

# Designing a Manufacturing Process For an Electrical Systems Manufacturer

## CHALLENGE

An electrical systems manufacturer of Pad Mount Transformers for the electrical industry was faced with an underperforming, premium-cost metal part contract manufacturer that was no longer a good match for their company. The manufacturer realized that to be successful in the future, they needed to find a new partner with lower costs and more efficient processes. Once it was time for a contract renewal, the manufacturer started looking for a new partner that better fit their needs.

The manufacturer needed a supplier that could design a flexible yet robust manufacturing process that could deliver manufacturing and freight cost reductions.

## SOLUTION

The electrical systems manufacturer conducted a rigorous quote, supplier evaluation and negotiation process to find a new partner to help them further their success and reduce costs. Through the process, they selected The Metalworking Group (MWG) to be their new partner.

The manufacturer picked MWG because their proposal provided better value to their company, including design and process change capabilities, manufacturing cost reduction, stocking programs, and freight cost reduction.

Brian Dubay, President at MWG stated “Once we met and discussed their business, we felt MWG would be a good partner for the project because our capabilities matched exactly what they were looking for in a metal contract manufacturer.”

## SITUATION AT A GLANCE

- An electrical systems manufacturer needed a new contract manufacturer to help reduce manufacturing costs and improve processes.
- The manufacturer’s current metal part contract manufacturer was an underperforming, premium cost contract manufacturer that no longer fit their needs.
- When it was time for a contract renewal, the manufacturer conducted a rigorous process to find a new partner.
- The manufacturer picked The Metalworking Group (MWG) as their new partner because of their ability to deliver cost savings and their efficient processes.
- MWG worked with the engineering and sourcing teams to design a new manufacturing process.
- MWG helped reduce costs, allowing for capital investment, and saved the manufacturer \$544,000 in 24 months.

## APPROACH

Once MWG was selected, they started by evaluating the manufacturer's process and analyzed where they could make an impact. The electrical systems manufacturer had a combination of high-mix part numbers paired with low, medium, and high-volume production runs. Working with the electrical manufacturer's engineering and sourcing teams, MWG designed a manufacturing process that was flexible and robust to account for these parts. This kept Work in Process (WIP) and Finished Goods (FG) to a minimum with only two weeks' worth of parts on-hand at any given time. This allowed the manufacturer to free up cash to focus on other aspects of their business.

MWG created new Robotic Welding Fixtures, including upgrading the Weld Robots and having them certified. In addition, MWG created special forming dies using lasers to locate the parts to due to the unique geometry of the parts.

To ensure an efficient process and 100% inspection rate, MWG created a 1-pc flow with conveyors between the robotic weld cell, the hand weld cell, and the Fluorescent Penetrant Inspection (FPI) weld testing.

As MWG continued to learn the parts and refine the processes, the team created a VAVE project that reduced overall costs and allowed for significant capital investment.

## RESULTS

As a result of the partnership between the electrical systems manufacturer and MWG, the manufacturer saved \$544,000 in only 24 months. The new design and process change yielded 16% savings from the previous vendor.

The Engineering Manager stated "MWG worked seamlessly to get to know our business and design a process that fit our needs. They acted as an extension of our team and ultimately helped us save money to help serve our customers better."

The electrical systems manufacturer and MWG continued to make these parts for six years until the company was purchased by another company and changed plant locations.

## PROJECT HIGHLIGHTS

- Project Scope: \$3.4 million
- Duration: 24-month initial contract
- Solution: Design and process changes
- 5,500 sq ft Lean Manufacturing Cell
- \$84,000 Capital Equipment Purchased (Press Brake (2), Arc Spot Welders)
- Project Ramp Up: 12 weeks



Pad Mount Transformer



Pneumatic Weld Fixture



Robotic Weld Cell