

# Behind the Scenes

with Kurt Hertzog



## Robust Tools

Because Brent English's father repaired shoes and guns, Brent had access to a shop with both hand and power tools and was exposed to hands-on creations from kindergarten on. By the time he was a freshman in high school, he had his own business making carry bags and powder horns for muzzleloaders. Labeling himself a "compulsive maker," this lifelong journey of designing and making things set him on the path to creating Robust Tools.

With formal training as a machinist and ten years in the trade, Brent set out to get an engineering degree. With his wife, youngsters, and a new house to remodel, he simultaneously finished a BS in Manufacturing Engineering and an MS in Industrial Technology Education—both with high honors. A few career stops later, he found himself working on wood fiber recycling at the Forest Products Lab.

It was a chance event of a gift to a coworker (who was an avid woodturner) that planted the seed for a new business. With a burl-covered box elder tree down on his property, Brent invited his woodturning coworker and some of his friends over to harvest the wood; they were kind enough to leave some of it behind for him. Having no lathe and only his experience turning powder horn end plugs in high school (on a pistol drill held in a vise on a wood screw), Brent turned the remaining box elder on a metal lathe. That rekindled a passion which required him to purchase a wood lathe—he ultimately ended up with an antique pattern maker's lathe. Brent began doing the craft circuit in 2000, selling his bowls and platters.

Brent's background in metalworking and machine design started him thinking about lathes, and in particular, what he thought was right and wrong about them. Encouragement to make his own lathe came from his woodturning friends. Self-taught to this point, he took a turning class from David Ellsworth and asked David if he would be willing to look at some lathe designs. With David's and Trent Bosch's design critiques, Brent began developing a woodturning lathe, not just for himself, but for production and sale to others. The assistance from them, along with feedback from three local turners, set things in high gear in 2004.

Brent journeyed to the AAW Symposium in Orlando in 2004 specifically to travel the trade show floor to see how he stacked up against the potential competition, as well as to determine if he could make a living manufacturing

lathes. (Note: Rocky Mehta started West Penn Hardwoods after a visit to the same Orlando symposium—see the first Behind the Scenes column in *Woodturning Design* #26, Summer 2010.) Brent decided that making a living this way was a possibility and planned to be at the 2005 Overland Park AAW Symposium with two lathes for sale. Robust Tools was created in 2005 by Brent and Deb English to design, manufacture, and sell woodturning lathes. The first model was the American Beauty.

The first Robust lathe was sold before the design was totally completed. Armed with only a line drawing, American Beauty No. 1 (the first production machine) was sold to a retired art professor who was moving from pottery to woodturning. (Note: Actually the first lathe still resides in the shop as a prototype and is lovingly referred to as "old number 1.") Production machine No. 2 was sold on the trade show floor at the AAW Symposium in 2005. No. 1 actually was on the floor as a demo machine and delivered after the show. Capitalizing on that meager start, Robust Tools sold five lathes that year.

The first Robust Tool "factory" was a 900-square-foot, two-car garage. Using part-time employees (along with Deb and Brent—Brent still at his full-time job), the company grew to a point where producing twenty-five lathes a year was severely taxing the 900-square-foot facility. That drove the move to a rented 2000-square-foot facility in Mount Horeb, Wisconsin, in 2008. From then until 2012, the company added not only sales but also models—the Sweet 16, the Liberty, and now the Independence—to the already established American Beauty. Production grew to 100 units per year and eventually that facility reached capacity.

The current location of Robust Tools is a former independent grocery store located right on the main street in the heart of Barneveld, Wisconsin. The building was available; it was purchased, remodeled, and eventually became the new Robust Tools headquarters in July 2012.

Three full-time employees, along with Deb and Brent, are now dedicated to the endeavor and are on track to deliver 120 machines a year. Projections indicate that the current facility should be capable of manufacturing 300 machines a year, along with their expansive array of tool rests. Though there aren't any new lathe designs to announce at this point, there have been discussions to venture into other aspects of woodturning.

Robust Tools lathes and the other products are American made (except for certain part numbers of the motor controller), a fact of which Brent is quite proud. Other than a few components that are out-sourced to nearby local experts with specialized machinery needed for production, he and his team fabricate the components onsite.

