



PREMIUM PUMPING TECHNOLOGY FOR THERMAL POWER

High-efficiency pumps

A large industrial power plant is visible in the background, featuring two tall smokestacks with red and white stripes. The plant itself has a complex structure with blue and white panels. The foreground shows a body of water with some ice, reflecting the sky and the plant. The entire scene is framed by a large blue triangle pointing upwards.

ANDRITZ



ANDRITZ products for Thermal Power

ANDRITZ offers a complete range of cost-effective pumps and technical support for all critical production process for the thermal power industry.

THE ADVANTAGES AT A GLANCE

- High efficiency
- Easy maintenance
- Long service life
- Economic operation

APPLICATION FIELDS

- Circulating water pump
- Boiler feed pump
- Condensate extraction pump
- Open or closed circulation cooling water pump
- FGD absorber/slurry recirculation pump
- FGD slurry pump (gypsum discharge pump, limestone slurry pump, etc.)
- High/low pressure desalination pump
- MGGH heat medium booster pump
- MGGH Condensate booster pump
- Others (submersible pumps, long shaft/centrifugal pumps, etc.)

	VLSP/VTP series line shaft vertical pump	VVP/ VCP series volute pump	AVCSP/ AVCDP series vertical barrel pump	KS series ceramic/ metal desulfuriza- tion pump	ACPS series ceramic slurry pump	HP series multistage high- pressure pump	ASP series split case pump	ACP series end suction pump / KS series metal pump	ASCP/ ASMP series sewage pump
Circulating water pump	✓	✓					✓	✓	
Boiler feed pump						✓			
Condensate extraction pump			✓					✓	
Open or closed circulation cooling water pump	✓						✓		
FGD absorber/slurry recirculation pump				✓				✓	
Seawater booster pump	✓						✓	✓	
Small slurry pump					✓			✓	
Desalination pump	✓	✓				✓	✓	✓	
Heat medium booster pump								✓	
Condensate booster pump								✓	
Others	✓				✓		✓	✓	✓

Vertical line shaft pump

ANDRITZ vertical line shaft pumps are available in either pull-out or non pull-out designs, with a choice of impeller designs with hydraulic adjustable blades that respond to changes in operating conditions while the pump is in operation. Additionally, it can be used as seawater intake pumps for desalination plants. The pumps are designed as either radial, axial, or mixed flow pumps. The choice of material is customized ranging from cast iron, cast steel, non-alloyed and low-alloy steel, stainless steel, or duplex and super duplex steel.

One of the biggest advantages of ANDRITZ's standard vertical pumps (VTP series) is their modular design and their high efficiency. The pump consists of a separate standard module that parts can be easily replaced if necessary. In addition, VTP series pump has long life and low maintenance rate. Another key advantage is its flexible choice of outlet bend location, which can be placed on or off the base, depending on the application and plant layout.

PRODUCT FACTS (VLSP)*

- Flow rates up to 70,000 m³/h
- Head up to 80 m
- Power up to 10,000 kW

* The values are guidelines and may differ depending on project requirement.

PRODUCT FACTS (VTP)*

- Efficiency: up to 91%
- Stage: 1~3 stages are available
- Sealing: Packing seal, cartridge seal, split seal (optional)
- Head up to 170 m
- Flow rates up to 8,640 m³/h

* The values are guidelines and may differ depending on project requirement.



Vertical (concrete) volute pump

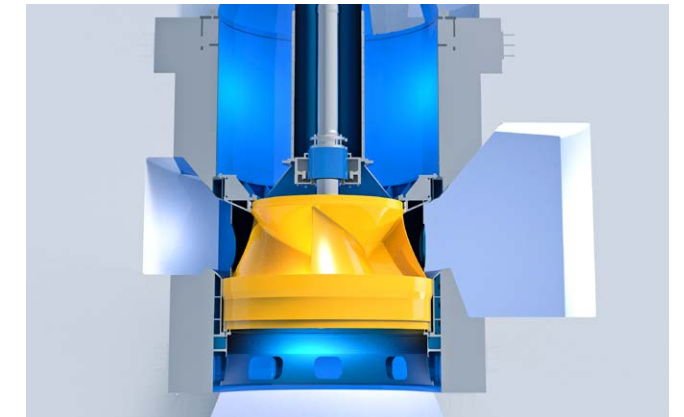
According to customer requirements, ANDRITZ designs and manufactures vertical volute pumps with concrete or metal volute. The optimal flow rate in the volute is derived from the special shape design, thus achieving a very high efficiency. The volute is made of concrete or metal, and the metal volute is a structure composed

of several segments welded, which can optionally be embedded in the concrete. This design is mainly used in the case that the hardness of the concrete volute cannot meet the pressure requirement and the pump head is higher.

