

# Shop's Diversity Rides On Waterjet Cutting



What does a 260 mph Ford Mustang funny car, a 48" manhole lid, a kitchen countertop, and a 56' semitrailer have in common? They all center around Brian Hough's shop, West Coast Steel Fabricators and benefit from versatile, affordable waterjet cutting.

Brian Hough's West Coast Steel Fabricators job shop extends beyond into three other divisions: OTI, Olympus Trailers and Cascade Truck Body & Trailer Sales. OTI manufactures equipment for wastewater treatment facilities; Olympus Trailers builds large motorsports and utility trailers; and Cascade Truck Body & Trailer Sales up-fits trucks for service and heavy-duty industrial use. Brian also runs his own NHRA Top Alcohol Funny Car racing team, Brian Hough Racing, where he is also the team's driver.

As the first of the four Hough enterprises, West Coast Steel Fabricators began operation in 1979 and does custom fabrication work that includes conveyors, bins, hoppers, tanks, trusses, ductwork, silos and much more. In essence, listing what products the versatile 50-person shop has not created would be easier. Besides his regular customers, Hough shares the shop's fabricating expertise and capabilities with all his other divisions, including the Top Alcohol Funny Car racing team.

A few years ago, Hough looked to expand and diversify his business in the face of the new economic reality. He wanted to expand his custom steel product offerings and elevate component quality to higher levels. That is when he incorporated his first abrasive waterjet cutting machine.



With abrasive waterjet technology, Hough now handles a wider range of production runs, including fast prototype development. He is able to quickly turnaround highly accurate parts without the hassle of tool changes or complex fixturing. Plus, as compared with his other production equipment, abrasive waterjet cutting generates much smoother surface finishes, which eliminates the need for secondary machining in many instances.

"I had long been interested in waterjet cutting, so when I was ready, I contacted OMAX. The company appealed to me because it is nearby in Kent, Washington and is a close-knit, family-oriented, United States-based company," said Hough. He chose the MAXIEM 1530, and "once I decided on a machine, OMAX had it here within three days, and that day, I was up and running."



"Where the MAXIEM really shines is in producing parts that are beautifully finished right off the machine. We have eliminated up to two hours of finishing time from most parts, as well as gained back the man-hours usually spent deburring and cleaning parts," explained Hough.

Prior to waterjet, Hough's businesses had relied on high definition plasma cutting. And while that process still accounts for a large amount of his daily operations, it is unable to compete with the MAXIEM waterjet in terms of accuracy, especially when cutting the shop's mild and stainless steel and aluminum.

"With our high def plasma we can get speed but not accuracy," said Hough. "With the waterjet, we can do the same amount of parts as with plasma, but when



the waterjet parts are done, they are done and have much higher quality finishes. So much so that we now have internal guidelines stating certain parts can only be produced using the waterjet machine, specifically those parts that will be customer facing. We want to show off these parts. It gives equipment a high-tech feel. Parts are cut perfectly and look beautiful every time," said Hough.

The trailers from the Olympus Trailers division benefit from the MAXIEM. These feature extensive aluminum constructions, including all aluminum framed cabinets with stainless steel countertops in work areas and heavy-duty aluminum doors throughout. The company's semi-trailers can measure up to 56' in length and feature lounges with DuPont™ Corian® countertops, drop-down LCD satellite TVs, full size refrigerators and even custom marble floors.

For his racing team, Hough uses the MAXIEM to help reduce the weight of his funny car, cutting precision parts such as motor mounts and brackets to his exacting specifications. NHRA drag racing is all about extreme straight-line speed. Teams like Brian Hough Racing look to gain every possible advantage, and Hough uses his waterjet machine for this purpose every chance he gets.

"When it comes to making parts for the car, the great thing about having the waterjet machine is how quickly I can go from idea to prototype. I can sketch out an idea and quickly turn that into action on the machine," said Hough. "We can turn around a new bracket to try on the car in rapid fashion. And if that doesn't work, we go back to the drawing board and come up with something new. The MAXIEM allows us to do a lot of experimenting in a very short amount of time."

As with his businesses, Hough has also had a winning formula on the track, becoming one of only nine drivers in

NHRA history to earn national event victories in both Top Alcohol Dragster and Top Alcohol Funny Car since the two classes were formed in 1981. He is also one of only nine drivers to net a Division 6 championship in Top Alcohol Funny Car since 1981, joining legends such as Brad Anderson, Bucky Austin and Pat Austin as the only multi-time winners during that time span.

In the shop, Hough's employees frequently experiment with new applications for the waterjet machine, working to accomplish even more with the equipment. They are now able to cut practically any type of material, from rubber to UHMW to aluminum to stainless steel and carbon fiber.

"We are now even cutting the wood for our skids with the MAXIEM waterjet," said Hough. "All our equipment ships out on wood skids, which require cutting prior to shipping. Thanks to one of our experiments, we recently switched to making those cuts with the waterjet. As a result, we took a job that previously ran between 7 and 10 hours and reduced it to only three hours. And because we complete the job so quickly, we have time to also cut our company logo into the pallets, which we had never done before."



"It is something that I look back on now and wonder how we were able to do it all along without a waterjet," he said. "The capability was something that we should have always had in the shop. We will definitely continue to move forward, and we are absolutely considering another machine, most likely with a larger table size. Our current machine is already used much of the workday, and as we market our machine's capabilities to clients in the area, it has become obvious that we will eventually see the demand for running two machines. When that times comes, I will certainly call OMAX."

**WEST COAST STEEL FABRICATORS**

**FOUNDED:** 1979  
**LOCATION:** Eugene, Oregon

**OWNER:** Brian Hough  
**SPECIALIZES IN:** Manufacturing motorsport & utility trailers and wastewater treatment facility equipment, up-fitting service trucks, and operating Brian Hough Racing, a Top Alcohol Funny Car NHRA Racing Team.

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