

ISSUE 16 - MARCH 2024

QUARTERLY NEWSLETTER FROM AUTOMATED SOLUTIONS AUSTRALIA

AXIS

MEET THE  
ASA TEAM  
**SAM NOTHNAGEL**

EXPLORING  
INNOVATION AT  
**FANUC AMERICA  
HEADQUARTERS**

ROBOT IN FOCUS:  
**FANUC  
M-2000IA/2300**



# FROM THE **DIRECTOR'S DESK**



## Welcome to this quarter's edition of Axis, your newsletter from Automated Solutions Australia.

**As we navigate through the transformative world of automation and robotics, our goal remains to keep you informed, inspired, and engaged with the latest developments and achievements in our industry.**

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*"We invite you to dive into these stories, gather insights, and maybe even find that spark of inspiration for your next project."*

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This edition is packed with insights and stories designed to spark curiosity and encourage further exploration into the possibilities automation offers. We're excited to spotlight the FANUC 2000iA/2300 robot in our Robot in Focus segment. This piece delves into the capabilities and applications of one of the most versatile robots in the market, highlighting how it's revolutionising manufacturing processes across various sectors.

Our Customer In Focus segment features Laminex, showcasing their remarkable journey with us and how our collaborative efforts have led to groundbreaking achievements in their operations. It's a testament to the power of partnership and innovation.

Meet Sam Nothnagel in our Meet the Team section. Sam's dedication and expertise have been instrumental in driving our company forward. Get to know the person behind the success and what motivates him to push the boundaries of what's possible in automation.

We also take you behind the scenes of Michael Boonzaayer and Brenton Martin's trip to FANUC America Headquarters in Rochester Hills, Michigan. This visit marks a significant milestone in our ongoing commitment to staying at the forefront of technological advancements and strengthening our relationship with FANUC.

Lastly, don't miss our feature on robotic welding. This article sheds light on the innovative approaches and benefits of integrating robotics into welding processes, a game-changer for industries looking to enhance precision, efficiency, and safety.

We invite you to dive into these stories, gather insights, and maybe even find that spark of inspiration for your next project. Your feedback and questions are always welcome, as they drive us to improve and evolve.

Thank you for your continued support and partnership. Here's to exploring the future of automation together.

Warm regards,

**Pat Green, Director**

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# CUSTOMER IN FOCUS: LAMINEX

**Laminex has been an iconic Australian brand for over 85 years. Growing from a small tin shed in suburban Melbourne fabricating insulating sheeting for electrical circuit boards, it has evolved to the large-scale operation it is today with multiple manufacturing plants right across Australia. The company is known for its longstanding expertise as a leading manufacturer in top quality decorative surfaces, and the company's success can be attributed to an ongoing focus on product and manufacturing innovation.**



Throughout its history, Laminex has continually adapted, reinvesting in the skills, safety, performance, and capacity of its plants through new equipment, training and development. The company's evolution began following World War 2 when founder Robert Sykes began to look to adapt his techniques to make new products. He traveled to the USA to research the fabrication of decorative laminates and began producing Australia's first interior décor product range in the late 1940's.

With Australia's cities booming, new house builds burgeoning and the need to produce affordable furniture escalating, Sykes' foresight to innovate was astute. He established the Cheltenham factory in 1952 and installed a cutting-edge hydraulic press to enable quicker production and expansion of the product range to meet market demand and improve returns.

The quest to improve and streamline production continues today. Product quality and consistency is paramount and is carefully monitored throughout the manufacturing process from raw materials to finished product. These days, production is aided by robotics, and Automated Solutions Australia partnered with Biesse Australia to provide Laminex Australia significant benefits through an automated system designed to improve throughput.

For this specific opportunity, Laminex was looking for a highly versatile solution to handle varying load sizes including a full panel or a steel sheet, smaller panel configurations and all the cut panel configurations.

ASA installed an automated manufacturing cell employing a Fanuc R2000iC/270F robot complete with a vacuum gripper enabling it to perform multiple operations. To extend the robots along the X axis, the cell includes a floor mounted rail incorporating a servo drive

motor controlled by the robot, caterpillar track to allow the cables and hoses to move with the robot and a robot carriage plate for mounting the robot.

