



PUMPS

**PREMIUM PUMPING
TECHNOLOGY FOR THE
PULP AND PAPER INDUSTRY**

IIoT ENABLED PUMP SOLUTIONS

ANDRITZ

ENGINEERED SUCCESS



Water



Pulp and
paper



Power

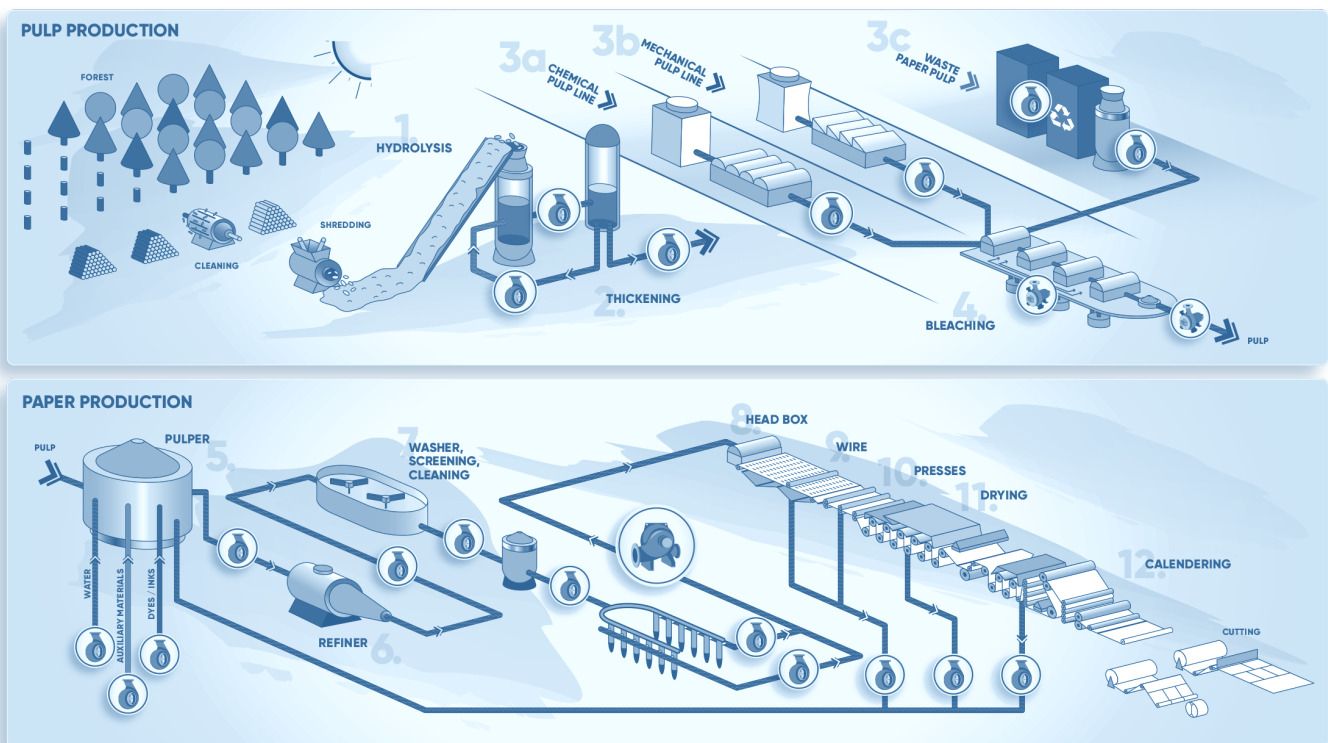


General
industries



ANDRITZ in the pulp and paper industry

As plant and equipment supplier to the pulp and paper industry, ANDRITZ has acquired broad expertise in the related process technologies. Our complete pump portfolio impresses with long service life, maximum cost-effectiveness, optimal NPSH values, and efficiencies of up to 93%.

