

Qualitek CurlTek

On-line Curl Control

Companies in the converting industry manufacturing high-quality paper, require a flat and level sheet after the surface treatment. Today, superior grades in sheet flatness (zero curl) can be achieved using the CurlTek and its unique steam application technology. The CurlTek is a single side steam applicator to control on-line curl and moisture in both cross and machine direction. Our advanced technology in conjunction with a high-performance steam actuator with zone spacing down to 75 mm provides best curl control. This, coupled with our durable pneumatic actuators, provides superior benefits for the converting industry.

Advanced Actuator Control Systems

Description

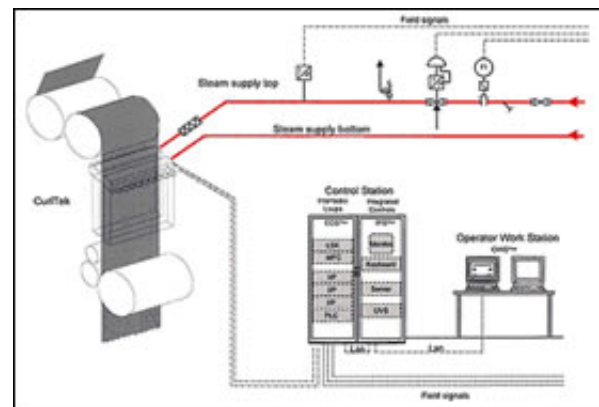
The most important characteristic of a curl control steamshower is its ability to raise moisture on steam treated surface without heating and remoisturizing of the complete sheet. This improves the sheet's cross-directional flatness and optimizes sheet running in converting. With the CurlTek in the on-line process, managing curl and sheet stability can be achieved simultaneously.

The compromise between process speed, curl and sheet flatness has been eliminated by increasing the velocity of the steam jets onto the web.

The CurlTek has a cross-directional header to make the profiler absolutely drip free. The steam header collects all condensate which might arise from the steam supply and assures that only dry steam reaches the profiling valves.

The profiling zone is fully compartmentalized, supplying high-velocity steam to each cross-direction compartment via a separate, patented pneumatic actuation valve that allows optimum zone definition and precise control. The

spring-loaded profile valves assure immediate steam shut-off at sheetbreak. These proprietary control valves assure finest control of even the smallest amounts of steam (moisture) and prevent excessive steam application. The Qualitek control technology assures sophisticated on-line control with special limits for each different grade. The CurlTek heating system assures that the steam shower is always hot and immediately ready for steam application.



Advanced Actuator Control System Layout

Primary material for CurlTek is 1.4571 (316 Ti) stainless steel. A special steam heating system of diffuser plate and dwell zone assures complete heating even during longer sheetbreaks.

Control Station^{ECS} is an electronic control station that governs the pneumatic actuators. Each actuator is controlled by an I/P-converter with a control signal of 0.4 - 2 bar (6 - 30 psi). Setpoints are sent from the control station.

Control Station^{IPS} is an integrated process station that serves as the central process point for the system. It contains the integrated control, the operator visualization package, PLC functions and the intelligence to control the entire actuator control system.

Technical Features

- Steam dryer header in cross direction.
- Steam heating system
- Diffuser plate heating.
- Steam heated dwell zone.
- Integrated control including PLC functionalities (interlocks, loops).
- Profiling zone spacing down to 75 mm gives high profiling capability.
- Rigid construction, 316 Ti stainless steel.

Benefits for the Converting Industry

- Increased moisture and sheet flatness for higher quality grades
- Flatter profiles and curl control can be achieved simultaneously.
- Control curl to both sides by using CurlTek on top and underside (plus/minus).
- Narrow spacing of the actuator can be defined based on sheet flatness.
- Better edge performance.
- Curl control on siliconized surface.
- Curl control on coated paper.
- Curl control on converting machines.
- Increase in the efficiency of the total production line with integrated curl control.

Options

- Pneumatic retraction
- Hydraulic retraction
- Vapor extraction hood
- Steam supply engineering
- PosiTrak position feedback
- Turnkey installation

QCS Family (Quality Control Systems)

WarpTek – heat control system

WarpTekPlus – heat and moisture control system

SpeedTek – speed optimization

GlueTek autometering gap control

PCS Family (Production Control Systems)

BridgeTek – bridge controls

SpliceTek – synchronized splicing

RollTek – diameter splicing

Qualitek UpTek – uptime maximizer

Actuator Family

CurlTek – on-line curl control

SteamTek – steamshower

SprayTek – moisture control

Steam and Condensate Systems