PULP & PAPER

THE ANDRITZ REFINER EXCHANGE WITHIN 24 HOURS

OUR CUSTOMIZED CONCEPT TAILORED TO YOUR NEEDS

ANDRITZ

ENGINEERED SUCCESS

ANDRITZ replacement plan

Given the age of existing refiners still in operation, repair and maintenance options have become limited. Operators now need to consider replacement of these old refiners. Such a decision can be difficult due to the substantial project costs and effort required for installation of new refiners. This is not just about replacing the outdated equipment with a new machine. It is about the fact that the existing interfaces and installations have to be adapted accordingly in order to prepare for installation of the exchange refiner.

ANDRITZ offers a solution for such cases – the **ANDRITZ LC refiner exchange concept.** The aim is to offer the customer a refiner that can be installed in a fraction of the time required for a conventional new refiner project to minimize downtimes and production loss.

These **LC refiners** designed by ANDRITZ called **TwinFlo C (TFC)** fit on the existing foundation and match the drive train and inlet/outlet connections.

THE CHALLENGE

- The old refiner installation has fixed dimensions and connection points for the refiner and its drive train.
- Changing the refiner fillings on old refiners is often very time-consuming due to limited access, causing also the risk of injury.
- The old refiners are mainly equipped with maintenance intensive stuffing boxes.
- The old refiner casings and doors are often made of cast components that suffer cracks and corrosion after decades in operation.

THE ANDRITZ SOLUTION

The new TFC refiner

- **allows simple connection to the existing drive train by using the appropriate coupling design.**
- **is equipped with a swing door and a rotor changing device that ensures a fast and safe changing routine of the refiner fillings.**
- **needs only one process seal and is already prepared for installation of a mechanical seal.**
- **has an improved design that consists of prefabricated components that can be combined according to the customer's needs.**

A design based on experience

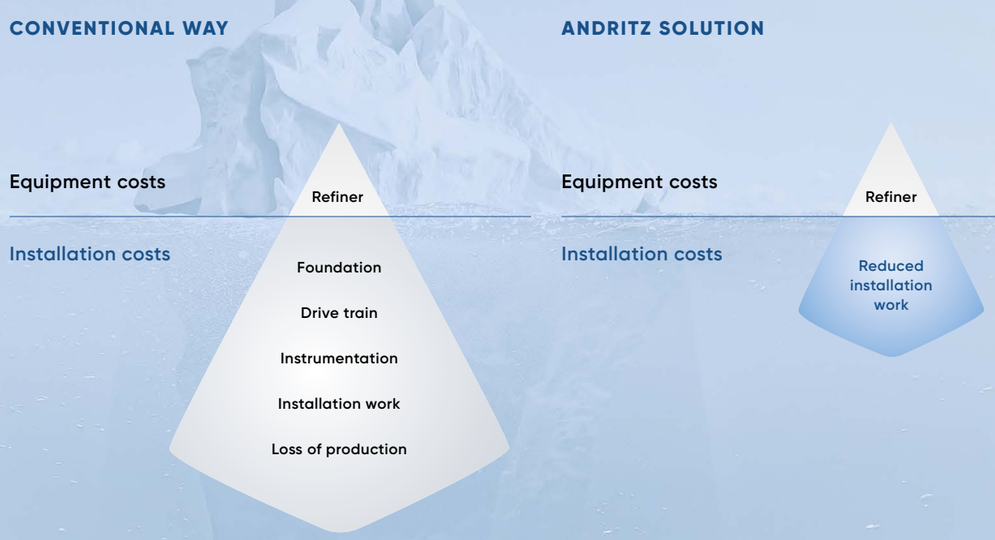
With its experience and engineering capabilities in the pulp and paper industry, ANDRITZ is going to change the philosophy of system renewals and upgrades. The new replacement refiner is a solution with features that are standard nowadays, such as mechanical seals, automated rotor position measurement, or machine monitoring systems that detect critical operating modes.

