



# KEEPING YOUR MILL AT THE FOREFRONT

Scanpump solutions for pulp and paper applications.

**scanpump**



**Scanpump process pump BE**  
The ultimate product range for almost all pulp and paper applications, such as pumping stock, liquor, chemicals, filtrates and condensate. These pumps are particularly well suited for headbox and dilution pumping, and ideal for water and effluent treatment applications.

- 1, 2, 3, 4, 5, 6



**Scanpump degassing pump BG**  
Designed for pumping stock consistencies up to 10% and other liquids with gas contents up to 70%.

- 1, 2, 3, 5



**Scanpump PN 25 pump BK/NK**  
Used for most liquids throughout the pulp and paper industry, ideal for handling high temperatures and pressures in digester applications.

- 3, 4



**Scanpump medium consistency pump BM**  
Designed specifically to handle the complete range of medium-consistency pulp. Particularly well-suited for applications demanding high stock consistency such as bleaching and oxygen delignification. The pumps can handle stock consistencies of up to 18%.

- 1, 2



**Scanpump split casing pump Z22**  
Specially designed for headbox applications, but also well-suited for water intake pumping. Robust double suction pumps with large capacities.

- 5, 6



**Scanpump cantilever pump FV**  
Suitable for a wide range of applications; pumping hot and waste liquids of all kinds; environmentally harmful liquids, sludge, slurries and liquids containing large or long solids.

- 1, 2, 3, 4, 5, 6



**ABS dry installed sewage pump FR**  
For economical pumping of heavily polluted wastewater in pulp and paper applications.

- 6



**ABS clean liquid pump NL**  
Particularly well-suited for general-purpose applications involving clear or turbid liquids and water treatment positions.

- 1, 2, 3, 4, 5, 6



**ABS submersible sewage pump AFP**  
The optimal range for blockage-free pumping designed for a wide range of applications, e.g., for wastewater, sludge and raw water.

- 6



**ABS submersible mixed flow column pump AFL**  
Ideal for pumping large volumes at moderate heads, such as wastewater, sludge and raw water.

- 6



**ABS submersible recirculation pump RCP**  
Propeller pump for circulating activated sludge in wastewater treatment plants, especially for the denitrification and nitrification process.

- 6



**ABS submersible propeller pump VUP**  
Ideal for pumping large volumes at low heads, such as activated sludge and raw water intake.

- 6



**ABS submersible mixer RW**  
Designed for water and effluent treatment processes as well as aggressive and abrasive liquids. Can be installed in all tank shapes and sizes for agitating, blending, mixing, dissolving and suspension of solids.

- 6



**ABS flow booster SB**  
Low-speed submersible mixer ideal for large tanks. Suitable for wastewater treatment plants, e.g. in oxidation tanks for flow generation in nitrification, denitrification and phosphate elimination stages.

- 6



**Scanpump Scaba top-mounted agitators FVP, VP, VVP**  
Designed to meet process requirements in demanding pulp and paper applications such as homogenization towers or chemical recovery and coating kitchens. They are also, well-suited for wastewater applications.

- 1, 2, 3, 4, 5, 6



**Scanpump Scaba side-mounted agitators SKPT, SVVPT, SVPT, SFVPT**  
Used in a variety of different agitation processes throughout the pulp and paper industry such as blow tanks, high-density towers, latency chest, bleaching towers, blending and machine chests.

- 1, 2, 3, 4, 5, 6



**ABS Nopon submersible aerator mixer OKI**  
A blower assisted mechanical aerator with high oxygen transfer efficiency for aeration systems. It is used in water and wastewater treatment applications, especially for heavily loaded plants and SBR applications.

- 6



**ABS submersible aerator TA/TAK**  
Self-aspirating aerators for wastewater treatment applications. The main areas of application are mixing and equalization tanks, activated sludge tanks, SBR reactors and sludge storage.

- 6



**ABS High Speed Turbocompressor**  
A built-in frequency-converter driven blower for the supply of air to aeration systems. It can also be used for industrial low-pressure air supply.

- 6

# THE SCANPUMP MODULAR SYSTEM

True modularity pays off. The Scanpump Modular System gives you the flexibility to reduce both downtime and total lifecycle costs. It means fewer components, fewer spare parts and greater opportunities – like speedy exchanges, easier upgrades and simpler, less time-consuming maintenance. This modular approach to design is a perfect example of Scanpump’s Design Philosophy working for you.

## Minimal spare parts for reduced costs and increased effectiveness

Keeping track of spare parts inventory is no easy task, but it is a crucial one – uptime depends on it. This is why interchangeability of parts is one of the cornerstones of the Scanpump Modular System. As a result, you can drastically reduce the number of spare parts that must be kept in stock. This in turn reduces costs, while supporting warehouse management efforts.