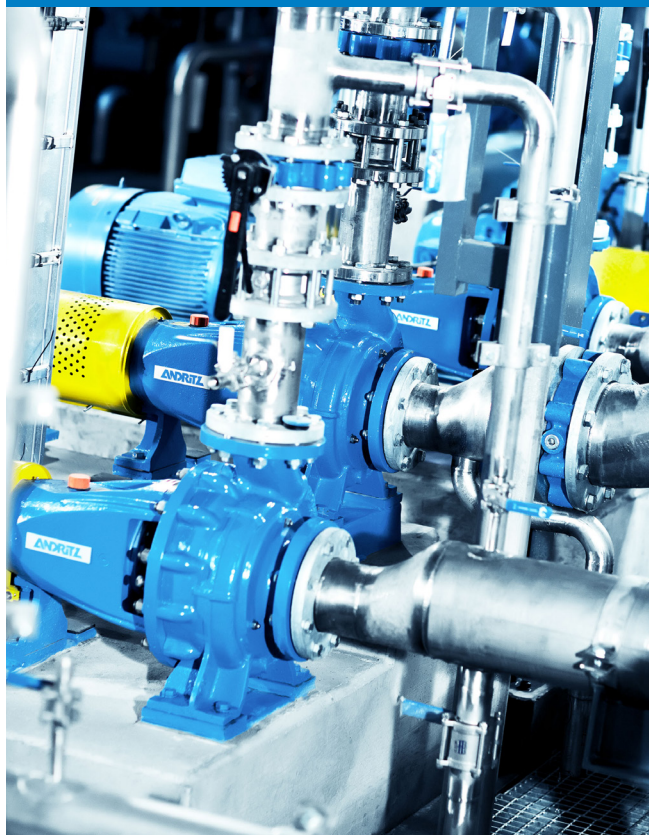


Customized pump solutions

Are you responsible for the operation or maintenance of a pulp or paper production plant? Do you plan complete new plants or conversion projects in the paper or pulp industry? Here you will find reliable and high-performance pumps from the Andritz pump program.

THE ADVANTAGES AT A GLANCE

- Complete pump range for the entire pulp and paper industry
- Efficiencies of up to 93%
- Consistencies of up to 16%
- Long service life
- Maximum cost-effectiveness
- Good NPSH values



SINGLE STAGE CENTRIFUGAL PUMPS

Single-stage centrifugal pumps are used as process pumps in various areas of pulp and paper plants. They handle pulp suspensions with consistencies up to 8% b.d., offer high efficiencies of up to 91%, and impress with their service-friendly and modular design. These pumps are also available with an additional degassing unit for media with high gas content.

SPLIT-CASE PUMPS

Double-suction split-case pumps are optimized for use as headbox- or cleaner pumps in the pulp and paper industry. They feature efficiencies of up to 93% and particularly low pulsation due to the specially developed impeller with staggered blades designed for the pulp and paper industry.

MEDIUM-CONSISTENCY PUMPS

Medium consistency pumps convey the following media: chemical and mechanical pulp as well as recycled fibers with consistencies of up to 16% b.d. with high efficiencies. In most applications, they can be operated without any vacuum pump. Due to new integrated SMARTSEP-device there are almost no fiber losses during operation.

SELF-PRIMING CENTRIFUGAL PUMPS

Self-priming centrifugal pumps with internal or external vacuum pumps for self-priming application or to convey media with high gas content. Thanks to the semi-open impeller, they are also ideal to convey viscous media and media containing solids.

VERTICAL SUMP PUMPS

Vertical sump pumps convey water, wastewater, pulp suspensions, slurries containing solids, and abrasive media.

