

## VIB AirTech<sup>Plus6</sup>

### *Micro Droplets Spray System*

Paper and board mills manufacturing high-quality paper, require a consistent sheet moisture profile along the entire length of the 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<sup>Plus6</sup>, a member of the SprayTech® Family, is the industry's most advanced spraydampening system. The proprietary micro droplets nozzle technology enables VIB Systems to provide an application-matched solution. These high performance spray nozzles provide paper-makers with the industry's narrowest control zone width (down to 12.5 mm).

#### Advanced Actuator Control Systems

##### VIB AirTech Plus6 Description

The most important characteristic of a micro droplet spraydampening system is its ability to prevent water drops or marks in the coating or calendering processes. With the patented micro droplets from the particle size management technology, the system can achieve improved sheet characteristics in both surface smoothness and gloss. For the first time, this improvement is possible without affecting the runability and efficiency of the production line.

The critical proprietary component of the system is the patented VIB two-stage nozzles that create a balanced and application matched mixture of air and water. 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 micro

droplet size increases the absorption into the web and allows application closer to the treated surface.



*AirTech<sup>Plus6</sup> sprayboom*

The VIB AirTech<sup>Plus6</sup> system consists of a sprayboom on which proprietary, two-stage nozzles are mounted; digital hardware station (DHS<sup>Plus6</sup>); 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.

#### New Grades for the Paper Industry

- On-line SC A/B with multinip calender
- On-line curl control for single side coated process
- On-line single side gloss application with soft calender and multinip calender.

**Digital Hardware StationClassic (DHS<sup>Classic</sup>)** is an electronic control station that governs the flow through the digital valve blocks. Each valve block has 64 digital steps from zero to maximum flow. Setpoints are sent from the VIB Integrated Process Station (IPS<sup>Plus</sup>) using measurement system data.



A perfectly integrated VIB AirTech<sup>Plus 6</sup>-spray in the drying unit.

**The Integrated Process Station (IPS<sup>Plus</sup>)** 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 60%, profile correction of 3% to 5%.
- 0.5% - 4.0% increase in average reel moisture .
- 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 owing to better paper quality.
- 2 - 4% increase in efficiency of the total production line with integrated moisture control.

#### Technical Features

- Advanced proprietary two-stage 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 25 mm gives high profiling capability.
- Constant air flow through the nozzles keeps them free from broke and debris.
- LAN or Serial Link protocol for connection to the measurement system. Activated by mouse click.
- Narrowest cross-direction control zone and highest speed of response to process changes.

#### Technical Specifications

##### Nozzle Orifices

1 to 5 mm (non-plugging)

##### Moisture Increase

1 to 2% moisture per row of nozzles

##### Resolution

.01% moisture

##### Stand-off Distance from web

120 mm (5 in.)

#### Options

- Custom vertical or pivot retraction
- Turnkey Installation
- Heated drip pan
- Mist removal system

#### PSF® – Precision Steam Finishing

**VIB AirTech<sup>Plus6</sup>** – Air-Water Spray Micro Droplets

**VIB AirTech<sup>Classic</sup>** – Air-Water Spray Fine Droplets

**VIB FluidTech<sup>Plus</sup>** – Fluid Spray Application System

**VIB WaterTech<sup>PC</sup>** – Hydraulic Water Spray High Flow