

VIB WaterTech^{PC}

Hydraulic High Flow Spray System

Paper and board mills manufacturing large tonnage, 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 water spray technology with PSM® (particle size management). The VIB WaterTech^{PC}, a member of the SprayTech® Family, is the industry high flow spraydampening system. The proprietary fine droplets nozzle technology allows VIB Systems to provide a solution tailored to your needs. These high-performance spray nozzles provide papermakers with a control zone width (down to 75 mm).

Advanced Actuator Control Systems

VIB WaterTech^{PC} Description

The most important characteristics of a 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. Using a VIB WaterTech^{PC} in the drying section, controlling to a flat moisture profile with a high average moisture target is possible.

The critical proprietary components of the system are the VIB water nozzles that create a balanced and application-matched mixture of water droplets. Directional vanes integrated into the nozzle create a rotational water flow from the nozzle. The pressure pulls the water from the nozzle and transforms it into a fine mist, in a full cone spray pattern that is efficiently applied to the web.

The droplet size increases the absorption into the web and allows application were high flow rates are needed. This eliminates the compromise between production and profiling capability.

The VIB WaterTech^{PC} system consists of a sprayboom on which proprietary, water nozzles are mounted on the digital valve blocks; water supply unit, purge air unit, integrated process station, operator station, and the necessary system cable and interfaces to communicate with the measurement systems. Each valve block has 16 digital steps from zero to maximum flow.

An optional air purge system for sprayboom is available.

Each nozzle has a proportional control valve with analog control from zero to maximum flow.

The Actuator Control Station (ACSPlus) is an electronic control station that governs the digital valve blocks in the sprayboom. Setpoints are sent from the VIB Integrated Process Station (IPSPPlus) using measurement system data. All field signals are wired to the Actuator Control Station.

The Integrated Process Station (IPSPPlus) 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.

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 50%, profile correction of 4% to 6%.
- Reel average moisture increased 0.4% - 2.0%.
- Energy savings produced from a consistent moisture profile and higher average moisture.
- Improved tension profile and reel building.
- 1 - 2% fewer rejects due to better paper quality.
- 1 - 2% increase in efficiency of the total production line with integrated moisture control.

Technical Features

- The water nozzle applies a highly atomized, low-pressure spray mist to the sheet.
- Integrated CD and MD control including PLC functionalities (interlocks, loops).
- Profiling zone spacing down to 75 mm gives high profiling capability.
- LAN or Serial Link protocol for connection to the measurement system. Activated by mouse click.
- Narrow cross-direction control zone and highest speed of response to process changes.

Technical Specifications**Nozzle Orifices**

1 to 5 mm (non-plugging)

Moisture Increase

3 to 6 % moisture

Resolution

.2 % moisture

Stand-off Distance from web

100 mm (4 in.) to 150 mm (6 in.)

Options

- Custom vertical or pivot retraction
- Turnkey installation
- Heated drip pan

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