PUMPS

HIGH DEGREE OF ENERGY SAVINGS AND INNOVATIVE FIBER SEPARATION SYSTEM

MEDIUM-CONSISTENCY PUMP, MC SERIES
ANDRITZ develops and manufactures high-quality custom tailored pumps for various industries. We supply pumps for different water and waste water applications. ANDRITZ pumps are operating successfully worldwide, for example in water resources management, waste water disposal, as well as large infrastructure projects for irrigation, desalination, and for drinking water and industrial water supplies.

Thousands of ANDRITZ submersible motors and pumps have been installed in mines around the world, working under severest conditions in water management and emergency drainage, including the largest submersible dewatering pumps in the world.

As plant and equipment supplier to the pulp and paper industry, ANDRITZ provides a complete pump program. Our product portfolio comprises medium-consistency pumps with an innovative fiber separation system, for example, as well as headbox pumps with efficiencies of over 90% and particularly low pulsation.

We also supply high-performance and reliable pumps for food applications such as proteins, dairy products, or beverages as well as a complete pump program for the entire sugar and starch industry. To round off the portfolio, ANDRITZ small hydropower plants and pumps used as turbines suitable for the private as well as the municipal sectors, and for industrial and commercial facilities ensure an economic and ecological independent power generation.
Premium pumping technology

**ANDRITZ MEDIUM-CONSISTENCY PUMPS, MC SERIES,** fulfill highest customer expectations regarding efficiency, life cycle, easy maintenance, economic efficiency, and reliability. Thus, they ensure stable production at all times. Extensive test series carried out at our in-house test rigs have made a key contribution towards optimizing the degassing process and improving efficiency. Peak efficiencies of more than 70% and a minimum of components increase the effectiveness of this pump technology. Further strengths are a high degree of energy saving and short service times due to the modular set-up of the pumps. Their excellent economic efficiency has been proven many times, providing energy savings of up to one third compared to other medium-consistency pumps and lower investment costs due to lighter construction.

**APPLICATION IN THE PULP AND PAPER INDUSTRY**
As suppliers of complete production systems for the pulp and paper industry, ANDRITZ has acquired broad expertise in the related process technologies. This forms the basis on which we develop successful components for conveying paper stock and pulp. ANDRITZ medium consistency pumps set new standards in conveying medium-consistency stock suspensions. These pumps operate in bleaching lines, pulp lines and recycled fiber lines conveying chemical and mechanical pulp as well as secondary fibers with consistencies of up to 16% b.d. They are highly process-critical as the entire production volume of a plant runs through them. ANDRITZ medium-consistency pumps have proven to be not only extremely reliable and robust thanks to their single-shaft design, but in most applications, they can also be operated without an internal or external vacuum pump due to their innovative fiber separation system, SMARTSEP.

**APPLICATION IN THE SUGAR INDUSTRY**
Conveying medium-consistency wet beet pulp suspensions and all types of viscous media is a complex task. ANDRITZ offers a practically tested pump to transport traditional wet beet pulp from extraction systems to pulp presses using screw- or belt conveyors, bucket elevators or positive displacement pumps. ANDRITZ medium-consistency pumps fit perfectly into the application to replace existing old systems, as they offer state-of-the-art pumping of wet beet pulp and thus provide major advantages.

**SMARTSEP**
The greatest advantage of the ANDRITZ medium-consistency pump is its innovative fiber separation system SMARTSEP. This system was specially developed by ANDRITZ in order to eliminate a major problem in all medium-consistency pumps - that of fiber loss, particularly in run-up operations and at low consistencies. Medium-consistency pumps used to mainly operate with a complicated measuring and control system to monitor the degassing line. With ANDRITZ SMARTSEP, an additional separation impeller returns fibers reliably to the pump and guides air out of the pump at the same time. This makes it possible to guarantee that there are no fiber losses, particularly in run-up operations and at low consistencies, and an easy control of the degassing valve. When the pump is in operation the valve is open, whereas when the pump is not running the valve is closed. Pressure difference control is only used in rare cases (booster positions).

