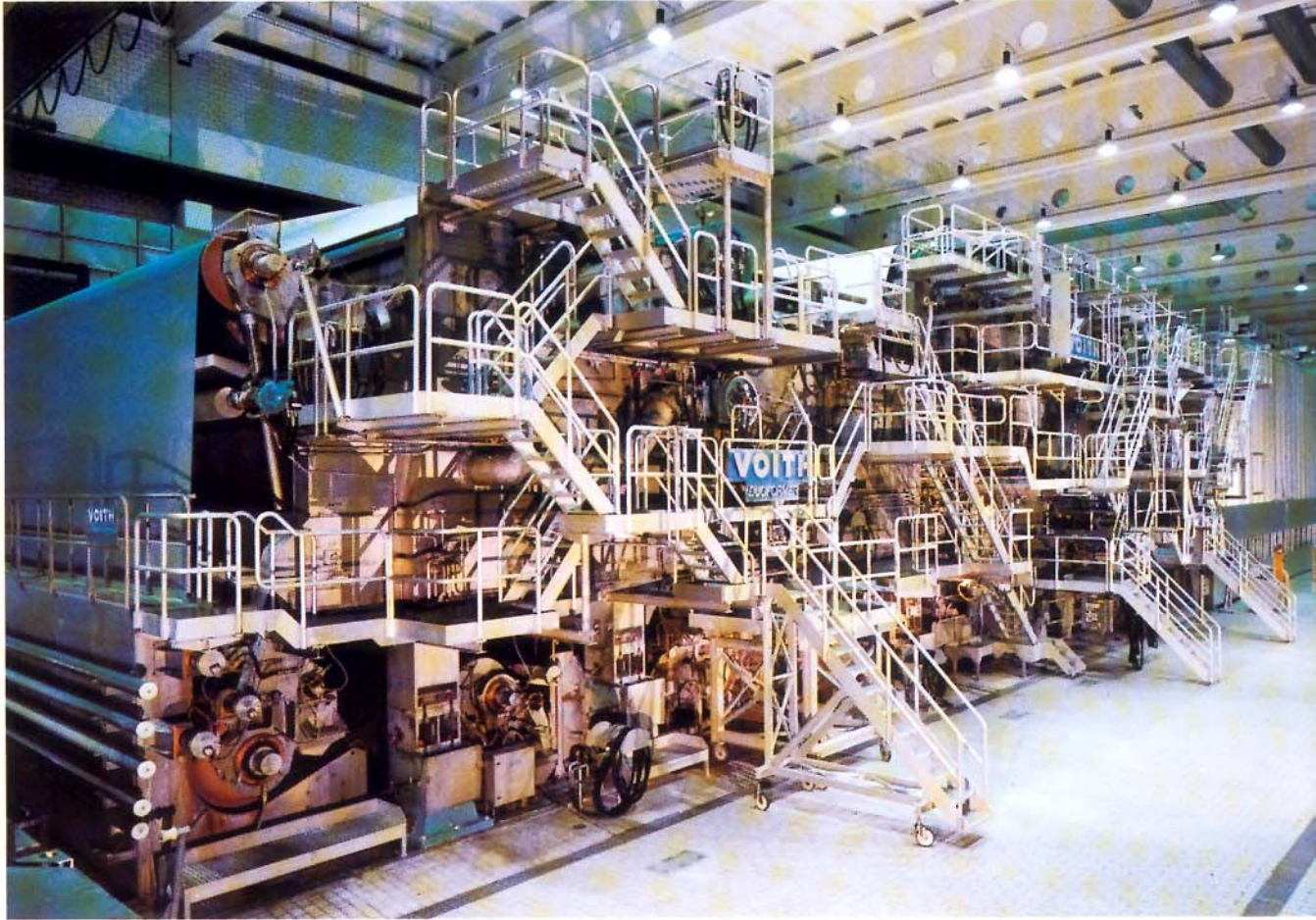




**Pumps for the
pulp and paper industry**



seepex progressive cavity pumps for the pulp and paper industry

The pulp and paper industry is amazingly diverse, with each mill producing a product of a different type, complete 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.

