



PANELBOARD

ADVANCED SOLUTIONS FOR YOUR L-/M-/P-/EVO-SERIES REFINING SYSTEM

**BOOST PERFORMANCE, INCREASE PLANT AVAILABILITY
AND REDUCE MAINTENANCE COSTS**

ANDRITZ

ENGINEERED SUCCESS

Advanced solutions for process and maintenance



ANDRITZ is very committed to offer innovative solutions to optimize and better control the whole MDF process and also to boost availability and minimize maintenance activities. Clear targets are the increase of plant's performance and competitiveness, with a reduction of both operating and maintenance costs. These solutions are based on ANDRITZ know-how and long experience, and are designed for your specific L-/M-/P-/EVO-series refining system.

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- Mechanical seal
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- Tool set
- Bearing & seal kits
- Lubrication and hydraulic unit for refiner bearings and plate adjustment

BLOW LINE 10

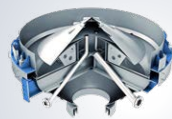
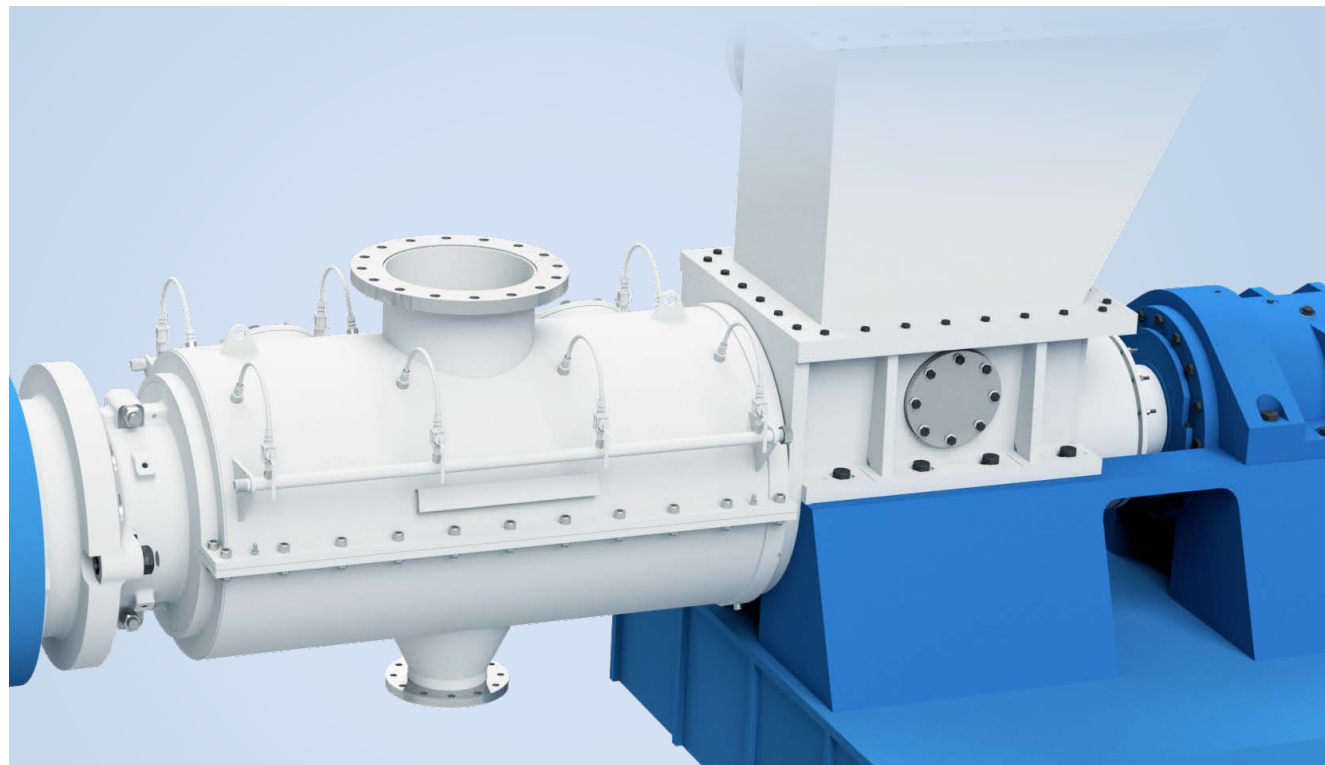
- Finger blow line with crash box – for refiner
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Pre-steaming bin and plug screw feeder

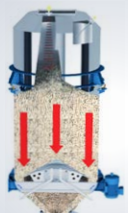
Plug screw feeders transport raw materials from atmospheric conditions to the pressurized zone of the process. ANDRITZ offers rebuilds, spare and wear parts, upgrades, and on-site services for the entire equipment.