With the Scanpump Modular System, you can reduce your spare parts inventory by half – without compromising availability.



Our BE series pumps are a perfect example. They are available in 39 pump sizes, yet are based on only six bearing assemblies. This means reduced spare parts requirements, making it easier to ensure that you have the parts you really need – at a minimum cost.

## Flexibility to meet evolving needs

The demands on equipment can change over time, so the greater the flexibility, the better. This is where the Scanpump Modular System comes in. It enables you to adapt a pump or agitator to enhance efficiency, boost performance or handle other consistencies. The series of modular parts, from impellers and wear discs to shaft seals, can be interchanged to meet exact specifications for a particular position in the process. This also makes it more likely that you can upgrade your equipment to keep up with evolving needs – instead of having to make new investments.

## Quicker, easier training and servicing

The mill’s maintenance crew must be knowledgeable about a lot of different equipment. So the more the designs have in common the better. Quite simply, familiarity saves valuable time, while reducing the risk of mistakes. By taking full advantage of the Scanpump Modular System, service technicians have a lot less to learn. Training on a single series means they can handle process pumps for a complete range of applications – quickly and easily. Bearing assemblies and seal cartridges, for example, can be rapidly exchanged with pre-assembled units from stock, keeping downtime to a minimum.

As part of the Scanpump Modular System, our Scaba agitators are available in both top and side-mounted versions to meet the specific requirements of the position at hand.



# SYSTEM PSI - SEALING SOLUTIONS

## Excellent reliability and versatility

The design of sealing solutions plays a critical role in overall efficiency and operating costs. By integrating the seal arrangement into the pump design, Scanpump can supply pumps that offer ideal operating conditions for the seal. Simply put, the system is built on the dynamic interaction between the pump and its seal. This concept is called System PSI (Pump Seal Integration), and it's another example of the Scanpump Design Philosophy.

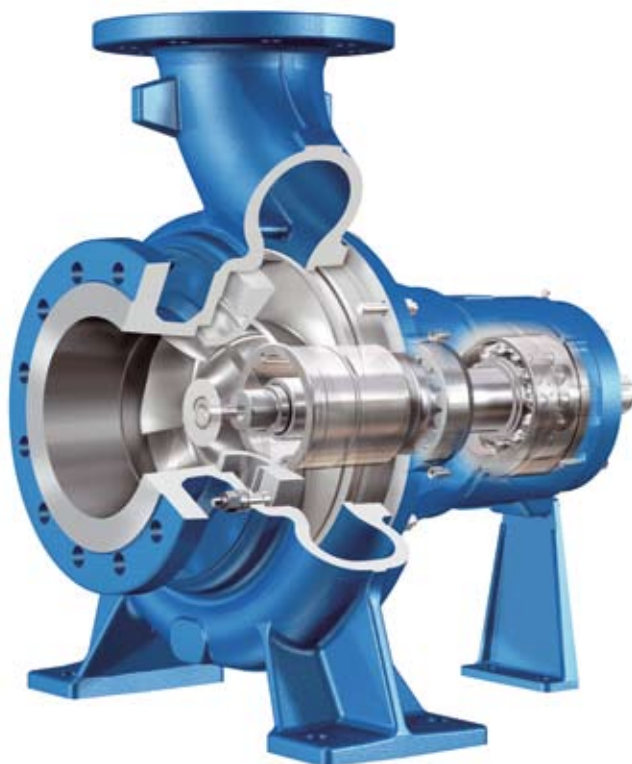
With System PSI, you can rely on high pumping efficiency and an extended MTBF (Mean Time Between Failure) along with low operating costs, flexibility, minimum spare parts requirements and short MTTR (Mean Time To Repair). It also includes durable oil or grease lubricated bearing assemblies that minimize shaft deflection and vibrations for total reliability. What's more, System PSI is designed to provide maximum flexibility in your choice of seals.

## System PSI

PSI cartridge	RBB MBA CSA	Rubber bellow Metal bellow O-ring seal
Gland packing		
Dynamic seal	Masterseal	
External seal		

With Scanpump System PSI you can:

- save up to 75% of the sealing water required in your mill.
- reduce your pumping energy by up to 25% due to the integration of the seal and pump design.
- increase MTBF of the mechanical seal by up to 50%.



Sturdy bearing assembly design minimizes shaft deflection and ensures long seal life.



Scanpump dynamic seal, Masterseal, is specially designed for pulp and paper stock, slurries and other demanding applications.

The PSI cartridge can be fitted with any DIN-mounted single mechanical seal, regardless of supplier.



