

PUMPS

PREMIUM PUMPING TECHNOLOGY FOR DESALINATION

IIoT ENABLED PUMP SOLUTIONS

ANDRITZ

ENGINEERED SUCCESS

Water

Pulp & Paper

Food & Beverages

Mining & Minerals

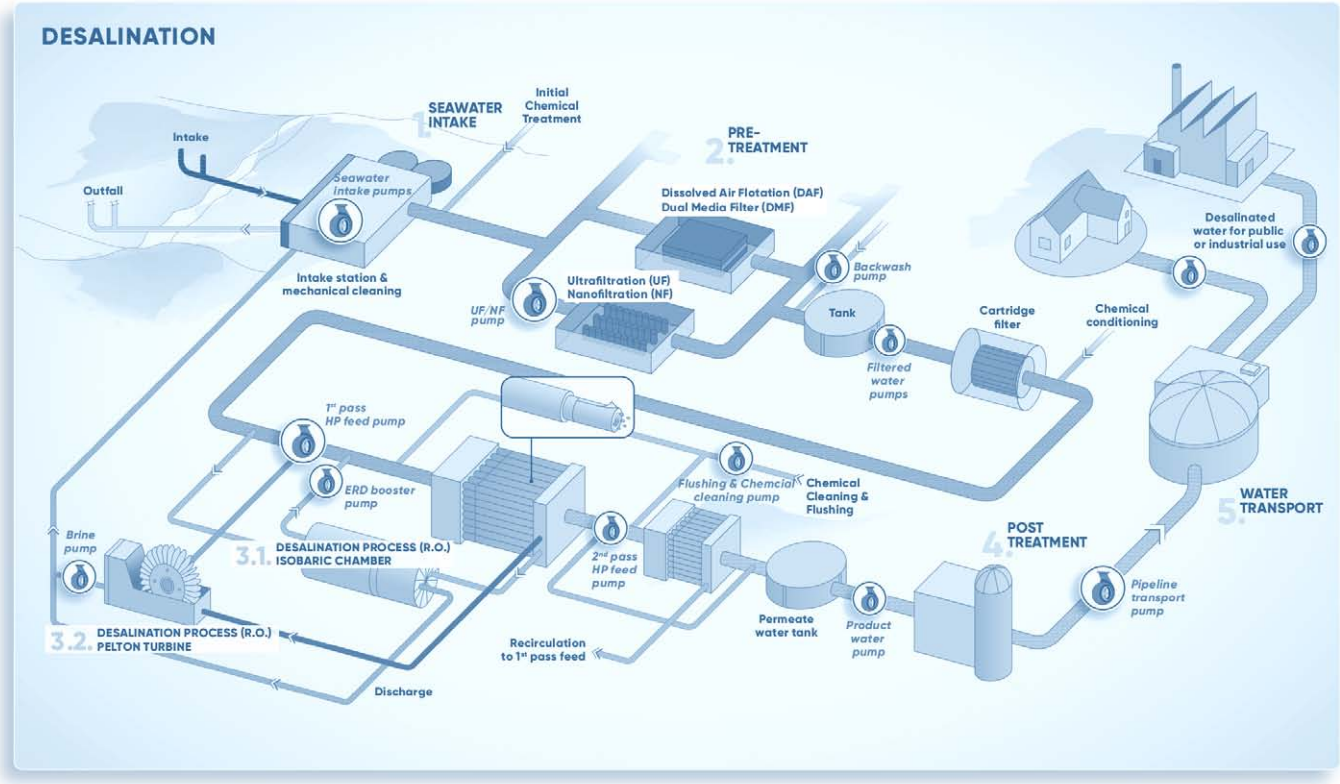
Power

Other Industries



ANDRITZ in the desalination industry

Are you responsible for the operation or maintenance of a desalination plant or are you a project manager responsible for a large infrastructure project for seawater desalination? ANDRITZ provides the complete pump portfolio and technical support for efficient and economic desalination as well as for all necessary production steps.



Custom-tailored pump solutions

ANDRITZ is not only a world leading original equipment manufacturer in the hydropower sector, but also supplies centrifugal pumps for seawater desalination applications, especially for Reverse Osmosis (RO) plants.

