AirTech^{Classic}

Fine Droplets Spray System

Paper and board mills manufacturing quality paper require a consistent sheet moisture profile along the entire length of the paper production line. Today, superior performance can be achieved in the moisture profile using VIB SprayTech and its unique air water spray technology with PSM (particle size management). The VIB AirTech^{Classic} a member of the SprayTech® family, is the industry standard for spraydampening system. The proprietary fine droplets nozzle technology allows VIB Systems to provide an application-matched solution. These high-performance spray nozzles provide papermakers with the industry's narrowest control zone width (down to 25 mm).

Advanced Actuator Control Systems

VIB AirTech^{Classic} Description

The most important characteristics of a fine droplet spraydampening system are its profiling capability and its ability to control the average moisture level. These two characteristics improve the sheet's cross-directional moisture profile and optimize the paper machine's productivity and runability. Controlling to a flat moisture profile with a high average moisture target is possible using a VIB AirTech^{Classic} in the drying section.

The critical proprietary components of the system are the patented VIB two-stage nozzles that create a balanced and application-matched mixture of air and water. The water nozzles are located in the center of the air nozzles. Directional vanes integrated into the nozzle create a rotational air flow from the nozzle.

The rotating air pulls the water from the nozzle and transforms it into a highly atomized, full cone spray pattern that is efficiently applied to the web. The fine droplet size increases the absorption into the web and allows application closer to the dry end of the process.

The dry end application reduces the dryer load and results in reduced steam consumption. This eliminates the compromise between production increases and profiling capability.

VIB AirTech^{Classic} at work. In the background is a DHS control cabinet for VIB AirTech Systems.

The VIB AirTech^{Classic} system consists of a sprayboom on which proprietary, two-stage nozzles are mounted; digital hardware station (DHSClassic); air supply unit and water supply unit; integrated process station; operator station; and the necessary system cable and interfaces to communicate with the measurement systems.

Digital Hardware Station Classic (DHSClassic) is an electronic control station that governs the flow through the digital valve blocks. Each valve block has 16 digital steps from zero to maximum flow. Setpoints are sent from the VIB Integrated Process Station (IPSPlus) using measurement system data.

The Integrated Process Station (IPSPlus) 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 control the entire actuator control system.

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Benefits for the Paper Industry

- Higher output and a flatter moisture profile can be achieved simultaneously.
- Narrow spacing of the actuator can be adjusted to produce the desired profiling effect.
- Digital flow steps determine the exact flow rate through each digital block and each nozzle for precise and responsive control.
- Better edge performance for improved reel building.
- CD moisture 2-sigma improvement of 60%, profile correction of 3% to 5%.
- Reel average moisture increased by 0.5% - 4.0%.
- Energy savings produced from a consistent moisture profile and higher average moisture.
- Improved tension profile and reel building.
- Higher caliper and a flatter caliper profile.
- 2 - 3% fewer rejects due to better paper quality.
- **2 - 4% increase in efficiency of the total production line with integrated moisture control.**

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 gives high profiling capability.
- Rigid construction, 316 Ti stainless steel.
- LAN or Serial Link protocol for connection to the measurement system. Activated by mouse click.

Technical Specifications

Nozzle Orifices 1 to 5 mm (non-plugging)
Moisture Increase 1.5 to 3% moisture per row of nozzles
Resolution 1% moisture
Stand-off Distance from web 100 mm (4 in.) to 150 mm (6 in.)

Options

- Teflon coating for diffuser plate
- Removable diffuser plate
- Steam supply engineering
- PosiTrak position feedback
- Turnkey installation

PSF® – Precision Steam Finishing

VIB AirTech^{Plus6} – Air-Water Spray Micro Droplets
VIB AirTech^{Classic} – Air-Water Spray Fine Droplets
VIB FluidTech^{Plus} – Fluid Spray Application System
VIB WaterTech^{PC} – Hydraulic Water Spray High Flow

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