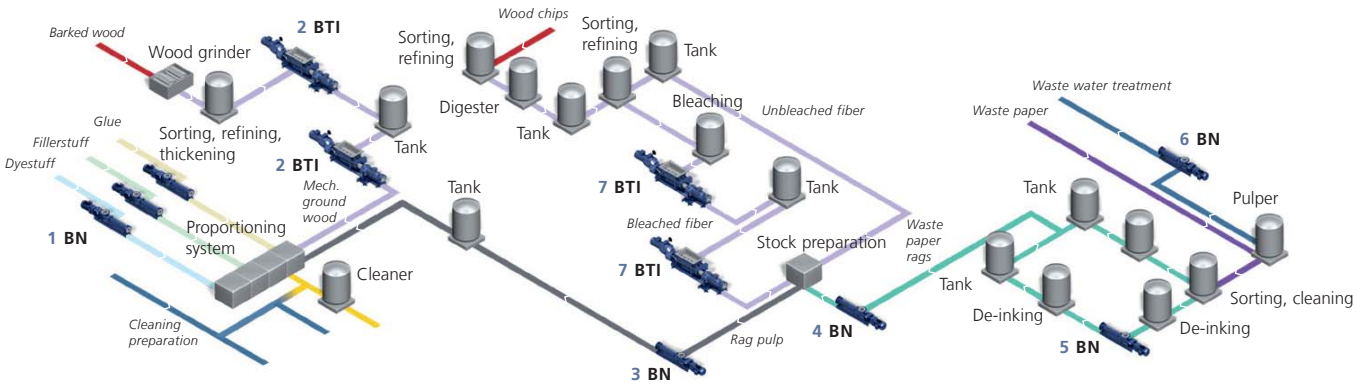
Conveying product: Polymer solution  
Conveying capacity: 300 – 3,000 l/h (79 – 792 GPH)  
Pressure: 4 – 6 bar (58 – 87 PSI) • Temperature: 20 °C (68 °F)



**Pump of range BN 70-6L**

Conveying product: Starch with a ds content of 30 – 35 %  
Conveying capacity: 60 m<sup>3</sup>/h (264 GPM) • Pressure: 4 bar (58 PSI)  
Temperature: 60 – 98 °C (140 – 208 °F)

Flow chart based on stock preparation



**Pump of range BN 130-6L**  
 Conveying products: Coating and glue  
 Conveying capacity: 40 m<sup>3</sup>/h (176 GPM) • Pressure: 4 bar (58 PSI)  
 Temperature: 24 – 50 °C (75 – 122 °F)



**Pumps of range BTI 35-24**  
 Conveying products: Sulphite- or sulphate stock  
 Conveying capacity: 2.8 – 20 m<sup>3</sup>/h (12 – 88 GPM)  
 Pressure: 16 bar (232 PSI) • Temperature: 20 – 90 °C (68 – 194 °F)

# Pumping solutions for the paper machine.

The size of the paper machines used for manufacturing endless paper is impressive. Lengths of up to 200 meters and widths of up to 10 meters are not uncommon. The demands placed on these machines, which manufacture up to 2,000 meters of paper a minute, are severe. Particular importance is attached to the transport and metering of starch and glue solutions.

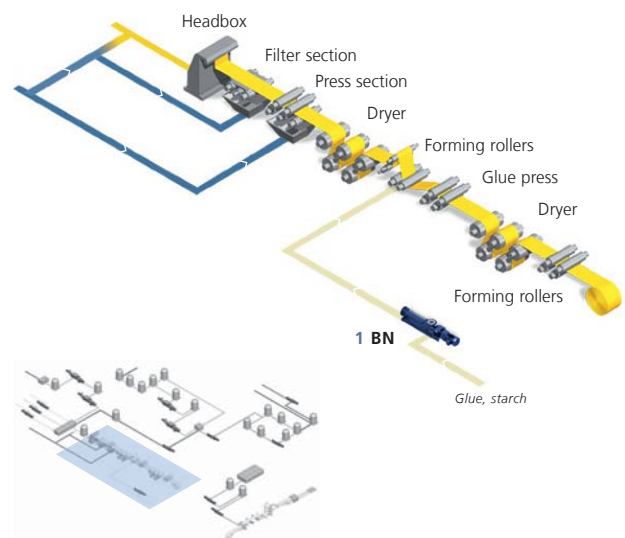
The machines used in the manufacturing process irrespective of the entire construction are largely made up of the same elements: headbox, filter section, press section, dryer and forming rollers. The fibrous materials are mixed in the stock preparation area prior to the headbox and enriched with auxiliary aids such as glue, kaolin and colorants. Thanks to their characteristics seepex progressive cavity pumps are ideally suited for this. The conveying action is gentle and of low pulsation, whilst the metering of auxiliary aids is exact as the speed and flow rate can be controlled.

