

Increase of cost effectiveness and energy efficiency in tissue production

EcoChange T and Yankee head insulation are impressive

In order to increase productivity in tissue production, Voith Paper is offering two products that impress with a return on investment in less than one year. The EcoChange Tissue (T) is a full sheet turn-up system that clearly reduces the quantity of broke and at the same time increases work safety. The Yankee head insulation prevents high heat losses from the cylinder head to the environment and contributes to energy-efficient tissue production.

In the tissue production process, considerable efforts are made to reproducibly create stable operating conditions and uniform quality. However, in this continuous production process there must be regular partially automated interventions in order to enable further transport of a certain quantity of tissue produced by the production line. This process requires the highest level of precision and concentration from both people

and machines in order to carry it out as safely, quickly and efficiently as possible. The turn-up of the parent roll at the reel is a dangerous task.

Reliable reel change

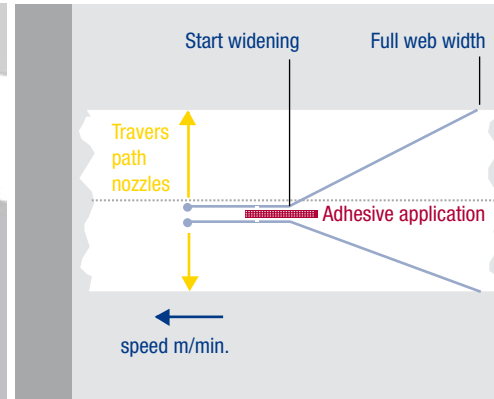
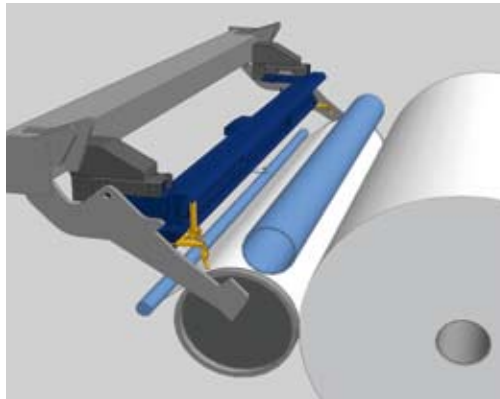
The EcoChange full sheet turn-up system with high-pressure water jet technology had already been introduced in other product lines. Voith Paper then adapted the

EcoChange system to the particular requirements of tissue production and developed the EcoChange T. The consistently automated and reliable EcoChange T ensures the highest changing reliability with minimum broke quantities at the reel core and the highest operational safety. The changing process takes place in a few seconds with the full web width running. Two water jet spray nozzles travel from the edges crosswise to

On Focus: EcoChange T

ProSafety	+++
ProEnvironment	+ □ □ □
ProRunnability	+++
ProQuality	+ + □ □
ProSpeed	+ + □ □

Section: reeling
 Width: all
 Paper grade: Tissue



EcoChange Tissue system.

How the EcoChange Tissue functions.

the tissue web and then begin to cut the tail to be threaded in the center. Through a micro-atomizer nozzle, this narrow part of the web is fixed on the new reel with a small amount of adhesive. By means of the control and the special technology, harmful dripping from the nozzle is prevented. Fractions of a second later, the two cutting nozzles shoot from the center of the machine to the edges and create a wedge-shaped web section that follows the clinging tail onto the new reel. Thus, the first layers begin to be wound symmetrically and evenly. The full

reel is ejected with a cleanly cut end and slowed down.

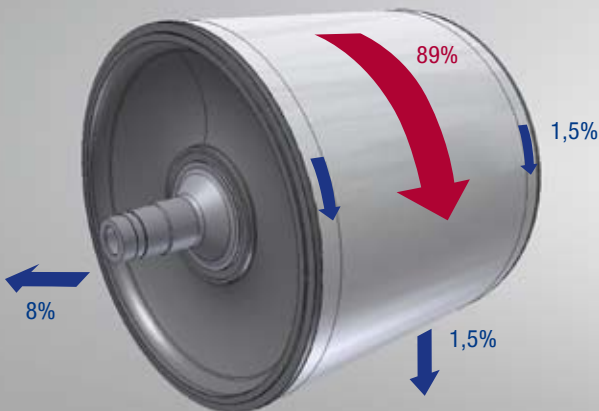
The EcoChange T works with Voith's innovative high-pressure water technology and is designed to be especially user-friendly. One aspect of this is the special cutting nozzle bracket with quick change connector. In addition, easy maintenance of the complex system was emphasized. In contrast to the conventional changing procedure with an asymmetrical tail cut in the wet section, as much as 30 seconds or more can be saved during each

change. In addition, change reliability is significantly increased without human intervention due to constant operation, so that installation of the EcoChange T is already paid off in less than a year. Safety in the reel area is likewise clearly improved, since potentially dangerous handling by the operation personnel during reel change is no longer required.

