Metal Tube Manufacturer Improves Product Quality & Reduces Overall Energy Consumption

THE CLIENT

A midwestern metal tube manufacturer specializes in the production of large, metal industrial tubing ranging from 8”-20” in diameter. Within the plant’s production operations, the manufacturer’s main focus is on the drying of the metal tubing, as well as the ink jet printing on the tubes after they are dried. In order to avoid scrapping and rejecting parts due to smudging and smearing, the product(s) must be completely dry and water free prior to ink jet printing.

THE CHALLENGE

Before reaching out to Paxton Products for help, the manufacturer was using four 2” fan nozzles with 105 PSI of compressed air to dry the tubes prior to printing. However, the company started to notice occasional quality issues with the tubing, despite using over 100 cfm of compressed air. As a result, the manufacturer reached out to Paxton Products for help as they would like to switch to blower-driven air in order to reduce the plant’s overall energy usage, while also improving the quality of drying.

THE SOLUTION

The Paxton Products team worked alongside the manufacturer to find the best possible solution for resolving the plant’s quality issues, while also reducing the plant’s overall energy consumption. The Paxton Products team proposed a custom-engineered air delivery system that utilizes Paxton’s own 5 hp, **PX-500 Centrifugal Air Blower** to supply air to three 6’ long, Stainless Steel **Air Knives**. And because the Paxton Products team has extensive experience in air flow technology, they were able to precisely analyze the best possible placement for the Air Knives and ended up placing them perpendicular to the tube’s direction of travel–positioning an Air Knife above the ink process and two Air Knives directly at the point of application. This would effectively clear the entire surface of water while also stopping the water from running down and into the target area.

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THE BENEFITS

The new Paxton Products system provides 200 cfm of air at 60" of water column by using a PX-500 (5 Hp) blower system, compared to the 22.8 Hp from the client's legacy compressed air system, and would result in $1.50 per hour in energy savings for the client. This would yield a Return on Investment of less than 11 months for a 24 hour x 5 day operation and would end up saving the manufacturer about $9,360 a year in energy savings alone.

Not only does Paxton's air system deliver the client outstanding energy savings, but it also significantly improves the quality of products. By eliminating the legacy drying system, the customer is now able to provide a higher quality ink jet process, eliminate scrap and rejects due to unclear printing, and even free up the compressed air to be used in other processes and areas throughout their facility. "Ever since we installed the new, blower-driven system for the client, they have seen significant savings in energy costs, as well as improvements to overall product and printing quality," added one of Paxton's Application Engineers involved with the project. The manufacturer is overall very pleased with their new Paxton Products system and is confident that it will benefit the plant in the long run.

Click here, or scan the QR Code to learn more about Paxton Products' high efficiency air knives and knife systems.

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