Paxton Products Helps Doughnut Manufacturer Eliminate Compressed Air

THE CLIENT

A food manufacturer specializing in the production of doughnuts reached out to Paxton Products for help with its conveying operations. Located in the United States, the food manufacturer's main focus is preparing doughnuts to be cooked, packaged, and sold. In order to cook the doughnuts properly, they must be sent through a production line in a bath of oil. More specifically, the doughnuts must be conveyed in a bath of oil for over 15 feet to cook properly.

THE CHALLENGE

Before reaching out to Paxton Products for help, the food manufacturer was using an improvised, compressed air system comprised of four, 52" pipes spanning the width of the fryer, each with 60 holes drilled in them. Each of these pipes were supplied with 30 psi of compressed air in order to convey the doughnuts across the 15-foot span – requiring a total of 607 cubic feet per minute (CFM) of compressed air. This means that the manufacturer was spending a significant amount of money on a small amount of compressed air to cook the doughnuts. The client also wanted to eliminate compressed air because of its potential to be dirty and contaminated which can result in product quality rejects.

The manufacturer reached out to the Paxton Products team in hopes of increasing energy efficiencies by switching to a blower-driven system instead of a compressed air system.

THE SOLUTION

The Paxton Products team worked alongside the client to find the best possible solution for solving the plant's issues, while still trying to increase energy efficiency. Paxton proposed an air delivery system comprised of four, 52" high efficiency 304 Stainless Steel **Air Knives** - each powered by a **20 hp PX-Series Centrifugal Air Blower**. Due to the oils present in this plant's operations, the Air Knives are each made of 304 Stainless Steel in order to withstand the harsh sanitation cleaners used in most food processing facilities.

This system would provide 1150 CFM at 20 inches of water column. In addition to this, the Paxton Products air system will consume only 16 hp while the original, compressed air system required 68 hp to operate.

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THE BENEFITS

Because most food processing facilities, such as this one, operate around the clock, this means that compressed air is constantly being consumed – carrying a high price tag in energy costs. Switching to the new Paxton Products blower-driven system has allowed the manufacturer to double the amount of airflow for a higher conveyor speed, while also eliminating the need for compressed air all together.

By eliminating the need for compressed air, the compressor strain is eliminated and can be allocated to other areas at the plant – ultimately bringing down production costs. In most cases, compressed air can also contain excess dirt, debris, moisture, and various oils. This may require additional and expensive equipment for cleaning and filtering out the excess debris in order to meet FDA standards. By completely eliminating compressed air with the new system, the client won't have to worry about the negative consequences that come from using compressed air. The new system will be a cleaner alternative to the original system by using filtered, ambient air which is extremely clean and safe for food and beverage production.

With the new Paxton Products system installed, the client's Return on Investment (ROI) will be less than 11 months. In addition to this, the food manufacturer will end up saving about $16,854 a year in energy savings. "Ever since we installed the Paxton Products system, the client has been able to save a significant amount of money in compressed air usage," added one of Paxton's Application Engineers involved with the project. Overall, the client is pleased with the system that the Paxton Products team installed 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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