The lathes in the Robust Tools product line all carry a seven-year warranty. Their lathes and tool rests are not only sold direct, but they are also sold through a network of woodturning professionals and through the Woodcraft website. With a 75/25 split between lathes and tool rests, both continue to build a following among the woodturning community. You can see all the Robust Tools products on their website at [www.turnrobust.com](http://www.turnrobust.com).



Fig. 1. Located in Barneveld, Wisconsin (a small rural town of 1,100), Robust Tools is unique; most of the residents of the town commute the thirty miles to Madison for employment.



Fig. 2. Robust Tools is located in the heart of “downtown” in a building that once housed a small grocery store. It is literally in the shadow of the famous Barneveld water tower.



Fig. 3. Other than a small space for offices, the rest of the building houses a standard machine tool shop, complete with nearly everything needed to make most of the entire Robust Tools lathe family.



Fig. 4. Other than powder coating and a few specialty operations, everything is done by hand in small production batches. The entire production process flows based on the “small batch, built to order” concept.



Fig. 5. Each lathe being assembled is already sold and belongs to someone. The assembly and test area is in the middle of the building right in front of the old grocery store windows.





Fig. 6. Respectfully called “old number one,” the first production design prototype machine sits prominently on the shop floor. It is still providing service as a test bed for design ideas; it runs nicely and can still turn pieces.



Fig. 9. Here, the lathe bedways are trued using a task built belt sander with a traveling pressure platen.



Fig. 7. There is a three-man crew on the shop floor, but each person has his own area of expertise. They are all cross-trained, but still gravitate toward their favorite tasks. Here, the frame components are being welded.



Fig. 10. In addition to the various lathes produced by Robust Tools, there is an extensive selection of tool rests. A vast array of sizes, shapes, tool post diameters, and lengths are available for current- and past-model lathes.

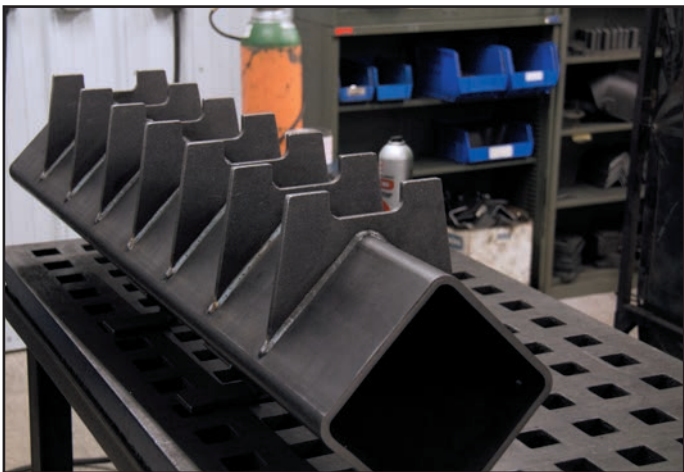


Fig. 8. The lathe that is under construction is ready to have the lathe bedways attached. Once the ways are attached, it will go out for painting and return for truing the ways.



Fig. 11. Similar to the lathes, tool rest production runs in batches; these tool rests are being readied for painting. The Robust Tools tool rests feature a hardened steel top rod to provide long life with minimal wear.





Fig. 12. Many of the product components require bending or welding or both. There is a host of welding jigs and fixtures along with shop-built bending equipment and tools to simplify the task.



Fig. 13. After the lathe beds are welded and the stainless steel ways are attached, they go out for painting. All the painting, except for the tool rest product line, is done by a local specialty painter.



Fig. 14. The original home of Robust Tools was a 900-square-foot, two-car garage with sufficient room to build only one lathe at a time. Floor space was cramped and production machine tools were limited.



Fig. 15. Once lagged to the skid and with the rest of the accessories fastened on board, the lathe will be shipped by common carrier to the new owner. Lathes are usually shipped once a week.



Fig. 16. Each shipping crate is constructed around the lathe. The skids, side panels, and bracing are designed to be prefabricated and stocked as component parts in inventory. Shipping is another designed assembly process.



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