Heiko Machine Tools LLC

This particular CWR machine is used for forming aluminum. (Courtesy: Heiko)
With a recent collaboration with a maker of cross wedge rolling machines, Heiko Machine Tools LLC is poised to offer its customers high-end equipment for the metal-forming industry.

By Kenneth Carter | Editor | Gear Solutions

ALTHOUGH HEIKO MACHINE TOOLS LLC HAS ONLY been around for three years in name, the experience behind that name speaks volumes to the customers it serves in the U.S., Canada, and Mexico.

And one of the ways the company serves its customers so well boils down to communication, according to Heiko President Joseph Kemple. “You’ve got to keep an open mind and your ear to the ground,” he said.

Heiko sells and supplies high-end, high-value European equipment to the metal-forming industry, as well as supplying the necessary support from its manufacturers in Europe, Kemple said.

CWR MACHINES
What has excited the Heiko staff recently is its collaboration with Smeral Brno a.s. in the Czech Republic. “We recognized their value to the marketplace and also the need for their technology in the marketplace,” Kemple said. “And so when we saw that and saw the technology they were offering, we jumped on it.”

Smeral had developed an efficient, high-speed gear blanking process using a rotary machine press, he said. When forging gear blanks, numerous steps and presses can be involved. Each step requires not only expensive presses, but tooling, loading/unloading, and the ensuing energy and labor costs.

“We learned that Smeral had perfected a cross wedge rolling (CWR) machine that forms a finished gear blank with a single rotation,” Kemple said. “In this process, a hot cylindrical blank is fed between two large rotating cylinders, which are equipped with specially designed forms.”

As the cylinders rotate, the hot blank also rotates against the cylinders as it feeds through, according to Tomáš Doležel, Smeral’s chief of commercial department. “The hot steel in the blank flows toward either end as the gears along the shaft are formed,” he said. “After that single rotation, the ends containing the excess material flow off the now fully formed gear blank and are sliced off. This is done within the CWR machine, so no other trimming press is required as there is no flashing to remove.”

ADDED VALUE
The collaboration is expected to add a lot of value for Heiko’s customers, according to Kemple. Heiko augments that support with its own technical team, which is proving to be an excellent combination.

“We communicate to Smeral what the customer actually needs,” he said. “A lot of times, the customer thinks they need something based on a previous experience, so we try to dig and ask probing questions to help the customer discover what they really need, which we then communicate back to Smeral. And Smeral comes back with some designs and some possible solutions. And then we set up the conference calls and the visits, and we come up with a solution that works best for that company. So we come in and help work with the customer to learn what they want and need from a business perspective as well as technology.”

And with Smeral’s CWR technology, customers will see that it conserves material and reduces waste, Doležel said. “It also increases the quality of the component material in comparison to standard castings,” he said. “That is, the successive forming used in CWR technology influences the internal characteristics of the material. Here material strings are led along the piece, which increases firmness and elasticity of the piece to levels higher than those of standard castings.”

SERVING MANY INDUSTRIES
Heiko serves the forging industry; the steel industry, which includes bars, pipes and tubes; the energy industry; the heavy automotive industry, people making the trucks; and general manufacturing, Kemple said.

Kemple said Heiko also can supply machines for its customers that make chips.

“We can supply them with machines to pull those chips out, separate the chips from the coolant, and we can clean the coolant, and they can use it again,” he said. “And of course, we can chop up and bale the chips, so they can get a high resale value for that scrap.”

Specifically for the gear industry, Heiko supplies straighteners, Kemple said. "Straighteners are used to straighten pinion gears,” he said. “These blanks that come off these Smeral machines, these CWR machines, after they’ve been machined and heat treated, then they can use our straighteners that we supply to straighten the shafts.”

Doležel said one of the challenges Smeral overcame was with the design of the forming tooling that covers the cylinders.

“The part drawings as well as the material specifications are used to design and manufacture these forms,” he said. “Obviously these forms are a mirror image of the parts ‘stretched out’ along the 2- to 2.5-meter long forms. Furthermore, several forging steps are effectively performed on the blank during this single revolution. To understand, if the blanking were done in a single step, the diameter of the cylinders would be the same diameter of the finished part, which is obviously not the case. Therefore, the Smeral design engineers calculate
BEING RESOURCEFUL

Kemple said Heiko has been impressed by the support it’s getting from Smeral, and as a result, he is quoting some large projects right now. “They’re (Smeral) going above and beyond developing solutions themselves for quoting the forging,” he said. “So they’re very, very resourceful.”

But Heiko’s employees are also tasked with being resourceful and “thinking outside the box” when it comes to giving customers what they need, according to Kemple.

Kemple noted a story of a sales meeting he attended before he came to Heiko. In that meeting, the company had turned down a customer because what they wanted didn’t fit a pre-determined sales goal. “The people within this one gear company made a decision based on information on a desk instead of listening to the customer, talking to the customer, and learning the customer’s true business needs,” he said.

And as the head of Heiko, Kemple said he has taken the lesson from that meeting to heart, because communication often can make all the difference. “Our integrity is finding the best solutions; that’s it in a nutshell,” he said. “We communicate, learn the needs, and communicate what we can offer including realistic delivery times.”

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