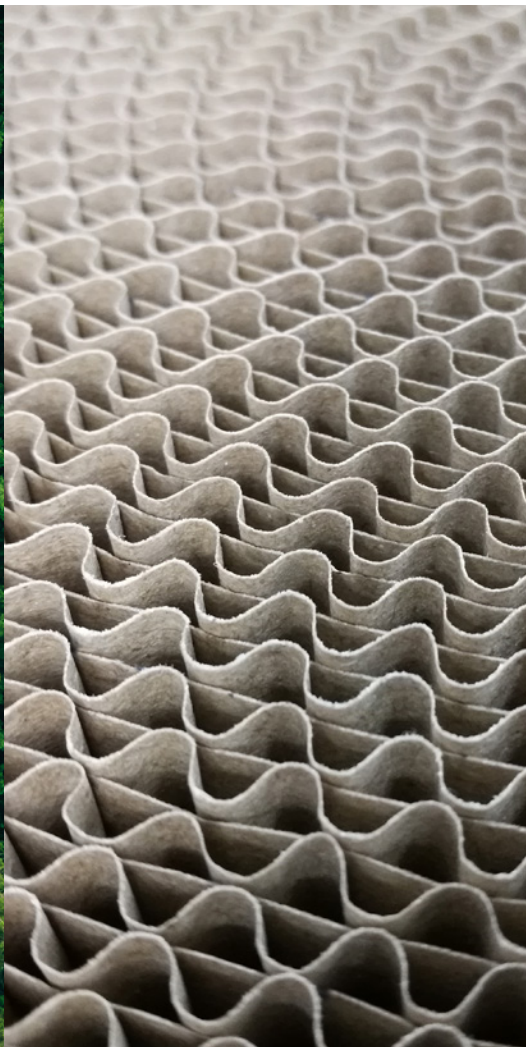




Unmatched application **expertise** for pulp, paper, and board

With two centuries of experience Sulzer is reliable partner for the pulp, paper, board, and bio-based products' industries. Our know-how and competitiveness are based on close cooperation with the world's leading producers, machinery suppliers and engineering companies.
sulzer.com/ppi



Your trusted and proven partner

Sulzer is the world leader in innovative, reliable, and proven pumping, agitation, mixing, and aeration solutions for the pulp, paper, board, and bioproducts industries. We drive the green transformation towards circular economy. We are the trusted partner in breakthrough solutions for textile, wood, and bio-based processes and application development. We are committed to this new development.

Proven expertise

With Sulzer you have the access to:

- Increased hydraulic excellence
- Unique applications coverage
- Experience in managing a diversity of process liquids and application environments
- The widest product portfolio available

The core competencies are based on long-term partnership programs with key customers and research institutes.

Value you can count on

- Customized solutions for your process improvements
 - Energy-efficient products with low life cycle costs and a lighter environmental footprint
 - Regular mill surveys and energy audits that can maximize the performance and reliability of your existing and planned processes
 - As a full-line supplier, we also provide energy-efficient products for water and effluent treatment applications
-

Service at your doorstep

Wherever you are, Sulzer is close by to provide personal, knowledgeable support and qualified services for the entire product life cycle. You can trust us to serve your installed base with our original spare parts also for the following well-known brands beyond Sulzer:

- Scanpump
 - ABS
 - Ahlström
 - Serlachius
 - Enso
 - Ensival Moret
-

From idea to industry

Our technologies can be used for turning wood fibers, lignin, straw, textiles, and waste biomass into new, sustainable end products. We offer solutions for both separation applications and for further processing the separated chemical components of biomass with various technologies.

- Full-scale research and development facilities
- Process equipment for your needs
- Rental equipment for agile process development
- Opportunities for co-developing process equipment



Join us in engineering new bio-based processes

Sulzer is committed to sustainable development, focusing on cellulose, textile, and bio-based raw materials as well as innovative manufacturing techniques to minimize waste and reduce reliance on non-renewable resources. We work closely with leading institutions and industry partners to innovate and develop new processes for higher-value wood-based products.

Sulzer actively investigates and develops new processes to support customers in taking the most out of the valuable wood raw material. We offer efficient and scalable solutions for industrial processing and commercialization by combining the agility of a startup with the resources of an industrial market leader.

Full-scale development center

The Sulzer competence center in Kotka, Finland is the world's largest test loop research facility for the pulp and paper industry and for new process applications for bio-based raw materials. It is designed to study pumping, agitation, and mixing processes and is available for demo runs and tests, conducted with absolute confidentiality. The test cycles are suitable for different liquids and can handle fiber suspensions that have a consistency of up to 20 per cent.



Rental test equipment

Sulzer rents out a range of test equipment for cellulose-based process development: pumps, static online mixers, and medium-consistency solutions. The key benefits of rented test equipment include:

- No large investments in test equipment
- Outsourced maintenance and servicing
- Easy installation and startup
- Expert process consultation
- Advanced testing analytics

The equipment can be used either in our full-scale development center in Kotka or at the client's site. Our clients can use a range of process equipment for continuous and batch-based processes in testing, piloting, demo batch, and pre-industrial batch stages.

Co-development of process equipment

We are set to find scalable solutions for our partners' development initiatives and mutually learn about the processes, applications, and suspensions. If suitable equipment cannot be found in Sulzer's testing selection, we are open to co-development projects.

Wherever you are, Sulzer is close by

Our global delivery and customer service network, including an advanced network of service centers and parts processing centers, provides qualified services for the entire product life cycle. We are well known for state-of-the-art products, performance, reliability, and energy-efficient solutions. Our customers benefit from our intensive research and development in fluid dynamics, process-oriented products, and special materials.

Thanks to our global network of modern manufacturing facilities and innovative processes, we ensure the highest quality. All Sulzer manufacturing plants have advanced testing facilities, capable of demonstrating pump performance and proving the ancillary equipment to ensure smooth commissioning and start-up.



Proper maintenance at your reach

When it comes to process equipment, performance is everything. Pumps need to be in working order at all times. Obtaining optimum working life from your equipment requires regular and efficient servicing. With Sulzer as your partner, you can always get the best out of your process. Our globally available Customer Support Services teams deliver fast, reliable, and innovative solutions during the whole life cycle of your equipment.



Repairs

With our modern equipment and highly skilled personnel at our service centers, we can repair and refurbish even the most demanding equipment back to its original performance. We also offer modernizations that enhance the performance of your equipment or increase its lifetime.



Field services

Our field services cover installation, start-up service, regular inspections, trouble-shooting, performance measurements, condition monitoring, and more.



Energy efficiency and decarbonization solutions

With Sulzer at your doorstep, you can improve your competitive advantage and ensure safe operation. Our partnership program offers you customized solutions for your process improvements and future applications.



Original spare parts

Sulzer has a worldwide network of spare part delivery centers to quickly deliver original spare parts from stock or manufacture them promptly based on your order.



Retrofits and reliability upgrades

We offer full service for your process equipment together with spare parts availability for daily maintenance and repairs, process optimization, and know-how as well as complete energy audits.



Customer service agreements

When you need to free your own resources to other valuable tasks or when you want to save money by not keeping spare parts in your own stock, Sulzer offers various service contract options for you.

AHLSTAR – the answer to your process needs

Designed especially for the pulp, paper, and bio-products industries, every AHLSTAR pump is tailor-made to ensure process reliability, high efficiency, and low operating costs. The AHLSTAR range also includes the total pumping concept for air-containing and gas-containing liquids with stock pumping (A), non-clogging (NPP/T), and wear-resistant (WPP/T) pumping hydraulics.

