

Precision Dispensing of Chemical Additives in the Papermaking Process

Chemical additives are widely used in the papermaking process to obtain specific characteristics and properties in finished paper products. The number and variety of chemical additives used are as large and varied as the different types of paper produced. The ability to precisely control the flow of these additives is essential for producing a high quality paper product without continuously overfeeding expensive process chemicals.

Industry Challenge

To obtain proper characteristics, precise amounts of chemical additives are injected at various stages of the papermaking process. Dyes and pigments add color and affect brightness. Perfumes add scent to facial tissues, toilet paper and advertising inserts. Bleaching agents, such as hydrogen peroxide, add increased brightness to recycled, deinked stock. Sizing agents add water repellency and strength, while emulsifiers are used to ensure proper mixing and distribution of the sizing agents.

The inability to accurately control the amount of additive used typically results in average product quality while continuously overdosing expensive additives to prevent underdosing. Too much or too little dye or pigment may result in unacceptable color variations or finish quality. Over-spraying of expensive perfumes increases waste and material costs. Improper blending of sizing agents or deinking surfactants may result in foaming. Consequently, the finished product is wasted, resulting in an increase in material, operation and maintenance costs as a replacement product is manufactured.

The Zenith Solution

A Zenith precision metering pump is the pump of choice for accurately controlling the flow of chemical additives. Zenith gear pumps provide precise, repeatable and pulseless fluid flow. Precision ground and lapped components produce extreme accuracy, linearity and repeatability under varying process conditions. Stainless steels or



When coupled with a ZeDrive speed controller, Zenith Pumps provide more precise flow control.

hardened tool steels offer excellent corrosion and wear resistance. The result is smooth and accurate flow that virtually eliminates over-dispensing, over-spraying, improper blending and improper mixing.

How You Benefit

Product Quality – The precise, repeatable and pulseless flow of the Zenith pump ensures accurate and smooth dispensing of chemical additives, thus helping you produce a high quality paper product. Used in conjunction with a Zenith ZeDrive 2000 speed control package, pump speed accuracy of +/- 0.01% of set point can be achieved.

Cost Savings – The high efficiency and metering accuracy of the Zenith pump will enable you to continuously dispense a precise amount of additive and reduce chemical expenses. Eliminating waste and preventing the cost of replacement manufacturing is also a direct savings.



Zenith offers a complete line of pumps and metering systems for various chemical additives in the papermaking process, such as metering of dyes, pigments, perfumes, bleaching agents, sizing agents, and emulsifiers.

Zenith[®]
Pumps