



## GRAIN SILO AERATION

### Overview

Wheat, soybeans, and other grains are transported to and stored in silos at an agricultural company's deep water international port on the U.S. East Coast. From this port, the agricultural and food processing company provides farmers in the Northeast and Mid-Atlantic areas with easy access to markets around the world. In addition to drying, these silos are aerated to prevent the stored grains from rotting. And where there's aeration, there must be fans – reliable fans.

At the top of a particular 170-foot silo at this facility, the original aeration fan was starting to rust and deteriorate. It was time to replace it. To ensure longevity and reliability, the food processing company turned to their local Twin City Fan & Blower representative for a new fan solution.

### Challenges

The biggest project challenge involved matching the center-line height of the old fan. The old fan was not sitting on a base. The new fan, which has a base that adds 6 inches to the fan height, would have to be recessed into its base to match the horizontal center line of the original fan's axis, and to match the inlet.

In addition to modifying the base and performance requirements, such as at least 20,000 CFM at -15 inches WC (suction) static pressure, the fan needed to be belt driven. The company also wanted a discharge stack on the fan to match the original stack.



## Quick Facts

### Industry

Food Processing

### Application

Fans provide aeration for grain storage silo

### Customer

Agricultural/Food Processing Company

### Twin City Fan Representative

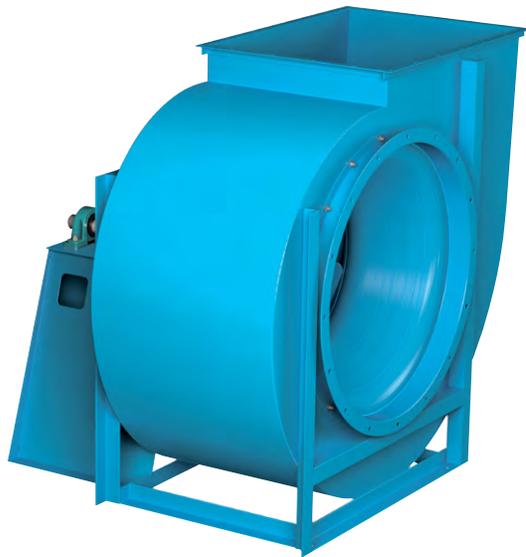
Prime Air Products  
Richmond, VA

### Challenge

Matching the center-line height of the old fan and meeting fan performance criteria

### Solution

Belt driven BCS high-efficiency, backward-curved industrial fan, customized base and custom discharge stack



**BCS**  
**Backward Curved**  
**High Volume/Pressure 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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## **Solution**

Twin City Fan & Blower supplied a belt driven BCS high efficiency, backward-curved industrial fan with a 40-inch wheel and spark-resistant construction. The BCS fan is designed for efficiency and high-pressure applications. The fan has a customized frame and unitary base to match the horizontal center line of the original fan's axis.

TCF also supplied the discharge stack. The custom stack is 5-feet tall and 29 inches in diameter. It's mounted directly on the fan outlet with no ductwork.

The BCS fans met the specified performance criteria providing 21,500 CFM, -15 inches WC static pressure. The motor is 75 hp, runs at 1,588 RPM and is started across-the-line.

## **Results**

The agricultural company can operate its international port knowing that the grain stored in its silos are safe due to the aeration provided by fans from Twin City Fan. The efficiency of the new fan is 79% – an improvement from the original fan. The new fan also provides a drop in brake horsepower – from 66 Bhp to 64 Bhp.

In addition to supplying a more efficient fan, TCF provided a modified base to match the center line of the original fan, as well as a custom discharge stack. The installation went very well and the new fan is performing better than expected.