

EFFICIENT TAILINGS DEWATERING

Decanter centrifuges for mining and minerals applications

ANDRITZ

Tailings treatment continues to come with the fastest growing safety, environmental and operational challenges in the mining sector. As many mining areas worldwide also face the problem of water shortages, the recovery of valuable process water is an added benefit of responsible tailings treatment. Based on the unique conditions at your site, ANDRITZ recommends and fine-tunes a solution that gives not only the highest possible process efficiency, but also state-of-the-art dewatering and reclamation: the ANDRITZ decanter centrifuge.



Tailor-made decanter centrifuge for tailings

The most efficient solution for tailings dewatering

In addition to social and environmental challenges, mine operators also face various operational challenges on a daily basis:

- Handling of slurries with high density
- Handling of high throughputs
- Very abrasive materials to process
- Longevity of assets, continuous and automatic operation
- Majority inorganic content, containing difficult-to-settle components such as clay
- Need for minimal or no flocculant consumption
- High dryness output required
- Low energy consumption targets
- Smaller particle size fractions

With tailor-made machines for your application and more than 30,000 references in various applications worldwide, the ANDRITZ decanter centrifuge for tailings brings you a lot of benefits.

YOUR ADDED VALUE

- Continuous and fully automatic operating system contributing to reduced labor costs
- Handling of large product quantities with highest throughput per footprint and thus smallest building requirements
- Reliable and robust machinery
- Flexibility to handle varying process parameters with double variable-speed drive (variable absolute and relative speed)
- Closed design for clean working environment in comparison to other technologies
- Longer average time between servicing - usually once per year - reduces maintenance and operating costs
- Protection against abrasion:
  - Best-in-class wear protection variants resulting in a strategic, long-term investment with a tangible return
  - On-site exchangeable wear parts wherever possible mean less downtime and reduced maintenance costs
  - Continuous performance assessment using ANDRITZ Metris Connect solutions and R&D help us work towards improved wear resistance and reduced component costs



Decanter centrifuge for tailings with continuous and fully automatic operating system

Efficient dewatering thanks to high-speed decanters

For dewatering of slurries with fine PSD, high G-forces are required. The ANDRITZ decanter centrifuge A10-4 operates with high-speed design capabilities for tailings and fine solids dewatering. Due to its large diameter-to-length ratio, it allows you to handle high volumes and increase recovery rates.

To achieve this high efficiency, the ANDRITZ decanter centrifuge A10-4 provides the following features and application-related benefits:

- **Flexible:** Designed for maximum flexibility with construction material options (carbon steel, stainless steel), and unique features such as:
  - **TurboJet** weir plate to recover energy
  - **GentleFeeder™** reduces turbulence and shear forces in the feed section, while also enabling better separation efficiency and solids recovery
- **High speed:** The high-speed decanter centrifuge for tailings operates at up to 2,700 G for efficient separation (high recovery rate of fine particles) and to achieve high throughput
- **Dual VFD drive:** The decanter centrifuge A10-4 is configured with a dual VFD drive system to react automatically in torque control mode to varying process parameters during operation
- **Deep pond design:** Deep pond configuration enables reduced power consumption



High-speed ANDRITZ decanter centrifuge A10-4

A comprehensive decanter centrifuge range for tailings

MODEL	A4-3	A7-4	A8-4	A10-4	A11-3	A14-4
G-force	3,000	3,000	3,000	2,700	1,600	2,000
Diameter [mm]	450	670	762	1,000	1,100	1,400
Weight [kg]	3,400	9,400	13,400	26,500	22,000	62,000
Max motor [kW]*	55/30	132/37	160/55	355/160	315	1,100

*Depending on application

FEATURES

- Dual VFD drive system to allow for automatic torque control operation and to fine-tune dewatering paramaters
- Deep pond design to reduce power consumption
- Optimum protection against abrasion for less downtime and reduced maintenance costs.



Decanter centrifuge A14, the largest decanter ever sold worldwide

Innovative design for an extended decanter life cycle

Energy savings and process optimization provide a strategic, long-term investment with a safe ROI. ANDRITZ has developed several innovations to extend the life cycle of your decanter.

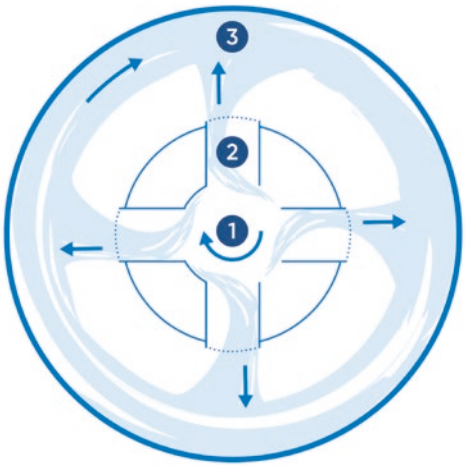
ACHIEVE BETTER RESULTS WITH LOWER ENERGY CONSUMPTION

ANDRITZ continuously innovates to deliver the best separation equipment so that customers never have to waste energy in their decanter centrifuges. ANDRITZ has shaped and improved today's industry standards through a number of technological innovations for energy savings, such as the TurboJet weir plates. Working in the same way as a jet engine, the TurboJets recover the remaining kinetic energy in the clarified liquid. By creating liquid jets pointing in the opposite direction to the bowl rotation, the reaction force supports this action. The TurboJet weir plates reduce total power consumption by up to 30% as a stand-alone feature.

