

May 2018

FF Journal

The magazine for today's metal fabricating & forming technologies

A TREND Publication

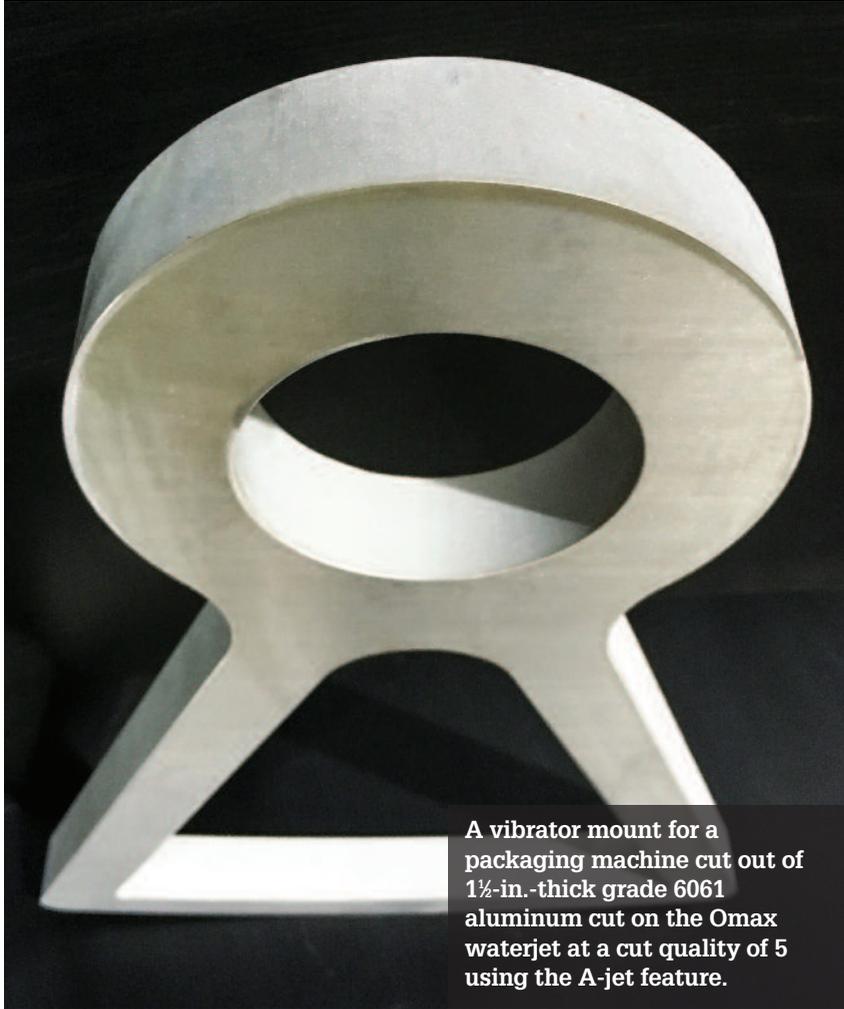
www.ffjournal.net

OUTER LIMITS

*NASA USES THE LATEST
IN METAL FABRICATION
TO WELD ROCKETS,
3D PRINT PARTS
IN SPACE*

WATERJET CUTTING

Shipping delays sent a fabricator on a frantic search for a reliable abrasive and found it from Barton International



A vibrator mount for a packaging machine cut out of 1½-in.-thick grade 6061 aluminum cut on the Omax waterjet at a cut quality of 5 using the A-jet feature.



Reliable resource

Shipping delays sent a fabricator on a frantic search for a reliable abrasive

Imagine a custom metal fabrication shop that cuts, forms, machines, welds and finishes hoppers and chutes and everything in between, using all types of metals, for the dairy and food processing industries, as well as the wastewater and pharmaceuticals sectors. A local farmer might even come in from the field needing quick fabrication of a bracket.

Now, imagine that fab shop running out of the waterjet abrasive upon which its business depends.

It nearly happened to Union Grove, Wisconsin-based American Metalcraft Industries (AMI), which unexpectedly had

to find a new source of waterjet cutting abrasives. "The majority of our jobs go through the waterjet," says Operations Manager Jim Sturino. "So that's the starting point for our work. If we run out of abrasive, our waterjets would sit idle and we would lose the versatility it provides."

In September 2017, shipping delays and lack of availability of the garnet abrasive AMI uses became critical. "We were concerned about our supply, absolutely. It



Setting the cut parameters on AMI's Omax 80160 Jet Machining Center.



Shown: Cutting 16-gauge stainless steel.

was getting to the point where we were worried about getting a delivery at all," Sturino says. "I think we were down to our last couple hundred pounds."