# SYSTEM PMI - INSTALLATION SOLUTIONS

## Easy installation and great cost savings

Being able to install equipment quickly, easily and cost-effectively is becoming increasingly important. By working together with customers, we have developed System PMI (Pump Mill Integration), an innovative concept consisting of freestanding baseplates, modular systems and options for flexible, cost-effective pump and motor installations. This makes engineering and handling a lot easier, while minimizing stresses on the pumps and the piping system. It also simplifies alignment. All in all, this contributes to a prolonged MTBF while minimizing noise and vibrations.

With system PMI, you are better prepared to meet evolving needs and future demands. It gives you built-in flexibility, reducing the cost of moving or upgrading the pump. To meet specific needs, steel baseplates and baseframes are also available. System PMI is a part of the Scanpump Design Philosophy.

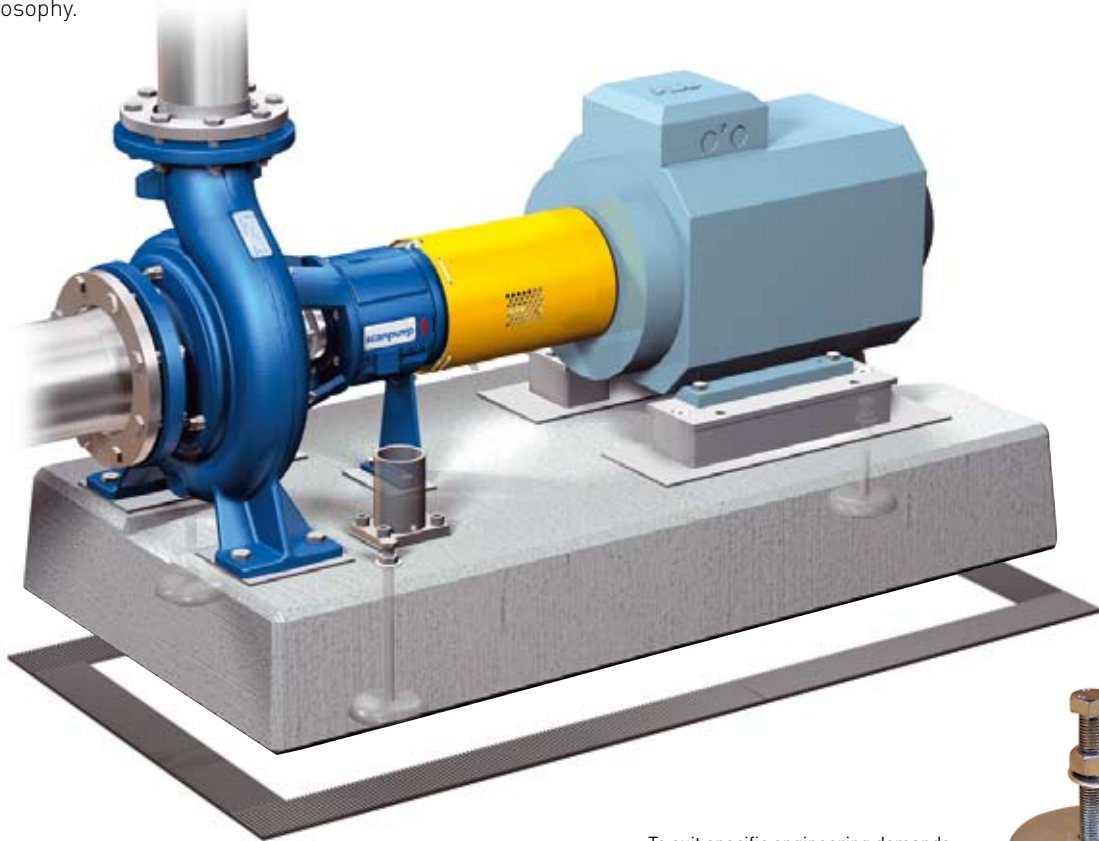
## Baseplate types from Scanpump

	Concrete	Fabricated steel	Foundation frame
Options	Levelling pads	Grouted in	Grouted in
	Rubber mat		
	Grouted in		

Legend: Free standing baseplates (System PMI)

With Scanpump System PMI you can:

- reduce installation time and costs by as much as 80%.
- increase MTBF of the bearings, mechanical seal and coupling by up to 25%.



The concrete baseplates can also be placed on a rubber mat.

To suit specific engineering demands, various installation options are available. For example, the baseplate can be placed on levelling pads.



# CHEMICAL FIBRELINE AND CHEMICAL RECOVERY

Sulphate or sulphite, batch or continuous cooking, you know the challenges. Critical positions are everywhere – from the digester to the evaporation plant. With the right equipment, so too are the opportunities. With Scanpump, you can rely on efficient and compact solutions that can take a beating for a long time to come, regardless of whether you're handling extreme temperatures or fighting off cavitation in liquor applications with tough NPSH requirements. It takes a broad range of products and plenty of know-how to ensure an optimal, position-specific solution, whether it pertains to absorbing irregular pressure shocks or protecting against corrosion in the bleaching department. Only then can you count on a long mean time between failures – and reliability every step of the way.



