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

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
cchangeover 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.”

Applications for Plasma Cutting Technology

Industry: Manufacturing
Equipment: HyPerformance® Plasma HPR130®