PRODUCT FACTS*

- CVP series Flow rate up to 50 m³/s, VVP series Flow rate up to 200 m³/s
- CVP series Head up to 40 m, VVP series Head up to 250 m
- CVP series Output up to 20 MW, VVP series Output up to 20 MW
- Highest efficiency

* The values are guidelines and may differ depending on project requirement.



Split case pump

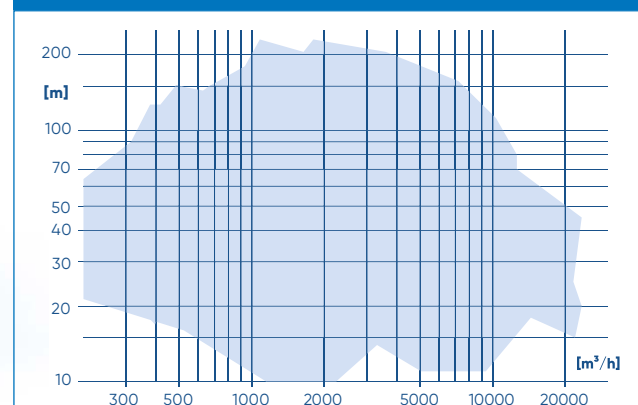
ANDRITZ split case pumps meet the requirements of high-end customers in terms of efficiency, service life, maintenance friendliness and economic efficiency. The pump efficiency exceeds 90%, helping to save valuable energy. All pumps are equipped with double channel radial impellers to achieve very good cavitation values. Due to the axial open design, maintenance is fast and easy. The two-channel radial impeller and in-line casing design allow the pump to be mounted horizontally or vertically (when mounted horizontally, the motor can be placed on the left or right side). ANDRITZ split case pumps can transport pure and slightly contaminated media or corrosive liquids and are used in water treatment and water supply systems, irrigation, flood control and desalination.



PRODUCT FACTS*

- Flow rates up to 25,000 m³/h
- Head up to 250 m
- Outlet pressure up to 30 bar
- Efficiency up to 90%
- Power up to 10,000 kW
- Temperature up to 80°C

* The values are guidelines and may differ depending on project requirement.



Vertical barrel pump

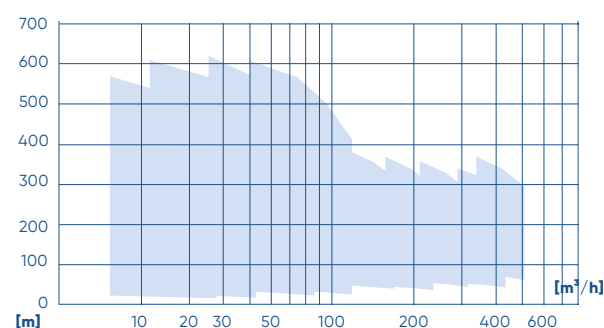
AVCSP/AVCDP series vertical barrel pumps are radial split, multi-stage single suction centrifugal pumps. The outer casing is only subject to the inlet pressure, and the mounting depth as well as the pump case depends on the requirements for cavitation performance. If the pump is installed on a container or pipeline, the barrel can be removed. The inlet and outlet pipe of the pump are located above the base plate, and the flange standards can comply with EN, GB, ANSI standards. From the driving end, the pump rotates counterclockwise.



PRODUCT FACTS*

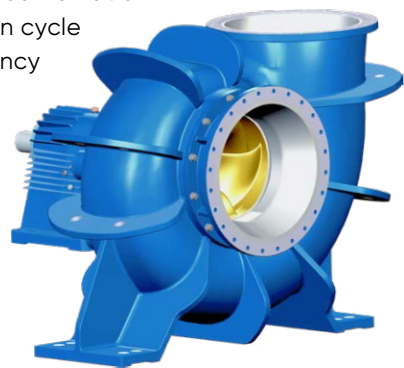
- Flow rates up to 800 m³/h
- Head up to 500 m
- Pressure up to 6.3 MPa
- Temperature can be from -20°C to +140°C
- Dimension: DN50-600

* The values are guidelines and may differ depending on project requirement.