### PN 25 pump BK

For enhanced reliability and hydraulic efficiency in digester applications, our unique BK pump is the solution. This reinforced pump is specifically designed to handle powerful pressure shocks in the chip feeding system. It also features a modular design and simpler construction compared to multi-stage pumps to minimize maintenance time and costs.

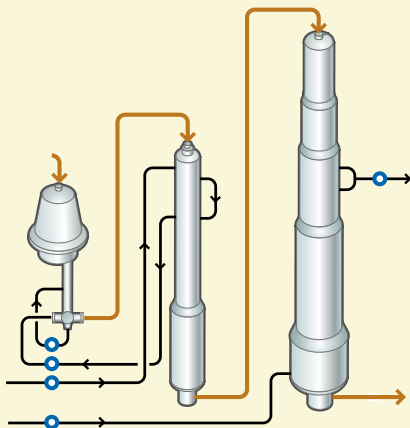
- Sturdy, reinforced construction and high corrosion margins
- Efficient operation for reduced operating costs
- Low initial investment cost
- Center lined to handle thermal expansion
- PN 25 pressure rating
- Temperatures up to 300°C



### Process pump BE

Scanpump's BE pumps come in a wide range of sizes and capacities, and are available in a number of different materials. As a result, this single range covers almost all applications in a pulp and paper mill. In addition to pulp, the BE range is well-suited for applications in green and white liquor, heavy black liquor, condensate, lime mud, filtrates and bleaching.

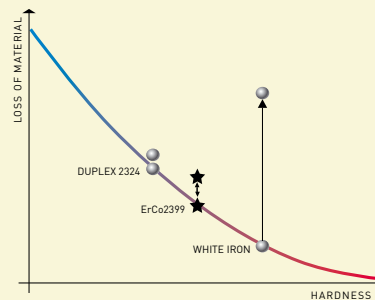
- Advanced modular design for fewer spare parts
- 39 different BE sizes and four different impeller types
- Optimized impeller designs for enhanced reliability
- Easily adjustable wear disc for higher efficiency
- System PSI sealing concept ensures the best conditions in the sealing cavity
- Rugged shaft and bearing assembly



### Simplified pumping in cooking

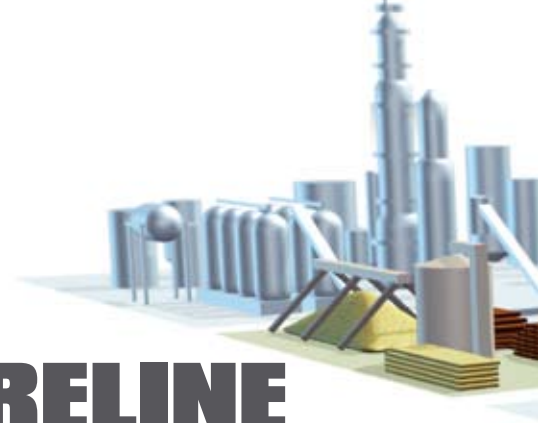
For all common systems in a continuous or batch cooking process, Scanpump can provide efficient and reliable position-specific solutions for each stage of the process – from the chip feeding system, via the digester, to the washing and screening processes. Here, our unique one-stage solution for high-pressure pumps is particularly effective.

Vertical shift in diagram caused by corrosive environment.



### Erosion resistance and hardness

This graph shows the general relationship between erosion resistance and hardness and how the materials can be affected in different environments. Therefore, when erosion occurs, the resistance against corrosion must be considered. For example, ErCo2399 has good wear resistance in corrosive liquid (short distance between the stars) and suffers little material loss. While white iron, which is hard and brittle, normally has good erosion resistance, but is vulnerable in corrosive environments (large distance between the two points).



# MECHANICAL FIBRELINE AND RECYCLED PAPER

Mechanical separation of fibres is no easy task. Not to mention the huge electricity requirements of refiners. Although pumps and agitators do not always account for the majority of overall power consumption, improvement in efficiency matters over the long-run. Whether your mill uses a mechanical fibrelines or a recycled fibre process, you can rely on Scanpump to provide the most energy efficient solution possible for each pump and agitator. A perfect example is our wide range of stock pumps – from standard process pumps to medium consistency solutions. For the recycled fibre process we are ready to meet the challenges involved in handling a huge variety of contaminants or handling gas in the de-inking process.



## Medium consistency pump BM

Many unit operations rely on their capability to pump medium consistency pulp. After all, bleaching economy is enhanced at higher consistencies, and the volume of the storage tanks can be minimized. By combining optimal reliability with excellent efficiency, our BM pump opens up cost-saving opportunities. To meet specific needs, it can be fitted with either an internal or external vacuum pump.

