

SteamTech^{FF}

Fourdrinier Flat Steamshower

Paper and Board Mills making high-quality paper, need a level sheet moisture profile through the entire length of the machine. Today with SteamTech and its unique steamshower technology, superior performance in the moisture profile is achievable. The SteamTech^{FF} (fourdrinier flat), a member of the SteamTech Family, is a multi-section steam shower system for the forming section. Our advanced technology allows VIB Systems to provide a high performance reliable steam actuator with zone spacing down to 50 mm. This, along with our long life pneumatic actuators, provides superior benefits for today's paper makers.



Advanced Actuator Control Systems

SteamTech^{FF} Description

The most important properties of a good fourdrinier steamshower are its profiling capability and its ability to raise dry content into the first press. These two properties improve the sheet's cross-directional moisture profile and optimize the paper machine's productivity and runnability. With a SteamTech^{FF} in the forming section, controlling the moisture profile and average moisture level is possible.

Increasing the velocity of the steam jets onto the web eliminates the compromise between production increases and profiling capability. The SteamTech^{FF} has two steam sealing zones to keep steam under the box, providing maximum benefit with minimum steam leakage.

SteamTech^{FF} has a unique diffuser plate with varying spacing in the machine direction to make the profiler more efficient. The profiling zone is fully compartmentalized, supplying high velocity steam to each cross direction compartment via a separate, uniquely designed actuation valve that allows optimum zone definition and precise control. The proprietary design of the converging nozzles generates higher steam velocity to ensure greater steam condensation and thermal transfer into the paper web.

Primary material for SteamTech^{FF} is stainless steel 1.4571 (316 Ti). Special grade stainless steel 1.4539 (904 L) is used against highly corrosive wear at the diffuser plate, edge-heating zones and in pneumatic control lines. Optional Teflon coating is also available for the diffuser plate and edge heating zones for ease of cleaning.

Control Station^{ECS} is a SteamTech 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 VIB control station^{IPS} using measurement system data.

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

Benefits to the Paper Industry

- Increased production and flatter moisture profile can be achieved simultaneously.
- Narrow spacing of the actuator is application matched to produce the desired profiling effect.
- Optional feedback of the actuator position ensures reliable performance of the SteamTech Actuator.
- Provides better edge performance for improved reel building.
- CD moisture 2-sigma improvement of 50 %, profile correction of 2,5 %.
- Dryness increase of 1,5 - 2,5 % after suction roll.
- Production increase of 6 – 10 %.
- Improved runnability is achieved with a uniform web tension profile.
- Improved felt conditioning of the pick-up felt.
- **Efficiency increase of total production line with integrated moisture control of 1 - 2 %.**

Technical Features

- Three separate zones in the machine direction.
- Integrated CD and MD control including PLC functionalities (interlocks, loops).
- Profiling zone spacing down to 50 mm means high profiling capability.
- Rigid construction, material 316 Ti.
- LAN or Serial Link protocol for connection to the measurement system. Switchable with a mouse click.

Options

- Teflon coating for diffuser plate and edge heaters
- Removable diffuser plate
- 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)
1.4539 (904 L) used for high corrosive areas (diffuser plate, edge heaters, control lines)

SteamTech[®] Actuator Family

SteamTech ^{FF}	Fourdrinier Flat Steamshower
SteamTech ^{TAD}	Through Air Drying Steamshower
SteamTech ^{TC}	Tissue Steamshower
SteamTech ^{SC}	Press Section Steamshower
SteamTech ^{TFF}	Teflon Flat Felt Heating Steamshower

Advanced Actuator Control System Layout