The cell controller incorporates an Allen Bradley PLC, a PILZ safety PLC and Ignition HMI. The PLC is programmed to interface to a highly functional operator control station and diagnostic terminal for the cell, as well as monitoring the cell safety devices and machine access door interlocks using specialty safety I/O cards connected to the overall control system.

In addition to a long reach of 2655mm, the Fanuc R2000iC/270F robot also has a large payload of up to 270kg, boosting its flexibility and enabling it to handle a full panel or a steel sheet, and also the smaller panel configurations with suction cups for all of the cut panel configurations. The robot is also able to tilt panels for operator inspection of the underside in the infeed area. Depending upon the stage of operation and the operators determination of the panel quality, the robot returns the panel back onto the infeed conveyor to head into the trimming facility, it is then either stored as accumulation stock or it can be rejected.

This facility allows Laminex to offer cut to size panels to the customer, from 600 x 600mm in 300mm increments, up to a size of 1800 x 3600mm.

A reject panel is one that for whatever reason, has been pressed with a visual blemish. By handling the panels with the robot rather than the moving them by conveyor, the boards are inspected firstly on the top surface prior to being flipped and tilted by the robot for close inspection on the underside of the panel.

The robot services the inspection area, a panel storage that can hold many hours of production, and the outfeed area.

The storage area can store and retrieve panels from a storage area allowing for storage or rejected panels and incomplete batches. The scheduling software managed by Biesse and Laminex can continue to feed the saw from the incoming production press or from the storage area when the press is stopped. In the event that the saw is stopped for cleaning and servicing, the press can continue to operate with panels being sent to the storage bays.

Panels that have been trimmed in the saw are picked from the outfeed conveyor by the robot and stacked perfectly onto outfeed pallets ready to be strapped and shipped.

The saw removes sharp and messy edges from the panels prior to handling and the robot removes the challenge of handling panels which weigh up to 180kg per piece all within the cycle time of the press that produces the panels.

The main benefits to Laminex of this automated process is the increased quality and throughput they've achieved. Eliminating manual handling and servicing the inspection area robotically has provided a significant reduction in the time and effort required to process the panels whilst improving quality control.

The successful results achieved by this automation has meant the cell is now just another step in the process that delivers world's best decorative surfaces from Australia to the world.

As further testament to their success story, in 2018 Laminex was recognised in the Architecture and Design annual survey as the eighth most "Top Trusted Brand", as well as being voted the number 1 top trusted brand in the Laminates, Solid Surfaces and Veneers category. These accolades indicate how the brand leads the way within the industry demonstrating social, safety, and environmental responsibility.



## EXPLORING INNOVATION & FESTIVE CHEER AT FANUC AMERICA HEADQUARTERS

**As the holiday season enveloped the air with its warmth and merriment, our Process Engineering Manager Michael Boonzaayer, and our International Business Unit Manager, Brenton Martin, embarked on a journey that seamlessly blended professional exploration with the joy of the festive season. Their destination? The renowned FANUC America headquarters, a beacon of innovation in the realm of automation, located in Rochester Hills, Michigan.**

Their visit to the customer experience centre at FANUC America was nothing short of awe-inspiring. Surrounded by the latest advancements in robotics, CNC systems, and factory automation solutions, Michael and Brenton found themselves immersed in a technological wonderland. From collaborative robots redefining human-robot interaction to machine learning algorithms optimising performance, the duo witnessed firsthand

the evolution of automation technology. It's incredible to think the advances that have been made since they last visited 12 months ago.

However, their visit wasn't solely focused on admiring cutting-edge machinery. It was also an opportunity to connect with industry peers and continue to foster meaningful relationships. Conversations

flowed effortlessly as they exchanged experiences and insights with friends and colleagues from FANUC. Amidst the hustle and bustle, the spirit of Christmas permeated the atmosphere, adding an extra layer of warmth to the proceedings.

As the pair departed FANUC headquarters, they carried with them a renewed sense of purpose and determination. The experience had not only deepened their understanding of automation but also reaffirmed their commitment to driving industry progress. Armed with newfound knowledge and inspiration, they returned to Australia, ready to embark on new projects and initiatives aimed at pushing the boundaries of innovation and delivering sovereign capability to local manufacturers.