- AHLSTAR pumps save energy and sealing water
- Designed to meet the EN ISO 5199 reliability standard, these pumps also comply with the EN 22858 (ISO 2858) standard
- The modular interchangeability of parts and components enables low spare parts inventory
- The pump range offers the lowest total cost shaft seal concept, with dynamic seal, mechanical seals, and packing
- Every AHLSTAR is designed for fast and easy installation, maintenance, and service

Features and benefits

Versatile range of reliable and efficient impellers

- Reduces life cycle costs, energy consumption, and downtime

Innovative and reliable integrated degassing and self-priming units

- For a variety of applications with difficult liquids
- Designed to help the centrifugal pump start quickly when the liquid level is below the pump in self-priming applications

Robust, reliable and patented Rotokey impeller mounting

- Enables fast and simple dismantling and reassembly
- Helps minimize maintenance costs

Externally adjustable patented side plate

- Allows fast and simple impeller clearance setting, thereby minimizing life cycle costs and ensuring continued high efficiency

Patented balancing holes

- Ensure efficient liquid circulation behind the impeller and in the seal chamber
- Guarantee optimum shaft seal performance by reducing unexpected shutdowns and minimizing operation and maintenance costs

Wide variety of shaft seal options

- Effective dynamic, single, and double mechanical seals, and gland packing
- Fast and simple installation
- No measurement required

Heavy-duty shaft

- Reduces deflection at stuffing box to <0.05 mm / 0.002 in
- Helps extend shaft seal lifecycle, reduces unexpected shutdowns and maintenance costs

Reliable bearing unit

- Reliable, heavy-duty bearing unit minimizes maintenance costs
- Includes oil and grease lubrication for all performance needs: grease lubrication for applications up to 120°C/250°F and oil lubrication for up to 180°C/355°F

Back pull-out design

- Facilitates quick access for servicing

AHLSTAR material selection

Stainless steel design

Duplex	ASTM A890 3A ASTM A890 1B ASTM A890 5A	41 4L, EH* 4T
Austenitic	ASTM A743 CF-8 AVESTA 654 SMO 2)	4C 4U
Martensitic	ASTM A747 CB7Cu-2	4E
Ferritic	ASTM A743 CC50 (mod)	ER**

Carbon steel, cast and ductile iron, titanium design ⁴⁾

Cast iron ²⁾	ASTM A48 CL 35 B	53
Chromium iron ³⁾	ASTM A532 IIIA	5B
Ductile iron	ASTM A395 60-40-18	5H
Carbon steel	ASTM A216 WCB	46 ¹⁾
Titanium	ASTM B367 C-3	75 ¹⁾

For more detailed information,
see AHLSTAR brochure.

¹⁾ Currently available on limited sizes

²⁾ AVESTA 65SMO is a trademark owned
by Outokumpu Stainless which has granted
Sulzer license to produce this material

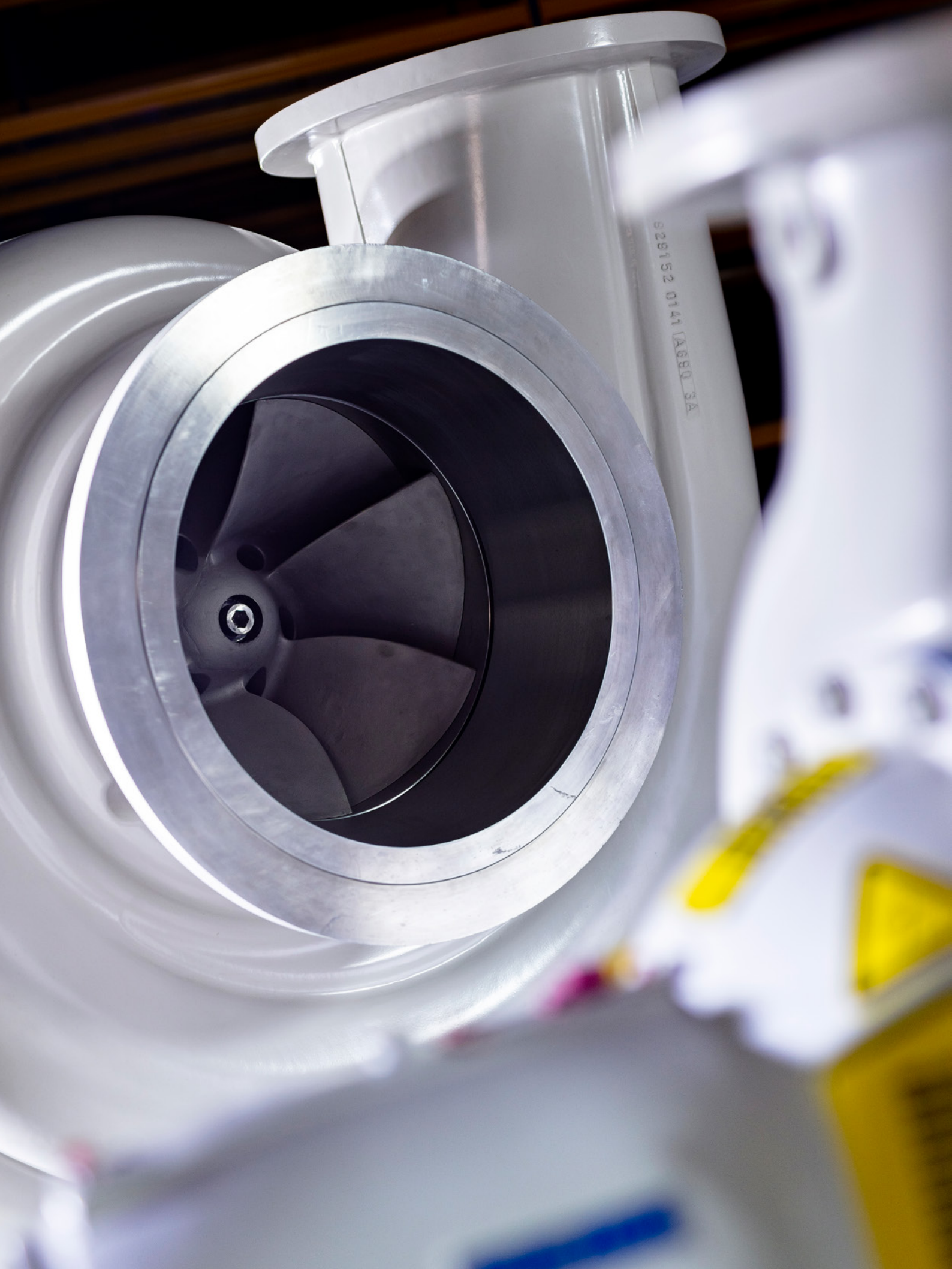
³⁾ For WPP/T range (5B/4E and full 5B)

⁴⁾ Other corrosion resistant cast steels available
on request

* EH precipitation hardened to c. 300HB

** ER for WPP/T range impeller and sideplate





829152 0141 A690 3A

AHLSTAR pumps with degassing and self-priming solutions

AHLSTAR pumps can be fitted with self-priming or degassing units to enable the pump to be started with an empty inlet pipe and to allow it to pump liquids with high gas content.

Efficient handling of high gas content

AHLSTAR pumps, fitted with a liquid ring pump or degassing units, can handle liquids with up to 40 per cent weakly bonded gases and up to 70 per cent strongly bonded gases, ensuring stable operation.

Self-priming and fast start-up

The integrated liquid ring pump (LM or S) enables fast and reliable start-up with an empty inlet pipe, making the pump ideal for challenging applications.

Enhanced system stability

The degassing unit removes gas bubbles from the impeller, stabilizing the system and significantly improving pump efficiency, especially when the gas content exceeds 4 per cent.

Versatile applications

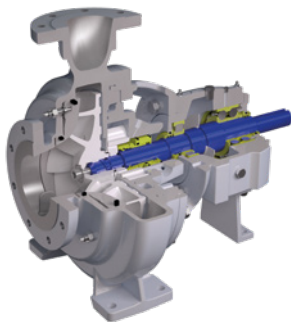
Suitable for high and low inlet head applications, the AHLSTAR pump can handle a wide variety of liquids including clean liquids, viscous liquids, fibrous and non-fibrous slurries, and liquids containing large solids. The pump offers reliable performance in both unstable and low or negative inlet head conditions, making it highly versatile in diverse settings.

Flexible sealing solutions

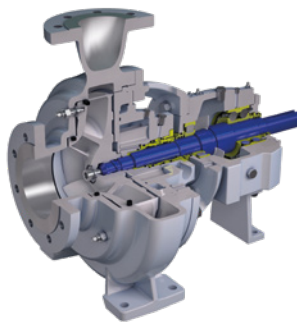
Options for single or double mechanical seals with a variety of sealing liquid options enhance reliability and reduce maintenance.

Self-priming in complex applications

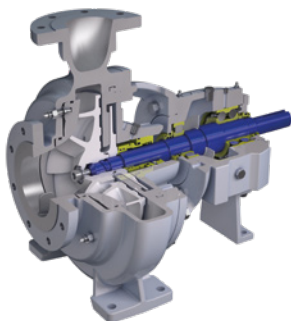
Integrated liquid ring pump ensures fast and constant operation even in self-priming applications, offering a reliable alternative to submersible and vertical pumps.



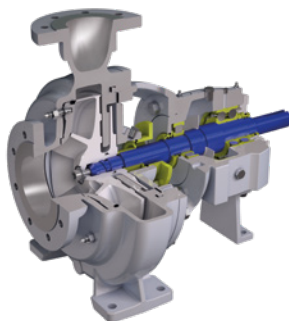
Liquid ring pump LM



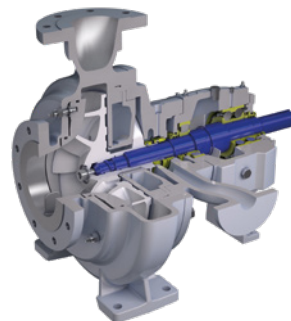
Liquid ring pump S



Gas separator GM



Gas separator GS



Gas separator R



Rely on the pioneers in the medium consistency (MC[®]) technology

Sulzer's MCE[™] pumping systems for medium consistency stock have proven to be the most reliable solution in the pulp, paper and bio-based products' industries. Sulzer utilizes application related Fluider[™] technology when selecting pumping solutions for pulp and paper mills.