Single-stage centrifugal pumps

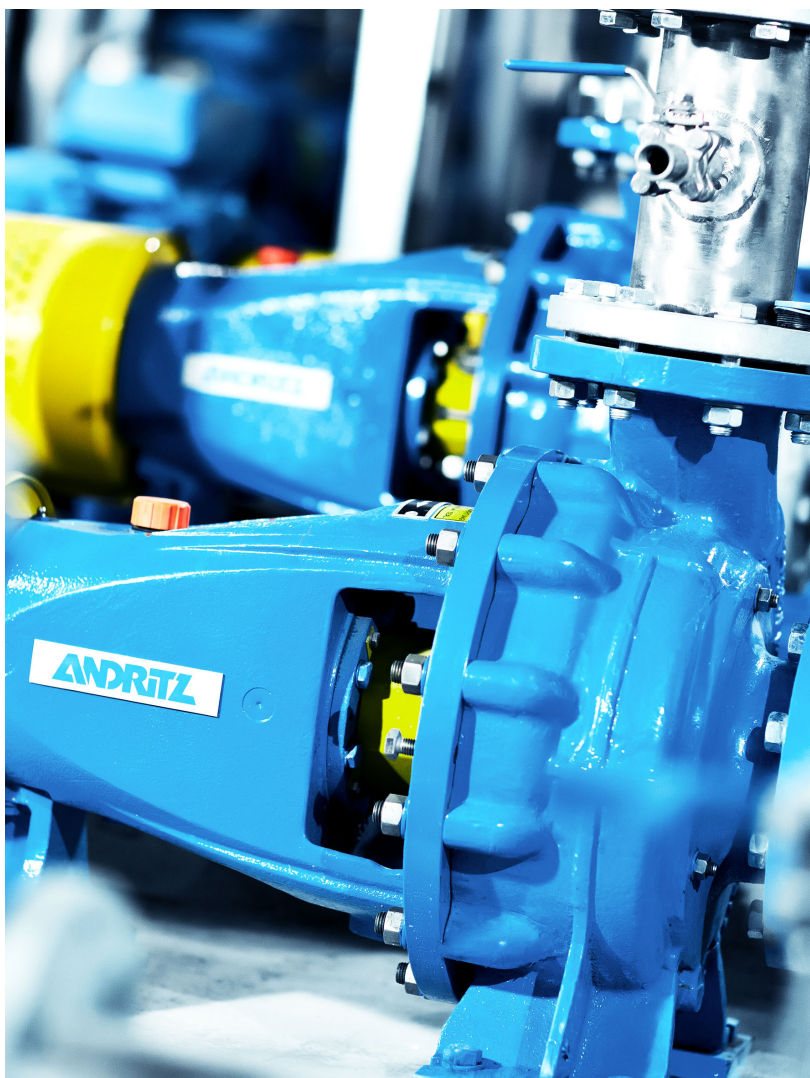
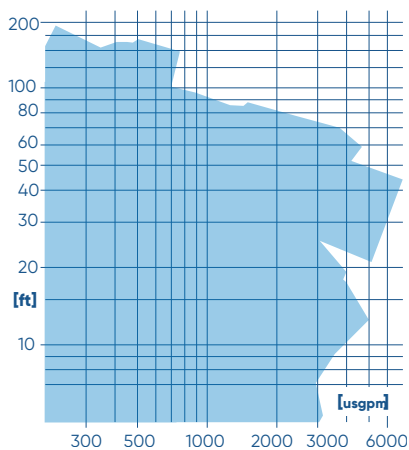
ANDRITZ single-stage centrifugal pumps are characterized by their robustness, ease of maintenance, and cost-effectiveness. Various material designs and shaft seal options ensure reliable operation and long service life. ANDRITZ centrifugal pumps are used as process pumps in many different areas of pulp and paper production. The process pumps are available with closed, semi-open, or open impellers in highly wear-resistant

designs. They convey stock suspensions with consistencies of up to 8% at 90, offer high efficiency levels of up to 91%, and feature a service-friendly, modular design. For media with high gas contents or for self-priming applications, versions with internal or external vacuum pumps are available as options.

PRODUCT FACTS*

- Highly wear-resistant design
- Flow rate up to 40,000 usgpm
- Head up to 590 ft
- Design pressure up to 580 psi
- Efficiency up to 91%
- Temperature up to 392° F