The headbox distributes the fiber mixture uniformly across the width of the machine. This settles in the subsequent filter section whilst the water is sucked away. Additional dewatering takes place in the press section by way of mechanical roller. In the following dryer section a damp-heated drying cylinder is then used to further remove water from the paper, while a relative residual dampness remains. Normally the paper web is impacted in this section by using additional surface hardener via a size press with a glue or starch solution. seepex progressive cavity pumps are also used to convey this solution because nothing is left to chance in this process either.

For the compacting and smoothing the finished paper web is wound up on a steel shaft where it remains up until finishing or possible coating and laminating. These areas are the main area of application for progressive cavity pumps in the paper industry.

## Applications (see flow chart below)

- 1 BN range pumps transport glue and starch to the forming rollers



## Features

- Conveying of viscous products
- Gentle, low-pulsation and accurate conveying



### Pump of range BN 17-6LS

Conveying product: Coating color  
 Conveying capacity: 18 m<sup>3</sup>/h (79 GPM) • Pressure: 2 bar (29 PSI)  
 Temperature: 38 °C (100 °F)



### Pump of range BN 130-6L

Conveying product: Calcium carbonate sludge  
 Conveying capacity: 25 – 100 m<sup>3</sup>/h (110 – 440 GPM)  
 Pressure: 3 bar (43 PSI) • Temperature: 20 °C (68 °F)



# Pumping solutions for the coating kitchen.

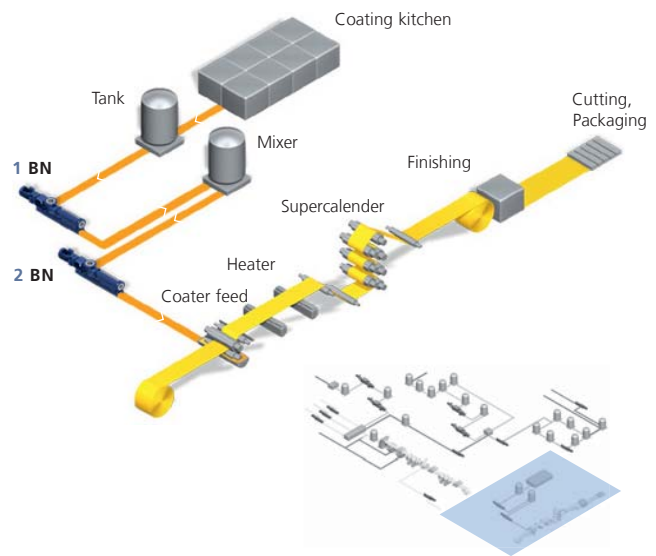
The varying demands placed on paper and cardboard by the further processing industry and end users frequently require the coating and laminating of raw paper. The coating of paper in the coating kitchen is a key procedure. During the coating and laminating process, the surface of the raw paper is coated with pigments, the coating color.

The coating kitchen is the main application for seepex progressive cavity pumps. This applies to the coating preparation as well as the feeding of coater in the coating system. The coater is located inside or outside the paper machine. Its task consists of placing the coating color onto the raw paper. High quality coating color is made of pigments, adhesives and additives. Key pigments are calcium carbonate and kaolin. The adhesives are natural or synthetic. Additives are used, among other things, as brighteners or defoamers.

The seepex pumps are particularly well suited for pulsation sensitive processes due to their optimized geometries with a high metering accuracy. They meet the highest demands of the technically highly developed paper coating and laminating process thanks to the gentle handling as well as variable speeds and flow rates.

