

Using Barton's 80 mesh garnet, Rennline is able to adjust tooling and flow rates for each job as it comes.



# CLEAN consistency

Job shop discovers the difference between the right or wrong abrasive

**S**ince 1963, the sleek, two-door Porsche 911 with rear-mounted six-cylinder Boxer engine has been modified for racing and rallying but its essence has remained unchanged. Car enthusiasts covet the varying models and take great care when making it their own.

At Rennline Inc. in Milton, Vermont, three waterjet cutting machines run 14-hour shifts each day to meet the aftermarket motorsport accessories demand for German automobiles. Beyond that niche, other customers send in orders for work as varied as aerospace components, signs and intricately cut beer taps.

Waterjet is a clean and consistent cutting option for thick material but if the garnet

used during the cutting process is not high quality, abrasive clogs midstream can result in costly scrap. Garnet travels from a pressurized hopper into a mixing tube 20 ft. away, where it is mixed with high-pressure water, exits the tube and slices through material without applying heat.

Rennline's customers expect perfect results in short order. "We need to save all the time we can," Rennline owner Paul



**Barton International adheres to strict grading standards so abrasives consistently meet quality control requirements from one production run to the next.**

Jacques says. "Our customers want their parts yesterday, and it's our job to keep them happy."

Rennline cuts parts from aluminum, steel, Inconel, titanium and other exotic metals, alongside rubber, glass, wood, plastic and more. Jobs vary in type, tolerance and volume. "One hour we can be cutting thick exotic material holding  $\pm 0.003$  in. and the next job is roughing out a piece of

# Waterjet Cutting

wood. We're all over the place, but it keeps things interesting," Jacques says.

Rennline's shop team performed due diligence by trying out a number of garnet options. "We once had an 8-in.-thick titanium job with a nine-hour run time that developed a partial garnet clog in the middle of the run. We were unaware of this issue until the cycle was complete, revealing a non-conforming part. This was not a cheap piece of material to scrap," recalls Jacques. "Having to deal with garnet clogs due to dusty garnet is a major time waster."

## Keen on consistency

Cut uniformity is key when it comes to waterjet abrasives. OEMs prefer abrasives that follow strict grading standards so their brand of waterjet machines cut at the levels operators expect, says Thomas Riggs, waterjet market manager at Barton. Barton garnet abrasives are consistently graded from one production run to the next. "Our customers can depend on the fact that products they receive from Barton will deliver the same high performance and quality standards day after day and year after year," Riggs says. "Issues related to abrasive quality are running at a 0.016 percentage error rate—that equates to one issue out of 6,500 orders," Riggs says.

After perusing and testing the options, Jacques and the Rennline team felt that Barton's garnet cut cleanly and consistently, keeping costs under control because process hiccups became infrequent. "We use an 80 mesh garnet for everything, which is the middle of the road as far as coarseness," Jacques says. "This allows us to cut a wide range of materials without having the hassle of switching garnets." Switching garnet types is not an option for Rennline, which runs jobs that change from hour to hour.

Rennline has over 20 years of experi-



**Rennline Inc. fabricates parts as varied as aftermarket motorsport accessories, aerospace components, signage and intricately cut beer taps.**

ence in waterjet cutting and operators know how to push their speeds and feeds to the limit. "Our experience allows us to get creative with our tooling and flow rates," Jacques says. "We sometimes push the envelope and having a consistent garnet is a key factor in allowing us to do so."

## Online availability

Rennline uses Barton's e-store online for its garnet needs as well as replacement parts for its Flow waterjet. "We've actually been able to get replacement parts for our waterjets from Barton's online store quicker than from the manufacturer of the part," Jacques says. "It's an easy process to order consumables as well as replacement parts, and we can count on our order to arrive in a timely manner."

The fact that Barton's garnet is processed in the U.S. is also helpful. "Garnet is the bloodline for our waterjet business. We can't be waiting for a shipment to arrive by boat from India, for example," Jacques says. "Not only that, but it goes from the docks to a truck that then takes a couple of days driving cross-country to get to us—we don't have time to waste and need it here quickly." With 23 warehouses in the U.S., six in Canada and 10 in Mexico, Barton garnet abrasives are widely available

throughout North America.

Barton's e-store gives customers the option to shop at their convenience 24 hours a day. "We have a lot of customers that put in orders after hours and on the weekends," says Stephen Podnorszki, product manager of waterjet parts for Barton. "Customers like the ability to buy their abrasive as well as replacement parts online—it's a handy one-stop shop."

"We have two parts warehouses in Virginia and California and if we don't have a part in stock, we can drop ship directly from the OEM, giving us three different locations to ship from," he continues. "That's shorter lead times and less downtime."

Whether they are cutting parts for a \$165,000 Porsche 911 or a \$165 million Joint Strike Fighter, Rennline has one chance to get the job right. "Time is money and if our machines are down, I'm not happy," adds Jacques. "We try to stock most of our spares, but when something falls through the cracks and we need it fast, Barton pulls through." **FFJ**

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**Paul Jacques**, Rennline Inc.



**Consistent garnet quality allows Rennline to cut parts without second guessing quality.**