

Custom Machine and Tool Co., Inc.

Bolsters Accuracy and Efficiency for Vande Berg Scales

Charlotte Stevens, Marketing Manager, Custom Machine and Tool Co., Inc.

If you can find that magic bullet that will reduce the machining process, you can achieve meaningful efficiency gains. It is imperative that checkweighers or in-motion weighing systems remain both accurate and efficient while attaining a consistently smooth operation because they dynamically weigh products as they move across the belt. One such challenge David Vande Berg, president of Vande Berg Scales (VBS), encountered was to make sure the company's in-motion weighing systems were equipped to move with less vibration and smoother transitions.

Based in Iowa in a 15,000 square foot facility, Vande Berg Scales manufactures a number of systems that employ motor driven belts and chains. The company designs and fabricates weighing and automation equipment including in-motion checkweighers, weight price labelers, box/tote weight labelers, and monorails. Accuracy through automation enables Vande Berg Scales to achieve the highest of quality standards. Add to this, their measurement and advanced design capabilities, VBS is able to facilitate custom projects and challenges with the same ease as standard products. For more than 30 of it 54 years, Vande Berg Scales has built a solid presence in the meat, dairy, food, and manufacturing industry as a driving force in dynamic weighing and automation.

Igniting the Passion for the Next Generation

In 1964, Don and Wilma Vande Berg tapped into their entrepreneurial spirit by converting their home and garage into small workshops to launch the Vande Berg Scales brand. VBS began to produce weighing, measuring and automation systems. The payoff came as the company quickly grew, thanks to their relentless ingenuity and dedication to their clients' needs. This leap of faith laid the groundwork for the second generation. In 2001, David Vande Berg, son of Don and Wilma Vande Berg, purchased the company.

With an upbringing in the scale industry and a degree in mechanical design, David Vande Berg, president of Vande Berg Scales, was inspired to design intricate custom systems. His knowledge of programming and electronics coupled with decades of weighing system and weights and measures experience served him well in every aspect of the growing business. And so he began a new era by spearheading the drive into automation.

Company Alignment

After discovering Custom Machine and Tool Co., Inc. (CMT) on the Internet, Vande Berg Scales recognized the advantages of CMT's Concentric Maxi Torque line of products. Custom Machine and Tool Co., Inc. had designed and patented a more reliable connection format, the Concentric Maxi Torque bushing system, which offers zero backlash and high clamping torques. These features, unique to the industry, would prove to enhance and strengthen VBS' product line. Along with its low profile design, the benefits allowed for direct coupling to the motor shaft, reduced costs by dismissing the need for a custom length shaft and eliminating a bellows coupler on the motor.

With its ease of positioning and the fact that it virtually defeats shaft damage due to its mechanical shrink fit, this



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connection system is the perfect fit for in-motion weighing systems. The Concentric Maxi Torque System was integrated so as to satisfy these precise pulley requirements.

How the Concentric Maxi Torque System works

Pulley and bushing are sold together as an assembly. There is a mechanical shrink fit affected by using a setscrew, axial to the shaft, as a lever to force the tapered bushing into the matching taper in the hub. As the lever forces the two tapers together, the slot in the bushing is compressed, thus clamping the pulley to the shaft with a mechanical shrink fit. That same set screw is removed and used on the opposite hole, which acts as a jack, releasing the shrink fit and allowing for removal or re-positioning.



The Concentric Maxi Torque in Vande Berg Scales' In-Motion Checkweigher.

"It is a fantastic and very innovative product that makes complete sense for our needs," said David Vande Berg of VBS. "The Concentric Maxi Torque's smooth running power is key to the in-motion weighing system's performance. Finding or building these attributes into components can be time-consuming, expensive, and difficult to repeatedly achieve. By implementing the Concentric Maxi Torque, it allows us to focus our resources on other areas to gain further improvements in our product offerings."

Vande Berg added, "The increased benefit in performance with the Concentric Maxi Torque design enables us to fabricate the components we need without long searches and outsourcing. With CMT's product, resources can be diverted to improve other areas of our designs while achieving a reduction in needed machining time. The keyless hub-to-shaft connection device has superior features and benefits compared to other connection systems such as keyways, pins, set screws, clamp collars, and other tapered shaft locking devices."

A similar recipe for success

In 1964, Edward Bennett, founder of Custom Machine and Tool Co., Inc. took the skills and creative savvy he acquired at an early age to begin manufacturing his unique line of screw machine products in the basement of his Scituate, Massachusetts home. Bennett quickly gained a reputation for his dedication to precision and quality which, in turn, spawned



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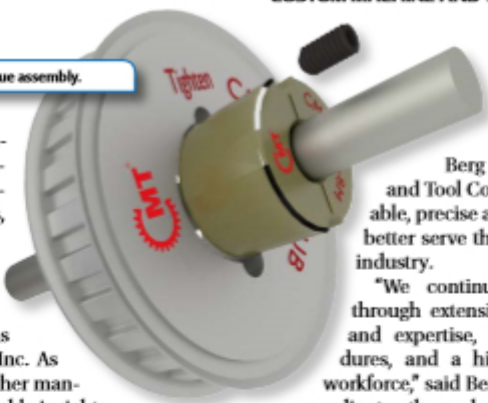
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The Concentric Maxi Torque assembly.

customer confidence and loyalty, endowments that would serve as a template for son, Robert, and his future-forward thinking inventions, patents, and endeavors.

"Precision isn't just a watch word... it is your core value." That's what Robert Bennett envisioned when he took over the reins of Custom Machine and Tool Co., Inc. As Robert apprenticed alongside his father manufacturing sprockets, he gained valuable insights and began to develop ideas of his own on how he could grow the business through innovation. Remaining true to the values taught to him, Robert expanded the product lines to include timing pulleys, drive systems and components for the motion control and power transmission industries. Robert went on to invent and patent a revolutionary hub-to-shaft connection device, the Concentric Maxi Torque, which allows for precise component positioning and tight runout control on demanding applications, while at the same time retaining installation simplicity and without risk of shaft damage.



Weighing in together, Vande Berg Scales and Custom Machine and Tool Co., Inc. are producing more reliable, precise and cost effective equipment to better serve the needs of the motion control industry.

"We continue to achieve our mission through extensive manufacturing experience and expertise, strong administrative procedures, and a highly skilled, quality-oriented workforce," said Bennett. "Our management team coordinates these elements into an efficient manufacturing production system." **PTE**

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