Demands of the pulp and paper industry

Paper basically consists of fibers, chemical agents and water. Based on the type of fibrous material used, paper is generally sub-divided into three different groups:

- ~ cellulose fiber
- ~ groundwood
- ~ secondary fiber.

Used, mineral and synthetic fibers are less common than plant fibers like cellulose, wood pulp and rags. More and more importance is also being attached to waste paper used as fiber. Additives, used to produce paper, are of both natural (kaolin/resin) and synthetic (dyes) origin.

seepex pumps with particular benefits are used for the entire range of raw material processing, paper machine forming and conversion in the paper and pulp industry throughout the world.

Well known for their use in coating kitchens, progressive cavity pumps are also ideal for proportioning systems, bleach plants and all phases of sewage treatment from white water to dewatered sludges.

Application for seepex pumps in the pulp and paper industry

1 Raw material processing

- ~ pulp stock of any kind, e.g. mechanical wood pulp, rejects, rags and cellulose
- ~ bleaching chemicals, e.g. sodium dithionite, calcium hypochlorite
- ~ deinking service, e.g. caustic soda, sodium silicate, fatty acids

2 Proportioning systems and stock preparation/finish stock preparation

- ~ fillers, e.g. resin size, aluminium sulphate, bentonite suspension, china clay
- ~ binders, e.g. CMC (carboxymethylcellulose)
- ~ miscellaneous additives, e.g. raw or cooked starch, lubricants, dyes, surfactants, flocculents, etc.

3 Coating kitchens and coaters

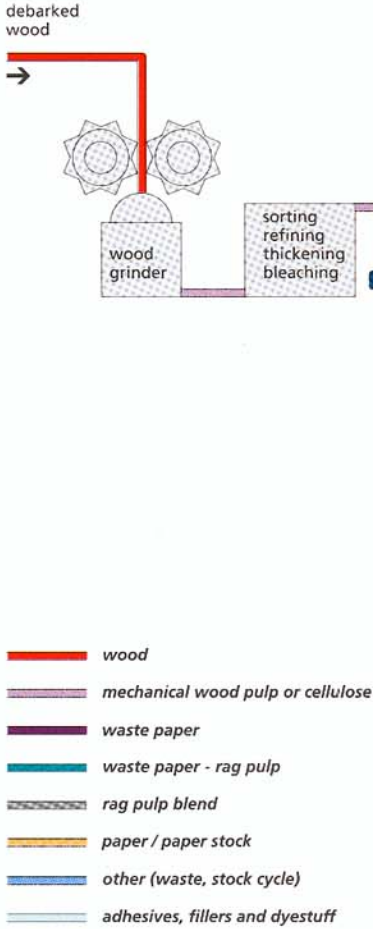
- ~ pigments, e.g. kaolin or calcined clay, calcium carbonate, titanium dioxide, talc

- ~ bonding agents, e.g. starch solution, size, CMS products, wax emulsion, casein, protein, chromic alum, formalin, alum
- ~ synthetic bonding agents, e.g. latex, synthetic glue, acrylate, polyacrylic acetate, polyvinyl acetate, polyacrylonitrile, polyvinyl alcohol and products based on styrene and butadiene
- ~ miscellaneous agents/additives used as dispersants and surfactants, e.g. sodium polyphosphate, calcium stearate, oil sulphates, tamol, wet-strength agents as well as anti-foaming agents and whiteners
- ~ softeners, e.g. glycerine, glycol, sorbite
- ~ coatings of any kind

