

OPS 21

TOMORROW'S OPERATIONS —
FOR TODAY'S MANUFACTURERS



CASE STUDY - YULA CORPORATION

About:

Yula custom designs and fabricates shell & tube heat exchangers, with the goal to provide quality heat exchangers on time, and at competitive prices.

Employees:

20+

Website:

www.yulacorp.com

Location:

Bronx, NY

KEY IMPACTS

25-40%

REDUCTION IN WELD TIMES

20%

LESS AMPERAGE
CONSUMED

25%

REDUCTION IN
POST-PROCESSING

YULA'S OPS21 GRANT ENABLED THEM TO INCORPORATE TWO NEW SEMI-AUTOMATIC WELDING MACHINES INTO THEIR PRODUCTION. THE USE OF THE NEW MACHINES INCREASED EFFICIENCY (REDUCED WELDING AND POST-PROCESSING TIMES), IMPROVED THE AESTHETIC QUALITY OF WELDS, AND ALSO REDUCED WELD DEFECTS DURING FABRICATION.

GRANT TECHNOLOGY AREA: Robotics/Automation

CHALLENGE / OPPORTUNITY

Prior to this project, Yula faced challenges in their operations as the submerged arc welding process that they used required a cumbersome setup process, which was only applicable for the largest 10% of their heat exchangers. In addition, their outdated sub-arc machine was costly to maintain and operate. The TIG welding process was time-intensive and required significant training to meet the aesthetics expected in the pharmaceutical industry. Last, TIG welding requires lengths of consumables, so the continuous weld length was limited and required starts and stops while welders grabbed new weld wires.

SOLUTION

Yula Corporation purchased two new spray pulse MIG welding machines with the capability to semi-automate the manual TIG welding process they were using previously. These machines allow for digitally programmed welding attributes so that the welds can be fine-tuned to exactly what is needed for a job. In addition, these machines feed weld wire through a welding gun so that welds can be done continuously.



We knew we would see improvement in the direct welding time alone, but the gains from higher than expected utilization and reduction in post-processing of welds made us wish we had upgraded this equipment years ago.

Jason Feldman, Co-President, Yula

Photo by: Peter Wald Photography

RESULTS & INSIGHTS



COST SAVINGS

- Lowered operating costs: reduced power consumption, utilized 20% less amperage and reduced cost of annual equipment maintenance.
- Reduced weld time by 25-40% on applicable jobs, depending on tank size, resulting in lower job costs overall.



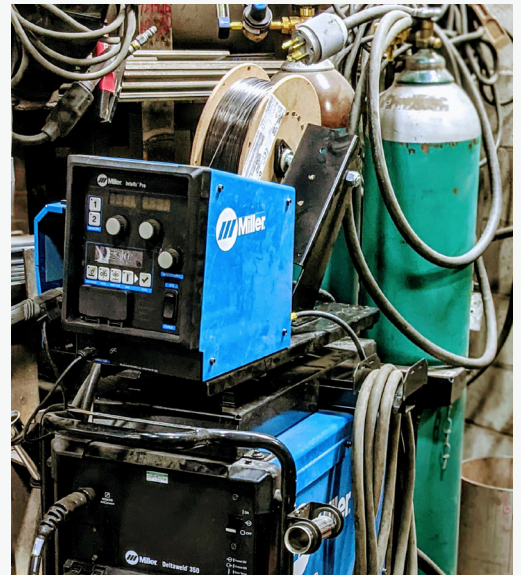
INCREASED EFFICIENCY

- Increased job efficiency and therefore production capacity, on applicable jobs, due to reduced overall weld times (25-40% noted above).
- Reduced weld times by over 50% for other related heat exchanger components (e.g. jacketing).
- Lowered cleaning and polishing time (weld post processing) by 25%, on applicable jobs.
- Avoided costly errors from material shifting due to weaker tack welds; tack welding is now quicker, easier to perform, and results in stronger welds.



IMPROVED COMPETITIVENESS

- Improved ability to competitively price jobs and to turn around jobs more quickly for customers.
- Increased aesthetic appeal due to smoother welds, which increases customer satisfaction.



Spray pulse MIG welding machine.



Spray pulse MIG welding close up.



Spray pulse MIG welding in action.

OPS21 PROGRAM OVERVIEW

Ops21 is a multi-faceted program designed to help NYC manufacturers learn about and adopt advanced technologies, specifically advanced materials, robotics, and digital manufacturing. It is part of the greater Futureworks NYC initiative, which aims to help manufacturers embrace advanced technologies and increase local production.

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