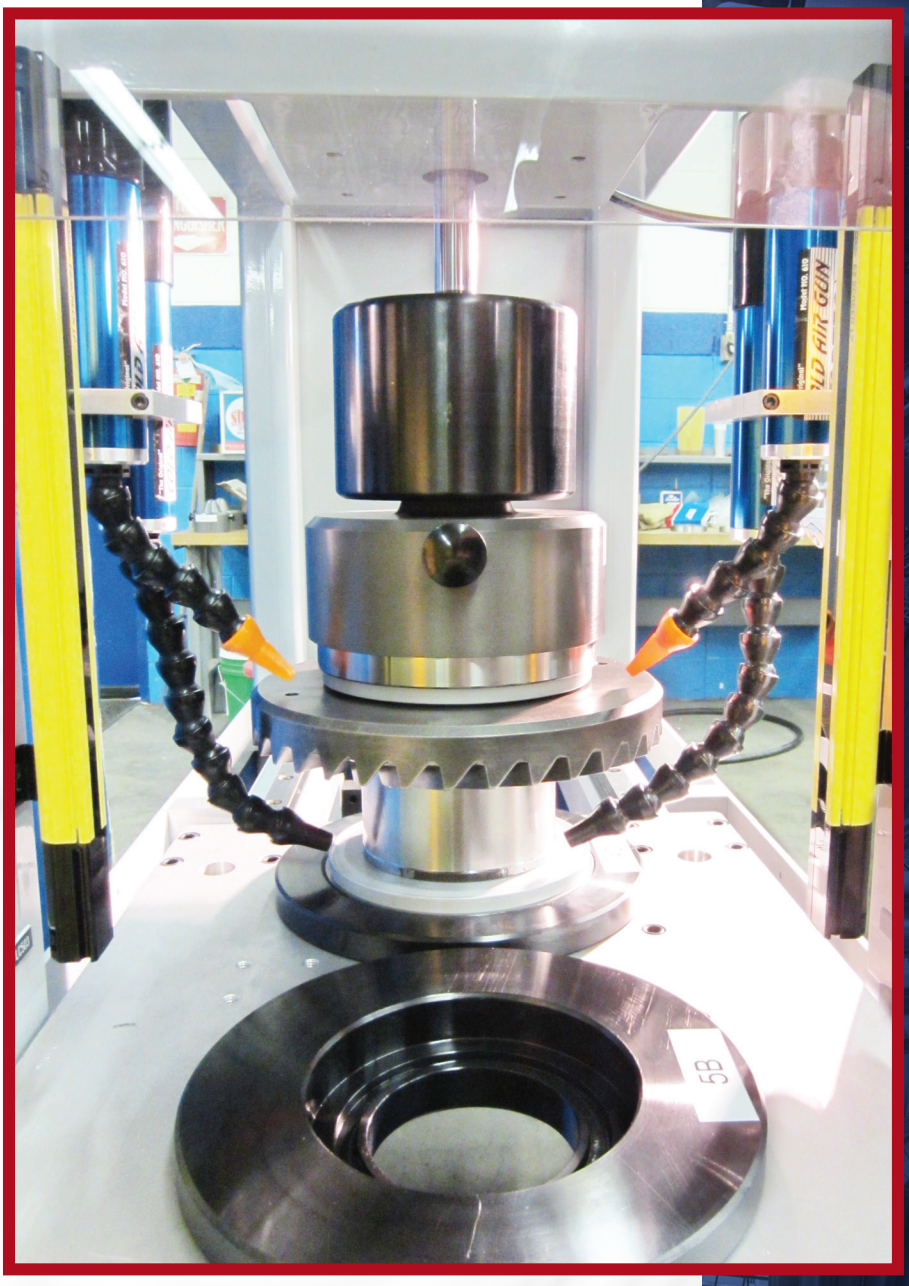
Cooling Large Industrial Parts in 60 seconds

How do you take large industrial equipment from 350 to 100 degrees Fahrenheit in under 60 seconds?

This was the challenge faced by Anderson Machine Manufacturing, a Richmond, VA-based company which builds custom machines for a broad spectrum of industries and applications. In 2009, one of their clients, a multinational corporation, sought Anderson Machine's aid in creating a machine to compress and cool the components of an industrial-size gearbox shaft.

The client wanted extremely rapid cooling, so top of the line air equipment was a necessity. Since the components of the machine had to remain dry, mist cooling was not an option. Todd Anderson, Vice President and Mechanical Engineer at Anderson Machine, explains that "as a mechanical engineer, you know to do what you're good at and find the best experts you can for other areas. We knew that in this case, meeting the client's requirements meant finding an extremely high level of expertise in air technology."