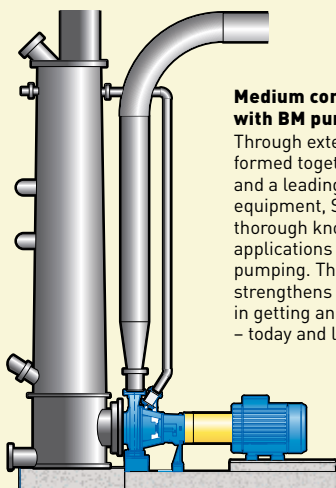
- Designed specifically to handle medium consistency stock (7-18%)
- Tough, sturdy construction for reliable operation
- Part of the Scanpump Modular System
- Optimized impeller design for fibre-free degassing and no vibration
- Specially designed vacuum solutions
- Smart seal cartridge design ensures quick and easy replacement
- Exchangeable impeller extension



## Degassing pump BG

When facing a gas pumping problem, you can either rebuild a standard process pump to a BG or install a new BG pump. This is often a cost-efficient solution. Well-proven, BG is the true problem-solver. A typical example is pumping from de-inking cells to the foam tank, an application where other pumps are unable to deliver a stable flow. What's more, a BG pump can handle higher consistencies compared to a normal stock pump. All in all, the BG pump means large savings thanks to high efficiency, stable flow and excellent reliability.

- Designed specifically to handle liquids with high gas content
- Wide range of sizes and capacities
- Can be equipped with an external vacuum pump
- Provides high hydraulic efficiency
- Part of the Scanpump Modular System
- Reliable design with sturdy bearing assembly

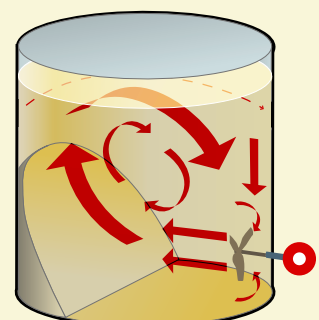


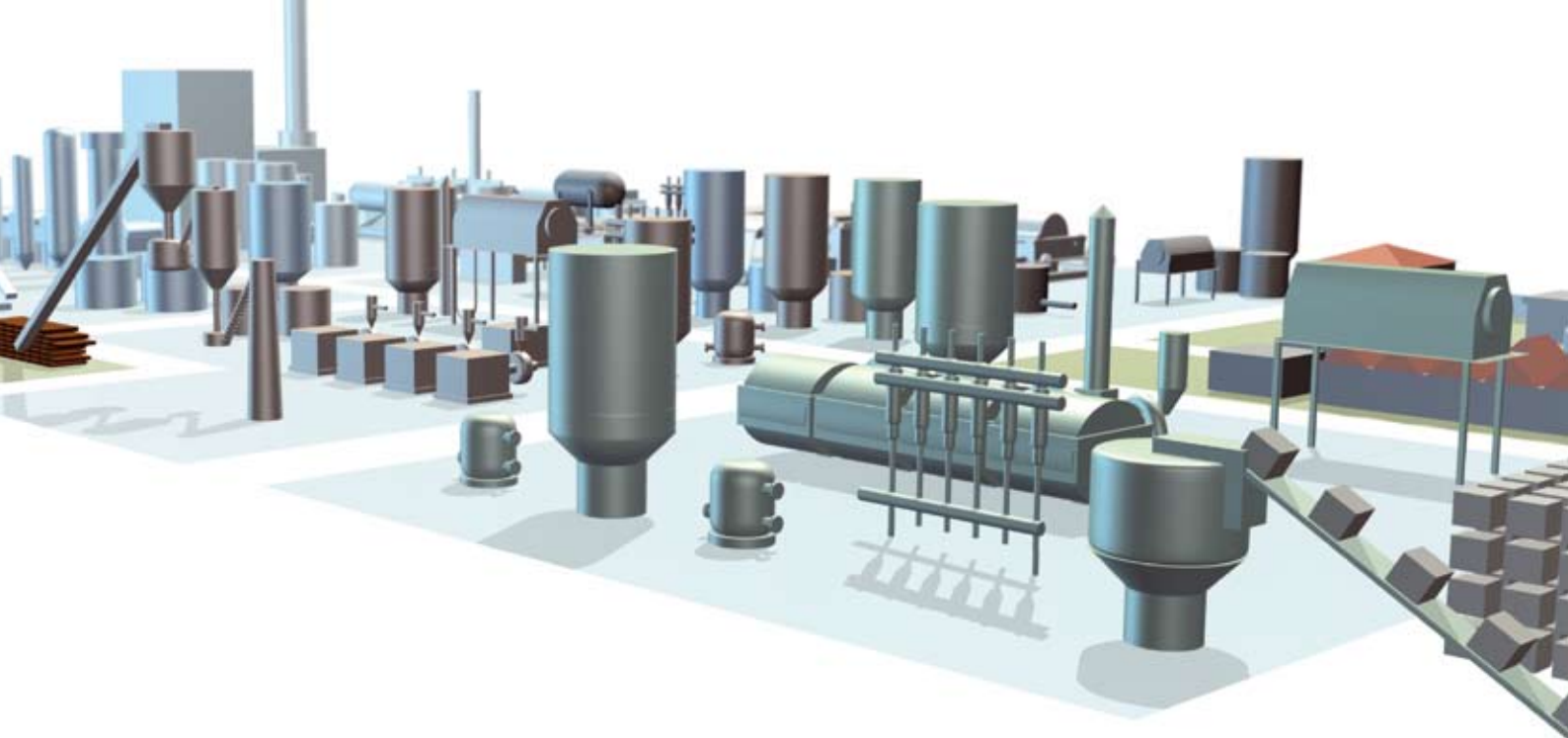
## Medium consistency technology with BM pump

