

Hypertherm®

Fabricator automates tube cutting to drive productivity

Industry: Aquatic recreation and site amenities

Equipment: Rotary Tube Pro™, ProNest®



The company and products

Natural Structures fabricates “fun and excitement,” each and every day. The family business is in its second generation producing aquatic recreation products such as children’s water slides and splash parks. Other products in the portfolio include stainless steel fun slides, outdoor pavilions and site amenities including benches and bike racks.

Operated today by Jodie & Ted Hausotter in Baker City, Oregon, the company was founded in 1971 by Ted’s parents in Riddle Oregon; moving to nearby Sherwood in 1984. Later, an unexpected re-zoning of their leased building provided the opportunity for the family to step back and reassess their business, including both their location and the products they were producing. After careful consideration, they decided to purchase and renovate a vacant manufacturing facility in Baker City. The new facility allowed them to expand services to include metal fabrication, powder coating, and roto-molding capabilities.

Natural Structures continues its focus on splash parks, and today produces work for clients throughout the United States, Canada, and other international markets. One noteworthy installation includes a slide fabricated for Capital One, adding a fun-factor to their workplace.

The problem

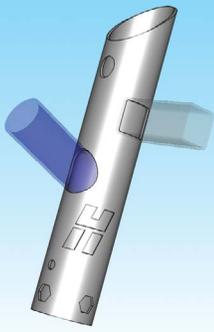
As the business continued to grow, this led to new clients with tighter tolerance requirements. “We needed to change our process capabilities to go from a tolerance of a sixteenth of an inch to a few thousandths of an inch on a repeatable basis,” said Jodie. Ted and Jodie again evaluated where they wanted to take the business and what resources were needed to make it happen. They knew this meant eliminating hand cutting of round pipe and becoming more efficient to increase productivity.

The solution

Working through a local machinery reseller over a period of six to eight months, Jodie and Ted evaluated their cut process options and eventually settled on plasma due to its combination of speed and cut quality over a range of material types and thicknesses. As for the table design, they selected a high precision plasma table incorporating both flat plate and rotary axis tube cutting capabilities. This table, incorporating Hypertherm’s EDGE® Connect CNC and HyPerformance® HPR400XD® plasma system, is programmed with Hypertherm CAM software using ProNest® for plate nesting and Rotary Tube Pro™ for automated tube and pipe cutting. “We knew about Hypertherm software because we’ve been using the ProNest nesting software with our existing plasma table for some years now,” commented Jodie.

The new cutting system positioned Natural Structures to achieve their required job tolerances and cut plate along with round, square, and rectangular tube and pipe from materials including mild steel, stainless steel and aluminum.

According to Production Supervisor Percy Dickerson, “Introducing Rotary Tube Pro was the main element and required our programmer to obtain training. Automated tube and pipe cutting was new for him, but he did have some prior CAD experience and was familiar with ProNest. Once he began working with Rotary Tube Pro, he found the intuitive menus very easy and straightforward to use, both when creating jobs using the parametric design tool and when importing parts in the 3D *.STEP file format created by SOLIDWORKS®.”



The benefits

Since implementing the new system, Natural Structures has experienced a significant improvement in their ability to process plate, tube, and pipe jobs, including those jobs with a higher level of detail than was previously possible. Also, to help ensure things continue to go smoothly, they have scheduled preventive maintenance and consumables replenishment programs, plus software maintenance that gets them all the latest updates and unlimited technical support.

Speaking directly to the rotary axis tube cutting capabilities of the new solution, Jodie stated “We can now process work faster and to tighter tolerances, and the Rotary Tube Pro™ software makes it easy to program tube jobs with intersections, delivering great fit-up.”

Percy added, “If you want to create production quantities of tube parts, Rotary Tube Pro enables it. We use it all the time, any chance we get. Now when we process a job, instead of measuring out tube, taking it to the saw operator, then taking it down to the fitter

for layout and drilling, with Rotary Tube Pro we just put the material on the machine and eliminate all those steps.”

Percy continued, adding “We used to use an ironworker to punch holes then finish them with a small hand grinder. But by using the automated True Hole® process available via the software, the bolts just drop right into the holes. We have a lot of uses for Rotary Tube Pro, including plasma etching for layout marks. It’s so easy. Now we’ve got fitters saying, ‘Hey, I want more of that.’ It makes my job way easier and I can go much faster. Now, one fitter can keep up with three welders, which is pretty significant.”

For more information, visit:
www.hypertherm.com

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