ANDRITZ now provides double-disc refiners tailored to fit into your existing system! Even a refiner one size larger or smaller with the same power rating may be the **most suitable replacement** machine for your current production requirements. In this respect, it is also possible to replace two different refiner sizes or models in your line (e.g. 34" and 42") with two machines of uniform size.

BENEFITS

- **The replacement is designed to fit into the existing installation.**
- **Expensive installation costs are eliminated, no major modifications are required.**
- **The existing drive train is maintained.**
- **Piping work is reduced to an absolute minimum.**
- **All safety standards are in line with machinery regulations.**
- **Short system downtime for refiner installation.**
- **Optimized maintenance work thanks to improved machine design.**
- **The new refiner allows the use of economical components such as mechanical seals or rotor position measuring system.**
- **The installation of the new refiner saves material resources and thus has both economic and ecological effects (CO_2 emissions).**

The economical benefits of the ANDRITZ solution



DESIGN FEATURES

The component construction of this refiner design allows a wide range of requirements to be covered through the combination of the various modules.

FLEXIBILITY

The refiner **housing size,** the **rotor size** and the refiner plates design are combined in such a way that they optimally match the production requirements in terms of **energy.**

ENERGY

Thus, in the course of the refiner exchange, a refining plant optimization takes place at the same time.

COSTS

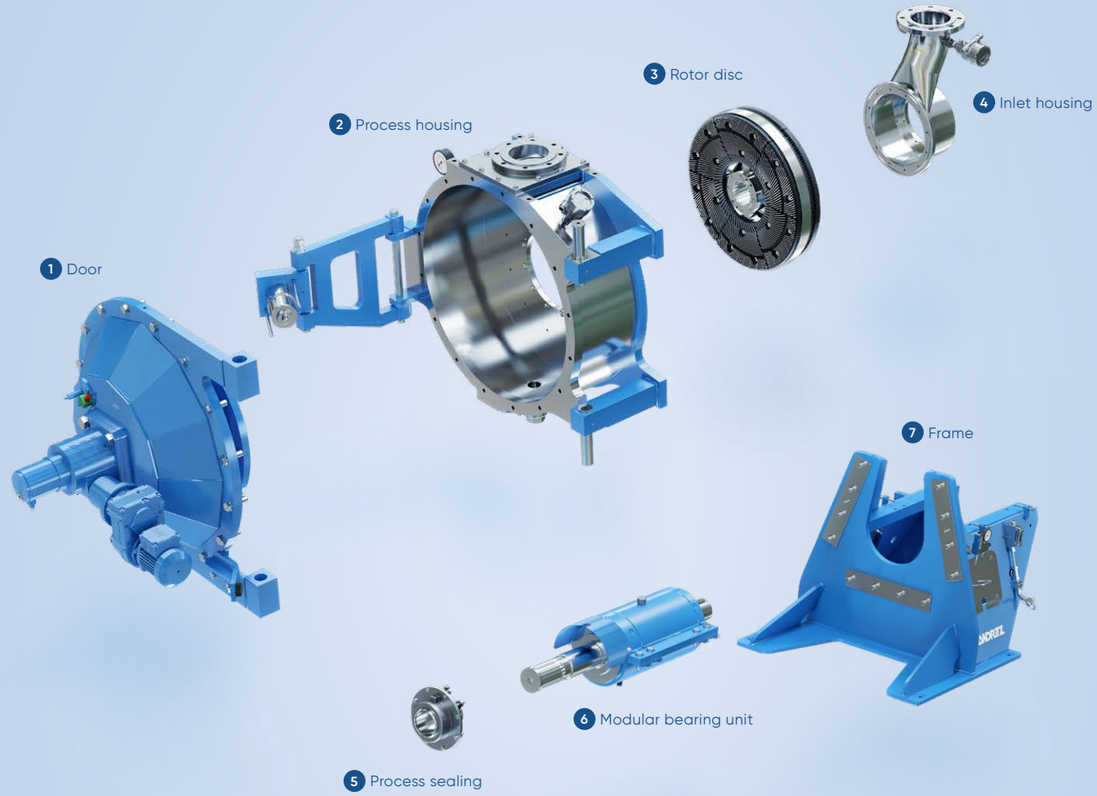
The modularity and changeability of the refiner-components allow further **adaptions to changing production requirements** to the refiner in cost-optimized operation.