Highly engineered and reliable pump technology supports processes like seawater intake, filtered water, high-pressure 1st pass and 2nd pass feed, for water transport, as booster of flushing pumps, for back wash, and energy recovery to process seawater to potable water, irrigation or industrial purposes. Depending on level of salinity and on temperature, pumps are available starting from gray cast iron to Duplex and Super Duplex steel. ANDRITZ centrifugal pumps fulfill highest customer expectations in terms of efficiency, life cycle, maintenance friendliness and economic efficiency.

BENEFITS AT A GLANCE

- Special, high-resistant material Duplex Steel and Super Duplex Steel
- Highest efficiencies
- Numerous horizontal and vertical models available
- Economic plant operation
- Long service life
- Maintenance friendly
- IIoT enabled

PUMP APPLICATION

	Vertically suspended (VLSP)	Submersible motor pumps (SU)	Multistage axial split (ASPM)	Multistage radial split (HP)	Double suction (ASP)	End suction ACP	End suction ACP-RO	End suction S	Pelton Turbine (CHS)
Sea water intake	■	■			■	■			
Filtered water / booster					■	■		■	
1st pass HP feed			■	■					
2nd pass HP feed					■	■			
ERD booster							■		
Pelton turbine									■
Backwash						■		■	
Flushing						■		■	
Chemical cleaning						■		■	
Product / Pipeline transport			■			■		■	

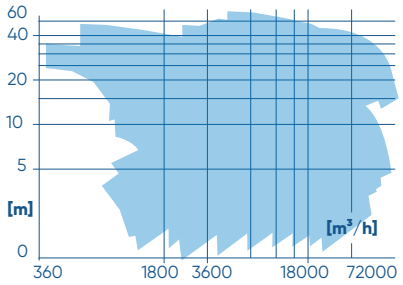
Vertical line shaft pumps

ANDRITZ vertical line shaft pumps are available in a pull-out or non-pull-out design with an optional hydraulic device to adjust the impeller blade angles to react to changing conditions while the pump is operating. The pumps are used in water transport for irrigation and drainage as well as drinking and industrial water supply. Additionally, these pumps can also function as seawater intake pumps for desalination plants. Depending on the area of application, ANDRITZ vertical line shaft pumps are designed as radial, axial, or mixed flow pumps. Similarly, the choice of material is customized ranging from cast iron, cast steel, non-alloyed and low-alloy steel grades, stainless CrNi steel grades, or duplex and super duplex steel grades.

PRODUCT FACTS*

- Flow rate up to 70.000 m³/h
- Head up to 80 m (single stage) – higher heads (multi-stage) on request
- Impeller: radial, mixed flow or axial
- Power up to 10.000 kW

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





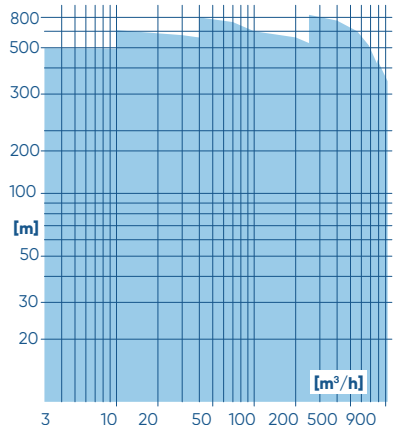
Single-flow submersible motor pumps

ANDRITZ multi-stage, single-flow submersible motor pumps are designed to transport clean, slightly contaminated and abrasive raw water as well as mineral, sea, industrial, mine and cooling water. ANDRITZ submersible motor pumps are characterized by zero maintenance, a long service life, high-operating reliability and an innovative modular shaft technology (MS-T). Equipped with MS-T-Technology, the pump cannot only be flexibly adapted to changing pumping conditions but is also saving storage costs.