Ceramic flue gas desulfurization pump

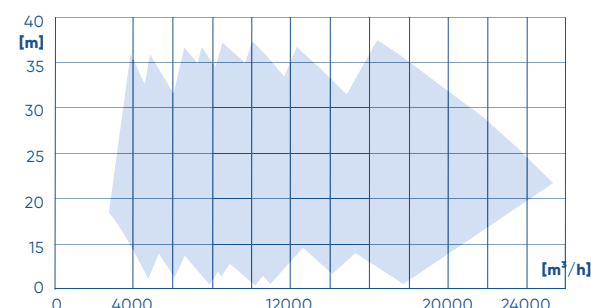
KS series ceramic desulfurization pump is a new generation of FGD pumps developed by ANDRITZ using the most advanced CFD and FEA research and development tools and the most advanced professional test stand in Asia. This series of pumps has the advantages of modularity, easy maintenance, simple structure and so on. The ideal combination of low-cost operation cycle concept, high efficiency and wear resistance.



PRODUCT FACTS*

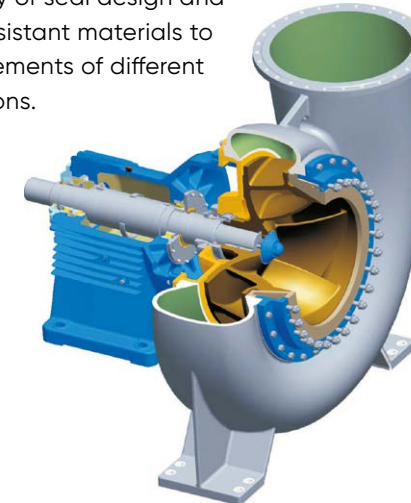
- Flow rates up to 20,000 m³/h
- Head up to 35 m
- Case pressure up to PN6
- Efficiency up to 90%
- Dimension: DN600-DN1200

* The values are guidelines and may differ depending on project requirement.



KS series metal pump

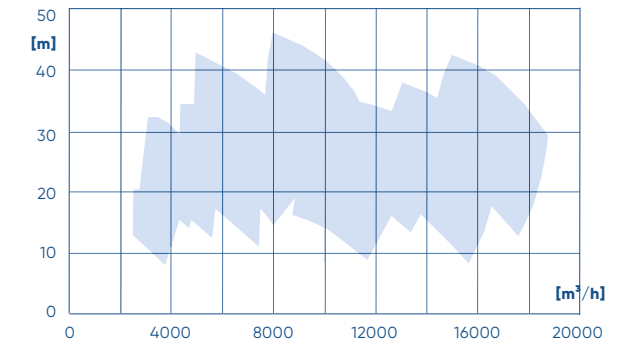
KS series metal pump, integral single casting design, semi-open or closed impeller for conveying high concentration slurry, and can be matched with one or two wear rings according to the impeller design. Provide a variety of seal design and various wear-resistant materials to meet the requirements of different working conditions.



PRODUCT FACTS*

- Flow rates up to 17,000 m³/h
- Case pressure up to PN10
- Efficiency up to 90%
- Temperature up to 200°C
- Tolerable chloride content: 80,000 PPM

* The values are guidelines and may differ depending on project requirement.



High-pressure pump

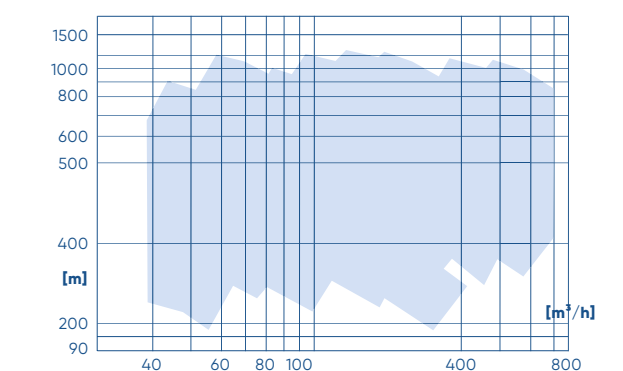
HP-RO series segment high pressure pumps are suitable for reverse osmosis, boiler feed water for small and medium-sized power plant, general industry and other fields, for transporting media without solid particle. The pump adopts heavy-duty bearing design to ensure stable and reliable operation, and can choose radial suction or axial suction arrangement subject to customer's need.



PRODUCT FACTS*

- Axial/radial suction
- Flow rates up to 600 m³/h
- Head up to 900 m
- Temperature up to 200°C
- Pressure up to 110 bar
- Diameter: DN65-DN150

* The values are guidelines and may differ depending on project requirement.