After learning about Vortec online, Anderson explained the machine his client sought. Vortec engineers analyzed the specifications Anderson provided and developed a solution. "Building as many different machines as we do, I deal with a lot of different vendors," Anderson states. "With Vortec, they hit the ground running, grasping our needs right away instead of needing to have things explained to them twice. We told them how big the assembly was, what materials were involved and the timeframe. They performed the heat load calculations to determine which products would work, then sent a spreadsheet showing the products with the right cooling capacity." By using four of Vortec's model 610 Cold Air Guns, Anderson was able to deliver a machine which cooled the equipment quickly, meeting the client's requirements.

VORTEC
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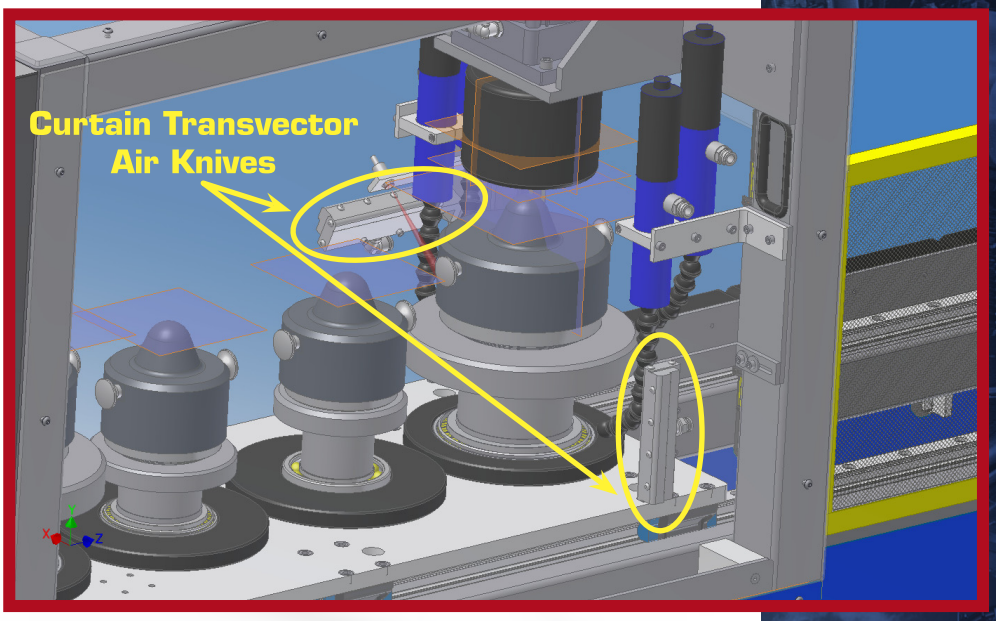
Success breeds new challenges. Anderson's clients were so pleased with the initial machine, that they requested a more advanced version. They wanted a machine capable of handling much larger pieces of equipment then their initial specifications had required. Anderson turned to Vortec for assistance in enhancing the design of the original machine to handle these new requirements.



Vortec's engineers realized that, although the Cold Air Guns effectively cooled smaller equipment, a two-stage cooling process was necessary to bring down the temperature of the larger, denser equipment. They suggested that Anderson retrofit the machine, adding a preliminary cooling phase. Vortec also recommended shifting to the larger, more powerful model 630 Cold Air Guns rather than the smaller model 610's which were originally used.

The 2-part cooling cycle necessary for the larger equipment involves using Vortec Curtain Transvector Air Knives to remove most of the heat, taking the temperatures of equipment from 350 to 150 degrees F. The Curtain Transvectors use compressed air, amplifying the air flow to rapidly dissipate heat by bringing more airflow (cubic feet per minute) to bear on the equipment. Curtain Transvector air knives bring more than three times the cooling capacity of standard nozzles. During this initial stage, machine operators can stop the process and take infrared temperature readings. In the second stage of the cooling process, four of Vortec's Cold Air Guns model 630 cool the equipment, lowering the temperatures from 150 degrees F to under 110 degrees. The combination of the model 630 Cold Air Guns and Model 921 Curtain Transvector air knives bring the temperature of the large gear equipment down from 350 degrees to 100 degrees F in less than a minute.

ANDERSON MACHINE MANUFACTURING

"I give Vortec high marks," Todd Anderson states. "When we presented them with an increased level of challenge based on our client's new specs, they didn't blink. The Vortec crew really has their heads screwed on right as far as interfacing with clients. And in addition to great products and an excellent understanding of technology, they also offer a very reasonable price."

For more information on Cold Air Guns, click here or scan this QR code with your smart phone. For more information on Air Knives, click here.

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