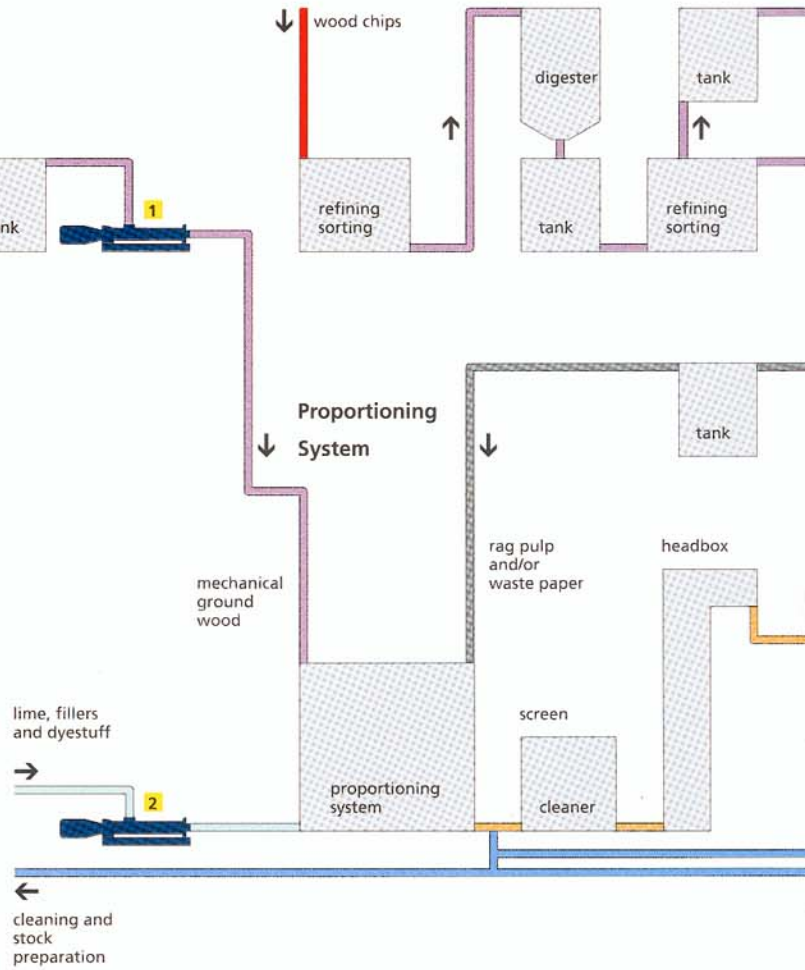
4 Water and waste water

- ~ flocculents
- ~ waste water of any kind
- ~ deinking sludge
- ~ dewatered sludges
- ~ conditioning and handling of dewatered sludges with fine lime/quick lime

Pulp Production



Cellulose Production



Application: mc stock processing. Six adjustable seepex pumps BTI 35-24 with bridge-breaker in special chlorine-free bleaching. **Product:** washed, bleached or unbleached sulphite or sulphate stock, fiber content: 4 - 15 % ds, flow rate: 2.8 - 20 m³/h (to 44 gpm), speed: 45 - 200 rpm, pressure: 4 - 16 bar (60 - 240 psi), temperature: 20 - 90° C, pH-value: 2 - 12



Application: metering additives/stock preparation. One seepex pump BN 70-6L with dry running protection TSE 120 and flushing connection. **Product:** cooked starch, flow rate: 62 m³/h (275 gpm), speed: 304 rpm, pressure: 4 bar (60 psi), temperature: 60 - 98° C, spec. gravity: 1.15, solids content: 30 - 35 % wt, viscosity: 3500 - 5000 cps.



