

THE IMPORTANCE OF COMPRESSED AIR EFFICIENCY IN THE PAPER INDUSTRY

By Ian Cass



As we become more and more digitized as a society, some believe we are heading toward a paper-free world. Despite our reliance on modern technology however, old fashioned paper is still a critical part of our day-to-day lives. We rely on paper for so many uses from everyday greeting cards to communicating important multi-million-dollar contracts. Even the world's famous wizard, Harry Potter, is breaking records in paper demand. The United States Scholastic (Potter's U.S. publisher) placed the largest purchase of paper for a single book printing (Harry Potter Seven) to date by purchasing nearly 22 million pounds of (FSC) certified paper.

Today, paper comes in an unlimited number of colours, textures and weights providing varying levels of quality. From luxury brand packaging to gold leaf embossed

business cards, paper can be customized to meet nearly any customer specification - making it a relic that is here to stay.

However, this relic is only made possible by compressed air, among other things. Continuous compressed air to be exact. Paper and paper board manufacturing is a complex process and the need for reliable, efficient compressed air is vital throughout the entire process. And, since paper manufacturing uses an enormous amount of energy, providing efficient compressed air is even more important.

From Pulp to Paper – the Manufacturing Process

To manufacture paper or cardboard, raw material such as pulp, or fibrous tree or plant material, is led through three distinct areas of production: the preparation of the pulp, creation of the sheet and the addition of any final coatings or treatments.

Essentially, pulp is fed into a paper machine where it is processed into a paper web. This process uses large volumes of water which needs to be removed after processing. The water is removed through both pressing and drying. Pressing the sheet removes the water by force. Compressed air is then used to complete the drying process. Back in the early days of paper making, this was done by hanging the sheets like laundry. In more modern times, various forms of heated drying mechanisms are used. The most common is the steam heated can dryer.

To keep up with the demand, pulp and paper mills require a continuous flow of clean dry compressed air to supply the near-constant production rate in a typical paper mill.

Sustainable Paper Making

Paper making requires a lot of energy. Keeping energy costs down and running a sustainable manufacturing process is priority one for most paper mills. With world oil and gas supplies challenged and pressure on water resources, finding efficiency in every corner of the paper mill is vital.

In some manufacturing environments, up to 91% of the water used in the pulp and paper process is cleaned through water waste management and returned to the source. And typically, a mill may recycle 150 million disposable cups into paper products and packaging. Finally, 100% post-consumer recycled paper material is now available on the market at a competitive price as compared to conventional paper.

Compressed air - used throughout the process - provides another opportunity for efficiency. With the need for near constant dry, clean air, matching supply with demand is critical to optimizing compressed air efficiency. Sullair developed a world class technology to specifically address this need - the Electronic Spiral Valve (ESV) - which provides precision compressor control to reduce operational costs. Sullair Electronic Spiral Valve Technology is a variable capacity control method that efficiently manages changes in compressor demand – reducing the amount of air compressed which in turn reduces energy usage saving money and typically delivering an energy saving of 30%. When optimized, the ESV can achieve up to 55% turn down in power consumption. We must also consider that a typical mill is a very hot, sticky, dusty and hostile environment. These contaminants can be detrimental to the efficient running of machinery operating in the mill. However, the Sullair ESV is engineered to be durable enough to run in harsh environments, including paper mills.

For more information on the efficient Sullair Electronic Spiral Valve Technology watch below:

<https://www.youtube.com/watch?v=nNxrNUykRno&t=8s>

Paper is surely here to stay but making sure it is done sustainably is of the utmost importance. Sullair is proud to provide solutions for the paper industry that provide reliable, constant air – efficiently.

Sources:

<https://thefutureofpublishing.com/industries/the-future-of-paper/#:~:text=According%20to%20P%C3%B6yv's%20World%20Paper,for%20books%2C%20newspapers%20and%20periodicals>

<https://www.jamescropper.com/sustainability>