



Quick Facts

Industry

Life Sciences

Application

Rooftop Air Handling Unit

Customer

Major Pharmaceutical Manufacturer

Twin City Fan Representative

Air Applications, Inc.

Location

Spartanburg, South Carolina

Challenge

Difficult installation, exacting requirements and on-time delivery with no room for error

Solution

Careful planning, combined with Twin City Fan & Blower's custom manufacturing abilities and dedication to quality

Result

High quality fans for years of maintenance free operation

RETROFIT PROJECT: ROOFTOP AIR HANDLING UNIT

Overview

A major manufacturing facility in the life sciences industry needed to replace two fans within an existing rooftop air handling unit. Specific requirements – matching the existing fans' performance, dimensions and more – posed a significant challenge. In addition, the location of the air handler meant the new fans would need to be dropped in by helicopter, making getting the fans right the first time essential.

Challenge

Twin City Fan & Blower was tasked with dimensionally cloning a product that was made by another company, to fit in an existing space. The new fans needed to match the exact specifications of the old ones – right down to the placement of the bolt holes. Adding to the challenge was the location: the air handling unit was situated on the top of a multi-story building, in an alley between higher building walls on both sides. The timeframe for installation was also incredibly tight – because of the location, a helicopter was needed to remove the old fans and drop in the new ones. The fans needed to fit and run perfectly the first time – there would be no second chances.

Solution

The plant already had TCF fans installed elsewhere throughout the facility, so the customer was comfortable with Twin City's ability to meet the exact specifications and timeframe, without mistakes. In order to ensure the specifications were correct, a number of engineering meetings were held to inspect the existing site. The old, obsolete fans were field-measured and then compared with the drawings of the old equipment to ensure the specifications were accurate.

Two new BAE fans were engineered to be exact dimensional replicas of the old, existing fans. BAE fans are characterized by their higher efficiency and good sound characteristics, and their ability to handle large volumes of air. A variety of customizations were required, including designing the new fans to align with the existing inertia bases (concrete bases that float with springs to absorb vibration), increased frame thickness and machined bearing pads. Special motors, specific balance, size and weight, and other requirements also had to be met.

CASE STUDY



BAE-DW
Centrifugal Fan

Twin City Fan & Blower has the engineering and manufacturing capabilities to accommodate virtually every conceivable application. We have completed thousands of successful installations worldwide and have a proven track record for tackling the most technically complex and unique applications.

We separate ourselves from the competition by offering a greater breadth of products and quickly adapting to the needs of our customers. This is truly a testament to our company philosophy – respond to the needs of the customer, the first time, every time.



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Once the fans were built and shipped to the jobsite, the air handling unit was turned off, the top removed, and the two old fans transferred out by a helicopter. Next, the helicopter picked up the new fans and set them in the space previously occupied by the old fans. It was a perfect fit. The removal and drop-in took only an hour, but a significant amount of planning was required – special safety training, evacuation of buildings the helicopter was to fly over, providing the helicopter pilot with accurate weights of the load, and more. Finally, electrical connections were completed and the fans began running the next day. The entire removal and installation process took just 24 hours. Everything – quality control, engineering and fabrication – worked 100%, meeting all vibration, noise and performance requirements. The fans are still running smoothly to this day.

Benefits

The challenges in this project were significant, but thanks to careful planning, good communication and an ongoing commitment to quality, the engineering and installation of the two new fans went flawlessly. TCF was able to successfully custom-engineer a product that fit the customer's exact requirements. By building fans to fit the existing space, the customer didn't have to spend the extra time and money that would have been necessary to redo ductwork, create new bases and make other changes to the space to accommodate new fans. According to Dave Franks of Air Applications Inc., Twin City Fan was selected for the project for a couple of reasons. "The customer was familiar with the product and had field experience with us – they knew they could count on Twin City Fan to do a job like this. Our fans are heavier fans – with heavy-duty shafts, bearings and bearings pedestals. It's an all-around robust product. Finally, the customer knew TCF had the ability to custom-engineer products to fit the requirements presented for this project – they have a demonstrated ability to work with customers to develop 'drop-in replacements' like what was required for this project."

Summary

The unique challenges presented – exact specifications and a difficult installation – were overcome by the team at Twin City Fan, and their representatives, Dave Franks and Ryan Funke of Air Applications. Thanks to excellent communication and preparation; a robust, perfectly engineered product; and impeccable timing and execution, the project was a complete success. The fans were delivered on-time, and fit the custom requirements exactly – once again proving Twin City Fan's unique capability to custom-engineer a product, saving the customer time and money.