Ceramic slurry pump

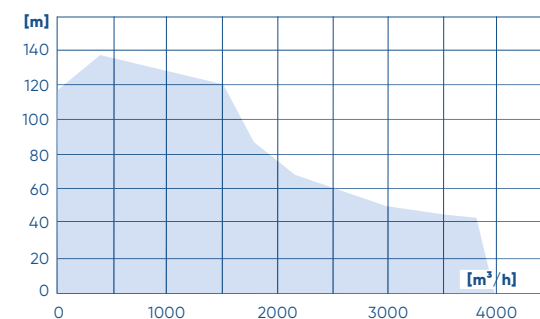
The flow parts are all ceramic design of ACPS series ceramic slurry pump, suitable for mining, small and medium-sized power plants, metallurgy and other industries, used to transport abrasive grout containing solid particles or corrosive media. The maximum weight concentration of solid liquid mixture allowed to be transported is 45% slag (coal) pulp, slurry and 60% heavy medium.



PRODUCT FACTS*

- High wear resistance design
- Suspension structure
- Flow rates up to 3,900 m³/h
- Head up to 130 m
- Diameter: DN25-DN600

* The values are guidelines and may differ depending on project requirement.



In-line pump

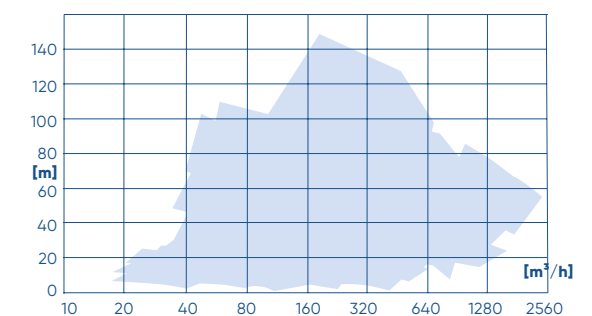
AICP series in-line pump is a pump developed by ANDRITZ using the most advanced CFD and FEA research and development tools and the most advanced professional test stand in Asia. This series of pumps has the advantages of modularity, easy maintenance, simple structure and so on. Direct transmission and compact structure improve the pump efficiency. Double runner design (high specific speed) reduces radial force. Standard configuration without bearing and lubrication helps reducing maintenance costs. The pull-out parts can be removed without removing the motor.



PRODUCT FACTS*

- Diameter: DN40-DN300
- Flow rates up to 23,000 m³/h
- Head up to 150 m
- Case pressure up to PN18
- Efficiency up to 89%
- Operation temperature up to 80°C

* The values are guidelines and may differ depending on project requirement.



Submersible centrifugal pump

The ANDRITZ ASCP series submersible centrifugal pump is a single-stage centrifugal pump equipped with a submersible motor. The series has a range of different impellers – open, semi-open and closed. The design not only allows for optimal conveyance of pre-cleaned wastewater (for example inside a wastewater treatment plant) but

also highest efficiencies of up to 80 percent. The ANDRITZ submersible mixed-flow pumps from the ASMP series are single-stage centrifugal pumps that have a submersible motor and are equipped with an axial or mixed-flow impeller. The pump itself is a high-flow submersible pump suitable for pumping large quantities of water at low heads.

PRODUCT FACTS (ASCP)*

- Flow rates up to 2,200 m³/h for ASCP series
- Heads up to 70 m for ASCP series
- Temperatures up to 40°C
- Efficiency up to 88%
- Pressure up to 10 bar (higher on demand)
- IP68 submersible motor (with or without cooling jacket)
- Suspension structure

* The values are guidelines and may differ depending on project requirement.



PRODUCT FACTS (ASMP)*

- Flow rates up to 9,000 m³/h for ASMP series
- Heads up to 28 m for ASMP series
- Temperatures up to 40°C
- Efficiency up to 88%
- Pressure up to 10 bar (higher on demand)
- IP68 submersible motor (with or without cooling jacket)
- Suspension structure

* The values are guidelines and may differ depending on project requirement.