ANDRITZ vibrating discharger with center steaming

Center steaming design for pre-steaming bins

- First-in, first-out principle for uniform wood chip retention time
- Even temperature and moisture distribution by ANDRITZ center steaming system
- No risk of bridging or blocking



Radar level control for pre-steaming bin

Radar level control sensor on top of the pre-steaming bin for exact level measurement

- Optimized use of the pre-steaming bin
- Easy to retrofit to existing equipment
- Better pre-steaming results



AdvaProtect 70 – for plug screw

A new generation of hardfacing for a longer service life

- Hard facing for high wear resistance
- Low operating costs



AdvaProtect segments – Multiple system

Innovative solution for on-site refurbishment with exchangeable wear segments. All in one solution, replacing existing rear screw pipe, screw pipe and plug pipe.

- Extremely wear resistant material with excellent price-performance ratio
- Fast replacement of wear segments on site
- All parts stay in your plant – no need to send parts out for refurbishment any more
- Longer lifetime of the housing thanks to refurbishment without welding



AdvaProtect liner – for compression housing

Innovative solution for on-site refurbishment – with exchangeable wear liner

- Flexible and cost-efficient system due to customized holes for dewatering purposes
- Fast replacement on site
- Longer lifetime of the housing thanks to refurbishment without welding



Dewatering unit

New delivery of dewatering unit

- Replacement of existing plug pipe
- Increased dewatering area – Dewatering nearly on complete circumference possible instead of on single small windows
- Exchangeable split dewatering wear liner for on-site exchange. Customer specific number of rows and bore holes possible e.g. for summer/winter operation



Bearing unit

Refurbishment, spare parts or new delivery of your PSF Bearing unit

- New bearing unit
- Professional refurbishment in workshop
- Delivery of spare and wear parts (shaft, bearing/seal kit...)



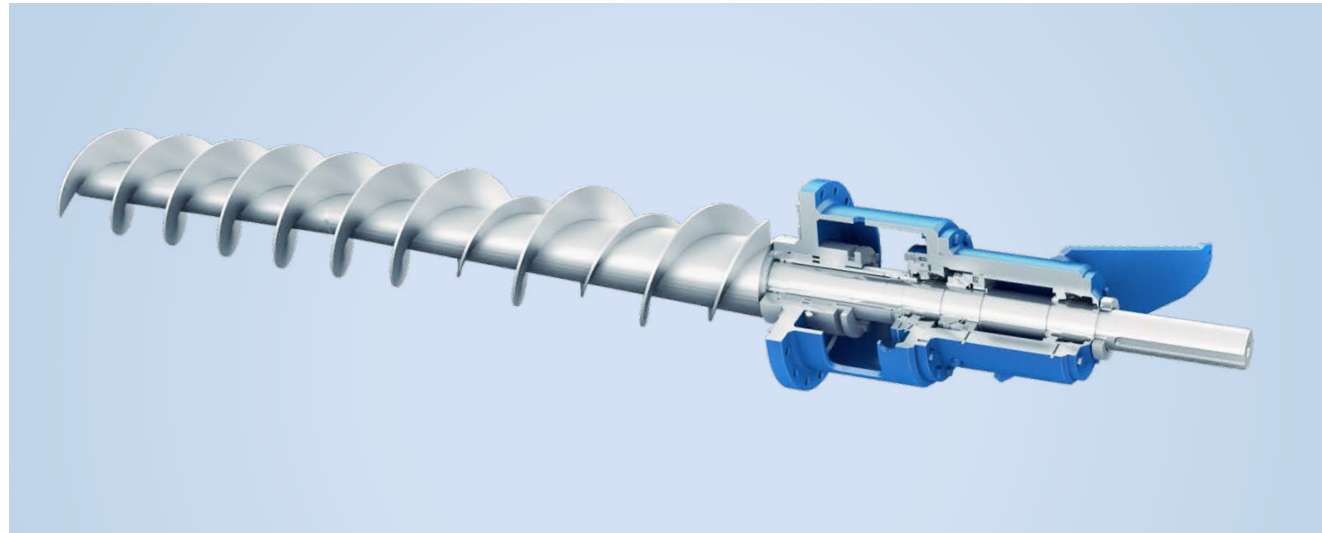
Blow back valve

Proven ANDRITZ design also for ADI/SFA plug screw feeder

- Lower risk of bending, breakage or shaft blockage
- State-of-the-art pneumatic control system
- Maximum safety in combination with maintenance-friendly design

