



Since 1977

ADVANCED ENGINEERING

PRECISION MACHINING, COMPOSITES & POLYMERS



Precision
Machining



Composites



Polymers

CAPABILITIES & SERVICES

Jackson Advanced Engineering are specialists in large format precision machining, composites and polymers and are a leading supplier of tools and products across a large array of industries, including marine, aerospace, television & film, construction, engineering, automotive and art & architecture, and general composites.

Precision machining, composites, and polymers are ever-evolving industries, ones which initiate and demand innovative thinking and as such, we are constantly exploring new technical territory and demand excellence from our people and processes.

Jackson Advanced Engineering can help assist no matter the scope of your project. Get in touch with our team to see how we can work together.



“A large part of what we do is help customers to develop their ideas, and optimise the outcome of their project.”

Cam Walker, Jackson Engineering Manager

EXPERIENCE

Our engineers, machinists and project managers are experts in their field and along with many years experience they bring a deep knowledge and understanding of our machinery and capabilities.

QUALITY

Our modus operandi is to produce high quality products and tools that do exactly what they are designed to do. We go above and beyond to provide our clients with an exceptional experience and an outstanding product.

INNOVATION

We are eager to maintain our upward trajectory in the Advanced Engineering sector by exceeding customer engagement and developing innovative and efficient processes in tooling, composites design, and manufacturing.

PARTNERSHIP

We share the process of your project, the pressure of your deadlines, and the satisfaction and pride of a job well done. We keep you informed, up to date and recognise the sensitivity of your project.

CORE CAPABILITIES

- 3 & 5-Axis CNC Machining
- Composites
- Engineering Design
- 3D CAD Modelling
- Project Management
- Research & Development
- Polymer Development and Production
- Rotational Moulding
- Design for Manufacture
- Cost Optimisation

PRODUCTS

- Tooling – Moulds, Plugs, Patterns, Liners
- Parts – Composites, Non-ferrous Metals, Plastics, Timber, Foams
- Polymers – Specialty Polyester Resin, Caro-C Tooling Board, High Performance Gelcoats
- Specialists in Prototype and short-run production

PROCESSES

- Spray Putty Patterns – Epoxy, Polyester, Vinyl Ester
- Closed moulded part production including RTM infusion and Pre-Preg
- Welding & Metalworking
- Plotter Cutting – Pre-Preg, Dry Fibres, Combo-mat, Fabric Sheet, Paper
- Oven Curing (110°C)
- Resin Blending

Jackson Industries CNC Machining Centres

	CNC MILL	Envelope Size (X x Y x Z) (m)
5-AXIS	1 CMS MX5	10.5 x 3.8 x 2.4
	2 CMS Ares 1	6.0 x 2.6 x 1.2
	3 CMS Ares 2	4.8 x 2.6 x 1.2
	4 CMS PK	3.3 x 1.5 x 0.7
3-AXIS	5 Thermwood 1	3.1 x 1.5 x 0.8
	6 Thermwood 2	3.0 x 1.5 x 0.6
	7 3-Axis Router 1	6.2 x 1.9 x 0.35
	8 3-Axis Router 2	4.3 x 1.9 x 0.3
	9 Akira Seiki VMC	0.65 x 0.35 x 0.4
	10 Plotter Cutter	9.2 x 2.2

Facility Equipment

- 6 Large Format 5-Axis CNC Routers
- 2 Large Format 3-Axis CNC Routers
- 3-Axis High Speed Vertical Machining Centre
- Plotter Cutting Machine
- Manual Mill & Lathe Equipment
- Welding Facility
- Curing Ovens - Small & Large
- Composite Production Department
- Fully Compliant Resin Blending Facility
- Rotational Moulding Machines
- Vacuum Pumps

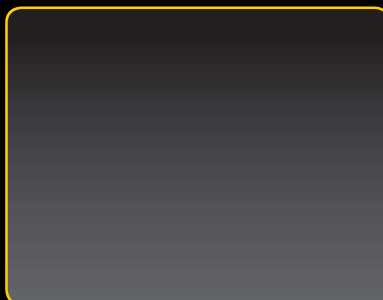
Machining Services

Jackson Advanced Engineering specialises in large-scale, high precision machining projects. We advise on the best material for your purpose. We work with, but are not limited to, composites (carbon & glass fibre laminates), non-ferrous metals, woods, plastics, tooling boards, and a wide variety of foams for moulds and core-sets. Our machinists will design efficient tool paths utilising our powerful Mastercam CAD/CAM software, to manufacture your mould or product using our industry leading CNC machining technology.



