

Jeffrey Davis, Cooper's senior director of engineering, says the company is increasing production

# Setting the Standard

High-tech emissions reduction technologies are top of the development agenda for one of the industry's leading suppliers

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With five decades of extensive automotive know-how under its belt, Cooper Standard has become one of the industry's leading global suppliers, offering advanced solutions in body sealing, fuel, brakes, anti-vibration systems, thermal management and emissions technologies.

But getting to the top – and staying there – has not been without its challenges. Like most of the supplier community, Cooper Standard has had to overcome several hurdles during the global economic slowdown, which saw the company file for Chapter 11 in 2009, and then emerge from bankruptcy protection less than a year later.

“What is interesting is that we had strong operations; it was a balance sheet issue that

forced us into Chapter 11,” recalls Jeffrey Davis, Cooper Standard's senior director of engineering. “The restructuring of our balance sheet makes me much more optimistic about the future. Global volumes are up, and that even applies to both North America and Europe, which had been hardest hit during the 2008 and 2009 time period.

“The biggest problem we face is being able to keep pace with the increasing volumes and engineering requests from our customers. This is not a bad problem, but nonetheless an issue that we are facing. After almost two years of scaling back operations in the wake of reduced volumes, we are trying to ramp back up to 2007 and 2008 production levels in a much shorter time period than we had to scale down, and this can be trying.”



Cooper's thermal management portfolio includes two-way, three-way, and four-way valve systems

As trying as it may be, expansion is well and truly on the agenda: “We are growing while continually looking for ways to improve – or should I say expand! We are looking to grow sales with new, innovative products such as our pumps, valves, quick connects with sensors, multistate engine mounts, safe-seal sealing systems, direct injection fuel rails, throttle valves and advanced emissions systems. We also have EGR coolers, modules, and wastegate actuators. In addition, we are continuing to diversify our customer base.”

**Target: Top 30**

Having emerged from Chapter 11 refreshed and far stronger, the immediate aim now for Cooper Standard is to break into the top 30 of the largest suppliers in the industry. With 19,000 employees based in 70 locations that are dotted in 18 countries, it’s easy to see why the top 30 goal is a realistic one. The company, which is headquartered in Novi, Michigan, boasts several leading brands that make up the Cooper Standard family, including StanPro, Metzeler Technical Rubber Systems and Metzeler Automotive Profile Systems, and as such, high-tech innovations are at the top of the agenda.

A good example of Cooper Standard’s innovation is the company’s latest thermal management systems. Davis, who joined the company in 2010, explains, “For years, many in the automotive industry took thermal management for granted or just assumed thermal management was being taken care of. As advanced internal combustion engines, hybrids and EVs are gaining more prominence, the industry now understands what we at Cooper Standard have known for years: that seamless integration of thermal management is an important aspect of vehicle performance, all of which can have wide-ranging benefits for vehicle performance and passenger comfort.

“Our technologies work to maximize thermal efficiencies within a system. The company’s innovative engineering teams develop and manufacture complete customer-specific thermal management solutions for today’s complex powertrain routings and performance requirements.”

Davis says there are a number of new innovative products in the company’s thermal management portfolio that improve vehicle performance and are also environmentally friendly. On the pumps side, a family of brushless pumps for IC engine, hybrid and electric engine applications have varying levels of flow, current draw, and communication methods to the vehicle, and this helps manage modern vehicle architectures from battery cooling loop to passenger cabin comfort.



1: The Series 4 Pumps helps OEMs to better control enables thermal management systems

2: The acclaimed Quick Connector with sensor

will measure temperature and pressure simultaneously.

“The benefit with these GE/Cooper Standard co-developed products is the improved reliability as a result of having the sensor integrated into the quick connect. Additionally, there is a benefit for installation as our design enables accurate sensing in a 360° radius, thus orientation as an assembly concern is eliminated,” adds Davis.

**Engine mounts**

Away from thermal management systems, the company is also leading the way in hydro-body mounts and multistate engine mounts.

“We are looking for innovative products that can have real time impacts on customers,” says Davis. “The hydro-body mount was first launched on the DJ Dodge Ram. Although we worked very closely with Chrysler on the implementation and launch, we were not fully aware of how pleased Chrysler was until the DJ was first shown at the 2010 Chicago Auto Show, during the introduction Chrysler specifically commented on the improved ride, attributing it to the hydro-body mount supplied by us,” he recalls.

The technology provides damping of road vibration experienced in the cab. Although

“Our technologies work to maximize the thermal efficiencies levels within a system”

“Our Series 4 Pump is a high-volume, highly efficient solution that enables OEMs to better control thermal management systems for improved vehicle operation and passenger comfort,” says Davis. The pump offers low current draw, variable speed and auto reversing.

Also part of Cooper’s thermal management portfolio are two-way, three-way, and four-way valves and electronic thermostats that help divert coolant to maximize thermal efficiencies within a vehicle system. The company also offers the market customer-specific modular connector technology that is designed to help maintain optimal battery temperatures to ensure top performance. Systems include the use of industry-leading connection technology that is designed and tested to customer requirements.

Cooper has its acclaimed Quick Connect with Sensors technology – a new generation of fuel Quick Connectors that integrate sensors into the body of Cooper Standard’s patented Quick Connect designs to instantaneously monitor temperature or pressure. The company is also further developing quick connect products that

typical body mounts provide damping and isolation, they are usually tuned for single band frequency, but the hydro body mounts provide greater frequency range of damping, through use of energy from the vibration of the vehicle normally transmitted from the frame to the seat. “We believe the Cooper Standard’s design is superior because it absorbs almost 50% more energy than other hydro mounts,” says Davis, crediting a clever push-pull action feature and a top cushion that acts as a load bearing. “Our design behaves both like a piston in a shock absorber and a hydraulic mount, which again differentiates it from other hydro mounts.

“The next level of technology beyond hydro mounts are multistate mounts.” The next-generation system has a type of design that encompasses the multistate inertia track technology, which allows the mount to respond differently to three or more states by using signals controlled from the onboard CPU. As well as having a minimal cost increase, the multistate inertia track technology is also lighter, leading to better fuel economy. ○