

Testing Air Conditioning Compressors Increases Equipment Uptime

Summer in the Midwest can consistently post 90-plus degree temperatures. As the sun beats through the cab of a Caterpillar excavator or CASE backhoe loader, the small glass box could quickly turn into an oven. Temperatures can easily get 20 to 30 degrees above ambient, which is unsafe for an operator if the air conditioning unit breaks down. In the case of an air conditioning crash, it's not just the operator that suffers, as the failure of a compressor could shut down the entire machine.

A faulty compressor is usually the first assumption when equipment goes down. In many instances the problem is caused by a variety of system issues, but when a compressor is not robust and incapable of handling the application and the environmental conditions of the job, it is more often than not related to the wrong compressor for the application.

We rely on construction equipment to perform large-scale work. Proper use of appropriate equipment contributes to the economy, quality, safety, speed and timely

completion of projects. So when that compressor fails, so does the alternator and the vehicle is out of commission until the air conditioning compressor is replaced. Having a long life on the compressor, allows Caterpillar, CASE or Bobcat customers for example, to have a longer uptime on vehicles. That matters to the success of the job and their bottom line.

T/CCI knows a little something about heavy-duty compressors and extremes. As the original manufacturer of the York Compressor, the business was built in part by supplying not only the heavy-duty trucking industry, but also the U.S. military with compressors that can withstand some of the most brutal conditions on earth – the deserts in the Middle East. If military vehicles can't operate in the extreme heat and high winds, soldiers are put at greater risk in an already dangerous environment.

For us, it was a natural market extension to move from heavy duty trucking and military into the off-road construction industry. In the last five years, T/CCI has grown from 15 percent market share to nearly 70 percent and has taken over as the market leader supplying companies like Caterpillar, CASE, Bobcat, and New Holland, among others.

The growth is a direct result of what we like to refer to as a "design thinking" philosophy – an engineering and solution based approach to the business. Whether we're talking about a skid steer, backhoe, or piece of mining equipment – every application has different needs, problems and conditions, which require engineering application expertise.

In this business, performance and durability count. An automotive compressor simply will not cut it for a heavy-duty application yet a number of air conditioning units on the market are put together with whatever compressors are available when the need arises. At T/CCI, we work closely with OEMs to make sure they have the right compressor for their application and work location. The product is designed and tested to be an off-road, heavy-duty product.

Testing and validation is a critical piece to supplying this industry. Customers require suppliers today to pass stringent product and quality testing. T/CCI was recently one of only 10 percent of Caterpillar suppliers to be Bronze SQEP Certified and meet their stringent quality standards. A state of the art innovations center with advanced engineering technology and



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climatic environmental chamber is key to meeting these requirements. Our company uses an on-site climatic wind tunnel not only for product testing, but we also make tunnel time available for customers that are looking to diagnosis systems issues, develop new products and test new technology. The tunnel can test under the most extreme temperatures, wind speed, humidity and solar conditions – simulating weather conditions from all over the world.

The demand in the market for this approach and custom application has also been a catalyst for T/CCI's global growth and expansion. Our customers are global as are their needs. In order to meet those needs and provide faster and less expensive, more local solutions, our operations have expanded to China, Ireland, Argentina, Germany, Spain and other locations around the world. To provide one example, T/CCI recently announced a strategic alliance with CASE producing the QP7H15 150 cc displacement compressor fitted to the CASE backhoe loader. In addition to the Iowa production facility, the CASE backhoe loader is also produced in Lecce, Italy, and supplied from T/CCI Europe located in Hamburg, Germany.

What's next for T/CCI in this market? Our team is already working toward new innovation and designs to benefit the construction industry. We're working to reduce the horsepower draw of the compressor on the engine for better fuel efficiency and maximum power to loads. We're looking at designs that will allow the compressor to be a smaller power draw on the overall engine load - that's where we're headed.

The Construction Market Source



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