Applications for Plasma Cutting Technology

Industry: Manufacturing
Equipment: HyPerformance® Plasma HPR130®

Robotic application integrated by Genesis Systems Group with HyPerformance Plasma drastically reduces lead times for manufacturer

- Taco Inc. is processing parts 40 – 50% faster than before.

- Extreme flexibility, smaller lot sizes and fast changeover times improve productivity.
- Robotic control in conjunction with the HPR130 allowed Taco Inc. to replace an individual stamping process, drilling process, and conventional plasma process.
- Labor, setup-times and lead times drastically reduced as a direct result of the purchase.

The company and products

Founded in 1920, Taco Inc., headquartered in Cranston, RI, develops and manufactures hydronic-based components (water circulation pumps, heat transfer products) for use in heating and cooling applications across the building spectrum – residential, commercial, industrial and institutional.

Taco Inc.'s wide range of hydronic and radiant systems and components include pumps, ASME certified heat exchangers, buffer tanks, expansion tanks, flow measurement devices, air separators and valves, and zone control products. It is also one of the best-known brands in the hydronic industry, long associated with continual product innovation and development.

The problem

Due to considerable growth year after year, the Heat Transfer Division located in Fall River, Massachusetts was struggling to keep up with daily production requirements for tank head subassemblies. Manual processing of tank heads required material to be transferred between five different work stations for hole drilling, stamping, conventional plasma cutting, fit-up and welding. Hole fit-up quality was a constant challenge that created bottlenecks downstream in the workflow at welding stations, and poor plasma cut quality with excessive dross caused porosity and leaks.

The solution

Taco fully revamped their sub assembly department to better align themselves with Lean Manufacturing concepts. The main focus was extreme flexibility, smaller lot sizes and fast changeover times. The centerpiece of this transformation was the purchase of two HPR130 plasma systems mounted in robotic cutting/welding cells. The flexibility of the HPR130 in conjunction with robotic control, allowed Taco to replace an individual stamping process, drilling process, and conventional plasma process with the HPR130.

The benefits

Taco realized immediate benefits from the new system. "Cut quality from the HPR130 is key to the success of both new cells." says Anthony DeMoura, Manufacturing Manager. "Before the new cells we had to stamp one hole, drill another and plasma cut others. The HPR130 in conjunction with the Fanuc robot were fully integrated by Genesis Systems Group to cut and weld all of the holes, in one setup. We are processing parts 40 – 50% faster than before. Robotic welding has been around for a long time but to accurately cut small holes can be a challenge. The ability to cut all holes from 17" diameter right down to ¼" is the only way automation would make sense for us. We wanted the cell to be capable of fully processing the parts. We have reduced direct labor and setup-times drastically and have been able to reduce our lead times as a direct result of the purchase of these cells. We have been so happy with the HPR's, that we purchased a new cutting table with an HPR and EDGE control and purchased an HPR400XD to retrofit an existing cutting table."

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