Northern Tissue Group as pioneer for new developed shoe press

First NipcoFlex T successfully started up

Ten years after the first shoe press worldwide was installed at the Northern Tissue Group (NTG) mill, the group has decided once again to be the first tissue producer to install the new Voith NipcoFlex T shoe press. The NipcoFlex T is the latest development of shoe press technology for tissue and improves product quality and plant efficiency.

The first Voith TissueFlex shoe press was launched on the market approx. ten years ago. At that time the main focus was on the product features of bulk and softness in order to differ in quality from the standard Dry Crepe machines.

During the last few years competition has become distinctly tougher even in the tissue sector so that in addition to quality characteristics, questions of energy saving and increase in efficiency have gained in importance. Due to very strong competition and the need to reduce costs, many production managers are confronted on a daily basis with the following questions:
  - How can the fiber input be reduced?
  - How can the efficiency of the plant be increased?
  - Where can energy be saved?

These questions were the focus for the product development of the new NipcoFlex T shoe press.

Technological challenge

The press nip of a tissue machine differs fundamentally from the press nip of a paper machine. The reason for that is the Yankee dryer which is not like the conventional mating roll of a press.

Besides the known parameters such as linear load, the Yankee dryer is subject to additional varying factors of influence such as steam pressure, which in turn changes the operating temperature and thus the deformation of the Yankee heads and shell. A shoe press for a tissue machine must therefore be designed to be very flexible across the full width of the nip. This is a prerequisite for generating a uniform linear load in the press nip so that a homogeneous CD moisture profile can be achieved. However, a rigid pressure shoe in machine direction is essential so that we achieve the desired high dryness.

NipcoFlex T for maximum productivity

The mentioned technological challenges were successfully implemented into

“It was a pleasure to work with Voith during the project phase and especially during the start-up and optimization phases. After this close cooperation we consider the Voith Paper team as a partner.

With the NipcoFlex T shoe press we are able to dramatically increase the energy efficiency and runability of tissue production at NTG, even more so than expected. This technology is setting the benchmark for minimum energy consumption and highest quality.”

Steve Mulcahy, Mill Manager NTG
On focus: NipcoFlex T

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ProEnvironment
ProRunability
ProQuality
ProSpeed
Section: press section
Paper grade: tissue

Contact

The design of the new NipcoFlex T shoe press. In order to ensure maximum operational reliability with the first installation, Voith Paper has subjected the new NipcoFlex T to a thorough test plan. The innovation was tested technically not only in the shoe press test rig but was also tested technologically for quality characteristics such as bulk and dryness at Voith’s tissue pilot plant in Sao Paulo, Brazil.

All the results gained from these rigorous tests confirmed that the NipcoFlex T has substantial advantages for the manufacture of tissue:

- With the NipcoFlex T, maximum drynesses of up to 48% can be achieved. This means that when compared to a conventional suction roll press, approximately 20-25% drying energy can be saved.
- The NipcoFlex T stands out due to its extremely uniform nip, which results in a high operating efficiency. Disturbing phenomena such as edge lifting are now a thing of the past.
- The effective shoe position can be adjusted during production from the control room so there are no production downtimes for adjusting the shoe position. Maximum flexibility for the optimum setting with regard to dryness, bulk and softness is achieved at the same time.

The first installation was started up successfully

The first NipcoFlex T was successfully started up at the Northern Tissue Group in Lancaster, UK in April 2010. As was already the case on the Voith pilot plant, the start-up was without any problems. The after press dryness was immediately increased by more than 5% directly after the start-up with unchanged bulk. The objectives of the new NipcoFlex T have already been exceeded during this first installation:

- The drying energy was reduced by more than 20%.
- The flexible shoe ensures a very good CD moisture profile and optimum runability.
- The flexible shoe adjusting device permits optimization of bulk and dryness during production.

NipcoFlex T succeeds

In addition to the first installation for the Northern Tissue Group, the NipcoFlex T will be installed in two new tissue machines. These machines will have a paper width of 5,550 mm and will be installed in China.

In 1999, Voith Paper established shoe press technology for tissue as the first supplier worldwide. Since then it has been the market leader in the sector of tissue shoe presses with twelve installations in operation.

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The flexibility of the NipcoFlex T allows setting of various pressure profiles.

Deformation of the Yankee by the line load sets high requirements for the NipcoFlex T.