# MEET THE **ASA TEAM** - SAM NOTHNAGEL

## CRAFTING AUTOMATION, ONE PIECE AT A TIME

**This month, we had the privilege of sitting down with Sam Nothnagel, one of our exceptional employees based out of the Melbourne office at Automated Solutions Australia. Sam's journey into the world of robotic automation has been nothing short of inspiring, and his insights shed light on the exciting innovations happening within our organisation.**



Sam's background is as diverse as it is interesting. With a history as a college volleyball athlete and experience in composite manufacturing and mould production/machining, he brings a unique skill set to ASA. As an Automation Engineer, Sam has found his niche in the mechanical design aspect of our projects, where he thrives on creating tangible solutions to complex problems.

What drives Sam's passion for robotic automation is the ever-changing nature of the field. "It's always something new," he shares. "I love being able to work with technology and always love the chance to solve a problem in which the solution is tangible and you can see the outcome."

One of the moments that made Sam particularly proud of his work was when the first parts he designed arrived, and everything fitted together perfectly. It was a testament to his hard work over the preceding months, and it brought a sense of fulfillment that only comes from solving complex engineering puzzles.

A typical day for Sam at ASA starts with a cup of coffee at his desk, checking emails to kickstart the day. Depending on the project's stage, he could be collaborating with fellow engineers on detailed mechanical designs or assembling crucial components.

Sam's key responsibilities at ASA revolve around mechanical design, including end-of-arm tooling, gripper stands, and other elements within robot cells. His dedication to precision and innovation is evident in the solutions he crafts.

Currently, Sam is working on an exciting project involving a rail and robot capable of handling a variety of components,

showcasing the versatility of ASA's robotic solutions. Such projects push the boundaries of what robotic automation can achieve.

In the world of engineering, challenges are par for the course. Sam faced a unique challenge when tasked with designing a release mechanism for a machine component that required significant force for removal, involving a morse taper. Through collaboration with his colleagues, they devised a solution that met the task's demands.

When asked about the impact of ASA's solutions on clients, Sam emphasises that ASA goes beyond offering a solution; the company provides the necessary support to ensure that the solution meets the client's expectations, often exceeding them.

A testament to Sam's skills is the design of end-of-arm tooling for a robot that allowed for the removal of an additional gripper, simplifying the tooling and reducing complexity for the end user. This is just one example of how ASA's work directly benefits our customers.

Looking ahead, Sam is excited about the future of robotic automation, particularly in the realm of machining and manufacturing. He envisions robots being integrated into these environments in creative ways to increase efficiency and produce more complex components. As he puts it, "It looks really cool when a robot is able to do all of the intricate processes required to produce the completed component."

Sam's enthusiasm extends to ASA's company culture, which he describes as second to none. The friendly and welcoming environment fosters collaboration and allows everyone to thrive. It's a unique

atmosphere that sets ASA apart. As for Sam's favourite robot model, he fondly mentions the R2000iC/270F. It was the first robot he worked on, and the attachment he developed for it holds a special place in his heart.

Outside of work, Sam's interests in robotics and automation are not limited to his career. He has always had a passion for LEGO and computers, making his career in automation a natural fit that allows him to relive that nostalgic joy.

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*"I love being able to work with technology and always love the chance to solve a problem in which the solution is tangible and you can see the outcome."*

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For those considering a career in robotic automation, Sam offers sage advice: "If you love computers and tinkering, then this is the place for you. This environment and industry will allow you to do some of the coolest things you can imagine. I could not recommend it more."

Sam Nothnagel's journey at Automated Solutions Australia is a testament to the boundless opportunities and innovation present in the world of robotic automation. As we continue to push the boundaries of what's possible, Sam's passion and dedication will undoubtedly play a pivotal role in shaping the future of ASA.

# ANNUAL ROBOT SERVICING

**Has your Robot had its Annual Service?  
Call ASA on 1800 ROBOTS to book.**

Just like a car needs regular servicing, the same applies to your robots. Your robots work hard for your business, sometimes operating 24 hours a day for long periods, so annual servicing of your robots will ensure your FANUC robots remain in optimal condition. Greasing, battery replacements, checking for excessive wear and measuring back lash ensure motion repeatability, as well as continuing to provide you with a great consistent outcome for your manufacturing processes. Annual servicing helps maintain a high level of Mean Time Between Failures (MTBF), as well as potentially forecasting issues that may be developing.



