



DD-WASHER PLUS™

A HIDDEN GEM
IN THE FIBERLINE



A STORY FROM
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ANDRITZ

ENGINEERED SUCCESS

A HIDDEN GEM IN THE FIBERLINE

Well over 400 ANDRITZ DD-Washer drum displacer washers have been installed on fiberlines at pulp mills all around the world, where they quietly and consistently deliver remarkable results for pulp producers. The four-stage washer has gone through numerous updates and developments since it was first launched in the 1980s, and now the ANDRITZ DD-Washer PLUS next generation drum displacer washer is the first choice of the largest and most efficient pulp producers across the globe.

ANDRITZ DD-Washer is the hidden gem in the pulp production process, sparkling brightly when it comes to performance in the fiberline. "The DD-Washer really is a remarkable piece of innovative engineering," says Markku Oksanen, Development Director, Fiber Technologies at ANDRITZ. "It is one of our most successful products and we have noticed that whenever pulp production experts first become aware of the performance of the DD-Washer, it's not long before the orders start coming in.

"It simply knocks the competition into the shade," adds Oksanen.

The core principle of the DD-Washer is multi-stage washing taking place in a

single washing unit in a rotating drum at even MC-consistency without any intermediate dilution. This approach to pulp washing stabilizes the entire fiberline process and because there is no mechanical pressing of the pulp during washing, the DD-Washer is extremely gentle, avoiding fiber damage and deformation.

"The DD-Washer is unique," says Oksanen. "Because it can have up to four washing stages in one unit, it is less expensive and a space saving solution compared to several wash presses required to give a corresponding washing result."

A LONG EVOLUTION

After decades of development, including

ADAPTIONS AND ADDITIONS

- A simplified wash sector design
- Improved pulp pocket design
- Incorporated fold seal
- Addition of VFD controlled pumps
- Improved wash water process
- Combined filtrates
- Improved cake release
- Addition of digitalization solutions

a prototype installed at the Enso-Gutzeit mill in Kotka, Finland in 1983 (now MM Kotka-mills), the very first official production-scale DD-Washer was delivered to Kymmene Oy Kaukas mill (now owned by UPM) in Lappeenranta, Finland. Installed in 1987, even then the washer made an immediate impression as it reached its performance guarantees for washing and throughput in an incredible 45 minutes after start-up.

Fast forward to 2022 and the DD-Washer PLUS is a completely different animal, although retaining the core principles and features that made it so successful in the first place. Oksanen says, "The original DD-Washer design has been through at least five generations of major change and



remarkable results
for pulp producers

development since the first one installed in the 80s, whilst keeping its main attributes of multi-stage washing in a compact design.”

Although the DD-Washer Plus may look similar on the outside, improvements over the years on the inside include a raft of adaptations and additions.

The improvements and additions implemented to the latest DD-Washers bring huge savings in chemicals, water, and energy. “Although looking similar to the original ones, the DD-Washer PLUS is now a completely different machine. In fact, it has gone through a complete transformation. It is available in a bigger size, is more efficient, uses less energy, and at the same time is able to handle a higher capacity, compared to earlier generations of the same size. Nowadays, there are also a number of smart functionalities that can further enhance its performance,” says Oksanen.