PRODUCT FACTS*

- Flow rate up to 900 m^3/h
- Head up to 800 m
- Pressure up to 100 bar
- Well diameter from 6"
- Temperature up to 75° C

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





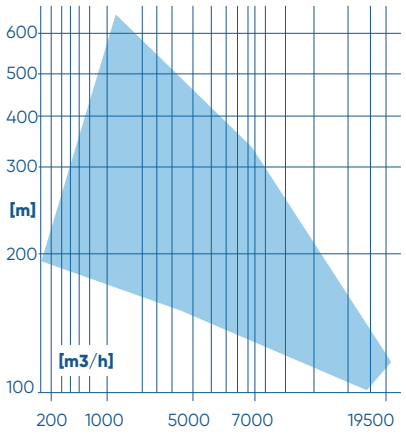
Multi-stage axial split case pumps

ANDRITZ multi-stage axial split case pumps have a multi-stage impeller arrangement in single or double flow design that can be combined in different ways to fulfill various application needs. This is a highly engineered pump designed to customers' specific requirements. The machine is optimized for transporting pure, slightly contaminated, or aggressive liquids in water supply projects, power station projects and desalination plants. Peak efficiencies, optimum suction performance and user-friendliness make this technology particularly effective, and in the axial split design maintenance-friendly at high heads.

PRODUCT FACTS*

- Head up to 1000 m
- Flow rate up to 36,000 m^3/h
- Power up to 40 MW

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





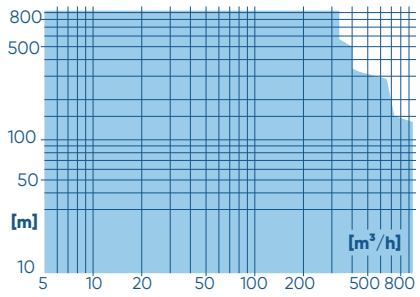
High-pressure pumps

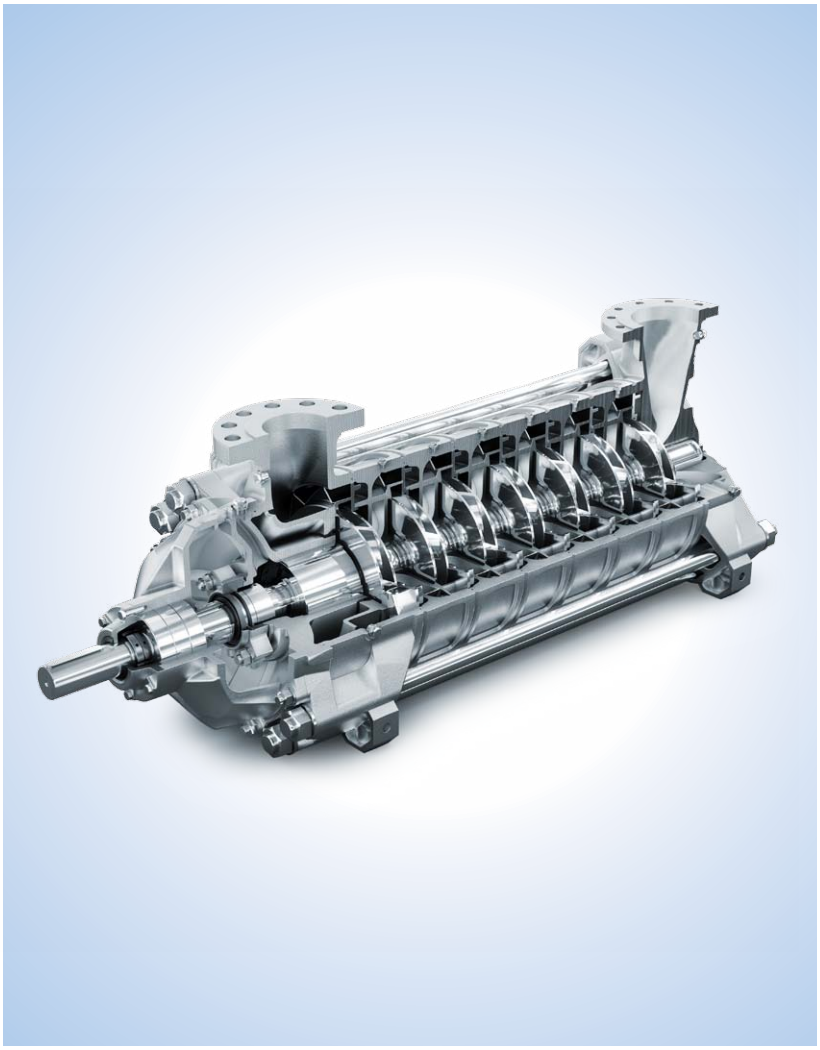
ANDRITZ multi-stage high-pressure pumps meet the highest customer requirements in terms of efficiency, service life, serviceability and economy. Numerous horizontal and vertical models allow for efficient building designs. A variety of material and sealing versions guarantee optimal adaptability to the medium. Different hydraulic systems for each pump size enable a selection at the best efficiency point.