*These values are guidelines and may differ depending on project requirements



Split case pumps

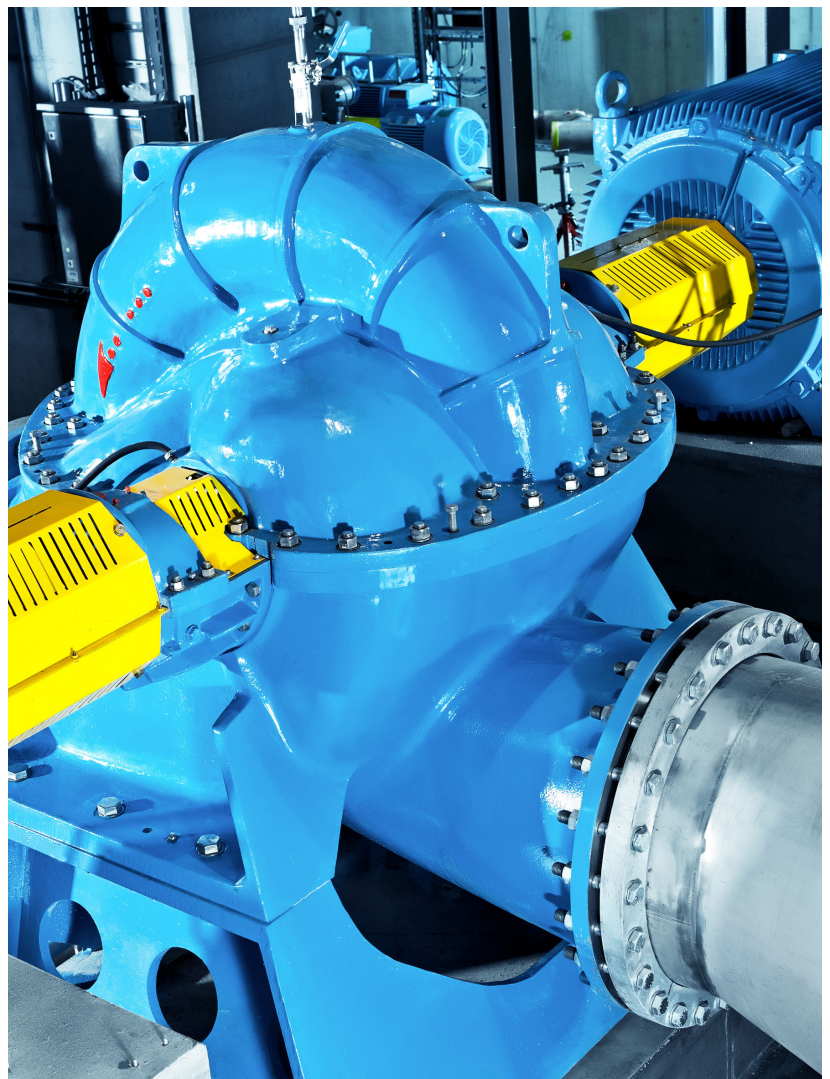
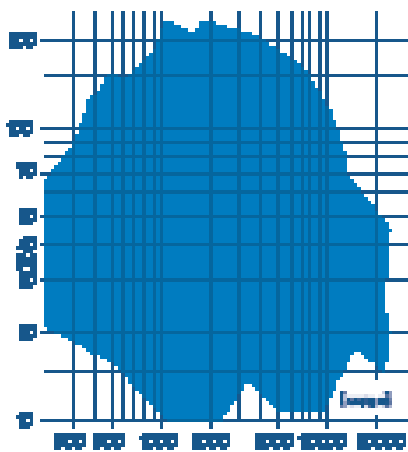
As plant and equipment supplier to the pulp and paper industry, ANDRITZ manufactures Split-case pumps for use as headbox- or cleaner pumps. ANDRITZ fan pumps convey stock suspensions with consistencies of up to 2%. They are characterized by efficiencies of up to 93% and low pulsation, thanks to the impeller with

staggered blades specifically developed for the pulp and paper industry. The pumps are equipped with a double-suction radial impeller, which achieves very favorable NPSH values. The axial-split volute casing design ensures quick and easy maintenance.

PRODUCT FACTS*

- Flow rate up to 180,000 usgpm
- Head up to 820 ft
- Consistencies up to 2% b.d.
- Efficiency up to 93%
- Temperature up to 170° F

*These values are guidelines and may differ depending on project requirements



High-pressure pumps

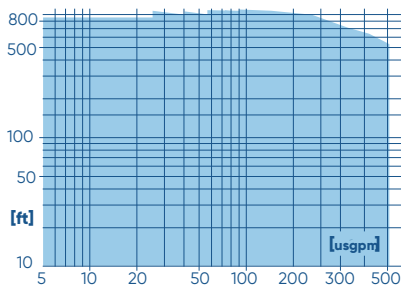
ANDRITZ multi-stage, high-pressure pumps meet the highest customer requirements in terms of efficiency, service life, serviceability and cost-effectiveness. Due to numerous horizontal and vertical designs, the pumps can be integrated into the system very flexibly.

A variety of material and sealing versions guarantee optimal adaptability to the medium. Multiple hydraulics for each pump size enable a wide range of applications in various fields while maintaining the highest efficiencies.

PRODUCT FACTS*

- Flow rate up to 3,500 usgpm
- Head up to 3,100 ft
- Design pressure up to 1,450 psi
- Temperature up to 320° F
- Efficiency up to 90%