Through extensive testing performed together with end-users and a leading supplier of process equipment, Scanpump has gained thorough knowledge of various applications in medium consistency pumping. This both confirms and strengthens our ability to assist you in getting an efficient installation – today and long into the future.

## Optimal mixing in the latency chest

For the latency chest, a Scaba agitator ensures a high active volume (up to 90% of the volume or more) for optimal mixing results.





### Scaba side-mounted agitator

For every agitator position, it is essential to reach the desired process results using the lowest amount of energy possible, for example in the latency chest. This calls for a very good agitation. With Scaba agitators, the risk of stagnant pulp is non-existent.

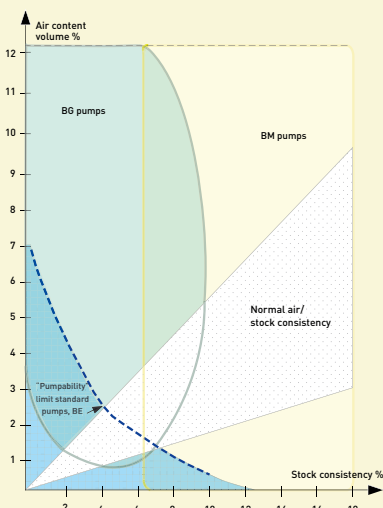
- Individually designed to meet each process requirement
- Robust, modular design
- Easily combined with most drive units, seals and propellers
- Designed to simplify service and maintenance
- Shaft seals can be maintained without emptying the vessel
- Process guarantee for all applications



### Process pump BE with 3-vane impeller

Clogging is a risk in applications that contain large solids such as chip washing, pulpers and reject handling. Yet in most cases it can be avoided. Our BE pump with a 3-vane impeller is a smart solution that features a specially designed groove in the wear disc that helps facilitate the passage of larger items, preventing blockage.

- Optimized 3-vane impeller design maximizes the free passage
- Specially engineered groove in the wear disc helps prevent erosion
- Advanced materials for very abrasive applications
- Modular design for fewer spare parts
- System PSI sealing concept ensures the best conditions in the sealing cavity



### Gas handling and pumpability

Our extensive experience and thorough knowledge of stock pumping and friction calculation ensure that we always choose the right pump for the job. In fact, whatever the gas content or stock consistency, you can rest assured that Scanpump offers the optimal solution. A normal stock pump, such as BE, can handle free air in stock as shown in the diagram. Over the pumpability line? Then our BM or BG pumps are ideal.



### Pulper dump pumps

Nails, wires, staples – you name it – can erode the pump causing extensive damage, even failure, within just a few months. The specially engineered groove in the wear disc of our pulper dump pumps allows potentially destructive objects to escape directly – instead of moving round and round, eroding the wear disc.

# STOCK PREPARATION AND PAPER MACHINES

If your mill has a heart, it's located here. There's simply no room for compromise or wishful thinking. You must get the right blend of fibres, which requires powerful and accurate pumping, agitation and mixing. This refines the stock to meet the specific demands of the recipe at hand. Yet ensuring smooth flows and stock homogeneity is no small challenge. And after all this comes the ultimately critical point: the headbox. You need a pump that can reliably handle huge flows at high efficiencies in the short circulation, while minimizing pulsations. Here consistent and even pressure is all important. After all, the quality of your product is at stake – not to mention the reputation of your mill.



## Process pump BE with ESDF impeller

Being able to ensure exceptionally low pulsations is a critical success factor. The BE pump with our patented ESDF (End Suction Double Flow) impeller is adapted to meet the extraordinary demands on dilution pump positions. It is also a reliable and cost-effective solution for smaller headbox systems – providing extremely low pulsations for an even flow.