PRODUCT FACTS*

- Flow rate: 850 m³/h
- Head up to 1000 m
- Pressure up to 100 bar

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





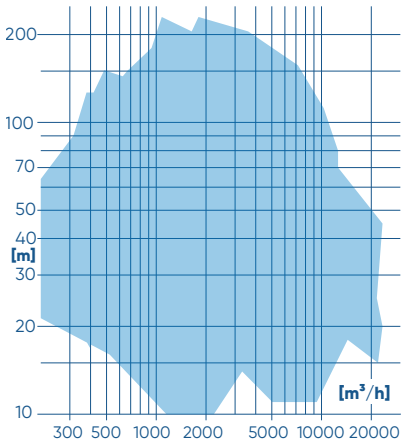
Double-flow axial split case pumps

ANDRITZ split case pumps meet the highest customer demands in terms of efficiency, long service life, maintenance friendliness, and economy. With efficiencies of over 90%, these split case pumps help to save valuable energy. All pumps are fitted with a double-flow radial impeller which achieves very favorable NPSH values. Due to the axial split case design, maintenance is fast and easy. Designed with a double-flow radial impeller and in-line casing, the pump can be horizontally or vertically installed (with horizontal installation, the motor can be placed on the left or right). ANDRITZ split case pumps convey pure and slightly contaminated media or aggressive liquids and operate in water treatment and water supply systems as well as in irrigation, flood control, and desalination.

PRODUCT FACTS*

- Consistency up to 2%
- Head up to 250 m
- Flow rate up to 40,000 m^3/h
- Pressure up to 25 bar
- Temperature up to 80° C
- Power up to 7,000 KW
- Efficiency up to 91%

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





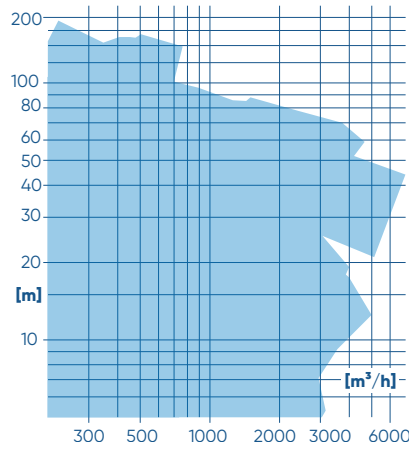
Single-stage centrifugal pumps

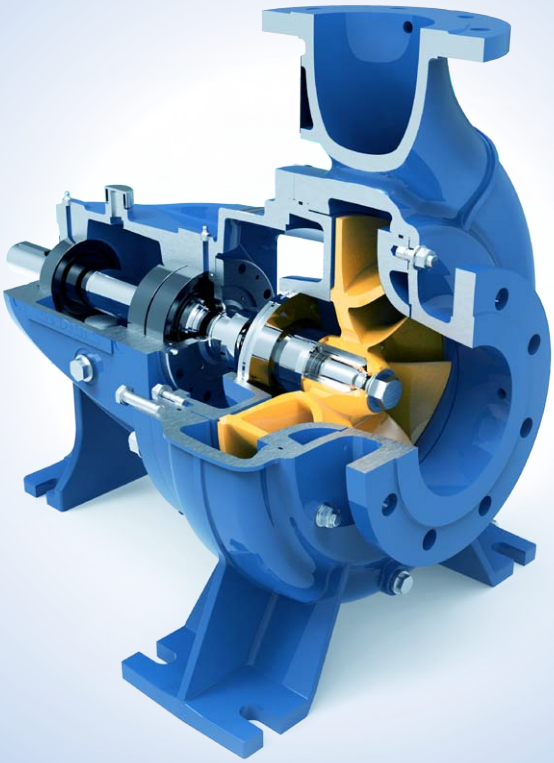
ANDRITZ single-stage centrifugal pumps are characterized by robustness, maintenance-friendliness, and economic efficiency. The pumps are available according to EN 733, ISO2858 and 5199. Various material combinations guarantee long product life cycles and excellent efficiencies. The end-suction pumps are available with closed, semi-open or open impellers in a highly wear-resistant design. These centrifugal pumps operate in water supply, waste water treatment, desalination plants, and irrigation as well as drainage. A modular system ensures high availability, enables the use of proven components and reduces the number of spare parts to be held in stock. ANDRITZ single-stage centrifugal pumps have been optimized for the use as Energy Recovery Device (ERD) booster pumps for high-suction pressure applications in the desalination process.