Single-stage centrifugal pumps

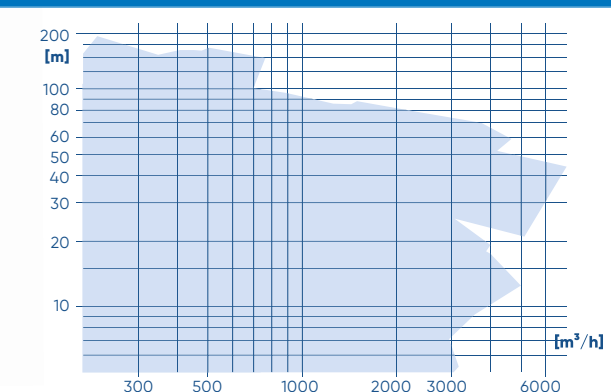
The ANDRITZ ACP series single-stage centrifugal pumps are characterized by robustness, ease of maintenance and high economic efficiency. Multiple material combinations ensure long product life and superior efficiency. ACP pumps have closed, semi-open or open design wear impellers, can be operated in water supply, wastewater treatment, desalination, irrigation and drainage systems. Modular systems ensure higher availability and exchangeable parts can reduce the number of spare parts in stock.



PRODUCT FACTS*

- Flow rates up to 6,000 m³/h
- Head up to 160 m
- Outlet pressure up to 25 bars
- Efficiency up to 90%
- Operation temperature up to 200°C

* The values are guidelines and may differ depending on project requirement.



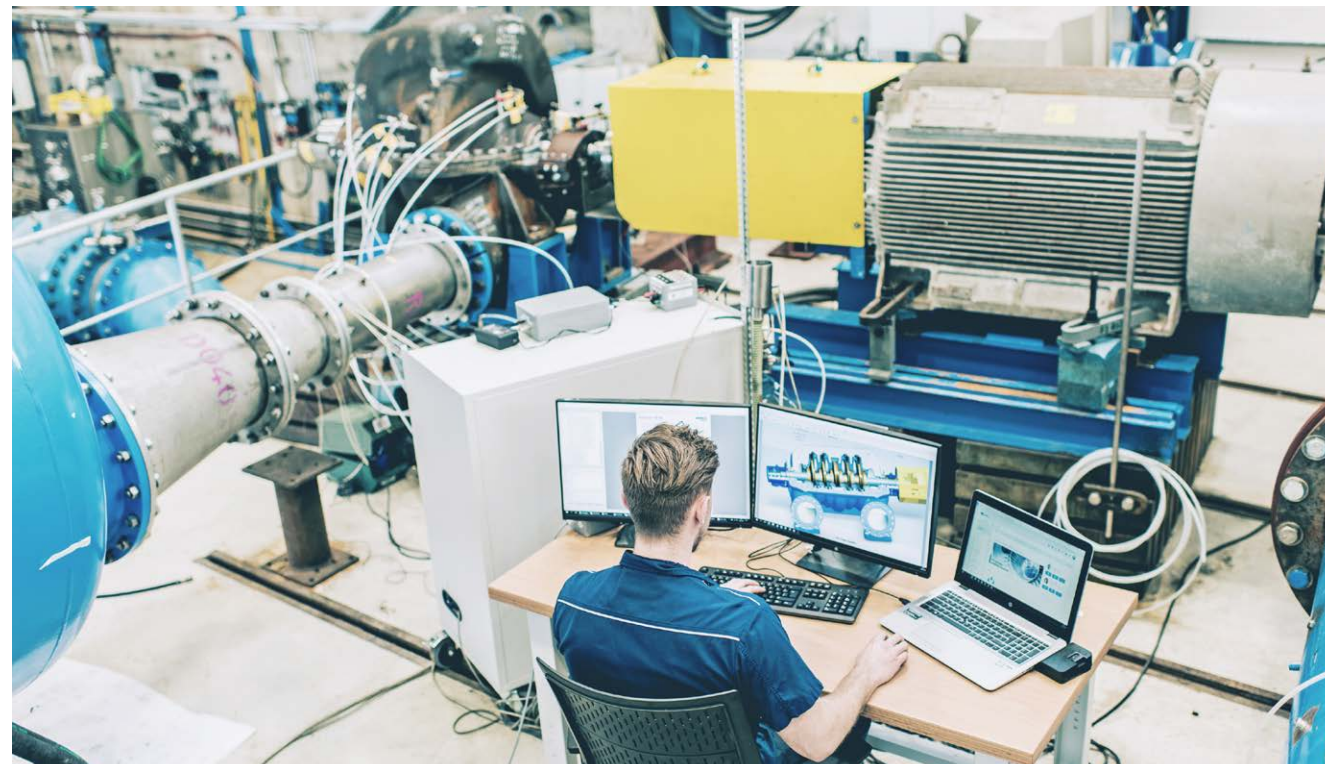
Always a flow ahead – Research and development

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.



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



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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