Paxton's Drying System Wheels in Savings for Automotive Manufacturer

An automotive manufacturer is using a Paxton Products Air System to dry trouble spots on their steel wheels.

THE CLIENT

A world-class automotive manufacturer of aluminum and steel wheels. The manufacturer has been in business for over 30 years in Paris, Kentucky. The manufacturer aspires to be a factor in sustainable development in society through manufacturing and innovation of automotive wheels. The manufacturer prides themselves on hiring local talent in order to support their local community. In Paris, Kentucky, the automotive manufacturer focuses on manufacturing automotive wheels that range in size 15-17 inches.

THE CHALLENGE

Following stamping and before finishing, automotive manufacturer washes the wheels. They then hang the wheels six at a time, three in the front and three in the back, on a vertical rack hung from a chain conveyor to dry before proceeding into the finishing area. For drying, the manufacturer used 24 compressed air nozzles followed by a 30 Hp blower feeding Loc-Line nozzles. The piping was catastrophic: Air would exit the blower from a 3" pipe, transition to a 4" divider, and then transition to two 6" pipes leading to a quagmire of 24 Loc-Line nozzles. Despite using both 370 cfm of compressed air and 30 hp of blower, they were still having trouble removing moisture from a blind crevice on the 16" and 17" wheels. Their drying process was extremely inefficient, as 370 cfm of compressed air requires a 75-90 hp compressor.

The automotive manufacturer contacted a Paxton Products representative in hopes of eliminating and supplementing the existing drying systems to rid themselves of the trouble spots. Once the Paxton representative came to the manufacturing facility, he was able to easily identify improvements that Paxton could make. The Paxton representative also confirmed to the production engineer that the system efficiency was severely negatively impacted by the poor piping from the blower to the myriad of Loc-Line nozzles.

THE SOLUTION

The Paxton team was able to calculate the precise placement of their recommended product from the wheels based on the placement and the failures of the blower the automotive manufacturer was originally using. Due to the irregular surface and varying depths of the wheels, the Paxton solution included a series of custom angled nozzle manifolds. Nozzle manifolds are ideal when exhibiting a larger distance between the air source and the surface to be dried or blown off. Nozzle manifolds maintain thrust as far away as 18 inches. For manufacturer's application, the nozzles were positioned to target pain points on both sides of the wheels as they were traveling along the chain conveyor. Based on the length of the manifolds, and the desired air thrust needed to reach the crevices, the Paxton engineers chose the 20 hp PX-2000 blower, which generates as much air power as a 30 hp blower, using 10 hp less energy, and resulting in electricity savings of nearly $5000 per year. Once Paxton provided this solution, the manufacturer was very impressed with the drying performance as compared to their previous solution. They added a duplicate system in to guarantee that all their wheels would be dry.

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CASE STUDY

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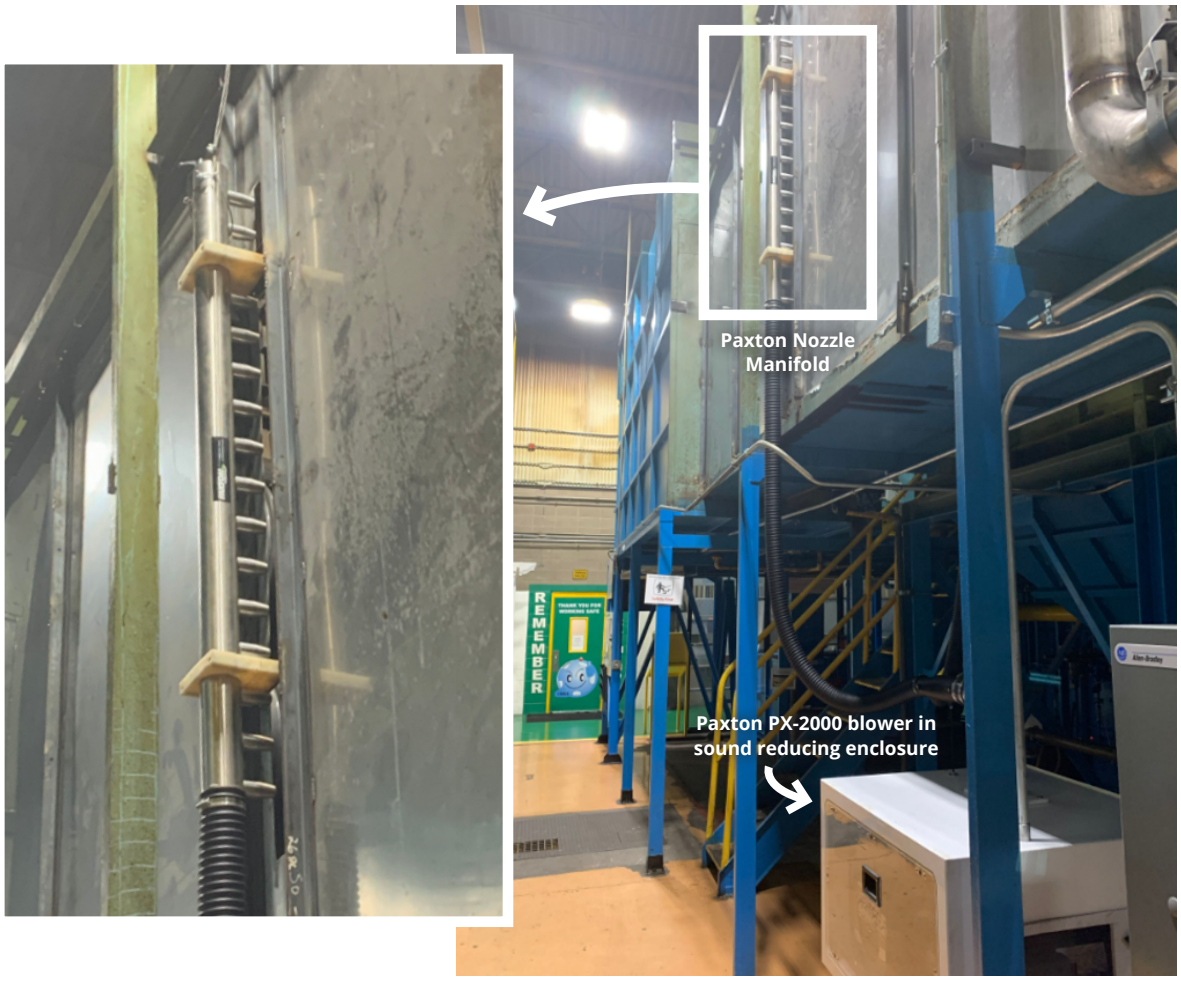
THE BENEFITS

The Project Engineer conveyed satisfaction with the capabilities of Paxton's Products' Air Systems as well as the support of the Paxton representative to resolve their pain points in production. The automotive manufacturer saw a reduction of waste, lost time and occurrences of rejected wheels. With Paxton's two systems now in place, the manufacturer is satisfied with the dryness of their wheels.

THE CLIENT'S RATING

The Production Engineer comments, "Thanks to the addition of the Paxton Centrifugal Blower, our company is on target to save over $20,000 annually. This saving is two-fold, resulting from the avoidance of sending rejected products to a strip company plus the lower cost of electricity versus the cost of compressed air."

The Production Engineer also comments, "Reduction of waste, lost time and occurrences of rejected wheels. With Paxton's two systems now in place, CMWA is satisfied with the dryness of their wheels."



For more information on Paxton nozzle manifolds, click here or scan this QR code with your smart phone.

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