PRODUCT FACTS*

- Flow rates up to 9.000 m^3/h
- Heads up to 190 m
- Temperatures up to 200° C
- Consistencies up to 8%
- Efficiency up to 90%
- Pressure up to 40 bar
- Optimized for the use as Energy Recovery Device (ERD) booster pump

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



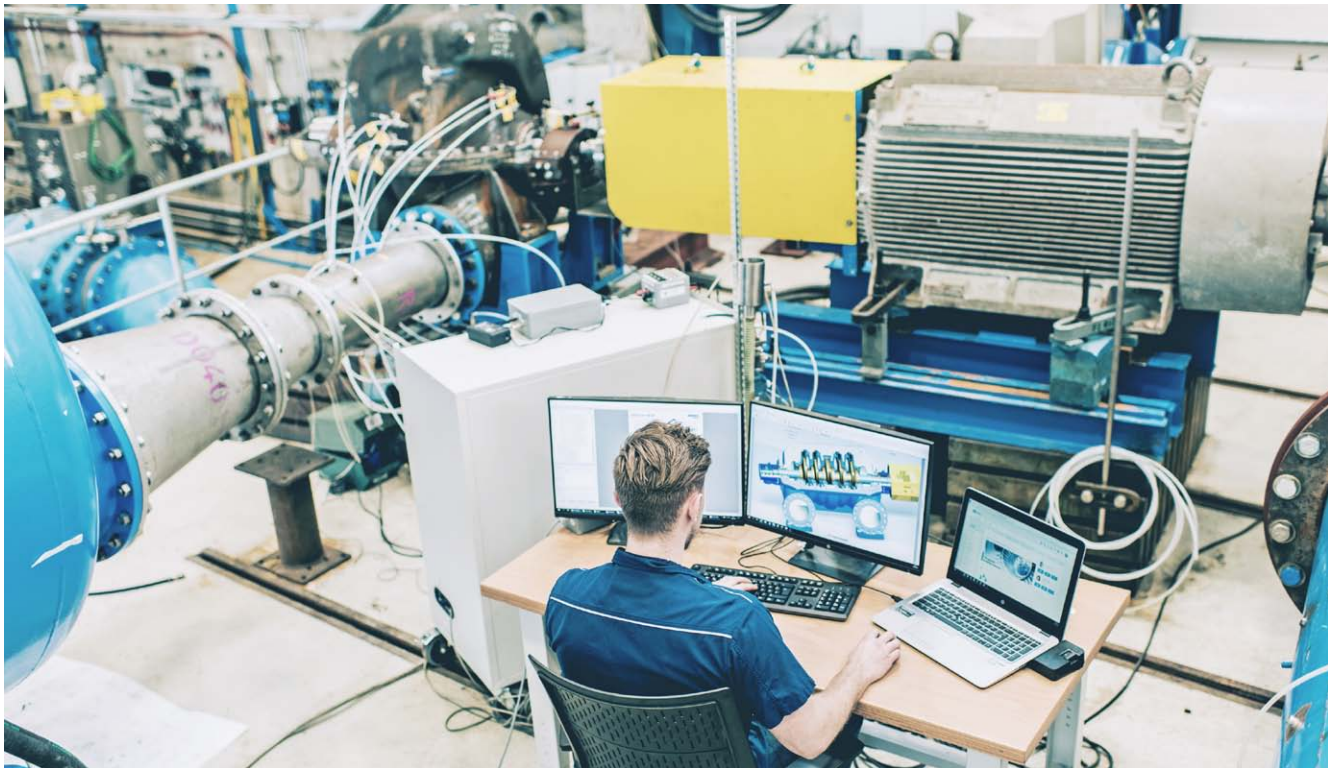


Always a flow ahead – Research and development

Our affiliate 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 ASTROE, center for hydraulic engineering and laboratory, we have an internationally renowned institute for hydraulic development work at our disposal. We are currently developing and testing our pumps and turbines at five locations in Austria, Germany, Switzerland, and China. 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 IoT 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 as well as any kind of smart digital service. These can be fully tailored to individual customer requirements and unite our clients’ physical and digital worlds.

With regard to IoT 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 IoT 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.

IoP

ANDRITZ connects people through VR, AR, OPP, IDEAS and many other tools. ANDRITZ IoP reduces costs and risks for our clients, while at the same time sustainably supporting and developing their valuable workforce.

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

- 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
- Energy consulting for pumps and systems
- Preparation of maintenance schedules
- Service and maintenance agreements
- Automation and Electrical Power Systems
- Electronic equipment
- Training

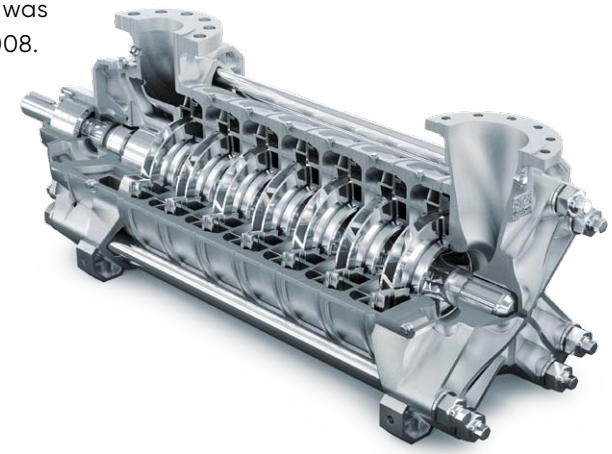
Duplex – Successfully defying the salinity

ANDRITZ-Wolfensberger (AnWo) Special Alloy Foundry was founded in June 2006 and is a joint venture between ANDRITZ AG, Austria, and Wolfensberger AG, Switzerland. Since 2015, ANDRITZ Wolfensberger has been a wholly owned ANDRITZ subsidiary.