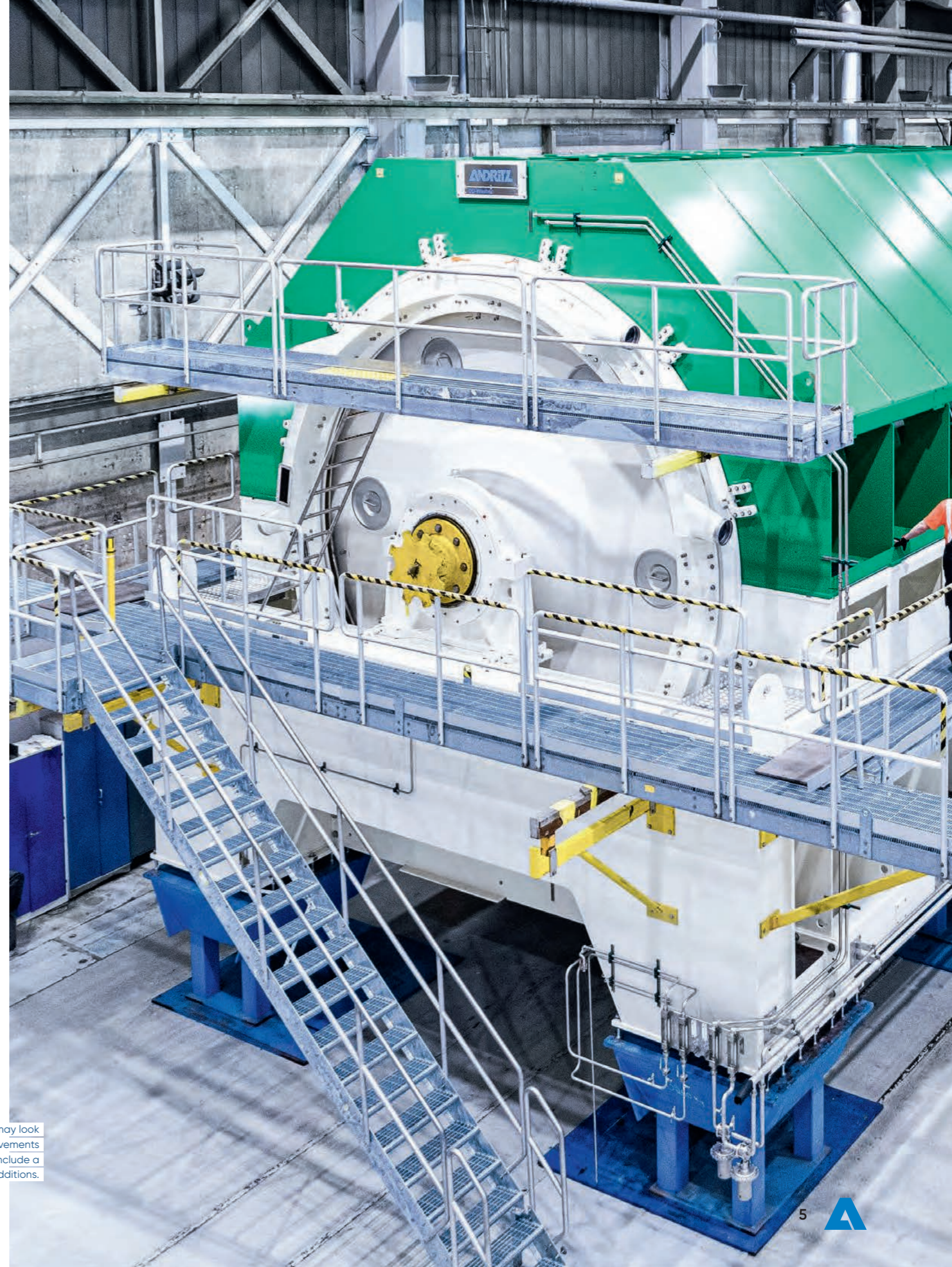
The ANDRITZ DD-Washer is now preferred by many of the major pulp producers around the world because of its high capacity, superior washing performance, and smaller overall footprint when compared to the installation of rows of wash presses. The size of the DD-Washer has also grown considerably, whilst still retaining a compact design, with the latest sizes going up to 11 m in drum length.

ANDRITZ has recently received its largest ever orders for its biggest DD-Washer units for single line pulp mills in Indonesia and Brazil, and 14 washers in total for kraft and dissolving pulp lines at another mill in Brazil.