AMI turned to the sales team at Barton International, which suggested its 80 STL, a proven, general-purpose waterjet abrasive that had recently been introduced to the market. "They sent a sample, and we ran it through the waterjet—it worked perfectly," Sturino says. "We've been using it ever since."

"Barton STL is graded specifically for waterjet cutting," says Tom Riggs, Barton's waterjet market manager. "It is produced to our high-quality specifications and complies with the same strict health, safety and environmental standards as garnet."

"The reason we went to 80 STL was availability and packaging," Sturino says. "We are a small family owned and operated custom metal fabrication facility. We do waterjet cutting, welding, polishing and forming. Our work is based on what the customer needs, and every project starts production on our waterjets."

Perfect packaging

Barton struck a chord by supplying 80 STL in 55-lb. bags. In contrast, the previous abrasive supplier had sent an order in bulk bags.

"We have a 16,000-sq.-ft. building packed with machinery, and we were getting these huge 2,200-lb. bags," Sturino says. "We weren't set up for that."

The bulk packages that AMI had received were highly inconvenient because an employee would have to measure the necessary volume, scoop abrasive out of the bulk bag and laboriously load it into a hopper. This process delayed jobs on AMI's waterjets. By comparison, loading one 55-lb. bag into a hopper was quick and easy.

Beyond the extra time and labor of scooping bulk abrasives bucket by bucket, there was the heightened risk of contaminants making their way into the hopper.

Waterjet Cutting

Sturino explains that when AMI received the Barton 80 STL sample, the waterjet operator ran a trial to see how it would perform cutting a variety of metals. The shop calibrated its waterjet equipment to the proper abrasive flow rate after testing the product sample, as recommended by Barton. “Once the machine has been set, the stream should be good,” Sturino says. Calibration, he adds, “is very simple: It’s basically just going to the computer and making sure your machine parameters are set correctly. It’s probably a one-minute process.”

Barton stresses the importance of performing the machine manufacturer’s recommended abrasive feed test regularly because each abrasive, whether it’s a different grit size or type of abrasive, flows differently. “The cut quality tells us everything,” Sturino says. “So, we base our adjustments on the cut quality itself.”

“We are a prototype, short production-run shop, so we’re not running a lot of the same parts over and over again,” he continues. “Our customer base is very diverse. A large run for us is about a hundred pieces.”

Handling it all

When it comes to materials, AMI processes just about everything. Whether it is 16-gauge stainless steel or ¼-in. Lexan polycarbonate, or gaskets, the shop cuts it on one of its Omax waterjets. Common metals run through the waterjet include carbon and stainless steels, aluminum, brass, and copper—as well as nonmetals like tile, neoprene, butyl rubber and silicone rubber.

“It’s all about efficiencies,” notes Sturino. “We don’t have the time or opportunity to load a specific abrasive for stainless, a specific abrasive for copper, or a specific abrasive for brass. We need an abrasive that can handle it all.”

Using Barton 80 STL as AMI’s multi-purpose abrasive, Sturino says the shop could shift from cutting a 3-in.-thick piece of stainless steel one moment to cutting a piece of 22-gauge stainless the next. Cutting a more fragile metal like copper is a matter of handling it properly yet, even on copper, 80 STL performs quite well.

According to Sturino, when it comes to edge quality, metals cut with 80 STL have



Filtering Barton abrasive through a screen as it’s poured into the hopper.



Installed in the heart of Chicago, AMI fabricated this stainless structure that includes a water function to cool down visitors on hot summer days.

a good finish. Any burr on the backside of the cut is minimal. In fact, it can be removed with a file or a simple burr wheel. Waterjet cutting with 80 STL leaves a smooth edge, with an almost sandblasted finish of very high quality.

Barton 80 STL has helped AMI maintain production efficiencies. “We try to do a run of like materials all at once, sometimes for 12 or 18 hours straight,” Sturino says. “It is so important that we have an efficient flow of abrasive so there are no backups or clogs in the stream. A clog in

“It’s all about efficiencies. We need an abrasive that can handle it all.”

Jim Sturino, American Metalcraft Industries

the abrasive can cause holes not to be cut, edges not to be finished—and reworking that can be costly. Using 80 STL, we have not had any clogs.”

Just as AMI understands the value its clients place on responsiveness, so does Barton. “When it comes down to a reliable source of supply,” Sturino says, “we’re comfortable with Barton. Their customer service and product availability have been just great. They’re supplying us with a consistent source of reliable material.” **FFJ**

Barton International, Glens Falls, New York, 800/741 7756, www.barton.com.

American Metalcraft Industries, Union Grove, Wisconsin, 262/878-7561, www.ametalcraft.com.