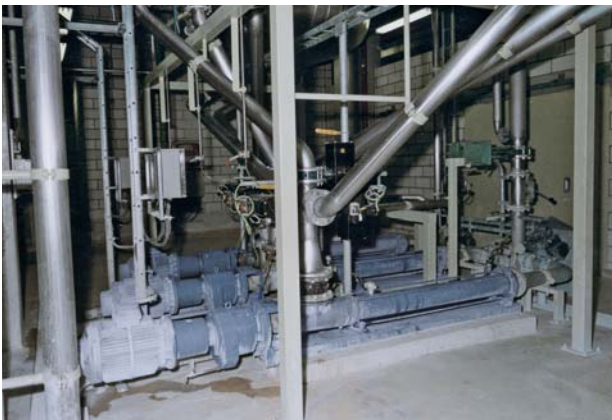
## Applications (see flow chart below)

- 1 BN range pumps transport coating from the tank to the mixer
- 2 BN range pumps transport coating color from the mixer to the coater feed



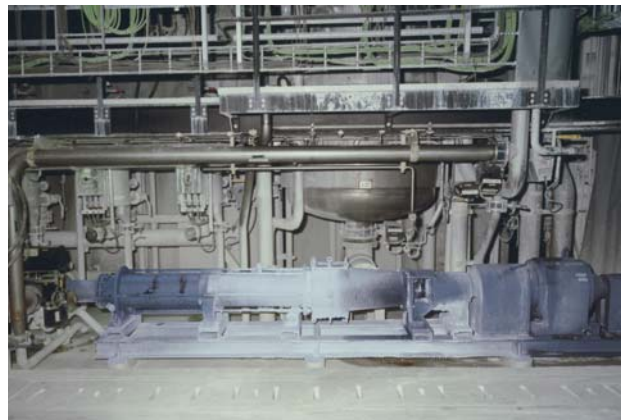
## Features

- Conveying of products with high temperatures
- Particularly gentle conveying due to low shear



### Pumps of range BN 35-24

Conveying product: Coating  
 Conveying capacity: 17 m<sup>3</sup>/h (74 GPM) • Pressure: 15 bar (217 PSI)  
 Temperature: 20 – 45 °C (68 – 113 °F)



### Pump of range N 240-12

Conveying product: Coating  
 Conveying capacity: 20 – 180 m<sup>3</sup>/h (88 – 792 GPM)  
 Pressure: 4 – 8 bar (58 – 116 PSI) • Temperature: 20 – 55 °C (68 – 131 °F)

# Your pump solutions at a glance.

seepex pumps gently transport low to high-viscosity products with and without solids over a wide temperature range with low pulsation and low shear. They also feature excellent metering accuracy and can easily pump products like coating color, starch and additives.

Range N pumps are used in virtually all industry sectors to convey low to high viscosity products with or without solids for up to 15 %. They are also used in metering applications.

- > Conveying capacity: 30 l/h – 500 m<sup>3</sup>/h (0.13 GPM – 2,200 GPM), Pressure: up to 48 bar (720 PSI)

## Range BN

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In pumps of the NS range the drives are not directly flange-mounted in favour of a universal configuration of the drives. They have a drive casing and a free shaft end, an elastic coupling or a v-belt and a service-friendly plug-in connection. This simplifies the replacement of the rotating wearing parts and the shaft sealing without dismantling the bearing.

- > Conveying capacity: 30 l/h – 500 m<sup>3</sup>/h (0.13 GPM – 2,200 GPM), Pressure: up to 48 bar (720 PSI)

## Range NS/N

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Pumps of the BTI range feature a rectangular feed hopper with an integrated bridge breaker. The compression housing is dismountable for service work. The length of the hopper opening is variable to suit the application conditions. Pumps of this range are used for pumping highly viscous and airtight products that tend to form bridges above the auger feed screw.

- > Conveying capacity: 100 l/h – 130 m<sup>3</sup>/h, (0.44 GPM – 572 GPM), Pressure: up to 36 bar (540 PSI)

## Range BTI

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Range D metering pumps for pumping and dosing small quantities in virtually all industries. They are especially suited for low pulsation metering of low to high viscosity products with or without solids and chemically aggressive products with a high accuracy.

- > 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.

#### Range MD

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

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