## ROBOT IN FOCUS: FANUC M-2000iA/2300

### FANUC M-2000iA/2300 is FANUC's Largest Lifter

The FANUC M-2000iA/2300 is FANUC's largest lifter, with a massive payload of 2.3 tonnes. This machine is well suited for heavy-duty material handling tasks that demand even stronger wrists, since it can lift a passenger vehicle or put large set castings into machine fixtures with ease.

#### FANUC M-2000iA/2300 Applications

- Assembly
- Palletising
- Part Transfer
- Dispensing
- Spot Welding
- Material Removal

#### FANUC M-2000iA/2300 Features

The IP67-protected, ultra-strong wrist of the FANUC M-2000iA/2300 is capable of lifting and holding a full vehicle from the side. The increased lifting capability of this model is a way to add versatility to heavy material handling activities. By automating these areas, this highly adaptable robot is designed to cut operating expenses, increase cycle times, and drastically reduce the chance of production material damage. Combining a

broad work envelope with the versatility of six axes, the FANUC M-2000iA/2300 is able to precisely move and position items inside a vast, defined work area. With its enormous payload and reach, the FANUC M-2000iA/2300 is able to do the task of traditional cranes, lifters, and shuttles, therefore increasing output and eliminating operator risk.

#### How can Automated Solutions Australia (ASA) Help?

Automated Solutions Australia (ASA) is your ideal FANUC industrial and FANUC collaborative robot integrator. Our industrial engineering team at ASA are FANUC robot specialists, from concept to system designs, installations, programming, and support. At Automated Solutions Australia (ASA), we love helping Australian businesses of all sizes reach their automation goals, and build their sovereign capability. This lets Australian manufacturers compete on the world stage. Phone Automated Solutions Australia (ASA) today on 1800-ROBOTS (1800-762-687) to learn more.

**If you're looking for a multifunctional robot with an ultra heavy payload, get in touch with us today to see if the FANUC M-2000iA/2300 is the right robot for your application.**



# ROBOTIC WELDING – AN OVERVIEW OF WELDING AUTOMATION TECHNOLOGIES

In the dynamic landscape of manufacturing, the advent of robotic welding has been a pivotal development, heralding a new era of efficiency and precision. Among the pioneers in this field, Automated Solutions Australia (ASA) has established itself as a key contributor, specialising in the deployment of FANUC robots for welding applications. Robotic welding leverages advanced robots to execute intricate welding tasks, under the oversight of skilled operators, enhancing both the quality of welds and operational safety, while also minimising waste and improving access to challenging areas.

## Benefits of Implementing Welding Robots

The integration of welding robots into production processes has transformed operations, especially in sectors heavily reliant on metalwork, like the automotive industry. These robots are adept at various welding techniques such as MIG, TIG, and laser welding. Their effectiveness is rooted in precise task programming and the employment of specific jigs, making them versatile for both high-volume manufacturing and customised projects. The consequent boost in productivity and time savings underscore the invaluable role of robotic welding in contemporary manufacturing setups.

## Advanced Welding Solutions Through Robotics

At ASA, the convergence of robotics expertise and welding proficiency enables the delivery of superior welding solutions tailored to meet diverse operational needs. Through a thorough examination of existing welding practices, ASA ensures that each robotic welding system aligns perfectly with the unique requirements of our clients. Our systematic integration approach promises peak efficiency across a spectrum of welding tasks, from straightforward to complex.