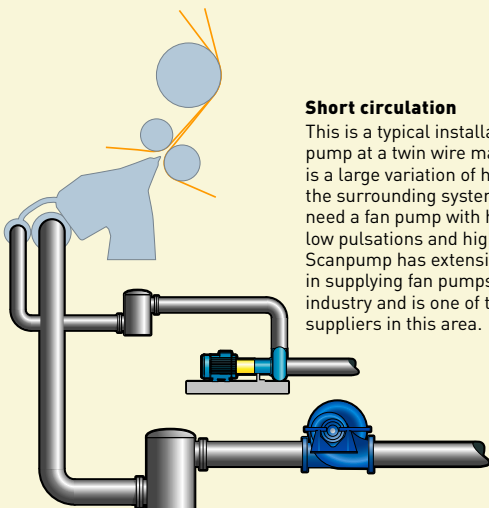
- Low-pulsation guarantee
- Advanced modular design for fewer spare parts
- Internal surface polishing
- Guided lap flanges available for smooth connection between the pump and the pipes



## Split casing fan pump Z22

The Z22 is the ultimate fan pump solution, providing reliable performance where you need it most. It is fitted with an advanced, precision-made double suction impeller that ensures a very smooth flow with extremely low pressure pulsation. To maximize operating efficiency, it is available in a wide range of models with different impeller options, making it ideal for both fan pump and cleaner positions.

- Well-proven and reliable with robust construction
- Extremely high efficiency with peaks well above 90%
- Ideal for variable frequency drive
- Internal surface polishing
- Guided lap flanges for smooth connection between the pump and the pipes



### Short circulation

This is a typical installation of a fan pump at a twin wire machine. There is a large variation of headboxes and the surrounding systems, but they all need a fan pump with high reliability, low pulsations and high efficiency. Scanpump has extensive experience in supplying fan pumps to the paper industry and is one of the leading suppliers in this area.