Discharger

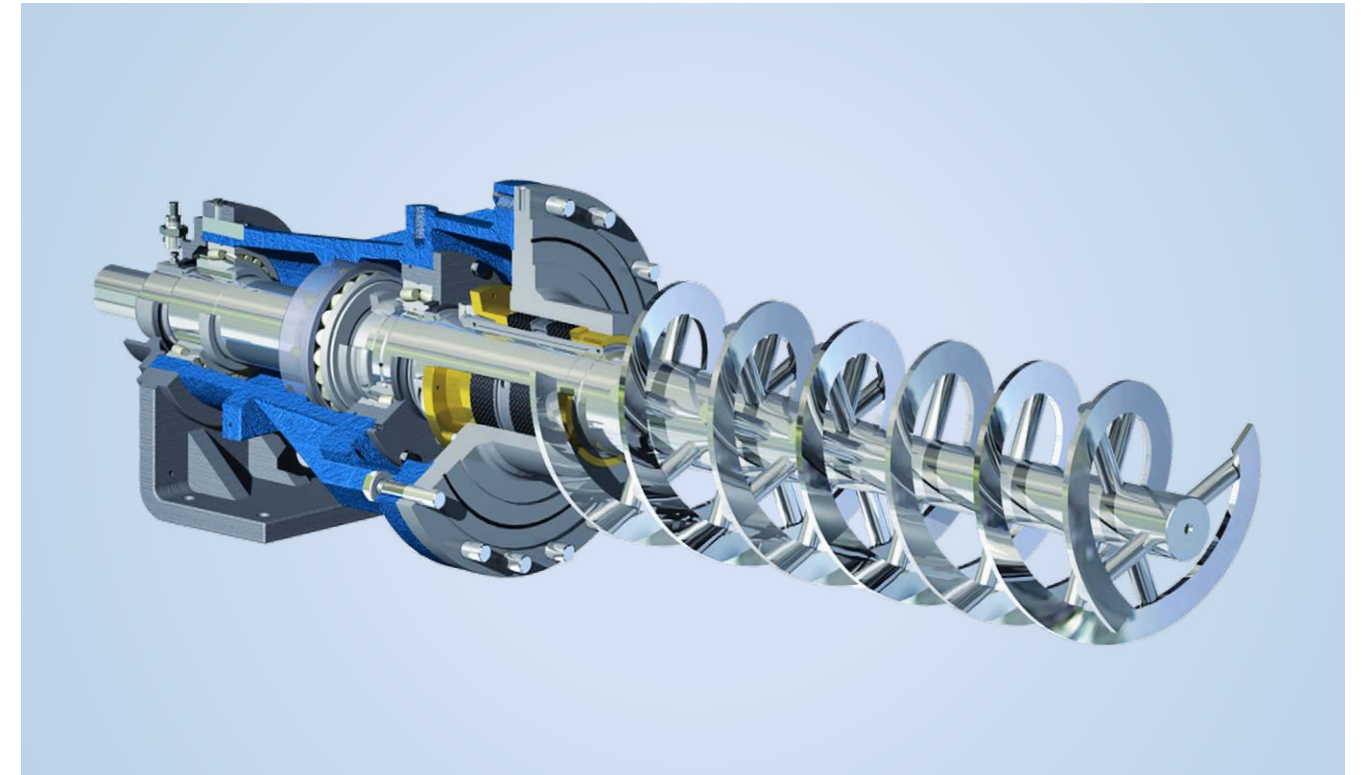
The raw material is transported from the vessel with a discharger system which meters the feedstock according to the throughput capacity to the pressurized refiner.



