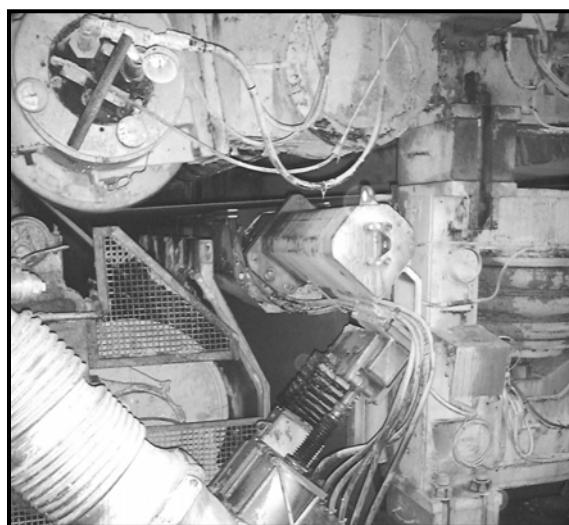


# SteamTech<sup>TFF</sup>

## Teflon Flat Felt Heating 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 actuator technology, superior performance in the moisture profile is achievable. The SteamTech<sup>TFF</sup>, a member of the SteamTech Family, is a flat type steam actuator system for the press 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<sup>TFF</sup> Description

The most important properties of a good steam actuator are its profiling capability and its ability to raise dry content. These two properties will improve the sheet's cross-directional moisture profile and optimize the paper machine's productivity and runability. With a SteamTech<sup>TFF</sup> in the press section, managing the moisture profile and drying capacity becomes notably easier.

The compromise between production increases and profiling capability has been eliminated by increasing the velocity of the steam jets onto the web in two separate machine direction zones.

SteamTech<sup>TFF</sup> has two zones 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 constant full width zone has higher steam velocity to ensure greater steam condensation on the paper web.

Additional boosting effect is created with a felt heating zone which increases the surface temperature of the felt to prevent heat losses when felt and paper are in contact.

Primary material for SteamTech<sup>TFF</sup> 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. The SteamTech<sup>TFF</sup> is Teflon coated on diffuser plate and edge heating zones for easy cleaning, especially in front of first press.

**Control Station<sup>ECS</sup>** 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<sup>IPS</sup> using measurement system data.

**Control Station<sup>IPS</sup>** 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 can be defined based on the desired profiling effect.
- Optional feedback of the actuator position ensures reliable functioning of the SteamTech Actuator.
- Provides better edge performance for improved reel building.
- CD moisture 2-sigma improvement of 50 %, profile correction of 3 %.
- Production increase of 6 – 10 %.
- Felt heating improves production increase further by 3 - 4 %.
- Dryness increase of 1,5 - 2,5 %.
- Improved runability is achieved with a uniform web tension profile.
- **Efficiency increase of total production line with integrated moisture control of 1 - 2 %.**

## Technical Features

- Two separate zones in the machine direction.
- One separate felt heating zone.
- 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
- 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 <sup>FF</sup>	Fourdrinier Flat Steamshower
SteamTech <sup>TAD</sup>	Through Air Drying Steamshower
SteamTech <sup>TC</sup>	Tissue Steamshower
SteamTech <sup>SC</sup>	Press Section Steamshower
SteamTech <sup>TFF</sup>	Teflon Flat Felt Heating Steamshower

## Advanced Actuator Control System Layout