Features and benefits

- Highest efficiency, reducing power consumption and installation costs
- Correct fluidization prevents fiber over-treatment
- Degassing alternatives include a built-in degassing system, a separate external MDS degassing system, and degassing without a vacuum pump
- High-temperature pumping
- Low and high inlet level pumping
- One-drive unit system in most applications
- Proven long-life mechanical design

Key characteristics

Capacities 20 to 10'000 ADMT/d
Heads up to 240 m / 787 ft.
Consistencies 6 to 18%



Technologies for each step of the process

Recycled fiber line

Repulping
Coarse screening
Flotation
Cleaning
Fine screening
HC dispersion
HC peroxide
Post flotation
MC dithionite
Storage tower

Mechanical pulp line

Refining and screening
MC peroxide
HC peroxide
Storage tower

Kraft pulp bleaching line

Blow tank
Brown stock washing
O₂ delignification
Knotting and screening
Bleaching feed tank
Bleaching: D0, EOP, D1
Storage tower

Mixing technology products for reliable and efficient processes

Sulzer SALOMIX™ and Scaba mixing and agitation technologies offer a wide range of products for pulp, paper and bioproducts' applications. Side-mounted horizontal and top-mounted vertical agitators guarantee effective agitating processes.

In addition to conventional agitators and mixers, Sulzer's selection covers special agitators, i.e. spiral and coaxial agitators. These are specifically tailored for the even and thorough mixing and agitation of high-viscosity substances based on customer-specific needs.

Features and benefits

- Excellent performance
- High-efficiency propeller with large axial thrust
- Suitable for most demanding industrial applications
- Heavy duty design with a bearing lifetime of minimum 200'000 hours
- Low total cost of ownership through smart design and energy efficient propeller
- Quick and easy installation, safe operation, easy maintenance and service
- Conical body shape supports the propeller and ensures vibration free operation
- Wide and comprehensive hydraulic coverage enabling the use in all mixing applications



Meeting today's challenges within wastewater treatment

Growing environmental awareness and increasing demands on wastewater gives higher requirements on the effluent treatment. Many pulp and paper mills are now leading the way of applying groundbreaking technologies and bringing significant environmental and economical benefits.

Requirements of the wastewater industry are very different depending on the process, and the composition from a bleached pulp line will be very different from a fine paper mill, a tissue machine or what comes from a mechanical fiber line – both regarding amount of fibers and suspended solids, oxygen requirement in the aeration process or the seasonal changes.

Sulzer has deep knowledge in wastewater treatment. When combining the product range of process pumps with agitators, submersible pumps and mixers, aerators and compressors, we can offer you great options for energy efficient solutions for now – and for your future operations.



Owatec – Turnkey water management solutions

A Sulzer brand Owatec delivers water management solutions covering everything from analysis to installation, operation, and maintenance. Our modular systems and end-to-end expert services ensure efficient and seamless project execution for aeration and biological treatment, chemical treatment, solids separation, and sludge dewatering. We provide tailored systems with seamless integration and efficient operations.

We handle every step with end-to-end management from water analysis and process design to installation, operation, and support. Modular cleantech with automated, remote flow control ensures reliability and adaptability for various industrial needs.

Process support

- Solution to address your project requirements
- Process validation and optimization
- Expert consultancy and piloting

Engineering and project execution

- Full-service engineering for turnkey solution packages
- Comprehensive design and project management
- Expert installation and commissioning

Modular technology

- Avoid infrastructure changes, cleantech available in shipping containers
- All-in-one technology
- Modular and scalable systems
- Automated 24/7 flow control
- Rent, buy, or included in the service agreement

Remote monitoring

- Effortlessly track the performance metrics of the units
- Monitor chemical usage with precision
- Stay informed with timely maintenance alerts



Digital technologies

Let Sense take care of your pump 24/7

Sulzer Sense condition monitoring is a unique solution that, in combination with our Sulzer Sense online service, allows you to remotely view the operating status of all the pumps and other rotating equipment at your facility. Wireless sensors attached to the pump measure temperature and vibration in three axes and allow operators to optimize preventive maintenance and enable troubleshooting.

Save time and money

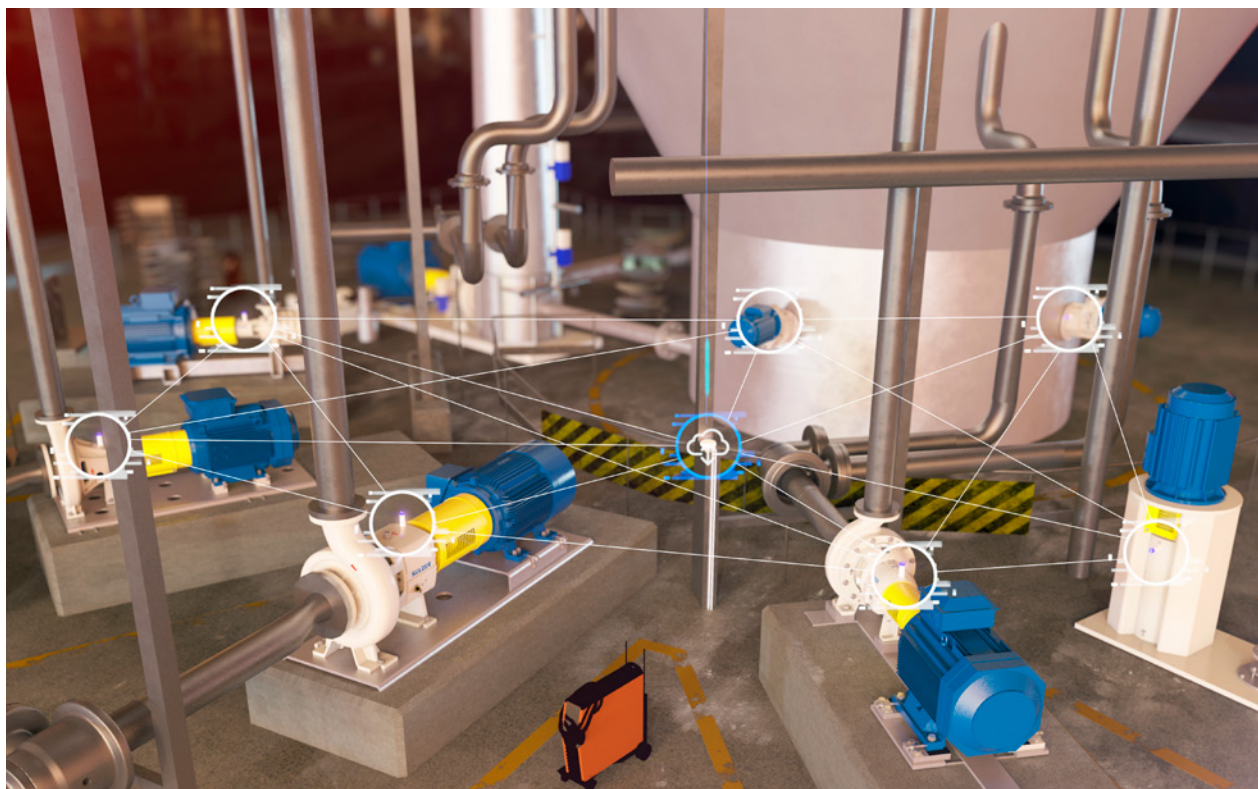
- Accurate online measurement – no manual measurement needed
- Enables troubleshooting of pumping and process problems
- Helps and enables optimized preventive maintenance
- Minimized risk for unplanned shutdowns
- Easy to install and use
- Wireless, no cabling work

Wide range of applications

Sulzer Sense condition monitoring is suitable for all rotating equipment, such as pumps, agitators, mixers and motors, regardless of type or brand. Since nearly every production site has this kind of equipment, the applications are numerous.

Easy, safe and convenient

- Results, trends and analysis available anywhere and anytime in Sulzer's online service via laptop, mobile phone or tablet
- Easy and safe thanks to an alert in the cloud service when adjusted temperature or vibration limits are exceeded
- Secure cloud-based solution, no software installation required





Our comprehensive product portfolio

Sulzer pumps and mixers are famous for their innovative and sturdy design. We make standardized products for all common applications and specialty products for applications with special requirements.