	<p>Discharge screw drop-in unit</p> <ul style="list-style-type: none"> • Complete drop-in unit (Bearing unit & screw) with packing or mechanical seal design • Professional refurbishment in workshop • spare parts
	<p>Upgrade of discharge screw & agitator to mechanical seal type LF (Low flow)</p> <ul style="list-style-type: none"> • Replacement of existing stuffing boxes or existing mechanical seal solutions • Low flow design reduces water and operating costs • Safe, stable and clean system • Less maintenance activities
	<p>Upgrade of bearing unit</p> <ul style="list-style-type: none"> • Upgrade of feed-end side bearing with single, or double oil seal solution to avoid oil leakages
	<p>Discharge screw and shaft sleeve</p> <p>New discharge screw and refurbishments with ANDRITZ AdvaProtect 70 hardfacing</p> <ul style="list-style-type: none"> • Highest raw material quality and manufacturing accuracy • ANDRITZ AdvaProtect 70 hardfacing for maximum lifetime and reliability • Capacity upgrades and customized screws according to plant operation parameters

Ribbon feeder

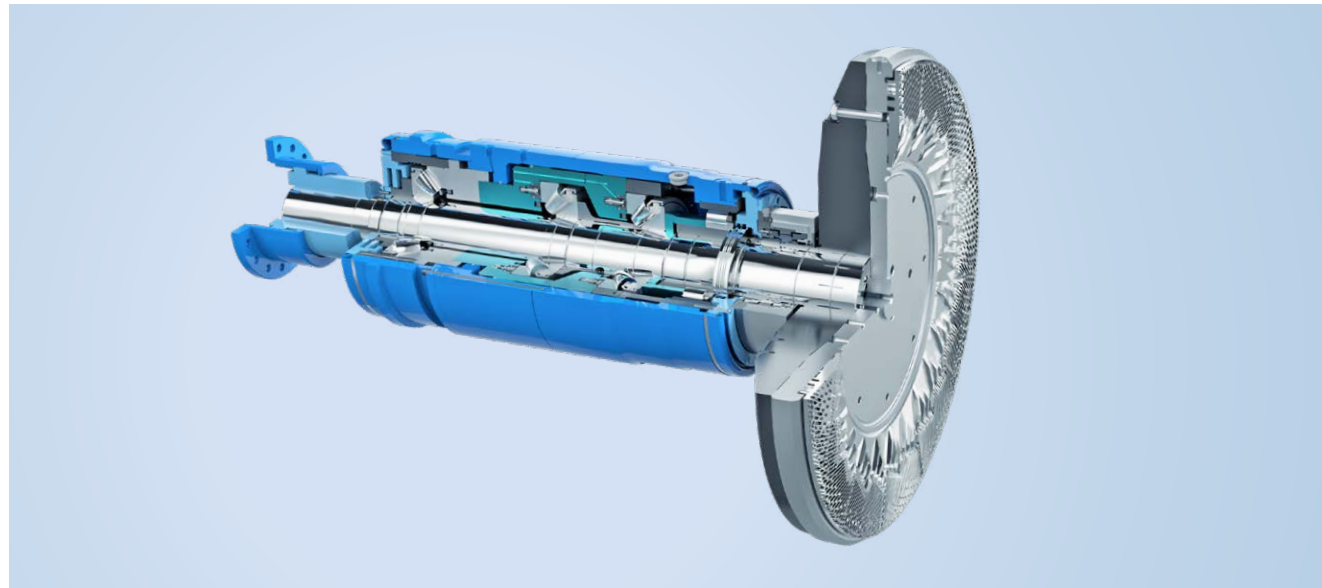
The ribbon feeder moves the raw material continuously to the refiner while allowing the heat in the refiner-produced steam to flow against the feeding direction of the material back to the digester system.



	<p>Ribbon feeder drop-in unit & spare parts</p> <ul style="list-style-type: none"> • Complete drop-in unit (Bearing unit & screw) with packing or mechanical seal design • or single spare parts
	<p>Upgrade of DFA500 ribbon feeder to mechanical seal type LF (Low flow)</p> <ul style="list-style-type: none"> • Replacement of existing stuffing box or existing mechanical seal solution • Low flow design reduces water and operating costs • Safe, stable and clean system • Less maintenance activities
	<p>AdvaProtect hardfacing – for ribbon feeder screw flights</p> <p>A new generation of hardfacing for a longer service life</p> <ul style="list-style-type: none"> • Additional wear protection for screw flights • Hardfacing for longer service life • Low operating costs

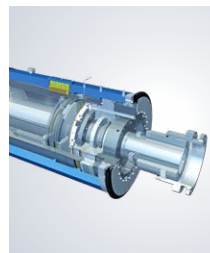
Refiner

The pressurized refiner is the heart of the fiber preparation process. ANDRITZ service is designed to ensure high machine availability and maximum performance throughout the long life of your pressurized refining system for your L-/M-/P-/EVO series refiner.



