

VIB CurlTech

On-line Curl Control

Paper and board mills manufacturing high-quality paper, require a flat and level sheet after the surface treatment. Today, superior grades can be achieved in sheet flatness (zero curl) using the VIB CurlTech and its unique steam application technology. The VIB CurlTech is a single-side steam applicator to control on-line curl in both cross and machine direction. Our advanced technology enables VIB Systems to provide a reliable, high-performance steam actuator with zone spacing down to 75 mm. This, coupled with our durable pneumatic actuators, provides superior benefits for today's papermakers.

Advanced Actuator Control Systems

VIB CurlTech Description

The most important characteristic of a curl control steamshower is its ability to raise moisture level on a steam-treated surface without heating and remoisturizing of the complete sheet. These characteristics improve the sheet's cross-directional flatness and optimize sheet running in converting. Curl and sheet stability can be controlled simultaneously using the VIB CurlTech in the on-line process.

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

The VIB CurlTech 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 VIB control technology assures sophisticated on-line control with special limits for each different grade. The VIB CurlTech heating system assures that the steam shower is always hot and immediately ready for steam application.

Primary material for VIB CurlTech 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 VIB Control Station^{IPS}.

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.

Benefits for the Paper Industry

- Increased sheet flatness for higher quality grades.
- Flatter profiles and curl control can be achieved simultaneously.

- Control curl to both sides by using VIB CurlTech on top and underside (plus/minus).
- Narrow spacing of the actuator can be defined based on sheet flatness.
- Optional feedback of the actuator position ensures reliable functioning of the VIB CurlTech Actuator.
- Better edge performance for improved converting.
- Curl control on siliconized surface.
- Curl control on **Coated Paper**.
- Curl control on converting machines.
- **3 - 4% increase in efficiency of the total production line with integrated curl control.**

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.

Technical Specifications

Pneumatic Actuator

Body material 1.4404

Control signal 0.4 - 2 bar (6 - 30 psi)

Position indicator

Closed in the absence of a control signal

Stainless Steel

Primary 1.4571 (316 Ti)

Options

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

Turnkey installation

PSF® – Precision Steam Finishing

VIB SmoothTech – Soft and Multinip Calender Steamshower

VIB GlossTech – Super Calender Steamshower for SC and LWC

VIB MoistureTech – On-line Moisture Application

VIB CurlTech – On-line Curl Control