



# THE EVOLUTION OF SHOE PRESS TECHNOLOGY

*PrimePress XT Evo*

**ANDRITZ**



# Gentle dewatering and better tissue quality

## UNIQUE TECHNOLOGY

The way that a shoe press is used in tissue production is unique in that way that sheet forming takes place on a water-saturated felt. Careful sizing is required for the equipment that pre-dewaters the sheet. The sheet is then pressed against a Yankee, which is challenging because the Yankee is not a perfect counter-roll press element.

## ENERGY SAVINGS

Higher post-press dryness can be achieved by operating the shoe press in "dryness" mode, obtaining high after-press dryness due to the right nip pressure curve and only minor rewetting. A papermaker can choose to either lower the thermal energy consumption or to increase the machine speed, raising production for a given level of thermal energy consumption.

## BULKIER SHEET

A shoe press operated in "bulk" mode produces a bulkier sheet. Low maximum nip pressures are permitted, still giving good after-press sheet dryness. This can be used to produce a bulky sheet, compared to that produced with "standard suction press rolls," but requiring less virgin fiber, or allowing the substitution of less costly furnish for high-quality furnish. This reduces the raw material costs.

Shoe press installations like at Arkhbum Tissue, Russia (picture on the right), and Vajda Papir, Hungary prove the success of this ANDRITZ technology.

**"The PrimePress XT Evo shoe press gently dewateres the web, but still achieves a far higher post-press dryness than conventional presses."**

Carlos Gallo  
Product Director Tissue and Drying  
ANDRITZ



## EXTENSIVELY TESTED

We are constantly improving and developing new technologies. Thanks to our tissue pilot plant (PrimeLineTIAC - Tissue Innovation and Application Center) at our headquarters in Austria, we have the facilities to constantly test and optimize our shoe presses under different operating conditions.



# Savings in energy or increase in capacity

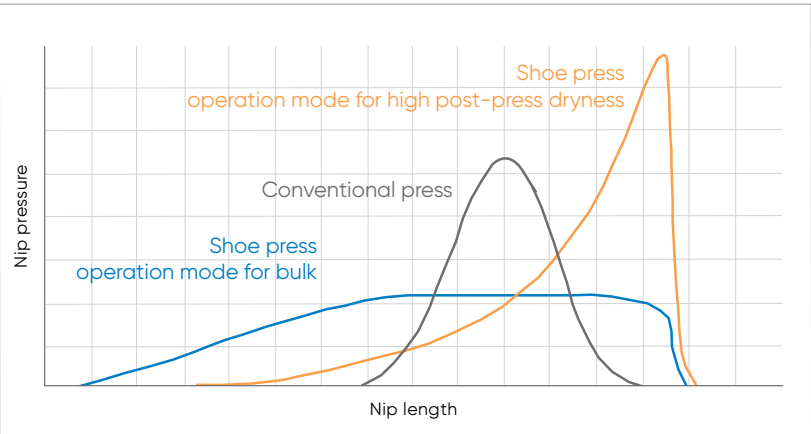
Due to the new energy-efficient press design, improved dewatering and reduced need for thermal drying, it achieves either significant savings in energy or a noticeable increase in capacity.

## NIP PRESSURE PROFILES

The figure on the right shows a nip pressure curve of a conventional press roll along with a typical shoe press. The conventional roll gives medium nip pressure and notable rewetting due to its symmetrical pressure curve (grey). When the focus is on maximum bulk, the maximum nip pressure of a shoe press is kept low (blue). When the emphasis is on maximum dryness, the maximum nip pressure of the shoe press is pushed to the top (red). Typical for both shoe press operational modes (maximum bulk or maximum dryness) is the abrupt pressure relief at the end of the nip, minimizing rewetting effects.

**"The line force and/or shoe tilt can be adjusted in a very flexible way in order to optimize the product quality and reduce drying energy."**

Hans-Josef Reiners  
Director Sales Paper and Board  
ANDRITZ Küsters



Typical nip pressure profiles

## EDGE CONTROL SYSTEM

The ANDRITZ edge control system gives full control of the critical edge zones to the papermaker. In the edge area, the operator can control local line load and set the optimum press nip.

The unique and patented deflection compensation ensured by the U-shaped loading mechanism ensures a clear relation between pneumatic pressure and line load, resulting in uniform conditions in cross-machine direction.



## BENEFITS

- New patented loading system for low energy consumption
- Flexible shoe design and edge control system
- Low-flow, low-pressure, low operating costs

**WATCH THE VIDEO**  
with our experts Carlos Gallo  
and Hans-Josef Reiners





## DISCOVER OUR FULL-RANGE PORTFOLIO FROM FIBER PROCESSING TO PAPERMAKING

An outstanding paper product requires outstanding production – matched with the particular needs of raw material and final product. Discover the full-range portfolio from ANDRITZ: Excellent stock preparation that allows best fiber development according to furnish and with economical use of resources. *PrimeLine* paper machines that are a synonym for producing top-quality tissue, paper, and board grades. Complete lines or single units, upgrades, and modernizations. Contact us and benefit from your individual package in papermaking technology.

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**GET AN OVERVIEW**  
on our tissue  
technologies and services