Product technology	Product type	Wood yard	Fiber-line	Recovery	Recycled fiber	Mechanical pulping	Stock preparation / paper & board machine	Water and effluent treatment	Power plant
Single stage pumps	AHLSTAR A and APT	●	●	●	●	●	●	●	●
	AHLSTAR NPP/T	●	●	●	●	●	●	●	
	AHLSTAR WPP/T	●	●	●	●	●	●	●	●
	AHLSTAR EPP/T		●	●					●
	SIL							●	●
	SNS	●	●	●	●	●	●	●	●
Double suction pumps	ZPP						●	●	●
Multistage ring section pumps	MBN		●	●	●	●	●	●	●
	MC and MD			●					●
Vertical pumps	VA	●	●	●	●	●	●	●	
	VM							●	●
Axial flow pumps	CAHR axial flow pump		●	●					
MC technologies	MCE, KCE, LCE pumping systems		●		●	●	●		
	MC discharge scraper		●		●	●	●		
	SX chemical mixer		●		●	●	●		
	MC discharger		●		●	●	●		
	Fluidizer technology								
Agitators and tower management system equipment	Side-mounted SALOMIX and Scaba	●	●	●	●	●	●	●	
	Top-mounted SALOMIX and Scaba	●	●	●	●	●	●	●	
Submersible pumps	ASB XFP range	●	●	●	●	●	●	●	
Compressors	HST range							●	
	HSR range							●	
Submersible aerators	OKI range							●	
Submersible mixers	ASB XSB range							●	
	ASB XRW range							●	
Inline grinder	Muffin monster							●	
Progressing cavity pumps	PC transfer, transfer perform, cake and dosing pumps							●	
Screens by Nordic Water	MevaScreen, MevaGrit							●	
Scrapers by Nordic Water	Zickert sludge scrapers							●	
Separators by Nordic Water	Lamella settler							●	
Filters by Nordic Water	DynaCloth, DynaDisc, DynaSand							●	

Product overview

Single stage pumps

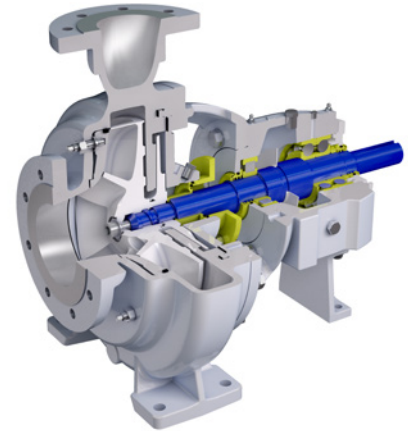
AHLSTAR A and APT end-suction single-stage centrifugal process pump

Key characteristics

Capacities	11'000 m ³ /h / 48'400 USgpm
Heads	160 m / 525 ft.
Pressures	16 / 25 bar, 230 / 360 psi, depending on material and size
Temperatures	180°C / 356°F

Applications

- For stocks up to 8%, liquors, water, chemicals, white water, condensate
- Clean and slightly contaminated liquids
- Viscous liquids
- Fibrous slurries
- Solids containing liquids
- Gas containing liquids and self-priming applications
- Various demanding applications



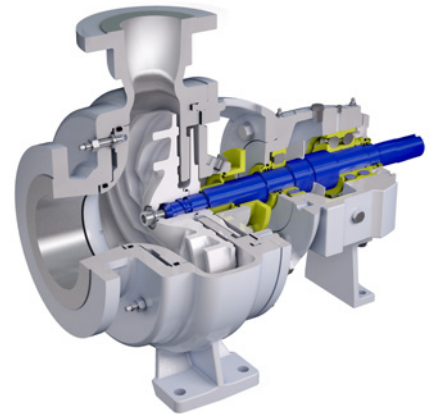
AHLSTAR NPP/T non-clogging end-suction single-stage centrifugal process pump

Key characteristics

Capacities	2'000 m ³ /h / 8'800 USgpm
Heads	90 m / 295 ft.
Pressures	16 bar / 230 psi, depending on material and size
Temperatures	180°C / 356°F

Applications

- For applications where normal stock pumps cannot handle liquids due to plugging or abrasive wear
- Suitable for unsorted stocks up to 8%, slurries, rejects, wastewater, chips, or other liquids containing large solids and other particles
- Large solids containing liquids and fibrous slurries
- Large solids and gas containing liquids and slurries including self-priming applications



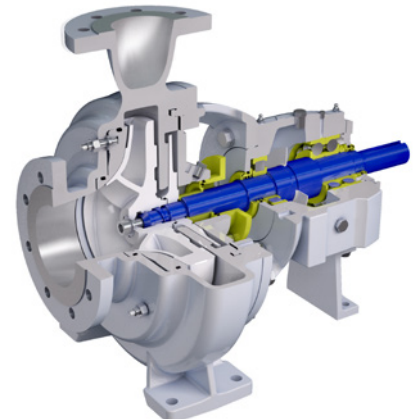
AHLSTAR WPP/T wear-resistant end-suction single-stage centrifugal process pump

Key characteristics

Capacities	7'000 m ³ /h / 31'000 USgpm
Heads	110 m / 360 ft.
Pressures	16 bar, 230 psi, depending on material and size
Temperatures	180°C / 356°F

Applications

- For the most abrasive and erosive pumping applications, such as lime milk and mud, and coating pigments
- Specially designed wear-resistant pumping hydraulics (W) with wear-resistant materials deliver six to eight times longer lifetime than conventional pumps
- Abrasive and viscous liquids, fibrous and non-fibrous slurries
- Abrasive solids and gas containing liquids and slurries including self-priming applications



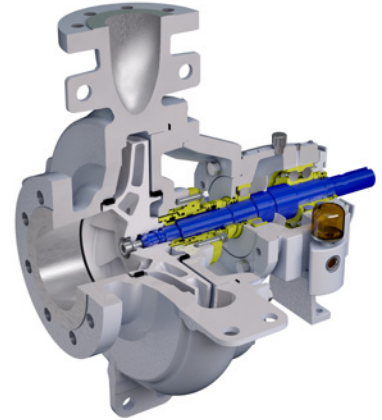
AHLSTAR EPP/T centerline supported end-suction single-stage centrifugal process pump

Key characteristics

Capacities	6'100 m ³ /h / 26'860 USgpm
Heads	160 m / 525 ft.
Pressures	25 bar / 360 psi, depending on material and size
Temperatures	210°C / 410°F

Applications

- Developed especially for pumping hot liquors such as in continuous and batch digesters (E hydraulics)
- Centerline supported design prohibits heat and pressure shock distortions
- High temperature liquids
- Clean and slightly contaminated liquids
- Viscous liquids
- Fibrous slurries



AHLSTAR A-LP process pumps for headbox applications

Features and benefits

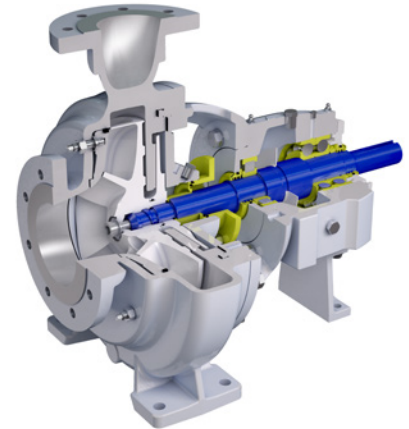
- Low-pulse version of AHLSTAR A
- Especially well-suited for the latest high-speed paper and board machines requiring minimum pulsation, absolute reliability, and high efficiency

Key characteristics

Capacities	5'000 m ³ /h / 22'000 USgpm
Heads	130 m / 425 ft.
Pressures	up to 16 bar, up to 230 psi, depending on material and size
Temperatures	180°C / 356°F

Applications

- For applications with special requirements in various pulp and paper mill processes



SIL inline single-stage centrifugal pump

Features and benefits

- Premium efficiency over a wide operation range
- Exceeds ErP (energy-related products) minimum efficiency index (MEI 0.4)
- Low installation and maintenance costs due to easy installation and unique design
- Low spare parts costs due to high standardization

Key characteristics

Capacities	up to 720 m ³ /h / 3'200 USgpm
Heads	up to 100 m / 328 ft.
Pressures	up to 16 bar / 230 psi
Temperatures	up to 180°C / 356°F

Applications

- Clean and slightly contaminated liquids
- Clean viscous liquids
- Clean fibrous slurries



SNS end-suction single-stage centrifugal pump

Features and benefits

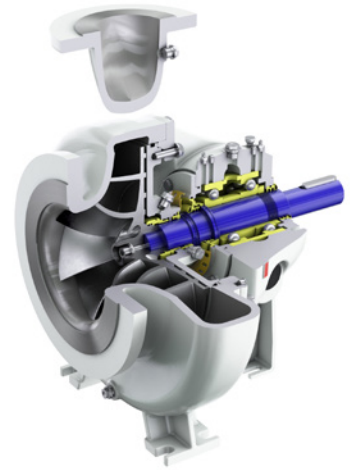
- Designed to meet the design requirements of EN 5199 international standard
- Fulfills EU's (European Union) requirements for energy-related products (ErP)
- Highest efficiency across the whole pump range, fulfilling the benchmark efficiency index MEI 0.7 (minimum efficiency index)
- State-of-the-art hydraulics ensure optimum capacity with low net positive suction head required (NPSHr)
- Low energy consumption, high standardization, easy installation and unique construction also equate to lower maintenance and operating costs
- ACS drinking water certification
- Standard material options: Duplex stainless steel ASTM A890 3A (41), austenitic stainless steel ASTM A743 CF-8M (42)

Key characteristics

Capacities	up to 1'400 m ³ /h / 6'000 USgpm
Heads	up to 160 m / 525 ft.
Pressures	up to 16 bar / 230 psi
Temperatures	up to 120°C / 250°F

Applications

- Clean and slightly contaminated liquids
- Viscous liquids
- Fibrous slurries



Double suction pumps

ZPP headbox feed pump

ZPP double suction pumps offer high reliability and durability. A robust design ensures trusted experience in all industrial segments. Specific design features provide the low-pulsating pressure on critical applications like paper machine head box, allowing us to maximize the value for customers.