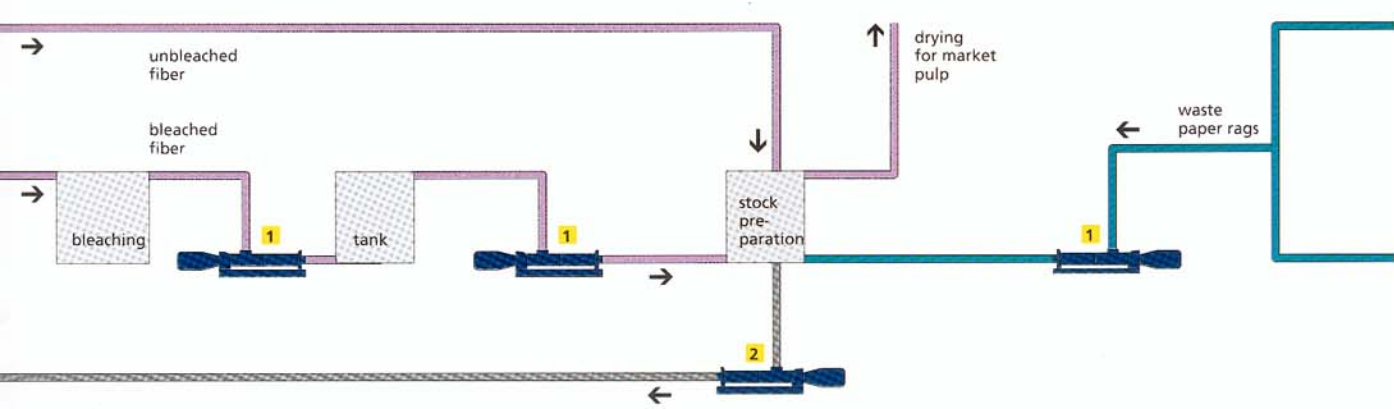
Application: stock preparation/proportioning system with a flocculent metering system. Seven VFD-controlled seepex pumps BN 2-12. **Product:** polymer solution, flow rate: 300 - 3000 l/h (1 - 10 gpm), speed: 90 - 470 rpm, pressure: 4 - 6 bar (60 - 90 psi)



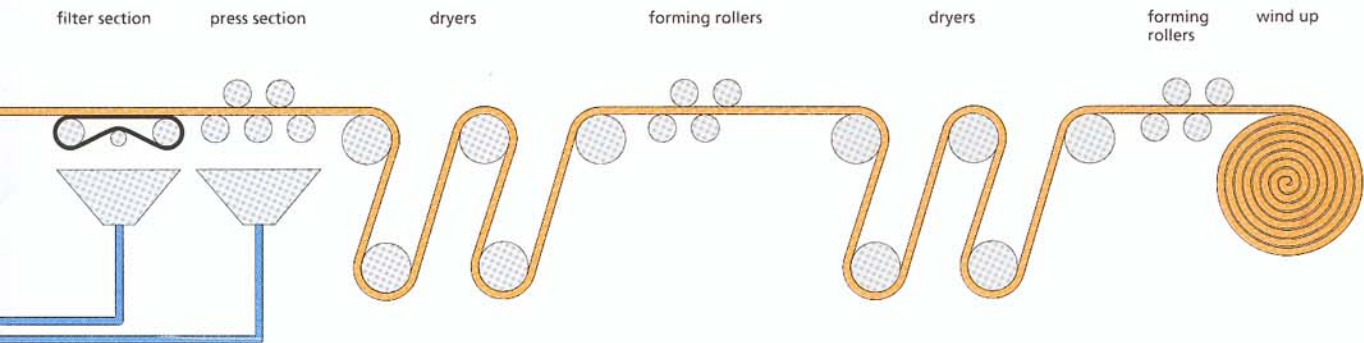
Application: stock preparation/metering additives. VFD-controlled seepex pumps NS 35-12 with rotor-side universal joint sleeve protection, double bearing seal, special gland packing, dry running protection

TSE 120 and adjustable stator retensioning device. **Product:** kaolin slurry, solids content: 550 g/l, flow rate: 0.35 - 11.25 m³/h (to 50 gpm), speed: 10 - 120 rpm, pressure: 2 - 3 bar (30 - 45 psi).