*These values are guidelines and may differ depending on project requirements



Self-priming centrifugal pumps

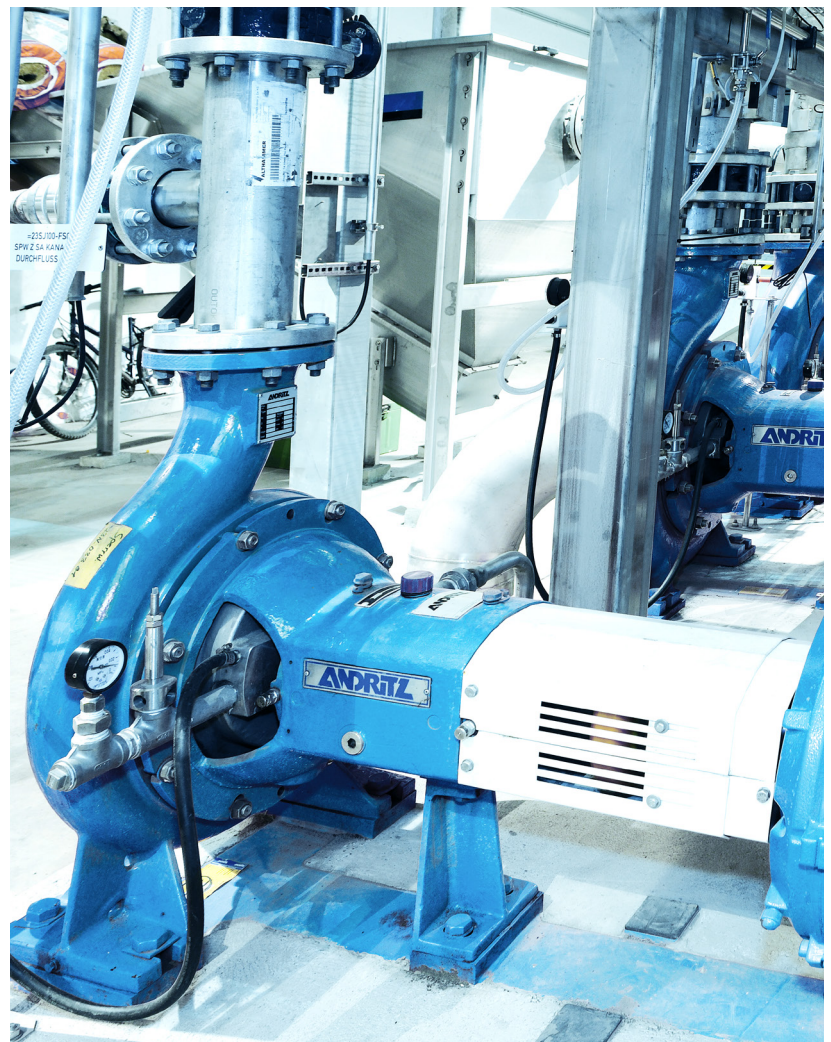
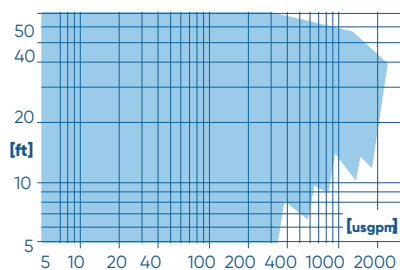
ANDRITZ pumps with internal or external vacuum pumps are used in self-priming applications as well as for pumping media with high gas content, even in critical suction line configurations. The use of a semi-open impeller allows for the trouble-free pumping of solid-laden media, which is typically found in the pulp

and paper industry. ANDRITZ self-priming centrifugal pumps meet high customer expectations regarding efficiency, service-life and cost-effectiveness, and they also impress with their maintenance-friendly, modular design.

PRODUCT FACTS*

- Self-priming / Degassing
- Flow rate up to 40,000 usgpm
- Head up to 590 ft
- Design pressure up to 580 psi
- Temperature up to 392° F

*These values are guidelines and may differ depending on project requirements.



