



CUSTOMER TESTIMONIAL

A Win for Waterjet



Job Overview

Company Al Qimma Equipment Company

Location Jeddah, Saudi Arabia

Challenge Faced quality issues with laser cutters, including material distortion and burns, leading to higher production costs due to extensive secondary processing.

Project Overview

Al Qimma Equipment Company, based in Jeddah, Saudi Arabia, specializes in manufacturing heavy machinery and building block materials for various industries. Initially equipped with advanced laser cutters (5kW, 6kW, and 20kW), the company expanded their cutting capabilities by incorporating a FLOW Hyperjet Intensifier 50HP waterjet cutter.

Challenge/Problem

The company faced quality issues with laser cutters, especially when processing specific materials like heat-treated metals. These problems included material distortion, warping due to heat, and burns from the oxygen gas used in laser cutting. Moreover, differences in kerf width at the top and bottom of laser cuts led to poor-quality parts requiring extensive secondary processing, which drove up production costs.

Solution

Al Qimma turned to waterjet cutting technology to address these challenges, specifically using GMA ClassicCut™ garnet with their waterjet cutter. This switch not only avoided heat-induced damage but also increased the cutting speed and efficiency of their operations. The waterjet's cold-cutting process produced smoother finishes and reduced the need for reworking, thereby saving time and costs despite the higher operational expenses of waterjet technology.

Comparison photos of cutting-edge quality using Laser and Waterjet:



80mm thick A36 metal cut with LASER using Oxygen.



30mm thick A36 metal cut with LASER using Oxygen.



HARDOX 12 mm metal cut with LASER using Oxygen. In this photo we can clearly see the burning of metal piece at the bottom portion of the work piece.




HARDOX 450 - 40mm HARDOZ material cut with waterjet machine. This photo clearly shows that no burns occur during the cutting process.


Project Outcomes

The company achieved a substantial improvement in the quality of the cuts, which directly enhanced the integrity and precision of the manufactured parts. The waterjet technology provided consistent kerf and superior edge finishes, substantially reducing secondary processing needs. This improvement led to cost savings and increased competitiveness in the market.


Project Highlights

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Exceptional Quality and Speed Utilizing GMA ClassicCut™ garnet in their waterjet cutter enhanced both the speed and quality of the cuts.

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Cost Efficiency The higher cost of daily operation was offset by the reduction in secondary processing, making the overall financial impact favorable.

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Material Versatility The waterjet cutter proved effective across a diverse range of materials, particularly heat-sensitive ones, without compromising on quality.

Lessons Learned and Future Prospects

Al Qimma Equipment Company learned that while laser cutters offer speed and initial cost benefits, they cannot solely rely on them for all materials, particularly for heat-treated metals and when high-quality finishes are crucial. The company plans to prioritize waterjet cutting for materials requiring high-quality finishes and for clients demanding superior quality parts. Despite the popularity of laser cutters in the Middle East, Al Qimma advocates for the adoption of waterjet technology for its superior cutting quality. The firm acknowledges that while waterjets have higher operational costs, the reduced need for additional processing with lasers brings the overall costs in line, making both technologies viable depending on specific needs and applications.



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