Maximum performance

- Wide range of hydraulics with different pump sizes and impeller options
- Material selection of ductile iron and duplex stainless steel for different application needs
- Pressure pulsation check and fine tuning when requested
- Polished internal surfaces for most demanding fiber applications

High reliability and durability

- High reliability due to heavy-duty bearing unit, oil or grease lubricated
- Replaceable casing wear rings designed for trouble-free operation in fiber applications
- Rigid shaft ensured trouble-free running

Features and benefits

- Long and trusted experience in all industrial segments
- Low pressure-pulsation pump
- Excellent performance
- Suitable for the most demanding industrial requirements
- Fulfills requirements of international ISO 5199 standard
- Unique and superior design features minimize life cycle costs
- Quick and easy installation, safe operation, easy maintenance, and service

Key characteristics

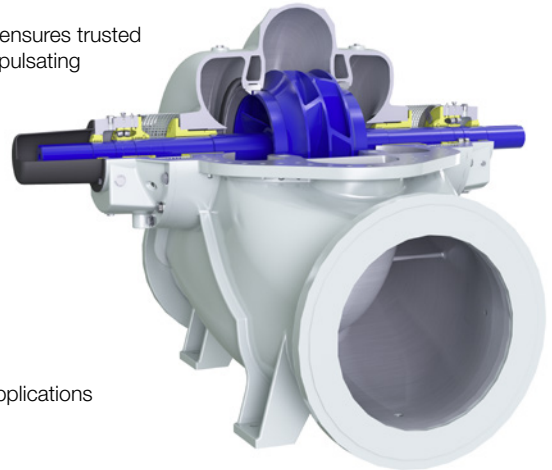
Capacities	up to 25'000 m ³ /h / 110'000 USgpm
Heads	up to 160 m / 525 ft.
Pressures	up to 20 bar, 290 psi, depending on material and size
Temperatures	up to 120°C / 250°F

Applications

- For applications with special requirements in various pulp and paper mill processes
- Clean and lightly contaminated liquids
- Viscous liquids
- Low-consistency fibrous slurries
- Low-pressure pulsation pumping applications

Materials

- Duplex stainless steel design SS ASTM A890 Gr.3A
- Ductile iron design CI ASTM A395 60-40-18



Multi-stage ring section pumps

MBN multistage ring section pump

Features and benefits

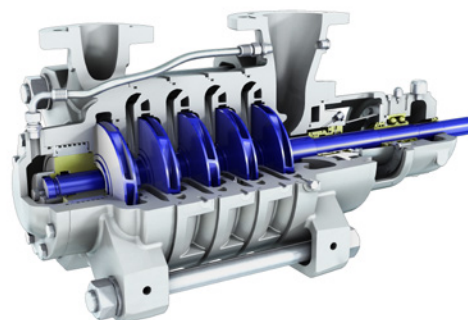
- Features our innovative polygon fit between impellers – no keys needed
- Maintenance-free dynamic seal, mechanical seals and gland packing are available for shaft sealing
- Easy to maintain – needing only one roller bearing unit and one shaft seal
- Simple construction to minimize dimensions and reduce investment and maintenance costs
- High quality investment cast impellers and diffusers for better efficiency
- Fast and easy impeller mounting
- Bearing unit can be serviced without disassembling the pumps
- Wide range of materials including duplex stainless-steel grades

Key characteristics

Capacities	700 m ³ /h / 3'080 USgpm
Heads	900 m / 2'950 ft.
Pressures	140 bar / 2'030 psi
Temperatures	180°C / 355°F

Applications

- For clean or slightly contaminated liquids in shower water, sealing water, boiler feed water applications, where a high pressure/high head is needed



MC high-pressure multistage pump

Features and benefits

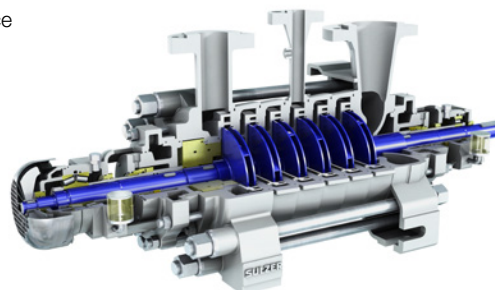
- Modular hydraulics for high efficiency in a wide range of operating conditions
- Large branch sizes for optimized inlet flow, low noise level and higher allowable forces and moments
- Unaffected by rapid temperature variations
- Easy access for cleaning to the seal cooling chambers
- Stiff shaft design for critical speeds above the maximum operating speed
- Low pressure version with dedicated large sizes for condensate extraction service

Key characteristics

Capacities	up to 1'700 m ³ /h / 8'5000 USgpm
Heads	up to 1'750 m / 5'500 ft.
Pressures	up to 180 bar / 2'610 psi
Temperatures	up to 180°C / 355°F

Applications

- For clean liquids in recovery boiler feed applications
- Feedwater pump
- Fuel injection and NOx abatement
- Condensate extraction



MD high-pressure multistage pump

Features and benefits

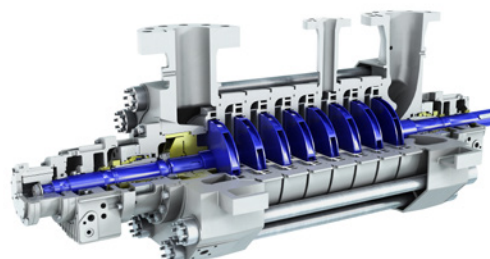
- Modular hydraulics for high efficiency in a wide range of operating conditions
- Centerline mounted with large branch sizes for optimized inlet flow, low noise level and higher allowable forces and moments
- Unaffected by rapid temperature variations
- Stiff shaft design for critical speeds above the maximum operating speed
- Multiple screws mechanical tensioners are used on large sizes to allow simpler tightening and loosening

Key characteristics

Capacities	1'200 m ³ /h / 5'300 USgpm
Heads	2'800 m / 9'200 ft.
Pressures	350 bar / 5'080 psi
Temperatures	210°C / 410°F

Applications

- For clean liquids in recovery boiler feed applications
- Feedwater pump



Vertical pumps

VA cantilever sump pump

Features and benefits

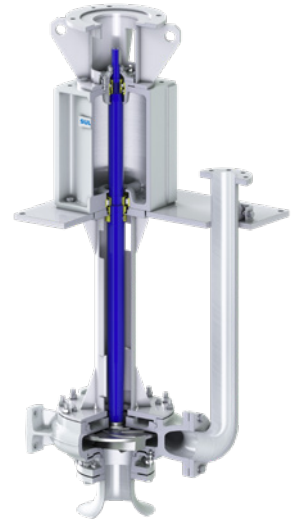
- Simple and robust design with ease of maintenance
- All types of hydraulics available: semi-open, open, closed or vortex impellers
- No sealing required
- No intermediate bearing

Key characteristics

Capacities	up to 1'500 m ³ /h / 6'600 USgpm
Heads	up to 100 m / 328 ft.
Pressures	up to 20 bar / 290 psi
Temperatures	up to 120°C / 248°F

Applications

- Clear and contaminated sump
- Corrosive, encrusting liquids and slurries



VM vertically suspended sump pump

Features and benefits

- Simple and robust design with ease of maintenance
- All types of hydraulics available: semi-open, open, closed or vortex impellers
- Single and dual seal design available for contaminated liquids

Key characteristics

Capacities	up to 3'500 m ³ /h / 15'500 USgpm
Heads	up to 100 m / 330 ft.
Pressures	up to 20 bar / 290 psi
Temperatures	up to 120°C / 250°F

Applications

- Clear and contaminated sump
- Corrosive, encrusting liquids and slurries
- Industrial water, effluents, hazardous fluids
- Corrosive and abrasive mixtures



Axial flow pumps

CAHR axial flow pump

Features and benefits

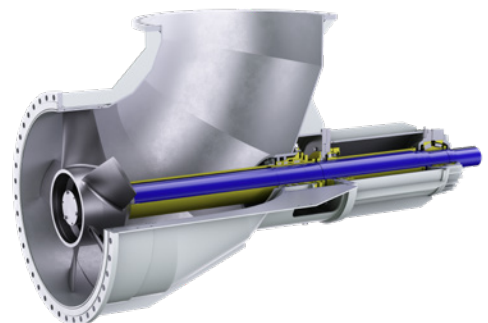
- High efficiency in high flow and low head applications
- High durability due to its heavy-duty construction
- Maximum reliability
- Low maintenance cost

Key characteristics

Capacities	up to 40'000 m ³ /h / 176'000 USgpm
Heads	up to 9 m / 29 ft.
Pressures	up to 10 bar / 145 psi
Temperatures	from -40°C to 180°C / -202°F to 356°F

Applications

- Corrosive and abrasive liquids
- Solid-contaminated liquids
- Chemicals, evaporation, and crystallization



MC[®] technologies

MCE[™] pumping system

Features and benefits

The most advanced innovative MC pumping technology for all pulp, paper mill and bio-based products' applications.

