

An automated PROCESS

A brushing system can improve output and consistency when finishing and deburring metal

Deburring, brushing and graining metal by hand is a laborious, time-consuming task that often can produce varied and inconsistent results—a problem for companies that want to please clients with faster output and consistent products.

Workers at CAB Plastics, Brooklyn, N.Y., used to manually deburr and brush the finish on the brass and aluminum signs the company produces. Likewise, Kelsch Machine Corp., Belleville, Wis., previously had employees hand sand aluminum and steel machine parts for its customers.

Both companies eventually opted to automate their processes with SuperBrush brushing systems from SuperMax Tools, an Eagan, Minn.-based manufacturer of drum and brush sanders.

Automating deburring and finishing processes can increase production speed and maintain product consistency, which ultimately can affect companies' bottom lines positively, agree representatives from Kelsch and CAB Plastics.

Product consistency

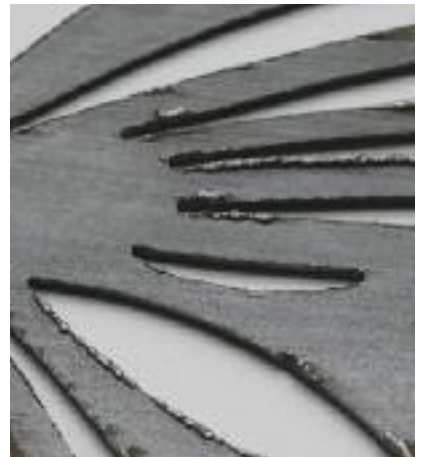
"We mostly did everything by hand" before purchasing the SuperBrush system

roughly 2.5 years ago, says Chris Bayer, owner of CAB Plastics. To make signs, the company puts finishes on metal pieces and deburrs them to remove anything an end user may not like, he says. CAB Plastics uses a 120-grit, 40-mil dense nylon brush on a 24-in.-wide SuperBrush machine.

Hand finishing is "somewhat of a skill as opposed to something that you are running through a machine," says Bayer. "There's a consistency factor." Consistency can change employee to employee, and it also can vary with a single employee at different times of day. Workers at 8 a.m. deliver different finishes than they do at 5 p.m. when they are tired. "I might be coming out with a product I couldn't use," he says.

Product consistency increased after Kelsch began using a SuperBrush earlier this year, says Bruce Kiesling, general manager at the company. It is easier overall to maintain consistency on the different machine parts the company produces using the brushing system, he says. In April, Kelsch purchased a 24-in.-wide SuperBrush with an 80-grit dense-wrap nylon brush.

SuperMax aims to help smaller, growing shops be more productive, says Warren Weber, vice president of the company. "If they are deburring an edge, the SuperBrush offers a very consistent finish as compared to hand sanding. If they are straight-lining or graining entire surfaces,



This cut was sanded using a drum or wide-belt sander.

Deburring/Finishing

The SuperBrush brushing system sanded these panels with a nylon brush.

it's exactly the same," he says. With its products, the company is offering businesses an alternative to completing work such as graining, straight-lining, deburring, slag removal, cleaning and aesthetic finishing by hand or outsourcing it, says Weber.

The 24-in. SuperBrush measures 52 in. tall, 46 in. wide and 35 in. deep. Brush speed can vary from 400 rpm to 1,200 rpm (100 rpm to 1,700 rpm with optional variable frequency drive). Parts as short as 3 in. can be brushed with the new vacuum hold-down model. The SuperBrush features a hinged steel dust hood with 4-in. vacuum ports and a reinforced steel conveyor bed and conveyor belt.

The SuperBrush also is available in 36-in., 49-in. and 52-in. sizes. Multiple brush types, including nylon, wire, flatter, Scotch-Brite and abrasive, are available.

Reduced time

Deburring and finishing parts by hand is much more time intensive than using an automated system, says Kiesling. He estimates the SuperBrush saves between 30 percent and 40 percent on time when compared with the hand-finishing method. "It's good for what it's designed for. We are getting everything out of it we asked for," he says.

The SuperBrush enables one or two workers to produce exponentially more products per shift with more consistency than if performing the same job by hand, notes Weber. A company using an automated system can "speed up their turnaround time dramatically," he says.

Being able to produce products at increased speeds is a competitive advantage for companies. "It's a very competitive market. You have to keep your eye out for new equipment" that can help the business, says Kiesling.

Indeed, CAB Plastics' clients are happy not only with the consistent product but also with the short production times, says Bayer. "They are noticing a time difference as far as getting things quicker, so the output is faster, and ultimately, the client is happy," he says.

Automating the deburring and finishing process with the SuperBrush increased production speed by at least 50 percent at CAB Plastics, says Bayer. "It's a great time saver.

Obviously, if you are doing things manually by hand and then you are able to do something by machine and come out with a desired result in much less time, why wouldn't you want to use it?" he asks.

Some companies also experience decreased turnover among employees after adding a SuperBrush machine, says Weber. When working by hand, "it usually is very dusty, very dirty, very truly labor intensive. Literally, a hard work to accomplish," he says. "To be able to just lay product on a conveying system and have consistency, that employee is much more efficient but also, in essence, happier because they are not as dirty, they are not as sweaty, they are not covered in dust."

Sample testing

SuperMax's testing lab ensures customers are able to achieve their desired finishes and results using the SuperBrush. "We run parts or their samples to show them the different effects" that the various brushes can achieve, says Weber. "We tell them what was done to it, what brush, the configuration, the machine settings, and give it back to them."

The company will modify or customize a brush, such as changing bristle density, bristle length or grit variations, to help a company achieve an exact finish. "We can do different density wrappings of the bristles. We can do different trim lengths of the bristles. We can do different core sizes so you can get different amounts of bristles," says Weber. There are "hundreds" of brush heads from which to choose, and they are available from 60 grit to 400 grit, he says.

"There's two basic ways we do sample testing. One is a customer will have a specific application and they want an exact finish," says Weber. "The other is the customer says, 'I don't know what I want. ... What do you have to offer?'"

Kelsch took samples of what the com-

pany wanted to achieve to SuperMax, and Weber presented the company with several options, says Kiesling. "He marked all the samples and kept track of everything and what he used on it so we could review it," he says.

The close documentation of the process in the sampling lab helps companies replicate the procedure later in their own facilities when training operators. SuperMax took the time "to get our people trained, get the machine here for us and select what we needed for our applications," says Kiesling.

The SuperBrush is easy to use, says Bayer. "It took a little while getting used to the machine, but they trained within a few hours," he says. Two operators work the machine at CAB Plastics.

"The intuitive nature of the equipment that we manufacture really helps to keep the learning curve pretty short," says Weber. A gauge displays the rpm of the brush, and one handle or button makes adjustments. The conveyor speed rate operates on a percentage scale from zero to 100 percent. "With the exception of our one largest machine, everything in essence has an analog readout. You literally turn a knob or turn a handle to match up with the speed or the percentage setting," he says.

The operators can run a sign "through the machine a couple of times at a certain speed, but essentially, there's not a great skill in it," says Bayer. "It's a matter of just letting the machine do its job." **FFJ**

CAB Plastics, Brooklyn, N.Y.,
718/385-1600, fax: 718/385-1187,
www.cabplastics.com.

Kelsch Machine Corp., Belleville,
Wis., 608/845-7090, fax: 608/424-1450,
www.kelschmachine.com.

SuperMax Tools, Eagan, Minn.,
651/454-3401, fax: 651/454-3465,
www.supermaxtools.com.