Paper Machine



Application: metering additives/stock preparation. One seepex pump BN 52-6L with dry running protection TSE 120. **Product:** 50% pigment and 8% starch glue, **flow rate:** 40m³/h (175 gpm), **speed:** 265 rpm, **pressure:** 4 bar (60 psi), **temperature:** 24 - 50° C, **Spec. gravity:** 1.42



Application: metering additives/stock preparation. One seepex pump BN 5-6L with single-acting mechanical seal and dry running protection TSE 120. **Product:** CMC (carboxymethyl-cellulose), **flow rate:** 4.8 m³/h, **speed:** 350 rpm, **pressure:** 4 bar (60psi), **temperature:** 40° C, **spec. gravity:** 1.09



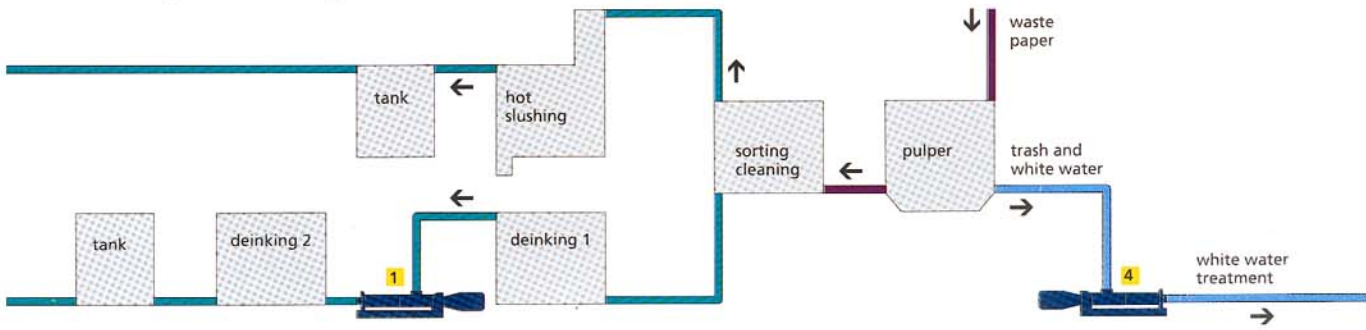
Application: coating kitchen. Eight seepex pumps BN 35-12 with dry running protection TSE 120 and flushing connection. **Product:** CMC or starch, **flow rate:** 15 or 25 m³/h (60/110 gpm), **speed:** 166 or 249 rpm, **pressure:** 12 bar (180 psi), **temperature:** 60 - 85° C, **spec. gravity:** 1.15, **solids content:** up to 30 - 35% wt, **viscosity:** 3500 - 5000 cps

Application: metering additives/stock preparation. Three seepex pumps BN 05-12 with VFD control, single-acting mechanical seal and dry running protection TSE 120. **Product:** binder