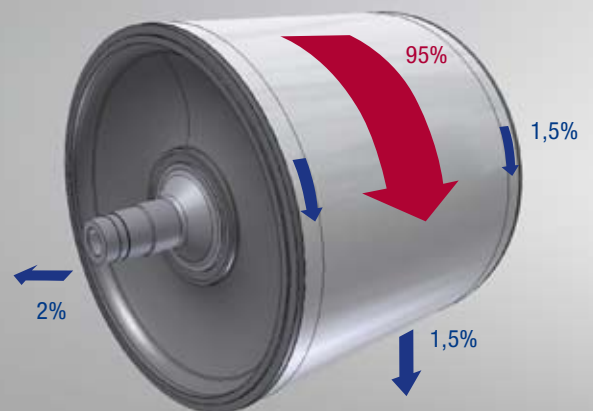
Ideal combination

An outstanding combination can be made by combining the EcoChange T with the MasterCut. The joint control

Without insulation



With insulation



Voith Paper Yankee – energy loss without (left) and with (right) head insulation.

and pressure generation make this combination an ideal system. The MasterCut cuts the web before the reel in the direction the machine is running by means of effective high-pressure water jet technology, without mechanical cutting units on the paper web. Clear improvement in dust-free and lasting high cut quality, even with fast tissue machines, is an essential feature of the MasterCut center cut process.

For over 15 years, Voith Paper has been using high-pressure water technology for paper cutting. EcoChange systems with over ten years of operational experience are part of the standard equipment in paper machines. EcoChange T and MasterCut were successfully introduced in the tissue industry in 2008 and are a must for modern, fast and safe machines.

Energy reduction by means of Yankee head insulation

Energy saving is an important topic in tissue production, too. Especially

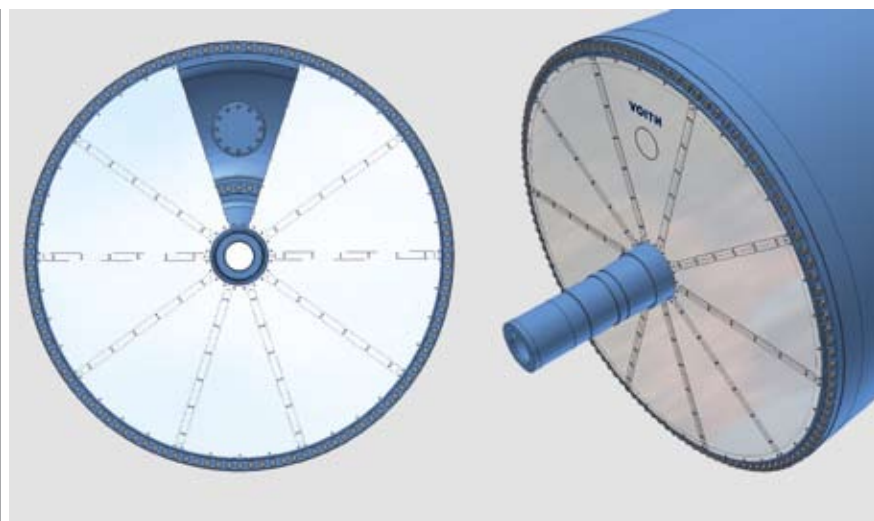
in the drying process, large amounts of thermal energy are consumed by the tissue machine in order to dry the web on the creping (Yankee) cylinder and give it the required product characteristics. A high release of thermal energy to the tissue web should be achieved here on the sleeve side. However, a considerable portion of energy goes unused and is lost via the cylinder heads.

This energy loss can be significantly reduced by insulating the heads of Yankee cylinders. Insulation cartridges are reliably attached to the heads of Yankee cylinders. The cartridges are designed to be shock-proof and splash-proof and offer ideal additional protection against deposits of dust on the Yankee head. The design takes into account all forces present in the system (e.g., centrifugal forces) and is optimized to the application of extremely varying thermal stresses.

The heat losses on the Yankee can be reduced by 3 to 8%, depending

on the diameter, speed and working width of the tissue machine. Installation of the head insulations thus pays off in less than a year. Assembly doesn't even take a day and can be done either as full assembly or with only assembly monitoring by Voith Paper. In addition, acceptance is carried out with the responsible certification authority, with the effect of mechanical processing on the tensions in the head being calculated by means of the finite elements method. Likewise, all possible influences are taken into account in a swell calculation.

Voith Paper looks back on over 30 years of experience in this area. Well-known tissue manufacturers have decided in favor of head insulation from Voith Paper. They can either be retrofitted on existing Yankee cylinders from all manufacturers or be delivered with new Yankee cylinders.



The cartridge solution for Yankee head insulations: reliable and energy-efficient.

On Focus: Yankee head insulation

ProSafety	++++
ProEnvironment	+++
ProSpeed	++

Section: dryer section
 Width: all
 Paper grade: tissue

Contact



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