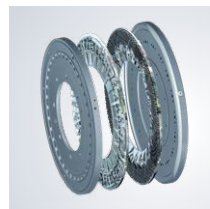
Refiner drop-in unit

- Brand new drop-in units
- Professional refurbishment of Refiner drop-in units
- Exchange program



ABS – ANDRITZ Bearing solution for M-/P-/EVO-Series Refiner Bearing units

- Reliable bearing unit with hydrodynamic lubricated axial bearing ensures long service life, independent of operation condition
- Fits in existing frame
- Existing rotor disc, mechanical seal and coupling half can be further used



Rotor discs & plate holder (segment holder)

- 100% save and approved forged material for longer lifetime
- standard design, or
- Innovative design with dove tail scrapers for advanced protection of full outer diameter



Premium scrapers and rotor blades for rotor disc and rotor plate holder

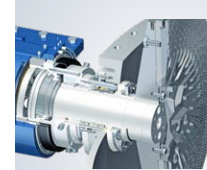
- 1:1 replacement of existing scrapers and rotor blades
- Long lasting premium material



Dove tail premium scraper upgrade – for M-/P-/EVO series Refiner rotor disc and rotor plate holder

Wear parts with longer service life and additional protection

- Protection of full outer disc diameter– for new discs or as an upgrade of existing discs
- Ensures longer service life for rotor disc and plate holder itself due to better protection
- New high wear resistant materials
- Longer service life for wear parts and longer lifetime for main components



Mechanical seal

- Upgrade to mechanical seal solution for L32/36, L42, L44
- New mechanical seal for M-/P-/EVO-Series 1:1 replaceable (steam and water flush possible!)
- Repair of mechanical seals



Coupling & coupling upgrade

- New coupling or coupling half for your Refiner
- Coupling/shaft upgrade on L-Series Refiner possible during bearing unit refurbishment



Tool set

Tool sets for sale or to rent for on-site services

- change of drop-in units
- change of rotor disc, mechanical seal and coupling half



Bearing & seal kits

Complete service kits for emergency on site repair or individual needed spare part