Medium-consistency pumps

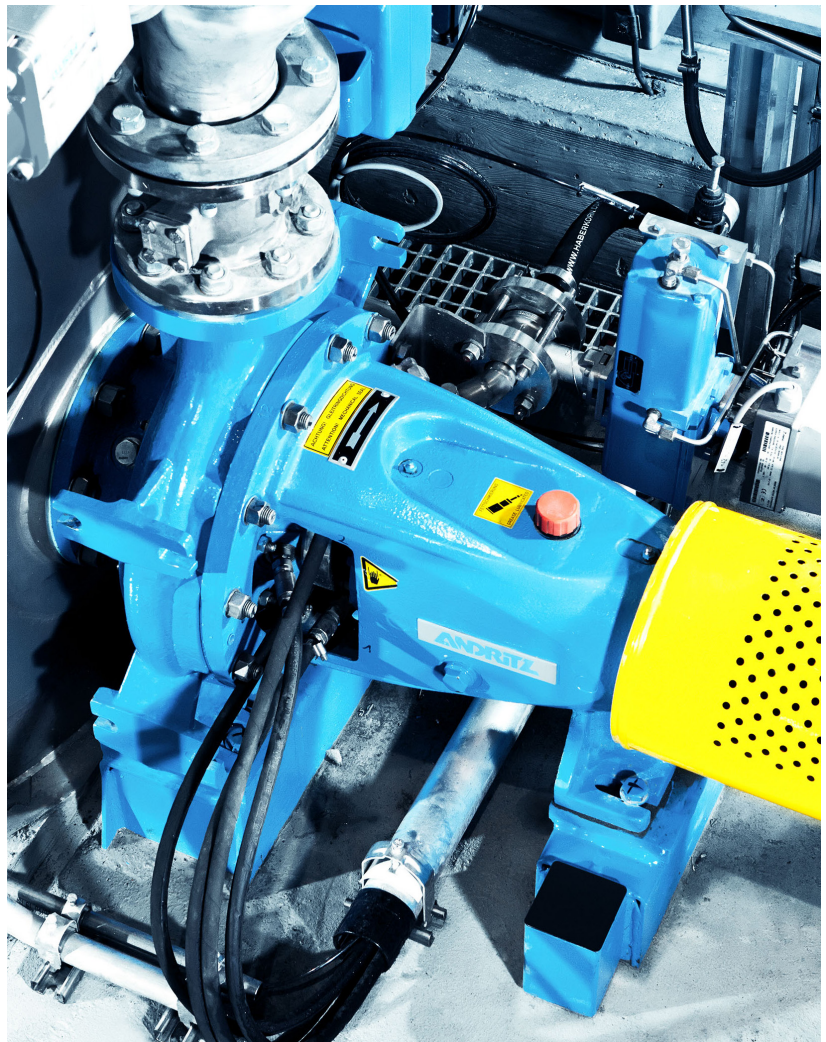
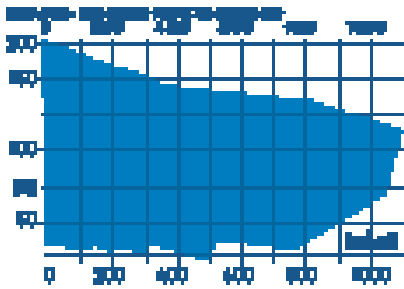
ANDRITZ medium consistency pumps ensure stable production and are characterized by outstanding economic efficiency. These pumps enable significant energy savings compared to other medium consistency pumps and reduce investment costs thanks to their compact design. They are capable of efficiently conveying all types of pulp, as well as secondary fibers with consistencies of up to 16%. In most applications, operation is possible without an additional vacuum pump. Another

advantage of the ANDRITZ medium consistency pump is the innovative fiber separation system (SMARTSEP). The ANDRITZ SMARTSEP system contains an additional separation impeller that reliably returns the fibers to the pump while simultaneously discharging the air from the pump. This ensures minimal fiber loss and easy control of the degassing valve, especially during start-up and at low consistencies.

PRODUCT FACTS*

- Flow rate up to 21,000 admt/d
- Head up to 590 ft
- Consistencies up to 16% b.d.
- Design pressure up to 580 ft
- Temperature up to 200° F

*These values are guidelines and may differ depending on project requirements



Vertical Sump pumps

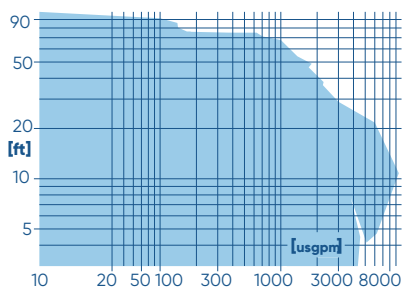
ANDRITZ vertical submersible pumps are specially designed for use under the most demanding industrial conditions. They are ideally suited for pumping fresh and raw water, pulp suspensions, slurries and wastewater with high solid content. The optional vortex-design ensures safe and efficient handling of slurries with large particles and abrasive media. A key feature of these pumps is the use of hydraulic components from the modular ANDRITZ process pump series. This allows users to benefit from proven technology, high spare parts availability, and consistent system compatibil-

ity within the pump family. Thanks to their robust and well-thought-out design, ANDRITZ sump pumps offer high operational reliability, a long service life, and minimal maintenance requirements. The vertical design allows for space-saving installation and ensures reliable performance even in continuous operation. ANDRITZ pumps stand for efficiency, ease of maintenance, and cost-effectiveness—a reliable solution for demanding pumping tasks in the pulp and paper industry as well as in many other industrial applications.