GENTLEFEEDER™ FEEDING SYSTEM

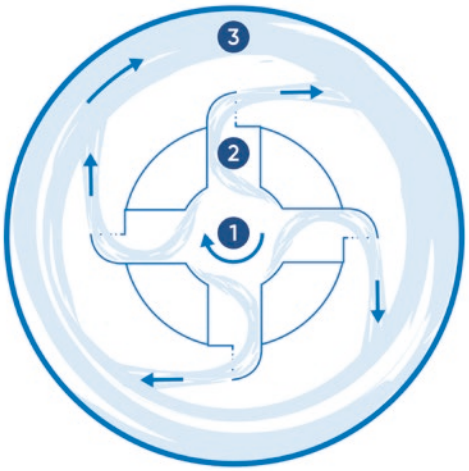
The CFD-optimized GentleFeeder™ is designed to reduce shear forces and smoothen the injection impact. It has been shown to increase revenue due to the product quality, with half the amount of solids in the centrate. The GentleFeeder™ has thereby become a standard feature for selected applications of special interest, in particular for crystallites and brittle solids. It minimizes crystal breakage while preserving the product value.

REGULAR FEED PORT DESIGN



1 Feed pipe 2 Feed port 3 Pool

IMPROVED FEED PORT DESIGN WITH GENTLEFEEDER™ FEEDING SYSTEM



1 Feed pipe 2 GentleFeeder™ feed port 3 Pool

GentleFeeder™ feeding system: Comparison between standard and improved feed port design

The right solution for any separation challenge

PEACE OF MIND, COST EFFICIENCY, AND SUSTAINABILITY – ALL FROM ONE TRUSTED PARTNER.

Regardless of your industry – whether environmental, chemicals, mining and minerals, or food and beverage – efficient separation processes are essential for high product quality, reduced waste, and the responsible use of valuable resources. With our advanced technologies, comprehensive services, and smart automation and digitalization solutions, we deliver peace of mind today and lasting success for tomorrow – efficiently, responsibly, and with measurable impact. What's more, with us you also gain access to one of the world's largest OEM manufacturers for solid/liquid separation for well-known brands such as 3Sys Technologies, Bird, Dedert, Delkor Capital Equipment (Pty) Ltd., Escher Wyss dryers, Guinard Centrifugation, KHD Humboldt Wedag, Krauss-Maffei centrifuges, dryers, and filters, LENSER Filtration, Netzsch Filtration, REINEVELD centrifuges, Rittershaus and Blecher, Royal GMF Gouda, Sprout Bauer, and Vandenbroek.

SEPARATION EQUIPMENT AND SYSTEMS

- Decanter and filter centrifuges
- Filter presses
- Dryers
- Presses and screens
- Extractors
- Thickeners
- Evaporators and crystallizers
- Disc and drum filters
- Screening and filtration components
- Specialized thermal systems



FULL-SERVICE OFFERING

- OEM spare and wear parts
- Maintenance and repairs
- Service agreements
- Automation and digitalization
- Machine and process optimization
- Second-hand and rentals

AUTOMATION AND DIGITALIZATION SOLUTIONS

Site assessment and integration • Advanced process control and artificial intelligence • Simulation and training • Digital twin technology • Data analytics and prediction • Electrification, instrumentation and controls

Enabling the green transition

As a technology leader in a changing world, we strive to make a positive impact on our environment. We believe that what we do today can make a difference tomorrow and in the future. We drive change and enable our customers to achieve their sustainability goals and make the world greener with our sustainable solutions in decarbonization, circular economy, renewable energy, and environmental technologies. It all starts with your specific process requirements and ends with a system that gives you the best results – day in and day out, for decades to come.

ANDRITZ. FOR GROWTH THAT MATTERS.

A WORLD OF SEPARATION SOLUTIONS

ANDRITZ provides mechanical and thermal solid/liquid separation technologies, complemented by comprehensive services, automation, and digitalization solutions for the chemicals, environment, food and beverage, as well as mining and minerals industries. Our customized, innovative solutions focus on minimizing resource consumption and maximizing process efficiency, thus making a substantial contribution towards sustainable environmental protection. With over 150 years of experience and more than 2,700 separation specialists around the globe, we are a driving force in the evolution of separation solutions – enabling industries to meet tomorrow's demands responsibly. **ANDRITZ. FOR GROWTH THAT MATTERS.**

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