

Wiegand Fabrication — Manufacturing Solutions

Case Study

Wiegand Fabrication meets customer requirements for cutting cost and decreasing product delivery lead times.

Wiegand Fabrication was tasked with the job of building a number of structural frames, with a cubic size of 54" x 40" x 44", from 2" x 2" x 1/4" structural steel tubing. The problem with the current method of manufacturing was the inconsistency between part fit-up and having multiple processes take place on the part before welding. The other issue that stemmed from the inconsistency of the part fit-up was the time that it took to actually fabricate the assembly. All of these issues are points that Wiegand Fabrication addresses during the fabrication of the frame.

Our Solution

Wiegand Fabrication first addressed the issue of inconsistency. To do this a tooling fixture was made and all of the end of the tubes were finished machined to length and angle. By machining the ends, the process provided a consistent and very accurate method as compared to saw cutting the tubes to length.



Also, many of the tubes needed to have through holes drilled in them. Since the parts were already in the machining center, the holes were drilled during the same operation that the tube ends were cut. There was a tremendous savings by not having to handle most parts multiple times. Wiegand Fabrication also used extensive rigid fixturing for securing the weldments. A fixture plate was designed for the sole purpose of fabricating this particular job. Since there were to be subsequent orders, the decision was made to invest in a more permanent fixture



Challenge

Fabricate customers project while increasing part accuracy and cutting part cost.

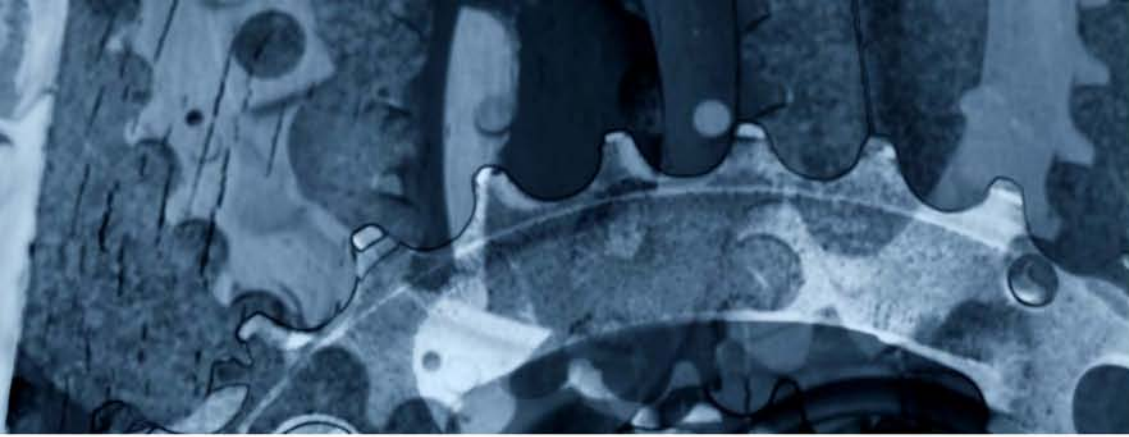
Solution

Utilize different manufacturing methods to produce the component parts faster and hold a tighter tolerance.

Results

- Production was streamlined
- Part accuracy was increased
- Successive machining operations were reduced
- Overall cost was reduced

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system. This gave us a very rigid platform to work from when it was time to assemble the component pieces. The tolerance of the tubes also attributed to a very close and repeatable fit-up prior to welding.

In Conclusion

Our method of machining the tube ends greatly increased the bottom line of the product in two distinct ways. First our overall tolerance for tube length and angle was held much closer than previous methods. We were able to depend on the tighter tolerance when it came to the



actual fit-up of the weldments. Providing for a much more accurate and repeatable end result after the fabrication process was completed. The second advantage to machining the tube ends, was all of the thru-holes and bolt clearance holes were machined at the same time the ends of the tubes were trimmed. This saves the fabrication process from multiple handling of parts.

Altogether, the parts were produced faster, more aesthetically and accurately, and there was an overall cost saving to the final product.

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