PRODUCT FACTS*

- Non-clogging and suitable for different depths
- Flow rate up to 3,500 usgpm
- Head up to 180 ft
- Design pressure up to 230 psi
- Consistencies up to 6%

*These values are guidelines and may differ depending on project requirements



Always a flow ahead - Research and development

Our Pump Technology Center (PTC) ASTROE enjoys an internationally renowned reputation for its hydraulic developments and investigations. The high efficiency of the ANDRITZ pump series is ensured by Computational Fluid Dynamic (CFD) calculations and extensive testing carried out in our company owned laboratory.

Continuously increasing demands by customers in our operating industries emphasize the significance of R&D in the constant optimization of products and services. Today, efficiency, flexibility, and reliability over an extended lifetime are the major challenges of the market.

Our commitment to research and development forms the basis for our advances in hydraulic machine manufacturing. With PTC ASTROE, center for hydraulic engineering and laboratory, we have an internationally renowned institute for hydraulic development work at our disposal.

We are developing and testing our pumps at different locations worldwide. Our test stands are among the most accurate in the world. By networking these research and development centers, we provide a continuous transfer of know-how within the ANDRITZ GROUP for the benefit of our customers. The main tools for R&D are numerical simulation methods as well as experimental measurements in the laboratory and on site. State-of-the-art equipment, highly precise measuring instruments as well as the latest simulation technologies, and powerful software form the basis of the high technical quality of the pumps and turbines from ANDRITZ.



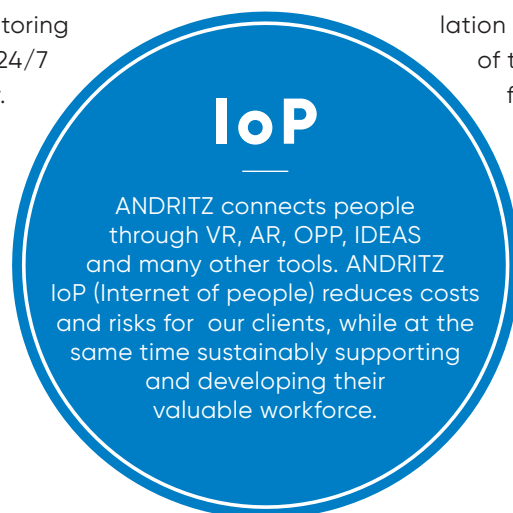
Smart Pumps

ANDRITZ has launched its IIoT activities already back in 2005 and its basic activities in the automation sector began as early as 1984. Now, the company has combined its innovative, industrial IoT solutions, which are field proven in many reference plants, under the technology brand “Metris – Foresee digitally”. Metris technologies include latest state-of-the-art Industrial IoT solutions (IIoT) as well as any kind of smart digital services. These can be fully tailored to individual customer requirements and unite our clients’ physical and digital worlds.

With regard to IIoT solutions for pumps, ANDRITZ has set a key focus on ensuring continuous and sustainable operational reliability and performance of pumps and plants ever since. ANDRITZ delivers highly sophisticated condition monitoring solutions for pumps. These solutions can be standard software packages or tailored to specific customer request. Special sensors are installed at the pump for this purpose and take measurements continuously. All data can be analyzed within the software or exported to various file formats. Limits and alert notifications with a traffic light system approach are also provided. The data is stored in an ANDRITZ Metris database. Metris cloud’s data are accessible by both the client and ANDRITZ condition monitoring experts, which enables 24/7 service for the customer. Finally, ANDRITZ also provides optimization

modules for pumps in plants or pumping stations as well as remote control options for locally installed platforms.

Thus, ANDRITZ is taking pump and plant operations to the next level. By monitoring an intuitive human-machine interface of the control system that is equipped with groundbreaking digital and visual technology, highly efficient workflows make the future calculable and enable proactive action through the analysis of data. Thereby, ANDRITZ IIoT technologies become the basis for Internet of People (IoP) solutions by connecting our customers’ specialists among each other as well with ANDRITZ experts. This value-adding interrelation results not only in a professional preparation of the collected data improving the plant’s performance, but moreover enables our customers to practice successfully applied business intelligence.



Greater efficiency for a competitive edge - Pumps service

Optimization / Modernization / Operating reliability

The conditions of your plant have changed, but your pumps are still operating as previously and therefore, wasting energy? Would you like to optimize your system to reduce costs? With ANDRITZ, you will have a competent partner for these and numerous other services at your side.