Applications

- Medium-consistency fibrous slurries up to 18%
- Medium-consistency fibrous slurries containing large solids
- Medium-consistency fibrous slurries with high gas content
- All pulp, paper and board medium consistency applications
- For related biomass and biofuel applications



KCE[™] pumping system

Features and benefits

The most efficient pumping technology for all pulp, paper mill and bio-based products' applications when feeding press washers in the Semi-MC[™] (intermediate consistency) range and high volume flows.

Applications

- Semi-medium consistency fibrous slurries up to 8%
- Semi-medium consistency fibrous slurries containing solids
- Semi-medium consistency fibrous slurries with high gas content
- All pulp, paper and board semi-consistency fibrous slurry applications and biomass and biofuels applications



KCE[™] pumping system

Features and benefits

The most efficient pumping technology for all pulp, paper mill and bio-based products' applications when feeding press washers in the Semi-MC[™] (intermediate consistency) range and high volume flows.

Applications

- Semi-medium consistency fibrous slurries up to 8%
- Semi-medium consistency fibrous slurries containing solids
- Semi-medium consistency fibrous slurries with high gas content
- All pulp, paper and board semi-consistency fibrous slurry applications and biomass and biofuels applications



MC discharge scraper and the tower discharge pumping

Features and benefits

- For discharging high consistency towers
- Ensures consistent quality and motion of the slurry in tank

Applications

- Capability to 13% tower consistency without dilution, and to 20 - 35% tower consistency with dilution
- Outlet consistency typically 8 - 13%
- Discharging high-consistency fibrous slurry towers up to 13%
- Up to 20 to 25% consistency when using diluting scrapers



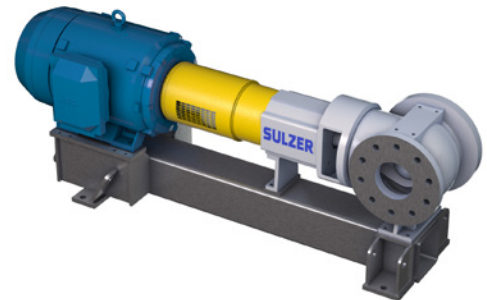
SX chemical mixer

Features and benefits

- For in-line mixing of both gaseous and liquid bleaching chemicals as well as steam into the paper stock
- Consistent quality mixing

Applications

- Fibrous slurries
- Clean and slightly contaminated liquids
- Viscous liquids
- Non-fibrous slurries



MC discharger

Features and benefits

- For dividing and controlling high-consistency stock flow and for discharging towers or reactors
- Dividing and controlling high-consistency fibrous slurry flows discharging high-consistency and fibrous slurry reactors
- For balanced high-quality mixing

Applications

- Gas removal option
- Chemical mixing



Agitators

SALOMIX™ SSA side-mounted belt-driven agitator

Features and benefits

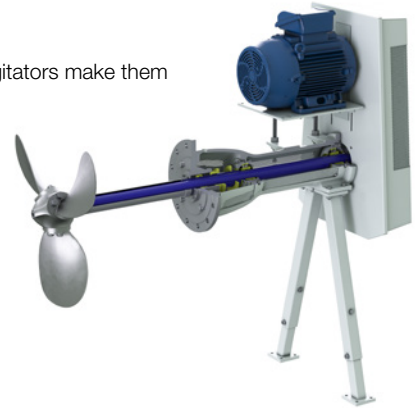
- New innovative design and rigid construction of SALOMIX SSA side-mounted belt drive agitators make them efficient, reliable, and service-friendly, while significantly reducing total cost of ownership
- Optional SOD shut-off device enables servicing the agitator without emptying the tank

Key characteristics

Stock concentration	up to 6%
Propeller diameters	800 to 1'300 mm / 32 to 52 in.
Power	7.5 to 75 kW / 10 to 100 hp
Maximum speed of rotation	up to 300 rpm

Applications

- Mixing in tanks and storage towers
- Clean and slightly contaminated liquids
- Viscous liquids
- Fibrous slurries, slurries



SALOMIX™ SSF side-mounted gear-driven agitator

Features and benefits

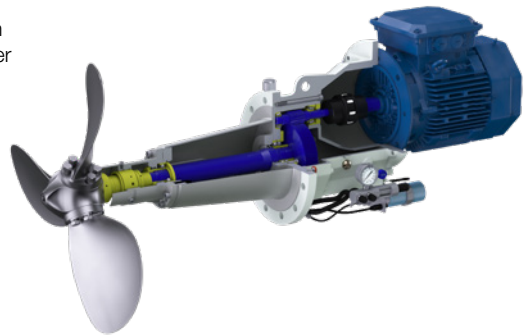
- High efficiency EX3 propellers results in energy savings and improved agitation
- Low total cost of ownership through smart design and energy efficient propeller

Key characteristics

Maximum agitated	up to 6% consistency
Propeller diameters	520 to 1'700 mm / 20 to 67 in.
Power	5.5 to 160 kW / 7.5 to 200 hp

Applications

- For all stock agitating processes



SALOMIX™ SLH side-mounted belt-driven agitator

Features and benefits

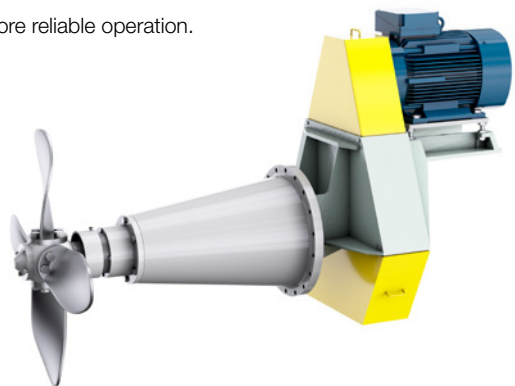
- Cone construction with an in-tank bearing. This will give lower vibrations and more reliable operation.
- Rigid belt drive to handle pressure shocks

Key characteristics

Propeller diameters	800 to 1'400 mm / 32 to 55 in.
Power	22 to 110 kW / 30 to 150 hp

Applications

- Designed for green liquor dissolving tank



SALOMIX™ SLR/STR side-mounted gear-driven agitator

Features and benefits

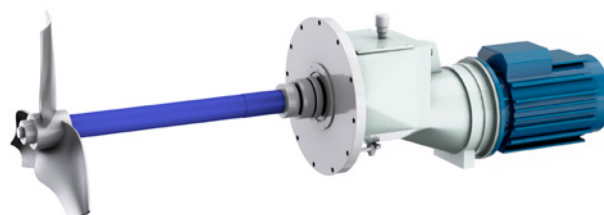
- High-efficiency SHP propellers with good mixing result at low power
- Robust and compact gear

Key characteristics

Maximum agitated	up to 6% consistency
Propeller diameters	315 to 800 mm / 12 to 32 in.
Power	2.2 to 11 kW / 3 to 15 hp

Applications

- For white water tanks and smaller stock tanks
- Mixing in tanks and storage towers
- Clean and slightly contaminated liquids
- Viscous liquids, solid-containing liquids
- Fibrous slurries, slurries



SALOMIX™ top-mounted gear- or belt-driven agitator

Features and benefits

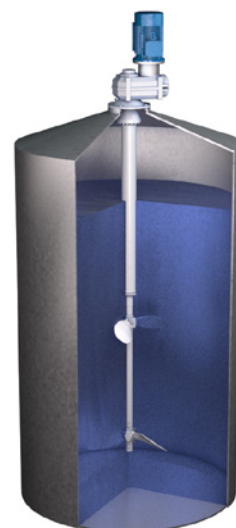
- The L series covers gear or belt driven agitators mounted vertically on the tank top or bottom flange
- Versatile impeller options meet any process needs in compliance with the rheology of the mixed fluid
- Maximum modular component flexibility
- Applicable for tanks from 1 to 2'500 m³ / 88'285 ft³
- The large hydraulic coverage satisfies the most demanding requirements of industrial agitation applications

