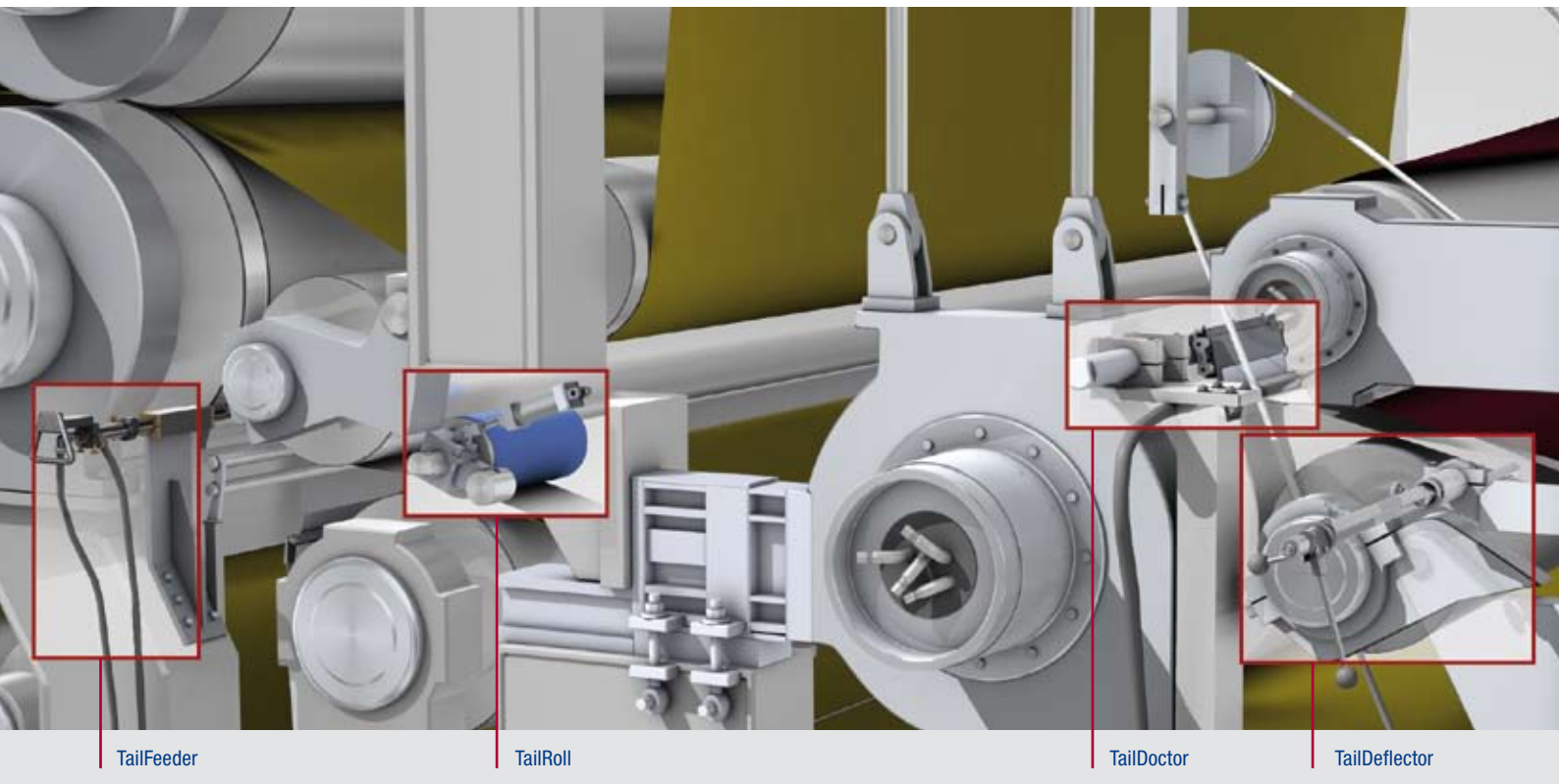


## Tailor-made products for optimization of specialty paper machines

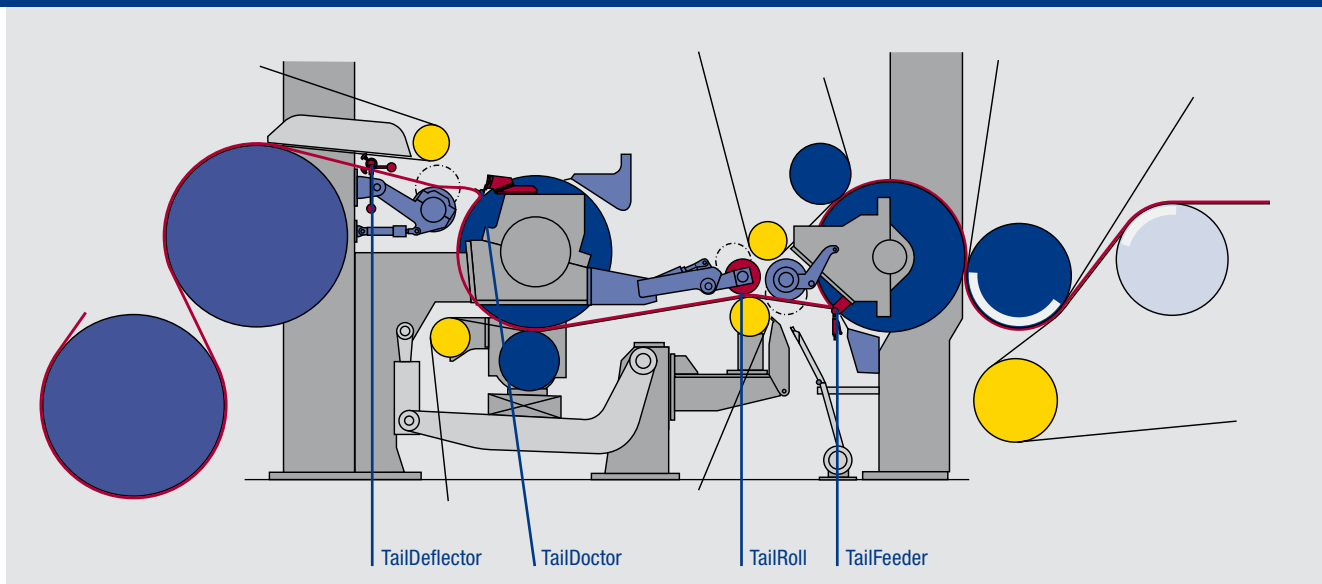
A small conversion can bring about big changes with specialty paper machines. Voith Paper offers not just complete specialty paper machines, but also products and concepts for optimization of existing machines. In this way, often substantial improvements can be achieved - with regard to efficiency, quality or productivity. Small investments usually pay off quickly. In what follows, two products are described that are frequently used for upgrading specialty paper machines: the “Value Plus Thread Concept” and the “RopeRing”.