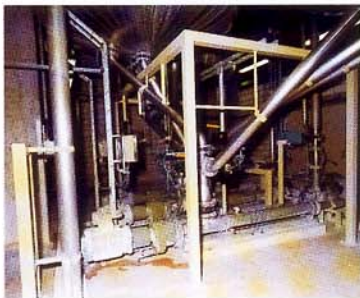
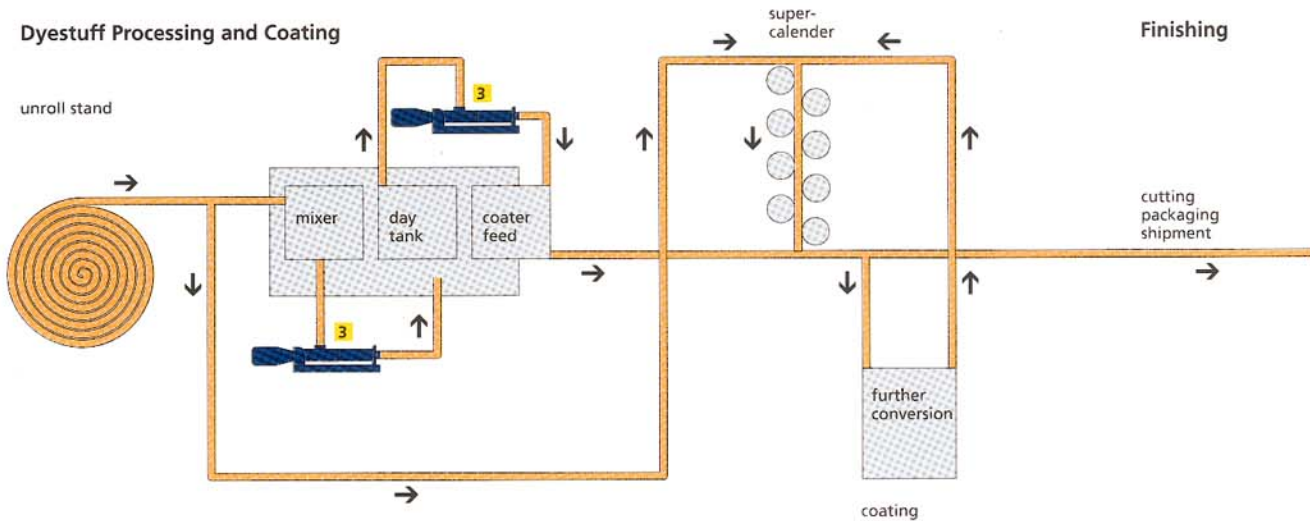
(aluminium hydroxide chloride sulphate), **flow rate:** 10 - 300 l/h, **speed:** 15 - 180 rpm, **pressure:** 4 bar (60 psi), **temperature:** 20 - 30° C, **spec. gravity:** 1.2, **pH-value:** 1 - 7, **viscosity:** 20 - 80 cps



Secondary Fiber Processing



Dyestuff Processing and Coating



Application: coating kitchen. Three seepex pumps BN 35-24 with dry running protection TSE 120 and flushing connection. **Product:** coating color, flow rate: 17.6 m³/h (77 gpm), speed: 186 rpm, pressure: 15 bar (200 psi), temperature: 20 - 45° C, spec. gravity: 1.6 kg, solids content: 60 - 70% wt, viscosity: 3500 - 5000 cps



Application: coating kitchen. One VFD-controlled seepex pump N 240-12 with dry running protection TSE 120 and flushing connection. **Product:** coating color, flow rate: 17 - 182 m³/h (75 - 800 gpm), speed: 25 - 245 rpm, pressure: 4 - 8 bar (60 - 120 psi), temperature: 20 - 55° C, spec. gravity: 1.6, solids content: 60 - 70% wt, viscosity: 3500 - 5000 cps



Application: water and waste water recycling in a paper machine. One VFD-controlled seepex pump BN 202-6L with flushing connection and dry running protection

TSE 120. Product: pulp, flow rate: 92 m³/h (405 gpm), speed: 152 rpm, pressure: 3 bar (45 psi), solids content: 8 - 9% ds



Application: coating kitchen. Seven seepex pumps BN 52-6L with dry running protection TSE 120 and flushing connection. **Product:** calcium carbonate, flow rate: 24.5/34.5 m³/h (108/152 gpm), speed: 171/238 rpm, pressure: 6 bar (90 psi), temperature: 5 - 55° C, spec. gravity: 1.9, solids content: 65 - 75% wt, viscosity: 1000 - 2000 cps



Application: coating kitchen. seepex pumps BN 70-6L with dry running protection TSE 120 and single-acting mechanical seal. **Product:** coating,

flow rate: 15 - 52 m³/h (66 - 230 gpm), speed: 90 - 260 rpm, pressure: 4 bar (60 psi), temperature: 25 - 50° C, spec. gravity: 1.54

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