Key characteristics

Propeller diameter	up to 8'000 mm / 316 in.
Shaft length	up to 30 m / 100 ft.
Power	up to 450 kW / 600 hp

Applications

- For storage towers, dissolvers, reactors, and production vessels
- Mixing in tank
- Clean and slightly contaminated liquids
- Viscous liquids and liquids with high gas content
- Fibrous slurries, slurries
- Solids containing liquids



Scaba top-mounted gear or belt driven agitator

Features and benefits

- The top-mounted series covers gear or belt driven agitators mounted vertically on the tank top or bottom flange
- Dry installed agitators rely on a deep process knowledge, which enable us to tailor- make the agitators to meet your specific need. This ensures the required process result with a minimum energy input
- Versatile impeller options
- High efficiency SHP propellers
- Good axial flow
- Scaba TreatX standardized agitators for water and wastewater treatment processes

Key characteristics

Propeller diameter	100 mm to 6 m / 4 to 236 in.
Shaft length	Up to 30 m / 100 ft.
Power	Up to 450 kW / 600 hp

Applications

- Flocculation, flash mixer, neutralization, sludge tanks, chemical storage, anaerobic digester etc.
- Mixing in tanks
- Clean and slightly contaminated liquids
- Viscous liquids and liquids with high gas content
- Fibrous slurries, slurries
- Solids-containing liquids



Submersible pumps

Submersible sewage pump type ABS XFP

Features and benefits

- Significant energy savings with high efficiency hydraulics and IE3 motor
- Long term reliability with rigid shaft and bearing lifetime 100,000 h
- Impellers designed specifically for wastewater and optimized for rag handling
- Minimum 75 mm free solids passage
- Submersed or dry installed
- Sizes up to DN600 and 350 kW

Key characteristics

Capacities	up to 2'700 l/s (50 Hz) / 3'000 l/s / 47'560 USgpm (60 Hz)
Heads	up to 80 m (50 Hz) / 95 m / 310 ft. (60 Hz)
Temperatures	up to 40°C / 104°F
Motor power	up to 550 kW (50 Hz) / up to 620 kW / 830 hp (60 Hz)

Applications

- Raw water intake, wastewater treatment plant, wastewater with large solids, various pumping stations of all sizes
- Clean water and wastewater
- Sewage with sludge and rag content
- Sewage containing solids and fibrous material
- Industrial raw water



Aeration

HST™ turbocompressor

Features and benefits

- Ensures that you get the highest efficiency for your biological treatment
- No wear due to the magnetic bearings
- Lubrication free
- Easy installation by integral design
- Low noise level: no need for additional soundproofing
- Flow control by integrated variable frequency drive

Key characteristics

Flow	up to 16'000 Nm ³ /h / 10'200 SCFM
Pressure rise	up to 130 kPa / 18.9 psi
Motor power	75 to 400 kW / 100 to 500 hp

Applications

- Aeration for treatment of industrial wastewater



HSR turbocompressor

Features and benefits

- 100% oil-free, environmentally friendly and safe
- Premium efficiency, low life cycle costs
- Wear-free, low maintenance costs
- Real-time monitoring secures the trouble-free operation
- Vibration-free, low machine noise
- Advanced liquid cooling system enables energy recovery

Key characteristics

Flow	up to 56 m ³ /min / 1'980 CFM
Pressure rise	2 to 9 bar (g) / 30 to 130 psig
Motor power	115 to 325 kW / 154 to 436 hp

Applications

- Suitable for providing oil-free compressed air for all industries



Submersible aerator mixer type OKI

Features and benefits

The submersible aerator mixer, together with the high-speed turbo blower, is the key to solving many aeration problems in industrial applications. This freestanding unit is simple to position at the bottom of the tank, and can run as either an aerator or a mixer.

Key customer benefits

- High aeration efficiency
- Designed for non-clogging operation
- Lifiable and selfstanding, making it easy to change of the plant configuration —no need to empty the tank
- Can run as an aerator and/or mixer according to process requirements
- Suitable for both, continuous and intermittent process operation
- Suitable for all usual tank depths, especially deep tanks

Key characteristics

Oxygen transfer	up to 410 kg O ₂ / h @ 12 m
Motor range	5 – 37 kW / 7 to 50 hp
Air flow	up to 3'600 m ³ /h / 2'100 CFM
Water depth	4 to 12 m / 13 to 39 ft.

Applications

- For aeration processes, in the pulp and paper
- Sludge storage and stabilization
- Flotation of oil and grease, additional aeration



Submersible mixers

Flow booster type ABS XSB

Features and benefits

- Energy efficient design, such as IE3 motors, high efficiency propellers and slow running design
- Self-cleaning propellers provides vibration-free operation
- Robust construction guarantee superior reliability and long operating life
- Premium Efficiency motor gives total efficiency improvement of up to 25% compared to other conventional mixer designs
- Compact, water pressure-tight design
- Provides high thrust and high flow capacity
- Increased performance variations with an extended and wide duty range

Key characteristics

Capacities	up to 6.2 m ³ /s (50 Hz) / 6.0 m ³ /s / 95'200 USgpm (60 Hz)
Diameters	up to 2'750 mm /108 in.
Temperatures	up to 40°C / 104°F
Motor powers	up to 7.5 kW / 10.1 hp

Applications

- For all sizes of treatment plants
- Gentle circulation and mixing in sewage treatment plants and industrial areas
- Low-speed wastewater mixing and stirring applications
- Equalization of sewage
- Biological processes
- Selector (contact zone)



Submersible mixer type ABS XRW

Features and benefits

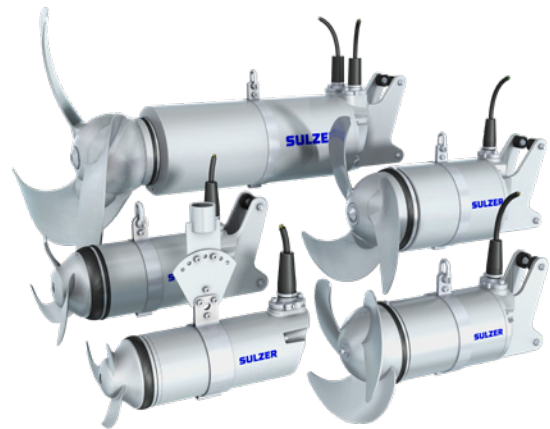
- Lowest energy consumption
- Easy upgrade of existing installations supported by a wide range of brackets and adapters
- Operational flexibility with variable speed to match the real mixing task and to manage changes throughout the year
- The robust design and the Premium Efficiency motor give superior reliability and long operating life

Key characteristics

Capacities	up to 1.79 m ³ /s / 28'300 USgpm
Diameters	up to 900 mm / 35 in.
Temperatures	up to 40°C / 104°F

Applications

- Mixing and stirring applications in sewage treatment plants and industrial areas
- Homogenization of highly-concentrated sewage sludge



Grinders

Muffin Monster™ inline grinder

Features and benefits

- Dual-shafted, slow-speed, high-torque design grinds tough solids
- Protects pumps, centrifuges and other sensitive downstream equipment from large debris
- Easy to remove cutter cartridge in 30K Muffin Monster
- Pipe flange diameters from 100 to 500 mm

Key characteristics

Capacities up to 1'558 m³/h / 6'860 USgpm
Pressures up to 10.3 bar / 150 psi

Applications

- Sludge line protection
- Pump station protection
- Wastewater treatment headworks protection



Progressing cavity pumps

PC transfer pump

Features and benefits

- Designed to deliver constant capacity with viscous fluids and shear thinning non-Newtonian fluids
- Selected drives and gearboxes with many low-speed options are available to reduce pump wear
- Compact for space saving, can be installed vertically or horizontally and run in either direction
- Competitively priced process pump with integral direct drive and gearbox, baseplate optional

Key characteristics

Capacities up to 440 m³/h / 1'900 USgpm
Pressures up to 24 bar / 350 psi
Temperatures -10 up to 100°C / 14 up to 212°F

Applications

- Sludge handling and transfer
- Industrial effluent
- Shear sensitive processes
- Shear thinning slurries
- High-viscosity medias

PC transfer perform pump

Features and benefits

- Saves time with maintain in place features, easy to de-rag and no need to disconnect the pipework
- Designed for use in sludge plants, where high reliability is essential and downtime is kept to a minimum
- An extension of the PC transfer pump with material variants for a wide range of process applications
- Robust drives and gearboxes with low running speeds form an integral part of the unit design

Key characteristics

Capacities up to 225 m³/h / 990 USgpm
Pressures up to 12 bar / 170 psi
Temperatures -10 up to 100°C / 14 up to 212°F