Product 1: Thread concept – new concept provides for reliable thread transfer through the press section

### Quick web feeding after a break

After a paper break in the press section, it often takes a long time for production to resume. This results in expensive downtimes. For that reason, Voith Paper has developed the “Value Plus Thread Concept.” It provides for reliable and quick transfer of the paper thread through the press section and into the dryer section.



The “Value Plus Thread Concept” (red marking) is suitable for retrofitting in existing specialty paper machines.

The tight construction in the press section for reduction of open pulls of the paper web makes it difficult and dangerous for the papermaker to guide the thread through the press section. The “Value Plus Thread Concept” solves the difficulties with slight modifications in the press sections and four newly developed modules - the TailFeeder, the TailRoll, the TailDoctor and the TailDeflector. The “Value Plus Thread Concept” can be retrofitted in every paper machine with free-standing press and rope carrier system. The two paper guide rolls before and after the free-standing press are provided with a hydraulic swivel mechanism and a direct drive in the optimization. Thus, sufficient room for the transfer results and accessibility on the drive side is improved.

When the web with the paper thread cut by the couch squirt runs into the press broke at the central roll, the feed strip is transferred with the TailFeeder into the free-standing press.

The TailFeeder is connected to the compressed air supply and acts as an air knife. Without direct contact, it lifts the paper tail off of the central roll by means of blow air. The paper tail is thus not creped and retains its stiffness. Thus, in the transfer process only a slight raising of the pull is necessary.

The TailRoll – a directly driven feed roll – is applied to the press fabric of the free-standing press on the light gap and thus the feed strip is fixed directly after contact with the press fabric. Immediate fixation prevents the formation of lumps and protects the press fabric from damage during feeding. Subsequently, the new doctor blade, TailDoctor, is applied to the top roll of the free-standing press and automatically activates its air transfer nozzles. The TailDoctor lifts the paper tail from the role and guides it directly into the downstream dryer section. The transfer through the free-standing press thus takes place in one operation and the time-consuming

cleaning out of the paper on the conventional removal doctor blade is omitted. In order to also guide the paper thread through the dryer section, it must be channeled into the rope transfer system. That is why Voith Paper developed the TailDeflector. It serves as an elongated arm of the paper maker with which the latter can easily and safely grasp the tail and guide it into the rope carrier system of the dryer section in a repeatable and safe fashion. In this way, the danger of reaching into the running machine is avoided. After the transfer, the paper web is run wide and the paper guide rolls are swiveled back into the operating position for reduction of open pulls. The “Value Plus Thread Concept” modules have been successfully used worldwide since 2007.

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Product 2: RopeRing – reliable feeding of the paper thread through the dryer section

## Line rope grooves accurately to dimension with RopeRing

**As a rule, paper machines for manufacturing specialty papers are equipped with a rope carrier system. The rope grooves of the dryer cylinders in the paper machine are exposed to heavy loads in this connection. Among the frequently occurring signs of wear are big rope grooves caused by feed ropes running at differential speeds. As a solution, Voith Paper developed the RopeRing that lines rope grooves and provides for safe and quick feeding of the paper thread through the dryer section.**

Deep rope grooves on the cylinders cause a differential speed between transfer rope and cylinder surface in the dryer section. With increasing depth of the rope grooves, the ropes diverge and rope wear increases. The unsafe guiding and faulty clamping of the paper thread then leads as a rule to breaking of the thread. In addition, the increasing transfer times lower production capacity.

For this reason, Voith Paper has developed a new product that is optimally suited for upgrading existing dryer cylinders. The RopeRing is a molded steel ring that lines the rope groove accurately to dimension. It

guides the ropes and the tail on an ideal radius so that the differential speed between the feed ropes and the rope groove is minimized. By means of the optimal clamping of the paper thread with the RopeRing, the feeding operations are significantly improved and the feeding times are again noticeably shortened. Use of the RopeRing thus reduces downtimes and increases the runnability of the paper machine. The RopeRing is installed directly into the rope groove. Reworking of the existing rope groove is usually not necessary. The RopeRing is suitable for all rope groove forms, even for loose rope rings. The existing rope groove is gauged by

means of Voith Paper laser technology and the molded steel ring is produced custom-fit for the respective application. During mounting on the dryer cylinder, the RopeRing is welded, pinned and ground. Due to the exact preparation, eight to 10 RopeRings can thus be installed in 12 hours. Voith Paper has 500 RopeRings already being successfully used in the market.

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*A cylinder without (left) and with RopeRing (right). It lines the rope grooves accurately to dimension in order to minimize differential speeds.*