FUTUREPROOFING AS STANDARD

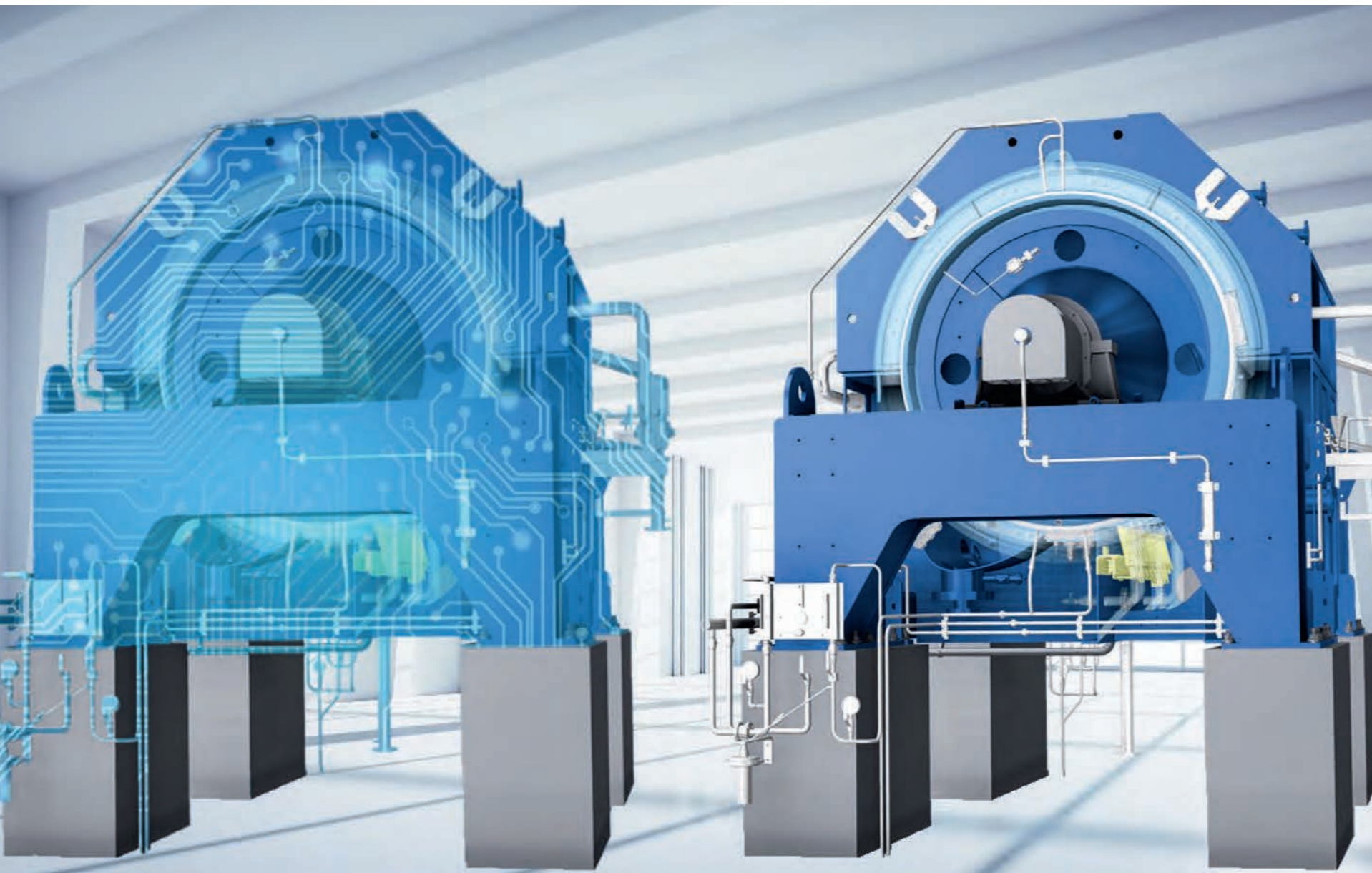
One of the advantages of retaining the original outside design of the DD-Washer is that any existing DD-Washer can be upgraded with the latest improvements and technology on the inside.

Although the DD-Washer PLUS may look similar on the outside, improvements over the years on the inside include a raft of adaptations and additions.





The new DD-Washer PLUS comes with the option to include the very latest in digital technology for optimized efficiency and uninterrupted availability.



"Due to the unique basic design that has remained the same while making further improvements over the years, the DD-Washer has always been delivered futureproofed as standard," says Oksanen. "We are able to upgrade practically any existing DD-Washer to include the very latest technology.

"This is perfect for customers with mills that have had to adapt to business environment changes over the years, which may include a need for more capacity, or are simply looking to get higher efficiency with lower energy costs. Thus, upgrading older washers offers the possibility to extend their lifetimes and can be a feasible alternative to replacement with a new unit."

As part of its commitment to ongoing development, the new DD-Washer PLUS comes with the option to include the very latest in digital technology for optimized efficiency and uninterrupted availability.

Jussi Piira, Director of Fiberline Digitalization, ANDRITZ, says, "For the DD-Washer PLUS we have developed a number of

digital solutions for our customers that center around intelligent functionalities of process automation.

"Using the latest Metris Digital IIoT solutions from ANDRITZ, we can monitor the equipment in real time, which allows us to estimate the lifetime of components in the washer and manage predictive maintenance. It also allows the opportunity to monitor the operational efficiency of the DD-Washer PLUS."

ANDRITZ now has various digital sensors applied to the DD-Washer PLUS that cover all aspects of operation: for example, screen plate scaling index, drum end seal thickness, seal water system diagnostics, predictive maintenance, remote support, and washing efficiency calculations. The main purpose of these digitalization solutions is to ensure timely and necessary maintenance so that the customer can avoid unexpected production losses due to equipment failures and provide the opportunity to operate the washing equipment so that it always offers the best possible performance.

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