## Custom Robotic Welding Systems for Varied Applications

Recognising the distinct challenges presented by different materials and projects, ASA provides bespoke robotic welding solutions. Our services span the gamut from initial consultations to ongoing support post-installation, facilitating a smooth transition to robotic welding for our clients. Collaborating with FANUC, we equip

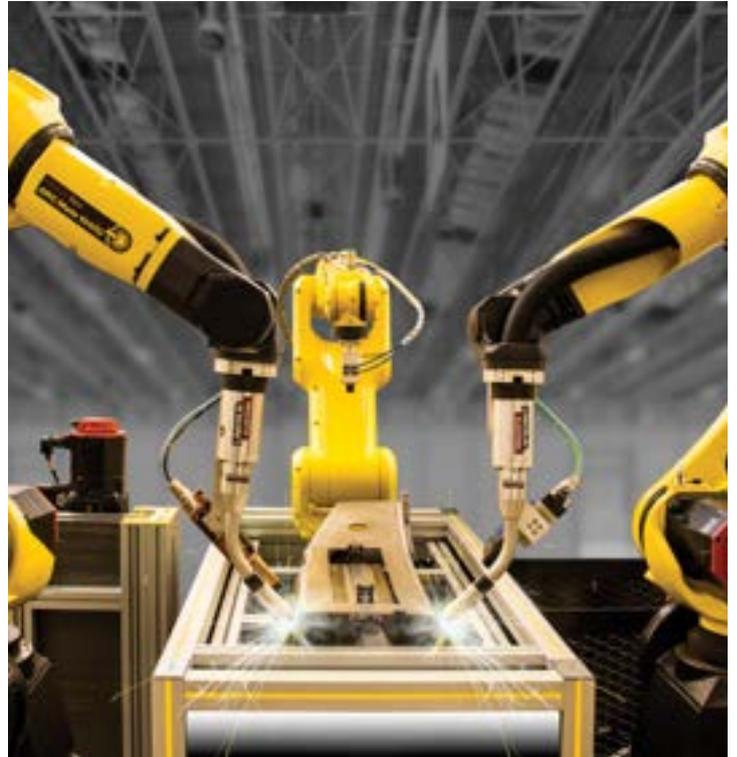
businesses with state-of-the-art robotic welding technologies, making it simpler to achieve exceptional welding outcomes and address common challenges.

## The Case for FANUC Robots in Robotic Welding

FANUC leads in robotic welding innovation, offering an extensive array of arc welding robots designed to elevate manufacturing efficiency and quality. The ARC Mate series, known for its wide range of models and user-friendly programming, reflects FANUC's commitment to meeting diverse manufacturing demands. These systems are crafted to enhance productivity, ensure high-quality welds, reduce costs, and promote a safer working environment. The technical excellence and reliability of FANUC's ARC Mate weld robots empower manufacturers to undertake ambitious welding projects with confidence.

## Collaborative Robotic Welding Innovations

FANUC's innovation streak extends to collaborative arc welding and additive manufacturing solutions. The CR-15iA and CR-7iA cobots, derived from the top-tier ARC Mate series, promote close cooperation between humans and robots, thanks to the intuitive ARC Tool Software. This, along with the ability of FANUC's robots to adapt to additive manufacturing tasks, provides manufacturers with increased versatility and efficiency. The CRX-10iA cobot, in particular, highlights FANUC's continuous



innovation in robotic welding, streamlining the integration process for manufacturers with its easy setup and programming.

Automated Solutions Australia transcends the role of a robotic welding system provider; we partner with businesses to boost their manufacturing prowess. By leveraging FANUC's advanced robotics, we offer unparalleled precision and efficiency, redefining welding operations. Whether the goal is to enhance productivity, maintain consistent quality, or optimise welding workflows, our expertise is geared towards realising these objectives. Embrace the technological advancements in welding with ASA and discover the comprehensive benefits of robotic welding in the modern manufacturing sphere.

# DELIVERING TOMORROW'S SOLUTIONS, **TODAY**

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ASA is a privately owned, wholly Australian company specialising in the design, engineering and integration of flexible automation solutions for the Australian manufacturing sector.



Whether your application is pick and place, palletising, packaging, part transfer or assembly, the development of a robotic solution offers significant benefits in almost any industry that is operating at high levels of throughput.

- Achieve uninterrupted speed, saving valuable production time.
- Achieve maximum repeatability, reliability and accuracy
- Lower costs versus manual labour
- Eliminate health and safety risks related to repetitive, tiring or dangerous operations

**Contact ASA for more information or visit our website**  
[automatedsolutions.com.au](http://automatedsolutions.com.au)

**1800 ROBOTS (1800 762 687)**





**1800 ROBOTS (1800 762 687)**  
**for 24 hours a day robot support**

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