**MC SERIES – FIELDS OF APPLICATION:**
- Chemical pulp
- Mechanical pulp
- Groundwood
- Waste paper
- Molasses
- Sugar industry

**PRODUCT FACTS:**
- Consistency up to 16%
- Head up to 190 m
- Flow rate up to 13,000 admt/d
- Pressure up to 25 bar
- Temperature up to 140° C
- IIoT ready

*These values are guidelines and may differ depending on project requirements*
Innovative separation system
SMARTSEP

MAIN ADVANTAGES OF SMARTSEP AT A GLANCE:

• Excellent efficiency (>70%), which is significantly above industry average - thus low energy consumption
• Very easy control and absolutely no fiber loss during the degassing process (at any consistency)
• Good homogenization of the stock
• Simple and cost-efficient design without vacuum pump

DEGASSING SYSTEM
Due to this integrated degassing system, the first single-shaft solution tried and tested in practice for pumping medium-consistency pulp can be used for almost all media and operating ranges without requiring any vacuum pump. Coordinated equipment sizes cover both the requirements of smaller plants, as well as the full performance spectrum of larger new plants with capacities of up to 5,000 bdmt/day. Finally, ANDRITZ medium-consistency pump has a flexible volute set-up with four supporting legs and thus can be installed vertically or horizontally with a flexible degassing line arrangement.

MATERIAL COMBINATIONS

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1. **REDUCED COSTS**
   - Control valve can be mounted directly to the pressure flange (without an adaptor)

2. **REDUCED CHEMICAL CONSUMPTION**
   - Optimized blending of chemicals

3. **SMARTSEP SEPARATOR SYSTEM**
   - Prevents fiber loss in any operating situation

4. **STURDY BEARING**
   - CFD and trial stand for optimization of the axial thrust
   - Prolonged operating life

5. **SERVICE-FRIENDLY, SIMPLE MAINTENANCE**
   - Modular design of impeller and fluidizer allows fluidizer replacement without dismantling the pump

6. **FLEXIBILITY OF INSTALLATION**
   - Flexible (left/right) degassing line arrangement
   - Easy-to-operate on/off degassing valve

7. **FLEXIBLE ALIGNMENT OF DELIVERY BRANCH**
   - Volute with four supporting legs
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.
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!

EUROPE
ANDRITZ AG
Stattegger Strasse 18
8045 Graz, Austria
p: +43 316 6902-2509
f: +43 316 6902-413
pumps@andritz.com

ANDRITZ Ritz GmbH
Güglingstraße 50
73529 Schwäbisch Gmünd, Germany
p: +49 7171 609-0
f: +49 7171 609-287
ritz@andritz.com

SOUTH AMERICA
ANDRITZ HYDRO S.A.
Av. Juruá 747, Alphaville Industrial
06455-010, Barueri, SP – Brasil
p: +55 11 4133-0000
f: +55 11 4133-0037
bombas-brazil@andritz.com

ANDRITZ FZCO
Dubai Airport Free Zone (DAFZA)
Building 6WB – Office No. 642
Dubai, United Arab Emirates
T: +971 4 214 6546
dubai@andritz.com

ASIA
ANDRITZ (CHINA) LTD.
No.83 B Zone, Leping Central Technology & Industry Park, Sanshui District, Foshan 528137, Guangdong, P.R.China
p: +86 0757 6663-3102
atc_pumps@andritz.com

ANDRITZ Separation & Pump Technologies India Pvt. Ltd.
S.No. 389, 400/2A & 400/2C, Padur Road, Kuthambakkam Village, Poonamallee Talluk,
Thiruvallur District – 600124, Chennai, India
p: +91 44 4399-1111
pump.in@andritz.com

NORTH AMERICA
ANDRITZ HYDRO Corp.
10735 David Taylor Drive, Suite 500
Charlotte NC 28262 USA
p: +1 (704) 943 4343
f: +1 (704) 943 0200
pumps.us@andritz.com

ANDRITZ HYDRO S.A.
Av. Juruá 747, Alphaville Industrial
06455-010, Barueri, SP – Brasil
p: +55 11 4133-0000
f: +55 11 4133-0037
bombas-brazil@andritz.com

ANDRITZ FZCO
Dubai Airport Free Zone (DAFZA)
Building 6WB – Office No. 642
Dubai, United Arab Emirates
T: +971 4 214 6546
dubai@andritz.com

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