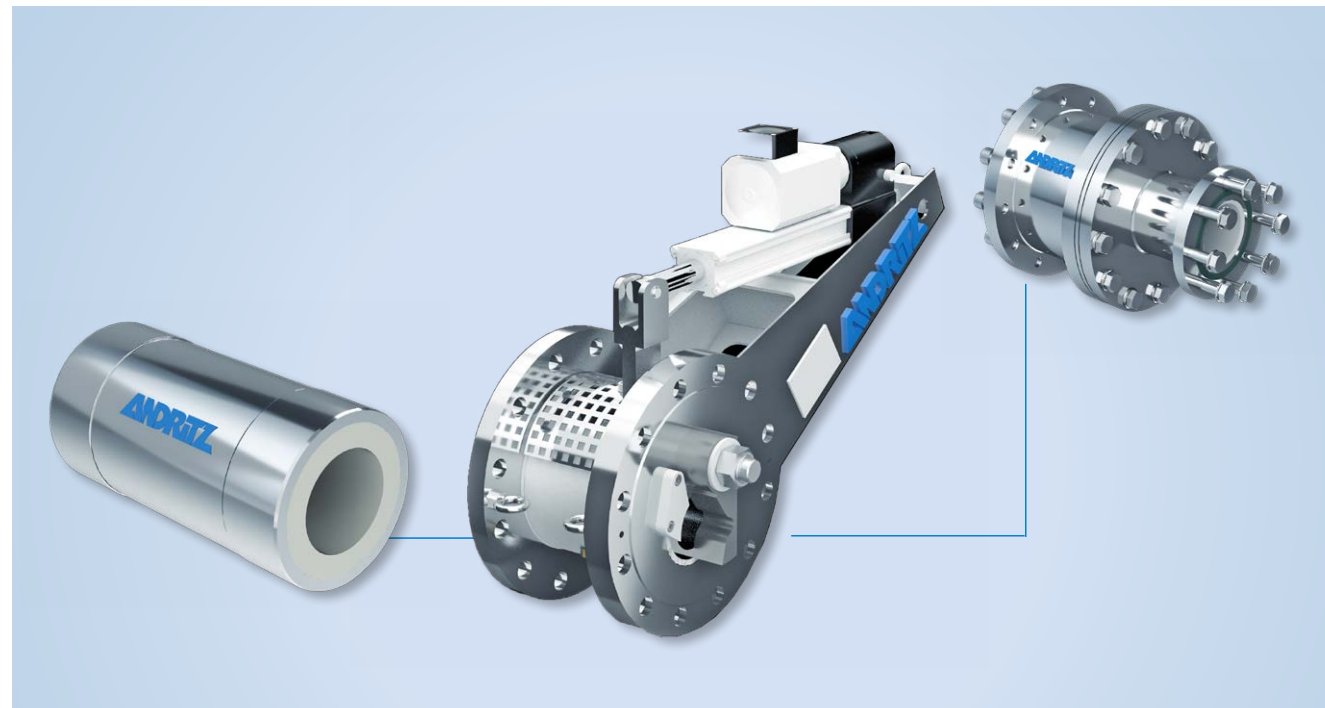


Lubrication and hydraulic unit for refiner bearings and plate adjustment

- Double filter system: Easy filter change during operation
- Precise and adjustable oil volume controllers for all lubrication points
- Instruments with display and transmitter functionality
- Standard components ensure world-wide spare parts availability
- Easy to maintain with good accessibility

Blow line

The finger blow valve (FBV) with ANDRITZ crashbox is specially designed to regulate the fiber flow in a way that is suitable for a blow line. Furthermore, it reduces turbulence to a minimum and improves lifetime and operating availability. The clever design enables easy exchange of individual wear parts like the sleeves or fingers.



Finger blow line with crash box – for refiner

Blow valve with new smart design and easy exchange of wear parts

- Additional wear protection thanks to new valve construction
- No risk of jamming of moveable components thanks to finger on the blow line side
- Maximized availability and longer service life



Ceramic sleeve – for finger blow line

Wear part with longer service life

- Interchangeable with conventional sleeve design
- New high wear resistant materials
- Longer service life



Fiber diverter valve (FDV)

Highly reliable and fail-safe design

- Reduced maintenance costs due to fewer wear parts, compact design, and lubrication-free slide bearings
- Less wear and flow turbulence
- Highly reliable operation because valve components are not restricted in their movement

Automation upgrades

Whether it is the fully autonomous control system system with a specially designed sensor for our customers' refiners or our solutions for monitoring the health of other rotating equipment, we present regular ANDRITZ automation and digitalization updates to optimize your system.



Hydraulic commander

Flexible solutions for fully automatic refiner control

- Fully autonomous monitoring and control system for refiners
- Hydraulic control block with servo valve for optimum refiner plate positioning
- Control of the refiner plate's position and/or closing pressure, allowing operators to control refiners remotely



AdvaCon – predictive maintenance

Automatic refiner plate protection and bearing condition monitoring

- Available for all refiner types independent of the OEM
- Cost reductions: Avoid unplanned shutdowns, optimize preventive maintenance schedule
- Accuracy: providing consistent and exact dynamic zeroing of plate gap



MDF Eye

Measuring device designed to measure the fiber quality at the blow line continuously

- Production monitoring and determination of fiber properties after the refining process
- Automatic, fast and reliable fiber measurement results
- Enhancing energy-saving potential in MDF production
- Sampling possible from multiple refiners



Digital wood

Measuring the wood quality by tracing/detecting and monitoring key properties of the incoming raw material. ANDRITZ instruments measure moisture and temperature with a measuring sensor, volume with a laser scanner and weight with a conveyor belt.

- Control of the material infeed to monitor its stability
- Process control and claim management
- Technological monitoring



TO DISCOVER THE BEST SOLUTIONS FOR YOUR NEEDS, PLEASE CONTACT YOUR RESPECTIVE KEY ACCOUNT MANAGER

We also want to take up your challenges! For more information about ANDRITZ's services, please visit andritz.com/refiner-service for details.

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