

CurlTech

On-line Curl Control

Paper and Board Mills making high-quality paper, need a flat and level sheet after the surface treatment. Today with the V I B CurlTech and its unique steam application technology, superior grades in sheet flatness (zero curl) are achievable. The V I B CurlTech is a single side steam applicator to control on-line curl in both cross and machine direction. Our advanced technology allows V I B Systems to provide a high performance reliable steam actuator with zone spacing down to 75 mm. This, along with our long life pneumatic actuators, provides superior benefits for today's paper makers.



Advanced Actuator Control Systems

V I B CurlTech Description

The most important property of a curl control steamshower is its ability to raise moisture level on steam treated surface without heating and remoisturizing of the complete sheet. These properties will improve the sheet's cross-directional flatness and optimize sheet runability in converting. With the CurlTech in the on-line process, managing curl and sheet stability at the same time are achievable.

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

The V I B CurlTech has a cross directional header to make the profiler absolutely drip free. The steam header collects all condensate which might come 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 too high steam application. The V I B control technology assures sophisticated on-line control with special limits for each different grade. The V I B CurlTech heating system assures that the steam shower is always hot and immediately ready for steam application.

Primary material for V I B CurlTech is stainless steel 1.4571 (316 Ti). 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 manages the control of the pneumatic actuators. Each actuator is controlled with an I/P-converter with a control signal from 0.4 - 2 bar (6 - 30 psi). Setpoints are sent from the V I B 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 manage the total actuator control system.

Benefits to 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 V I B CurlTech on top and bottom side (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 V I B CurlTech Actuator.
- Provides better edge performance for improved converting.
- Curl control on siliconized surface.
- Curl control on coated paper.
- Curl control on converting machines.
- **Efficiency increase of total production line with integrated curl control of 3 - 4 %.**

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 means high profiling capability.
- Rigid construction, material 316 Ti.

Options

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

Technical Specifications

Pneumatic Actuator

Body material 1.4404
Control signal 0.4 - 2 bar (6 - 30 psi)
Position indicator
Closed when no control signal

Stainless Steel

Primary 1.4571 (316 Ti)

PSF[®] - Precision Steam Finishing

V I B SmoothTech	Soft and Multinip Calender Steamshower
V I B GlossTech	Super Calender Steamshower for SC and LWC
V I B MoistureTech	On-line Moisture Application
V I B CurlTech	On-line Curl Control

Advanced Actuator Control System Layout

