

## WAVEFORM CONTROL TECHNOLOGY™

# Frontline Australasia Case Study

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### FRONTLINE AUSTRALASIA



#### – CHALLENGE –

Maintain and reaffirm Frontline Australasia's position as a leader in welded goods manufacture. Increase capacity while reducing reliance on skilled welders and ensure high quality and repeatability. Restructure manufacturing to reduce manual lifting and handling of product as well as significantly reducing turnaround time.

#### – SOLUTION –

Lincoln Electric dual robotic cell driven by two Power Wave<sup>®</sup> 455M's as an integral part of a re-structured production line.

#### – RESULTS –

Substantial increases in production from approximately 150 towbars units per day (using Frontline's older single cell units) to 250-300 units. Reducing the lifting/handling of units from twenty-two times to just two, while ensuring repeatability.



Frontline Australasia manufactures and supplies precision components and assemblies for both domestic and overseas markets for clients in the aircraft, automotive and defence industries. Frontline manufactures approximately 90 different models of towbars, sportsbars and rear protection bars for many of the biggest names in the automotive industry – Toyota, Mitsubishi, Ford, Holden and Kia/Hyundai.

Frontline has recently embarked on a major re-development of their manufacturing facilities, including moving to a new purpose-built site, to significantly improve capacity and reduce lifting/handling of the product typically from twenty-two times to just two.



As a major part of this re-structure, the Lincoln Electric dual robotic cell unit - with another coming on-line in the near future - has significantly reduced cycle times on the highly complex towbars Frontline manufactures compared to that of their older single cell robotic technology.

"We have a strong reputation in this industry and we needed to increase capacity to keep up with demand," said Paul Lavall, Engineering Manager at Frontline Australasia.

"Towbars are highly complex in construction and, of course, require stringent safety standards. There are dozens of welds per unit. Typically, we have reduced our cycle times from 17 minutes down to about 9 minutes with this machine."

**"As a result, typical production turnaround times have shrunk from 3-4 days to 3-4 hours."**

"Repeatability is also an important factor ensuring consistently high standards. Unlike our older single cell robotic units, the Lincoln Electric robotic cell is calibrated to its skid base ensuring the machine always 'knows where it is'", said Paul Lavall.

“ With the other robotic units we have, the suppliers know robotics not welding. When something goes wrong with the welding, they don't know the issues involved in welding and can't even talk the same language. This is where things really fell down in the past. Having Lincoln Electric as our welding technology provider ensures that we have an expert in welding technology with robotics capabilities. ”

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“Once the weld parameters are set the quality does not diminish like a manual process - it doesn't get tired.”

Precision is important for Frontline, not only in ensuring Australian welding standards are met, but also protecting the organisation's hard-earned reputation for knowledge and expertise in manufacturing welded product. “We don't have weld quality issues and we never have a failure with the Lincoln Electric cell. Our customers are extremely happy and we like to keep it that way.”



According to the Frontline, automating the production line not only alleviates the skilled welder shortage, it also reduces the risk for the company. “Manual welding is hard on the body – fumes and burns. Automating takes out that risk,” said Mr Lavall.

“While in some respects we need less of the skilled welders that are so difficult to find, there are new sorts of roles that require great skill like programming – but it is less stressful on the body.”

Frontline Australasia use a wide variety of Lincoln Electric products – 17 in total. When asked why they implemented Lincoln Electric robotic cells, Paul cited Lincoln Electric's welding expertise as a primary reason.

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“With Lincoln Electric, help is always at hand. We moved over Christmas and we had support throughout the entire process from our Lincoln Electric representative – he was great!”

In regards to the programming of the Lincoln Electric robotic cell, programmer John Cini said that while it was somewhat more complex with the dual robotic cell - as the two robots needed to be coordinated - the system was intuitive to operate. “It is very user-friendly. We have not even scratched the surface of what this thing can do, too. We have not reached anywhere near its full potential.”



## WHAT IS NEXTWELD®?

*The challenges facing industrial fabricators today are increasingly difficult. Rising labour, material, and energy costs, intense domestic and global competition, a dwindling pool of skilled workers, more stringent and specific quality demands.*

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*for applying technology to improve the quality, lower the cost and enhance the performance of arc welding processes. Advancements in power electronics, digital communications and Waveform Control Technology™ are the foundation for many of the improvements.*

*NEXTWELD® brings you a series of Process, Technology, Application and Success Story documents like this one. NEXTWELD® explains how technologies, products, processes and applications are linked together to answer the important questions that all businesses face:*

- How can we work faster, work smarter, work more efficiently?
- How can we get equipment and people to perform in ways they've never had to before?
- How do we stay competitive?
- How do we maintain profitability?

*NEXTWELD® is the future of welding, but its benefits are available to you today. Ask your Lincoln Electric representative how to improve the flexibility, efficiency and quality of your welding operations to reduce your cost of fabrication.*



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