Applications

- Sludge handling and transfer
- Industrial effluent
- Shear sensitive processes
- Shear thinning slurries
- High-viscosity medias



PC cake pump

Features and benefits

- A large auger inlet and screw conveyor to deliver consistent pumping and push the cake to pump
- Saves time with maintain in place features, easy to disassemble, no need to disconnect the pipework
- Feed chamber easily disconnects allowing access for removal of the rotor and screw conveyor assembly
- Designed for use in sludge plants, where high reliability is essential and downtime is kept to a minimum

Key characteristics

Capacities	up to 49 m ³ /h / 216 USgpm
Pressures	up to 24 bar / 350 psi
Temperatures	-10 up to 100°C / 14 up to 212°F

Applications

- Thickened sludge cake (>30% DS)
- Dewatered sludge transfer
- Sludge blending
- Industrial process sludges with high % DS
- High-viscosity medias

PC dosing pump

Features and benefits

- For low flow, metering and dosing applications, with continuous and accurate capacity demands
- Gentle pumping action, minimizes shear and crush damage to the pumped product
- Dosing pump parts are interchangeable with the PC transfer range, with stock standardization benefits
- An enhanced coupling rod design, gives higher pressure capabilities, up to 72 bar

Key characteristics

Capacities	5 to 1'250 l/h / 0.02 to 5.50 USgpm
Pressures	up to 72 bar / 1'044 psi
Temperatures	up to 120°C / 248°F

Applications

- Sludge dewatering
- Controlled flocculent pumping
- General industry and chemical processing
- High-viscosity medias

Screening, sedimentation and filtration solutions by Nordic Water

The treatment portfolio from Sulzer – Nordic Water covers a wide range of particles out of water separation suitable for the pulp and paper industry. The products are well proven in the industry with hundreds of installations worldwide, over more than 30 years.

The filtration products like DynaSand or DynaDisc filters have proven given sustainable access to more and better-quality water, which has improved the paper quality significantly. Other additional benefits including reduced maintenance, lower energy demand and a reduction in chemical usage are also important when retaining fines on the paper web or recirculation of process water.

MevaScreen fine screen

Features and benefits

MevaScreen offers one of the highest separation degrees of screenings and solids available on the market. It features heavy-duty and extremely robust bar screens with low head loss. The high-capacity fine screens are designed with a fully covering screenings mat. These fine screens have the lowest energy usage due to the absence of brushes and similar components. No water consumption as the design has excluded the wash water requirement in other screens. The unique automatic controls with pulse-operation, gives fully screenings mat benefits. The system is highly tolerant of varying flow volumes.

Key characteristics

Slot width	1 to 6 mm
Discharge height	0.7 to 5 m
Channel width	300 to 2'000 mm



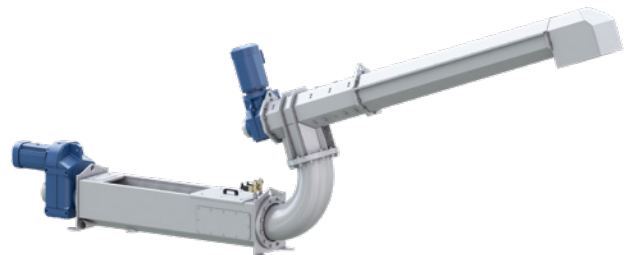
MevaGrit grit washer and classifier

Features and benefits

The MevaGrit offers efficient separation of sand and mineral particles on a low footprint. It is available in a wide range of sizes and models for energy-efficient grit recycling. MevaGrit is designed for long life with fewer parts to maintain and low wear resulting in reduced disposal costs.

Key characteristics

Flow capacity	up to 30 l/s
Dry solids content	>90%



Lamella settler

Features and benefits

Lamella settler maximizes settling efficiency with a reduced footprint at 10% of a traditional sedimentation tank. It features a unique flow control system and inlet openings designed for uninterrupted settling. The system efficiently separates solids with basically no energy consumption. CleanBot, an automatic cleaning robot cleans lamella plates without the need for water.

Key characteristics

Flow capacity	3 to 50'000 m ³ /h
Sedimentation area	Free-standing versions up to 165 m ² , plate pack design for concrete basin to meet request



Zickert sludge scraper

Features and benefits

Zicker sludge scrapers are designed for continuous sludge transport in rectangular or circular shaped sedimentation tanks. The hydrodynamically designed profiles provide a sludge thickening effect. The lowest part of the sludge layer is removed while the more diluted sludge above remains. This results in a dryer sludge which will facilitate dewatering, leading to efficiency improvements and energy savings. The flexible design allows for easy adaptation to tanks with pillars or other obstructions inside.

Key characteristics

Bottom tank dimensions	Rectangular tanks max 100 m in length, max 12 m in width per scraper, parallel scrapers for wider tanks
Circular tanks	up to Ø 50 m



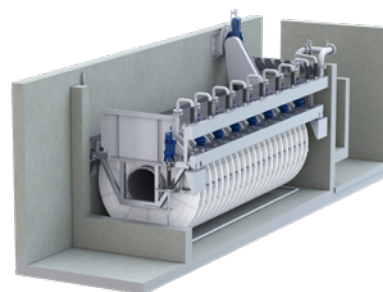
DynaCloth fiber disc filter

Features and benefits

The DynaCloth outside to inside flow filter provides high-quality filtration performance using the pile cloth technique, making it particularly suitable for applications where removal of fine particles to deliver high-quality effluent is required. It is tolerant of high inlet Total Suspended Solids (TSS) shock loads. It offers high operational reliability and high flow rate capacity in a single unit at a competitive cost. Providing continuous filtration during backwash eliminates the need for additional units.

Key characteristics

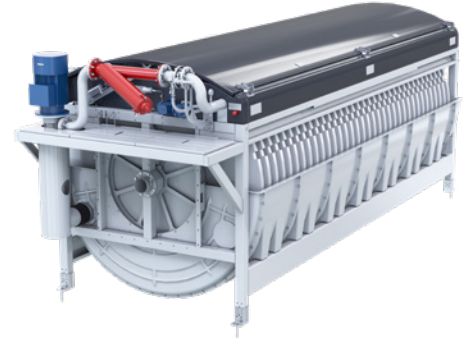
Flow capacity	10 to 2'600 m ³ /h per filter
Submerged effective filter area	up to 258 m ² in a single unit
Typical reject water volumes	1 to 4%
Filter cloth	nominal 5 and 10 µm equivalent
Three diameters available for different flow/load applications	



DynaDisc microscreen filter

Features and benefits

The DynaDisc inside to outside flow filter provides high filtration efficiencies, featuring a patented filter cassette that ensures easy maintenance. The integrated level tank optimizes the headloss, retains filtrate for use by the backwash system and helps increase the lifetime of the filter cloths. Oscillating backwash spray nozzles ensure an even and efficient cleaning further enhancing the lifetime of the filter cloth. It offers high flow capacity in a single unit coupled with high operational reliability at a competitive cost. Providing continuous filtration during backwash eliminates the need for additional units.



Key characteristics

Flow capacity	10 to 3'250 m ³ /h per filter
Gross filter area	up to 300 m ² in a single unit
Typical reject water volumes	1 to 3%
Filter cloth	nominal 10 and 20 µm and upwards
Two diameters available for different flow/load applications	

DynaSand™ continuous sand filter

Features and benefits

The DynaSand offers continuous filtration that builds up a secondary filter bed layer, for better turbidity removal rates. DynaSand uses "contact filtration," in-line dosing and precipitation with coagulation and separation inside the filter. This process effectively addresses turbidity, color, COD, and provides a hygienic barrier to meet stringent drinking water standards. The system supports mechanical, chemical, and biological processes within the same filter unit. With DynaSand wash water reduction, you can save up to 75% of energy and wash water usage. The continuous operation sand filters achieve higher flows and loading capacities per unit compared to backwash operating filters.

Key characteristics

Flow capacity	3 to 50'000 m ³ /h
Filter area	from 0.7 – 7 m ² for a single free-standing / tank version unit
Concrete basin design as high as requested	
Contact filtration saves up to 70% of footprint and 40% coagulation chemicals compared to conventional designs	



The Sulzer Flow division keeps your processes flowing. Wherever fluids are treated, pumped, or mixed, we deliver highly innovative and reliable solutions for the most demanding applications.

The Flow division specializes in pumping solutions specifically engineered for the processes of our customers. We provide pumps, agitators, compressors, grinders, screens and filters developed through intensive research and development in fluid dynamics and advanced materials. We are a market leader in pumping solutions for water, oil and gas, power, chemicals and most industrial segments.

E00579 en 3.2025, Copyright © Sulzer Ltd 2025

This brochure is a general presentation. It does not provide any warranty or guarantee of any kind. Please, contact us for a description of the warranties and guarantees offered with our products. Directions for use and safety will be given separately. All information herein is subject to change without notice.