Service and maintenance have a long tradition at ANDRITZ and complement the product portfolio. The century-long expertise is reflected not only in a service portfolio with innovative solutions and advanced products that can be optimally adapted to the respective customer needs, but also in a specially trained staff. ANDRITZ has specialized in the servicing of pumps to achieve improved efficiencies and adaptations to changed operating points of the installed pumps. A

large potential for savings can already be achieved by improving the efficiency of 20 percent of the installed pumps. Our service team provides prompt, professional, and reliable assistance – also for other manufacturers' products. Book our service package and you can be sure of the best operating reliability for your systems in the long term. We conduct an expert assessment together with you, thus creating transparency and making an optimum solution possible that is tailored to your needs. After examining your plant, we determine its savings potential and realize it by improving the efficiency of the pumps installed. Additionally, this individual solution lowers your maintenance costs. You do not have to think about personnel, nor about maintenance schedules or utilities. Assembly is conducted according to defined schedules and with assistance from our trained personnel.



AN OVERVIEW OF OUR SERVICES

- Energy consulting for pumps and systems
- Supply of original spare parts
- Deployment of trained personnel
- Installation and start-up
- Inspection
- Repairs, overhauls, maintenance
- Machine assessment by an expert for early fault detection
- Consulting and modernization
- Performance and vibration measurement
- Fault and damage analyses
- Feasibility studies
- Preparation of maintenance schedules
- Service and maintenance agreements
- Automation and Electrical Power Systems
- Electronic equipment
- Training



Find out more about
ANDRITZ pumps service

Pumping solutions that make efficient use of fibers and energy

After a record construction period of just over 13 months, the Heinzl Group's PM2 at Zellstoff Pöls AG, Austria, went successfully into operation. It is the largest and most advanced kraft paper machine in Europe. ANDRITZ had received the order to supply a Primeline plant for production of specialty papers. The scope of supply included the stock preparation plant, an approach flow system, the complete Fourdrinier paper machine, a high-precision drying cylinder, and the automation systems. ANDRITZ also supplied all of the process pumps for the new production plant. The investment increased the paper production capacity at the facility to 80,000 tons per year. The very high-quality bleached kraft paper is known under the brand name of Starkraft. It was no coincidence that the symbol chosen was a flying rhino – symbolizing both strength and flexibility. The kraft papers market segment is a highly specialized market with the highest quality standards. Integrated production at the Pöls location not only ensures a continuous supply of raw material for the paper machine, but also contributes towards energy-efficient production.

HIGH-PERFORMANCE PULP PRODUCTION AND STOCK PREPARATION

The Zellstoffwerk Pöls pulp mill is currently able to produce 430,000 t/a and is the largest producer of bleached ECF long-fiber sulfate pulp in Central and southeastern Europe. Every year, two million cubic meters of wood are processed, primarily in CO₂-neutral operations. The PM2 has two stock preparation lines. The first of them feeds long-fiber sulfate pulp produced at the mill to the paper machine, while the

second stock preparation line supplies short-fiber pulp to the pulp cycle. This guarantees the optimum composition of raw materials for the demanding kraft paper production process. The entire paper-making equipment is distributed over three levels: The pumps and the two stock preparation lines are installed on level one. The complete paper machine with finishing equipment and control room are on level two. In the side aisle of the paper machine building, the entire air system for the new plant is located on level three.

PUMPS DELIVERY PROGRAM FOR PM2 IN PÖLS

ANDRITZ supplied all of the process pumps for the new PM2 kraft paper machine at Zellstoff Pöls AG. The scope of supplies and services comprises the engineering work and supply of 30 stock pumps from the ACP process pumps series, six water pumps from the ISO series, two 'S' series stock and water pumps, two high-pressure pumps from the MP series, and two FP series double-suction fan pumps.

OPERATING RELIABILITY AND COST-EFFICIENCY

In addition to the supply of top-class equipment, professional and appropriate installation of the components guarantees trouble-free start-up and reliable plant operations in the long term. ANDRITZ specialists carried out the installation of the PM2 in Pöls, including the required precision alignment of the components, in close cooperation with the future operating personnel. Thus, it was possible to provide intensive training for future equipment operators and in-depth knowledge of the specific technical context.



Pumps innovation for the Heinzel Group





INNOVATION SINCE 1852

The internationally renowned ANDRITZ GROUP has been building pumps for more than 170 years. We offer innovative and targeted solutions with pumps and complete pumping stations. Our longstanding experience in hydraulic machine manufacturing and complete process know-how form the basis of the high standard of ANDRITZ pump engineering. Our quality and high-efficiency products as well as our understanding of customer requirements have made us a preferred partner for pumping solutions worldwide. ANDRITZ offers everything from a single source – from development work, model tests, engineering design, manufacture and project management, to after-sales service and training. We also perform complete start-up on site and guarantee our customers the best support. Our declared goal is your complete satisfaction. See for yourself!

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