Located in Guangdong, China, AnWo has around 130 employees working in a 10,500 m^2 workshop and an 800 m^2 office area. The foundry produces high-alloy steel castings for pump casings, pump impellers, and components for hydro plants with a finished piece weight of up to 4 tons.

AnWo provides high-quality steel castings for the ANDRITZ GROUP on a continuous basis and develops new parts together with its customers. The foundry's top management has an average experience in European high-alloy steel casting manufacturing of 30 years and can support customers both in material and design issues. They are also familiar with European standards and quality requirements. In June 2010, AnWo was certified according to ISO 9001:2008. AnWo always aims to fulfill the highest European standards for both its working environment and its production facilities and to provide customers with high-quality products at competitive prices.

Due to the repeated contact with sea or salt water, the choice of the right material for pumps in desalination plants is crucial. Due to the aggressiveness of the salt water, ANDRITZ pumps are made of a special, resistant material, namely duplex steel. Striking characteristics of duplex steel are their high resistance to surface corrosion, local corrosion and stress corrosion cracking. The structure of this steel is particularly resistant to corrosion fatigue, energy absorption, erosion and abrasion, low thermal expansion and has good weldability. The processing of duplex steel requires extensive practice and know-how. ANDRITZ has long-term experiences in the application of this special material.







INNOVATION SINCE 1852

The internationally renowned ANDRITZ GROUP has been building pumps for more than 165 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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