LOUD AND CLEAR SOLUTION FOR AUTOMOTIVE NOISE AND VIBRATION PRODUCT REDUCTION MANUFACTURER



Our customer is a leading expert in the global market for automotive noise vibration harshness solutions. Their products reduce noise and vibration that come from the engine, drive train and the friction with the road, all of which diffuse to the chassis of the vehicle.

THE CHALLENGE

The plant facility was using flying wedges, and pistons (that are less accurate than gear pumps) to increase accuracy and improve repeatability during the application of metering polyol and isocyanate to manufacture flexible polyurethane products like jounce bumpers, top mounts and spring seat isolators. In the form of a foam, polyurethane is key and very practical for generating effective insulation products that are going to be durable and resistant, yet light in weight.

The lack of accuracy and efficiency in the manufacturing process of the polyurethane products had been present for years without any real solution to the issue as it was inherent on machines used for the process. These production inefficiencies were generating unnecessary cost increases in raw materials and manufacturing time, hence impacting profits and margins.

THE SOLUTION

The customer knew that old machines used for the application to meter polyol and isocyanate to manufacture polyurethane products were not accurate. It was not until an enlightened and experienced engineer who worked for the customer and knew about Zenith pumps, suggested to make the switch and install a Zenith gear pump. For almost 100 years Zenith has provided proven precision fluid handling solutions and process engineers have relied on our products to deliver on the most challenging pumping applications.

Our channel partner representative Martell Associates in New England had served the customer for many years with other products and services, and this time around they took on the challenge and found the perfect gear pump to improve manufacturing efficiencies for the customer.



Zenith H-9000 Pump

First, Martell Associates tried BPB, BMB, BMC and BLB pumps but then they switched to the H-9000 Zenith pumps series because the superior abrasion resistance of the tool steel pumps was a plus. Many of the polyurethane products contain abrasive particles such as pigments that are small but can wear parts.



The installation of the H-9000 Zenith pump generated high accuracy and precision by generating a stable, repeatable, pulseless flow amid varying conditions such as temperature, viscosity and pressure, ensuring an exact volume per revolution without expensive flow meters. The unique design of the Zenith H-9000, is a precision ground rotary external spur gear with combination mechanical face and packing seal, with a rotating clockwise facing drive shaft. It operates at a maximum speed of 300 rpm, with a maximum viscosity of 100,000 cps and maximum temperatures of 950°F (510°C). As well as maximum inlet of 1,000 psi and maximum outlet pressure of 2,500 psi.

THE RESULTS

The new installation of the new Zenith H-9000 series pump is saving the customer cost on scrap by eliminating waste, in addition to generating better yields and quality and less product variation. The high volumetric efficiency is achieved with optimum operating clearances and assured under pressure by the built-in alignment dowels. The installation of the pump has also simplified the quality and inspection requirements and processes.

In addition, Zenith pumps are generally known for their low cost of ownership. With only three moving parts, two metering gears, drive shaft and tool steel construction, the pump provides excellent wear resistance, long life and reduced maintenance, hence reducing downtime significantly.

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