MAINTENANCE

Future maintenance work can be carried out under further aspects:

- **Short-term exchange** of components instead of long term repairs.
- **Streamlined stock management** of components fitting to several machines instead of numerous spare and wear parts.
- **Short-term purchase** of refurbished exchange components instead of new parts.

TwinFlo C – the customization system for TwinFlo refiners



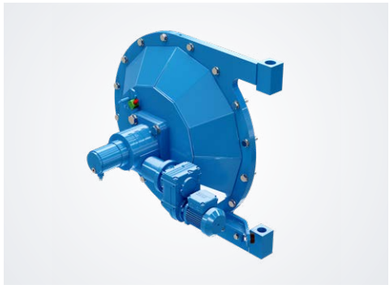
UPGRADE FEATURES

The components design of this refiner design allows the implementation of advanced modules and functions.

- Implementation of an **advanced bearing unit** ensuring a balanced refining gaps control.
- Installation of a **dual outlet system** actively controlling the rotor movement by pressure and flow regulation.
- Easy upgrade and change of **process sealing system** from stuffing box to a single or double acting mechanical sealing.
- Automation features, such as **rotor position and plates wear measurement.**
- Simple application of an advanced **machine protection system** (ANDRITZ AdvaCon).
- **Individual customized features.**

Upgrade features can be considered during the machine purchasing phase or later on demand.

Technical Details



1

DOOR

A welded door construction equipped with an electromechanical adjustment system made of standard catalogue parts. All parts in contact with pulp and media are made of stainless steel.

Benefits:
Simple maintenance of adjustment components.

2

PROCESS HOUSING

A separate welded housing construction equipped with a revolving mechanism to move out the rotor disc safely. The outlet flange is easily adaptable to advanced or customized designs All parts in contact with pulp and media are made of stainless steel.

Benefits:
To a certain extent, different sizes are interchangeable with each other to adapt the refiner in case of changing production requirements which goes along with optimization of process and energy demands.

3

ROTOR DISC

Stainless steel rotor disc which can be moved out easily by a revolving mechanism for maintenance purposes. The rotor disc is designed to handle a certain range of refining plates (over- and under- hang designs) to optimize production and energy demands.

Benefits:
Quick and safe refiner plates changing procedure.

4

INLET HOUSING

The separate stainless steel inlet housing with a separate sealing holder reduces the effort and the number of parts needed for maintenance purposes in case of housing changes.

Benefits:
Improved maintenance.

5

PROCESS SEALING

There are 3 interchangeable versions of process sealing designs:
- stuffing box
- single acting mechanical seal
- double acting mechanical seal

Benefits:
All 3 versions are accessible through the process housing and can be exchanged during an extended plates changing procedure without dismantling of the bearing unit or alignment works.

6

MODULAR BEARING UNIT

This TwinFlo generation consists of a separate bearing unit that is installed in the frame as a drop-in unit.

Benefits:
This compact bearing unit can be handled as exchange unit and decreases maintenance stop times. Bearing unit upgrades to advanced versions are simply done by exchanging the drop in unit to the new design.

7

FRAME

ANDRITZ provides a customized frame, fitting exactly to your current installation in order to maintain piping, drive drain and foundation connections.

Benefits:
Reduced installation efforts.

THE ANDRITZ REFINING SERVICE TEAM – GLOBAL SUPPORT FOR ANY KIND OF REFINER

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

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