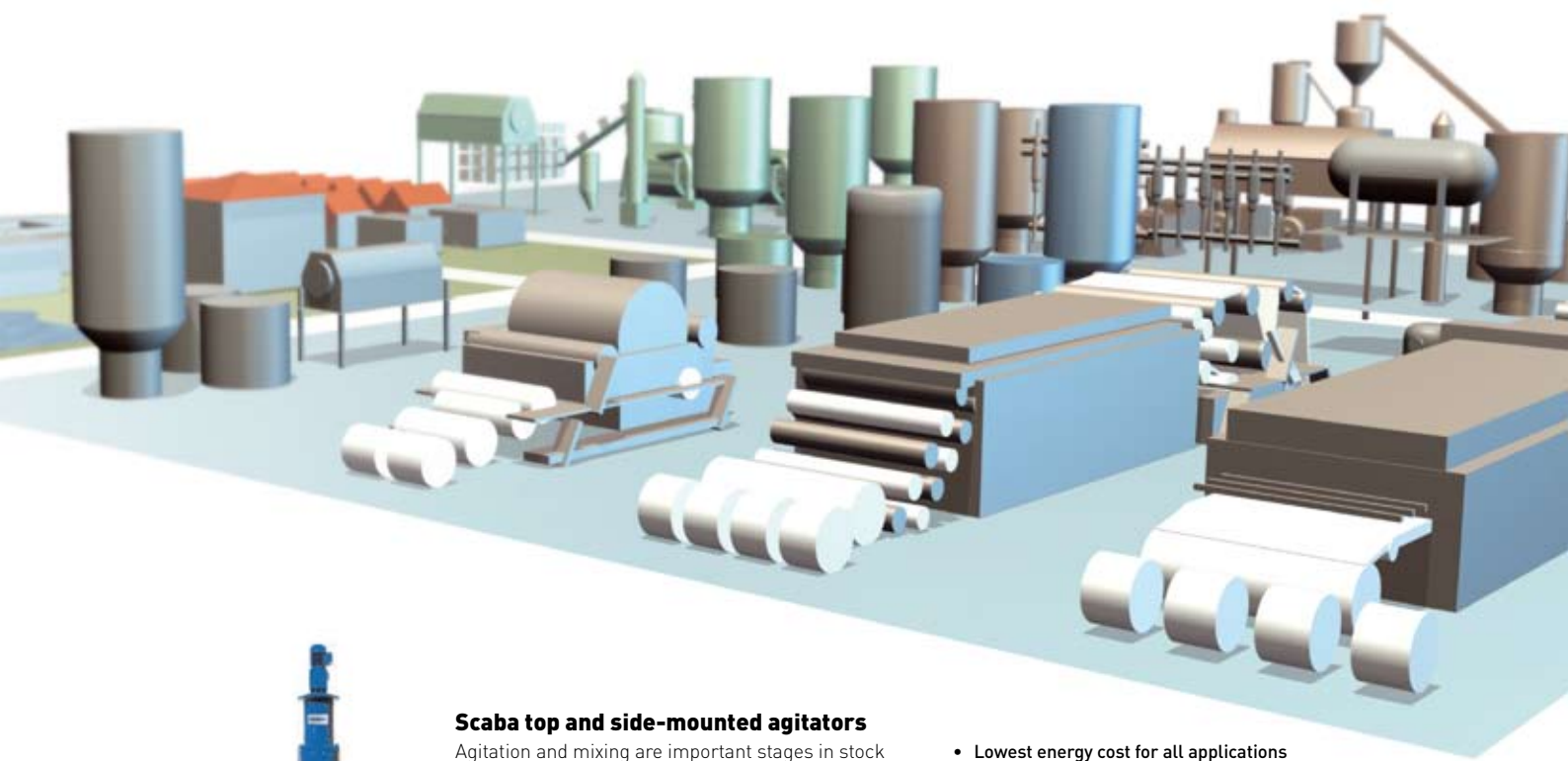
### Z22 Fan pump impeller

The Z22 fan pump for headboxes features an advanced double suction, double flow impeller design that ensures extremely low pulsations and a powerful, even flow.



### BE ESDF impeller

Scanpump is the inventor of low-pulsation impellers for end suction pumps for smaller paper machine headboxes and dilution systems. The advanced ESDF impeller is a combination of a closed and a semi-open impeller with low-pulsation properties.



### Scaba top and side-mounted agitators

Agitation and mixing are important stages in stock preparation – whether it is ensuring intense agitation in the blending chest or an even flow and the right concentration in the machine chest. In every position, the challenge is to ensure the desired mixing results in a reliable and energy efficient way. Scaba does just that – and comes with a process guarantee.

- Lowest energy cost for all applications
- Robust construction for a long service life
- Modular design means fewer spare parts and less maintenance.
- Wide range of drive units, housings, seals and propellers



### Cantilever pump FV

Our seal-less FV sump pump provides reliable, non-clogging operation, making it ideal for pumping various types of spill water around your mill. Fitted with a vortex impeller, it allows passage of large solids without the risk of blockage. What's more, all bearings are well-protected above the spill water level for high operational reliability.

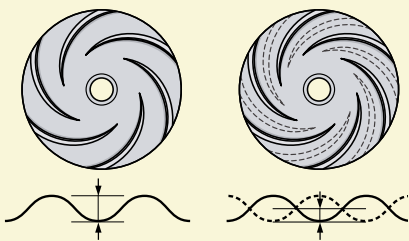
- Extremely reliable
- Fitted with vortex impeller
- Part of the Scanpump Modular System
- Minimal maintenance



### Clean liquid pump NL

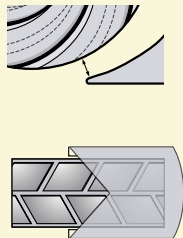
This general-purpose pump is far above the ordinary. Fine-tuned to the requirements of the position at hand, the NL pump offers high efficiency with low NPSH requirements. Not to mention higher reliability and easier maintenance when compared to standard water-norm pump installations.

- Fitted with closed impeller
- Oversized ball bearings with grease or oil lubrication
- Minimum shaft deflection provides optimal operating conditions for the shaft seal
- Vortex breaker in the sealing cavity for optimum seal working conditions
- Available in a range of materials

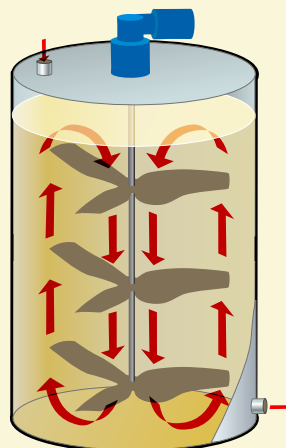


### Designed for lowest possible pulsations

By staggering the impeller halves, the vane duct volume that passes the volute cut-water is reduced by half. This doubles the vane frequency and thereby reduces pressure pulsations. What's more, thanks to the skewed vanes, the cut-water is V-shaped giving an even smoother passage and further reducing the pulsations at vane frequency.



The greater the distance between the impeller and the volute cut-water, the lower the pressure pulsations. This is why we have designed Scanpump fan pumps with an optimized distance between the impeller and the volute cut-water – keeping efficiency within design limits. This, combined with precise balancing and manufacturing based on extensive experience, ensures the best possible conditions for your paper production.



### Storage tank for paper stock

Storage tanks in stock preparation must be able to ensure the homogeneity of the stock, while keeping stock consistency under control. Only then is it possible to obtain optimal paper machine runnability and ensure the quality of the final product. Scaba agitators are the answer – providing solutions tailored to the stock consistency, the volume and shape of the tank and process conditions.