FluidTech^{Plus}

Fluid Spray Application System

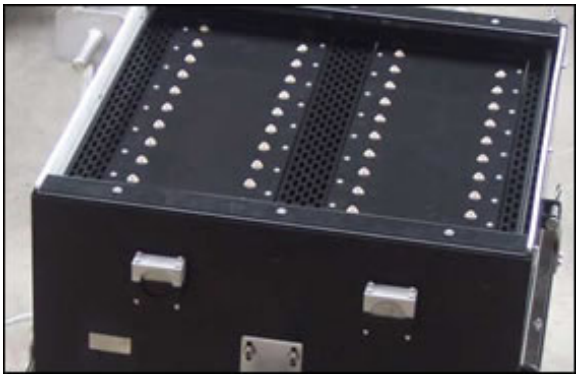
Paper and Board Mills making high-quality paper, need a leveled sheet coat and size application through the entire impregnated surface of the paper. Today with VIB FluidTech and its unique air lubrication spray technology with PSM® (particle size management), superior performance in coat and size application is achievable. The VIB FluidTechPlus, a member of the SprayTech® Family, is the industry's most advanced spray application system. The proprietary lubrication nozzle technology allows VIB Systems to provide an application matched solution. The patented lubrication spray nozzles provide paper-makers most advanced control with the capability to control zone by zone the amount of application fluid.

Advanced Actuator Control Systems
VIB FluidTech^{Plus} Description

The most important property of the FluidTech^{Plus} spray system is its ability to control fluid application for coating and sizing with automated control in cross machine direction. With the patented lubricated nozzle with micro droplets from the particle size management technology, the system can achieve improved sheet properties in both surface smoothness and gloss. For the first time, this improvement is possible without effecting the runability and efficiency of the production line.

The critical proprietary component of the system is the patented VIB lubricated two-stage nozzles that create a balanced and application matched mixture of air, lubrication and fluid. Directional vanes integrated into the nozzle create a rotational air flow from the nozzle. The rotating air and lubrication pulls the fluid 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 efficiency applying the fluid coating and sizing onto the web.



VIB FluidTech ^{Plus}

The VIB FluidTech^{Plus} system consists of a sprayboom on which proprietary, two-stage lubricated nozzles are mounted; fluid control station (FCS^{Plus}); air supply unit and fluid 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 MWC coating application
- On-line control for single side coated process
- On-line sizing
- On-line fluid application
- On-line fluid application on Yankee
- On-line fluid application in front of calender

Fluid Control Station (FCS^{Plus}) is an electronic control station that manages the flow through the fluid control valves. Each fluid control valve has a pneumatic actuator, and each control zone has an integrated flow measurement and control. Setpoints are sent from the VIB Integrated Process Station (IPSPlus) using measurement system data.

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The Integrated Process Station (IPS^{Plus}) serves as the central process point for the system. It contains the integrated fluid application control in MD/CD direction, the operator visualization package, PLC functions and the intelligence to manage the total actuator control system.

Benefits to the Paper Industry

- Increased production and equal fluid application can be achieved simultaneously.
- Narrow spacing of the actuator is application matched to produce the desired fluid application.
- Accurate individual flow control with integrated flow measurement for each nozzle for precise and responsive control.
- Provides better edge performance for improved reel building.
- CD fluid application 2-sigma improvement of 50 %.
- MD control of fluid application of down to 0.1 g/m².
- Energy savings derived from a level fluid application.
- Improved caliper profile and reel building.
- Less rejects through better paper quality of 2 - 3 %.
- **Efficiency increase of total production line with integrated moisture control of 2 - 4 %.**

Technical Features

- Advanced proprietary two-stage lubricated nozzle applies a highly atomized, low-pressure fluid mist to the sheet.
- Integrated CD and MD control including PLC functionalities (interlocks, loops).
- Profiling zone spacing down to 25 mm means high profiling capability.
- Constant air and lubrication flow through the nozzles keeps them free from broke and debris.
- LAN or Serial Link protocol for connection to the measurement system. Switchable with a mouse click.
- Narrowest cross direction control zone and highest speed of response to process changes.
- Teflon coated for easy cleaning

Options

- Custom vertical or pivot retraction
- Turnkey Installation
- Mist removal system

Technical Specifications

Nozzle Orifices

2.81 to 4.1 mm (non-plugging)

Fluid Application

3 to 6 g/m² per row of nozzles

Resolution

0.25 g/m²

Stand-off Distance from web

120 mm (5 inch)

SprayTech® Actuator Family

VIB AirTech$^{Plus\ 6}$ - 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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