

## Qualitek SteamTek

### *On-line Moisture Application*

Paper converting lines manufacturing fine and specialty grades, require a specified moisture level and flat profile. Today, superior grades in moisture level can be achieved using the SteamTek and its unique steam application technology. The SteamTek is a single side/both sides steam applicator to control on-line moisture in cross and machine direction. Our advanced technology enables Qualitek to provide a reliable, high-performance steam actuator with zone spacing down to 75 mm. This, coupled with our durable pneumatic actuators, provides superior benefits for today's papermakers.

#### **Advanced Actuator Control Systems**

##### **Description**

The most important characteristics of a moisture control steamshower are its capability and its ability to raise moisture level on steam treated surface without dripping, marks or other damage to the sheet. This improves the sheet's cross-directional flatness and optimizes sheet running. With the SteamTek in the on-line process, managing sheet moisture and sheet can be achieved simultaneously.

The compromise between process speed, moisture and sheet stability has been eliminated by increasing the velocity of the steam jets onto the web.

The SteamTek has two cross-directional headers to make the profiler absolutely drip free. The first steam drying header collects all condensate which might arise from the steam supply and assures that only dry steam reaches the second profiling header.

The profiling zone is fully compartmentalized, supplying high-velocity steam to each cross-direction compartment

- Narrow spacing of the actuator can be defined

via a separate, uniquely designed actuation valve that allows optimum zone definition and precise control. The spring-loaded profile valves assure immediate steam shut-off at sheetbreak. These proprietary control valves assure finest control of even the smallest amounts of steam (moisture) and prevent excessive steam application. The Qualitek control technology assures sophisticated on-line control with special limits for each different grade. The SteamTek heating system assures that the steam shower is always hot and immediately ready for steam application.

Primary material for SteamTek is 1.4571 (316 Ti) stainless steel. A special steam heating system of diffuser plate and dwell zone assures complete heating even during longer stops.

**Control Station<sup>ECS</sup>** is an electronic control station that governs the pneumatic actuators. Each actuator is controlled by an I/P-converter with a control signal of 0.4 to 2 bar (6 - 30 psi). Setpoints are sent from the control station.

**Control Station<sup>IPS</sup>** is an integrated process station that serves as the central process point for the system. It contains the integrated control, the operator visualization package, PLC functions and the intelligence to control the entire actuator control system.

#### **Benefits for the Converting Industry**

- Increased sheet moisture for higher quality grades.
- Flatter profiles and moisture control can be achieved simultaneously.

based on sheet flatness.

- Better edge performance.
- Moisture increase of 1.5 - 2% by using single side application.
- Moisture increase of 2 - 3% by using double side application.
- Moisture control on siliconized paper.
- Moisture control on coated paper.
- Increase in the efficiency of the total production line with integrated moisture control.

### Technical Features

- Steam dryer header in cross direction.
- Steam heating system.
- Diffuser plate heating.
- Steam heated dwell zone.
- Integrated control including PLC functionalities (interlocks, loops).
- Profiling zone spacing down to 75 mm gives high profiling capability.
- Rigid construction, 316 Ti stainless steel.

### Technical Specifications

#### Pneumatic Actuator

Body material 1.4404

Control signal 0.4 - 2 bar (6 - 30 psi)

Position indicator

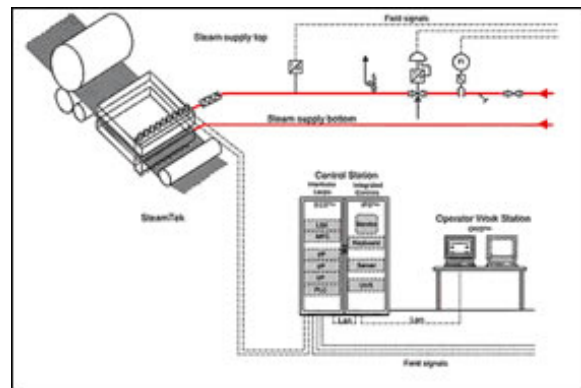
Closed in the absence of a control signal

#### Stainless Steel

Primary 1.4571 (316 Ti)

#### Options

- Pneumatic retraction
- Hydraulic retraction
- Vapor extraction hood
- Steam supply engineering
- PosiTrak position feedback
- Turnkey installation



Advanced Actuator Control System Layout

### QCS Family (Quality Control Systems)

WarpTek – heat control system

WarpTek<sup>Plus</sup> – heat and moisture control system

SpeedTek – speed optimization

GlueTek – autometering gap control

### PCS Family (Production Control Systems)

BridgeTek – bridge controls

SpliceTek – synchronized splicing

RollTek – diameter splicing

Qualitek UpTek – uptime maximizer

### Actuator Family

CurlTek – on-line curl control

SteamTek – steamshower

SprayTek – moisture control

Steam and Condensate Systems



Advanced Actuator Control System Layout