

# Applications for Plasma Cutting Technology

**Industry:** Custom metal fabrication for the Energy, Nuclear and Defense Industries  
**Equipment:** HPR400XD® Mariner CNC and ProNest® 2010 software



## Hypertherm's Integrated Plasma Cutting Solution by Retro Systems brings \$220,000 of outsourced cutting back in-house

- Cut speed improvements of 2 – 3 times over the lasers, and 3 – 4 times that of the old plasma with secondary operations reduced by at least 50%.
- Outsourcing eliminated, saving \$220,000 over two years.
- Training new operators in two shifts minimizes training time and expenses.
- ProNest 2010 increases profitability by measuring outcomes and minimizing scrap.

### The company and products

Hutchinson Manufacturing is a large ISO 9001 compliant custom metal fabricator with 105 employees, doing business in Hutchinson, Minnesota since 1953. In addition to fabricating challenging custom jobs, Hutchinson Manufacturing also offers dedicated work cells in their 100,000 square foot facility for repeat contract manufacturing. Specialized to meet the demands of energy, gas and oil recovery industries, quality systems include 10CFR50 compliance to meet the stringent requirements of material dedication, testing and quarantine required by the nuclear industry.

### The problem

The outdated cutting technology of two ten year old CO<sub>2</sub> lasers and a 20-year-old ESAB Sabre plasma gantry drove outsourcing costs to over \$220,000 in two years. Material limitations of the systems and poor cut quality required any material thicknesses over 3/4" to be outsourced, which limited quality control and disrupted the production process. To meet the criteria for 10CFR50 compliance to grow their business in the nuclear industry, tight control of the cutting process with the ability to cut thicker materials, faster cut speeds, and significantly improved cut quality was needed. "Outsourcing so much cutting didn't give us good control of our schedules and quality, so we needed to make a change. We needed reliability with consistent cut quality, and fast speeds to crank parts out," commented Isaac Marceau, Vice President of Operations.

### The solution

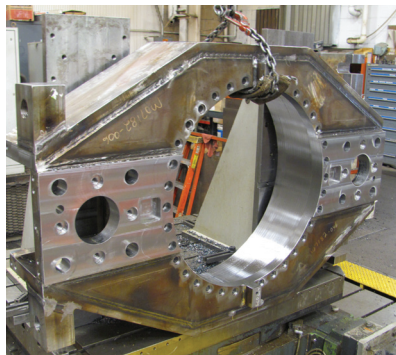
Isaac was familiar with the Hypertherm name, and requested quotes from four cutting machine OEM's. "The ESAB gantry was old and unreliable, with not enough power, and the newest laser was 10 years old. We understand proper engineering, so for our new cutting machine, we focused on precise motion and the rigidity of the designs." The Retro Systems MEGA HORNET 3000 met their specific requirements for quality. It was not the least expensive option, but still met their 2 – 3 year cost justification. The Retro Systems MEGA HORNET 3000 was configured

with the Hypertherm Integrated Plasma Cutting Solution including a HyPerformance® Plasma HPR400XD, Hypertherm CNC control and ProNest 2010 software. Working closely with Retro Systems and Central McGowan Inc, the local Retro Systems servicing dealer, Hutchinson Mfg. has built a foundation for a long-lasting partnership. "After the sale technical service is critical to our operation" states Isaac. "The Central McGowan automation team even assisted with the installation. The CMI office in St. Cloud is only 50 miles away, so when we need help, they are there for us."

### The benefits

"We saw immediate benefits from the investment, with cut speed improvements of 2 to 3 times over the lasers, and 3 to 4 times that of the old plasma," Isaac commented. Less heat buildup in the cuts has reduced warping, which was a recurring problem with the lasers when cutting thicker plate and the cleaner cuts have reduced any secondary processes by at least 50%. "Parts fit in vices with much less shimming, and we get higher part counts per shift with minimal rejects." These improvements have nearly eliminated outsourcing, reduced lead times, and enabled Hutchinson Manufacturing to extend production to two shifts.

"After using the system daily for 1½ years, we are still finding new advantages to it. ProNest 2010 helps us measure outcomes and keep our scrap factor very low, and we pass the savings on to our customers. We're considering cutting tubes, a new process for us, and training new operators takes less than 50% of the time it used to. With the Hypertherm CNC and Phoenix™ software, we can have a new operator up and running in two shifts. One shift for training, one shift for observations and on the third day they're on their own and do well."



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