ToolingUpdate

Powdered-Metal Tool Steels Drive Sink Production

Elkay Manufacturing Co., Broadview, IL, employs a mix of hydraulic presses for drawing stainless-steel sinks and mechanical presses for trimming the drawn blanks. To maximize the number of hits between tool sharpenings on its trim dies, run on its four mechanical presses, the firm boasts of through-the-roof productivity gains thanks to investment in powdered-metal tool steels for its cutting inserts. Compared to using D2 for the inserts, the number of hits between sharpenings has doubled, according to tool engineer Daniel Erickson during a visit by *MetalForming* editor Brad Kuvin.

"Since we switched over from D2 to Vanadis 4 tool steels," says Erickson, "we've been able to get 50,000 hits per cutting edge on the trim tools, or 200,000 hits per tool before we have to remove the tool for sharpening. So while the powdered-metal steel is more costly, the reduction in maintenance costs and time easily justifies the switch."

Vanadis 4 is a powder metallurgy alloy (56-62 HRc) from Bohler Uddeholm, recommended for adhesive-wear applications such as that created by trimming the stainless-steel flanges at Elkay. Material thickness of the sinks ranges from 20- to 16-gauge.

Erickson orders the Vanadis 4 material in one of two ways: large 1-in.-thick by 48-by-24-in. plates from the Bohler Uddeholm warehouse in Rolling Meadows, IL; or it purchases smaller precut pieces locally from The Steel Store in nearby Elk Grove Village, IL. Elkay consumes two to three of the large 1-in.-thick plates per year just for its cutting inserts.

The Steel Store, where Erickson purchases smaller sections of tool steels, is one of 26 local service-oriented sources for small orders of tool steel that Bohler Uddeholm has established throughout North America. The stores, 10 in the United States, average in size from 3000 to 4000 sq. ft., and typically have just two or three employees. The customer base is typically within 10 miles of each store.

Formed and trimmed sinks ride the line at Elkay Manufacturing Co., Broadview, IL. At bottom sits stacks of untrimmed drawn sinks. For its trim dies, Elkay invested in powdered-metal tool steels for its cutting inserts. Compared to using D2 for the inserts, the number of hits between sharpenings has doubled.

The Elk Grove Village steel store operates three band saws, two rated for stock to 20 in. wide, the other for stock to 25 in. wide. This is in contrast to the Bohler Uddeholm warehouse that runs 11 band saws, processes $10 million in inventory annually, and stocks plate to 12 in. thick and to 36 by 144 in. on 2500 shelf locations. Its saw capacity is 40 in. thick, 60 in. wide.

When *MetalForming* toured the warehouse, we spied a new vertical milling machine that the firm uses to meet a growing market need in the Chicago area: die blocks with the edges chamfered or radiused. "More and more customers don't want just rough-cut die blocks," says Tom Bell, vice president and business area manager for cold work applications at Bohler Uddeholm. "With the vertical milling machine, we're able to supply a more finished product."

For more information on tool steels from Bohler Uddeholm, and on its steel stores, write no. 200 on your reader service card.