

SteamTech^{TAD}

Through Air Drying Steamshower

Mills making high-quality tissue on TAD (through air dryer) machines, need a level sheet moisture on the through air dryer for even drying. Today with SteamTech and its unique actuator technology, superior performance in the moisture profile is achievable. The SteamTech^{TAD}, a member of the SteamTech Family, is a multiple section steam actuator 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 tissue makers.



Advanced Actuator Control Systems

SteamTech^{TAD} 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 machine's productivity and runability. With a SteamTech^{TAD} on the forming section or in front of the TAD, managing the moisture profile and drying capacity becomes notably easier, and energy saving on gas are realized.

With the use of a second SteamTech^{TAD} extra capacity of additional 4 - 10 % is possible. Enhanced profiling will be achieved.

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

SteamTech^{TAD} 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^{TAD} 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 easy cleaning and dust removal.

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 Tissue 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 crepping on wire through even moisture profile.
- CD moisture 2-sigma improvement of 60 %, profile correction of 3 %.
- Production increase of 6 – 12 %.
- Dryness increase of 3 - 4 % into TAD dryer.
- Improved runability on the whole production line.
- Improved converting through better moisture profiles.
- Reduction in gas consumption through better dryness at the through air dryer.
- **Efficiency increase of total production line with integrated moisture control of 1,5 - 3 %.**

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
- 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

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|--------------------------|--------------------------------------|
| 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

