



Hypertherm®

Whale Tankers boost productivity and quality with ProNest®

Industry: Manufacturing

Equipment: ProNest®, HyPerformance® Plasma, HPR260XD®, EDGE® Pro



The company and products

Whale Tankers LTD. (www.whale.co.uk) of Solihull, West Midlands, United Kingdom, is Europe's leading waste tanker manufacturer. The company started life offering mobile welding services before moving into the waste vacuum tanker and jetting equipment market in the 1960's. The company currently sells to local government utilities and private contractors all over the United Kingdom and Europe.

Plasma production bottleneck

In 2001, Whale Tankers invested in a new plasma cutting machine with Hypertherm CNC control and plasma power supply. The machine came bundled with the manufacturer's original CAM system for offline programming. Following a review of the company's software needs by design engineers Steve Johnstone and Glenn Kemp, they identified ProNest as a new software candidate.

"We did some research on the Internet and identified two popular nesting CAD/CAM suppliers and invited the companies to present their offerings" stated Steve Johnstone. "The consensus amongst our team was that ProNest was by far the most powerful and easiest-to-use.

We were able to fully test-drive the ProNest software before making the investment."

Attention to detail

ProNest is able to integrate with Whale Tankers SOLIDWORKS® 3D CAD software which allows full 3D component and assembly design. Glenn Kemp commented "Our new products are now entirely designed in 3D, from scratch. For the fabricated parts that need to be cut on our plasma machine, the sheetmetal unfolding module within SolidWorks allows fast export of the flattened 2D shape to ProNest for full automatic nesting."

"ProNest also provides us with other valuable features. For example, many cylindrical parts have intersecting tubes. When flattened, the joining holes become elliptical and these are output as very small point-to-point moves which caused problems at the cutting machine. ProNest was able to 'smooth' and replace the many tiny straight lines with blended arcs instead. This led to improved motion at the machine and better cut quality."

Glenn added, "ProNest's excellent feature for 'tabbing' the cut-outs on internal parts is also useful. It is important that the centre slug is 'tabbed' into position, so sheet integrity is maintained when the flattened shape is rolled into its 3D form. Once this is done, the slug is manually removed by cutting the tabbed links so the hole is ready to receive and weld the mating component. Previously, trimming the part geometry to obtain the required tabs was time-consuming. With ProNest it is simply a matter of 'point and click'".

Return on investment

Commenting on how ProNest has helped the company, Steve Johnstone had the following to say. "We (the design engineers) like ProNest because it solved a handful of problems that were causing major delays in our throughput. Initially, as the design engineers, we had to spend our time using the prior software to generate nests for the shop floor because that program was just too cumbersome and complex to use in the production environment. Of course, as designers this distracted us from focusing on our main vehicle design tasks. With ProNest's user-friendly design it is ideal for shop-floor use, and it's now simply a matter of saving the CAD files on our network and letting the operators responsible for the cutting machine take care of the day-to-day nesting. In addition, material utilization has been improved greatly." Says Glenn, "The shop-based engineers can now use ProNest to quickly and automatically nest new parts onto remnants from previous jobs.



The nesting efficiency is much better than it used to be and faster. In fact, ProNest has contributed to a year-to-date savings on material cost of £32,000+, effectively paying for itself within 3–4 months of purchase.”

“Material handling of the skeleton material was also a major hold-up to the production cycle, requiring time-consuming manual torch cutup and removal from the machine bed”. Says Mark Nind, CNC programmer, “We purchased the Skeleton Cut-up module to overcome this bottleneck. ProNest automatically generates cut moves that cut the skeleton material into easy-to-remove “chunks”, sized to match our waste receptacle. When you add up that, this saves between 15–30 minutes per sheet in unloading time, over our annual production of 4,000 sheets, the labor savings alone is significant (25–50 man-weeks per year). This has also eliminated a hazardous task in the process.”

After attending a two-day training course Whale Tankers’ staff went straight into live production the same week. “ProNest is an ‘expert-system’ for profiling applications and we became productive immediately. A bonus was the cutting technology information came pre-optimised for our Hypertherm plasma power supply, so that cutting feedrates are precise for the material, thickness and size of the shapes we are producing. We no longer have to manually tune these at the machine.”

Glenn concluded by saying, “We manufacture in excess of 250 vehicles a year. Overall, ProNest has provided a major improvement to our production process and has paid for itself quickly”.

For a location near you, visit:
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One of Hypertherm’s long-standing core values is a focus on minimizing our impact on the environment. Doing so is critical to our, and our customers’ success. We are always striving to become better environmental stewards; it is a process we care deeply about.

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