Engineering Services

Jackson Industries has a long history of diverse engineering capabilities and offerings. Our engineers have extensive experience solving technical design challenges that customers have in complex part and tooling projects. We enjoy working with customers to develop solutions that meet the requirements of the project. We specialise in product and mould design, custom fixtures and jigs, foundry patterns, high temperature composite and aluminium moulds, costing and process optimisation. We primarily use SolidWorks and Rhino 3D CAD software.



Research & Development

We pride ourselves on our ability to carry out product development in-house, minimising the outsourcing of processes, allowing us to take control of quality assurance and consistency of supply. As a result, we are constantly improving, building new products, innovating and developing new processes to further excel in the industry. Some recent examples include polymer development, Temporary Site Lighting (TSL), rotational moulding machinery, and robotic assembly automation.

Project Management

Our team recognises the importance of consistent communication and projects being delivered on time. We utilise project management and production software to effectively manage all aspects of your project. Our project managers monitor production schedules, material requirements and labour resources to efficiently execute your project on time and within budget.

Composite Manufacturing

Jackson Industries has been involved in the manufacturing of composite structures for our LIFEGUARD® electrical distribution equipment for over 30 years. In conjunction with our resin chemistry lab this has allowed Jackson Industries to expand and push the boundaries of composite manufacturing, polymer development and to build a breadth of knowledge invaluable to our customers. Current areas of interest include Resin Transfer Moulding (RTM) part and mould manufacture, prototype part manufacture, specialty polyester resin blending, modification and manufacture, out-of-autoclave (OOA) pre-preg.

OUR WORK

CUSTOMER: Emirates Team New Zealand (ETNZ)
PROJECT: AC50 Foils
MATERIALS: Tooling Board, Carbon Laminate

Requiring a level of accuracy seen in the aerospace industry and Formula 1, Jackson's created the female moulds, and machined the upper surface of the 6 meter long foils working within tight tolerances of the original design specifications for ETNZ's campaign to reign supreme at the 35th America's Cup in Bermuda. Our facilities and large format 5-Axis machining tools allowed us to machine the complex angles and size of the foils' female ceramic based moulds. Jackson's is continuing its long standing relationship with ETNZ as they embark on the defence of the 36th America's Cup in 2021.

“ Jackson Industries has been yet another of the unsung heroes of the last campaign. They operated to a fantastic level of quality over two years under constant pressure to deliver what turned out to be some of the most important components in helping us win the America's Cup. ”

Grant Dalton, CEO, Emirates Team New Zealand



CUSTOMER: Matcraft Industries
PROJECT: Mega Cow
MATERIALS: High Density EPS

With the aim of cementing Morrinsville as a key player in the NZ dairy sector, the late Laurie Maber, former Mayor of Morrinsville, commissioned the design and build of this 6.5 metre high 'Mega Cow' - which sits proudly on the Main Street of Morrinsville. Built by Matcraft Industries with Jackson Industries machining the moulds, the process involved over 300 hours of machining multiple blocks of polystyrene into female moulds. Fabricated in two parts, plus separate parts for the horns and legs, the cow came together at the Matcraft site and joins the likes of Ohakune's carrot and Gore's trout as a local icon.



CUSTOMER: Haeberlin Composites
PROJECT: Juno Race Car
MATERIALS: MDF, Epoxy Spray Putty, Tooling Board & Carbon Fibre Laminate

John Ryall and Gregor Haeberlin employed the services of Jackson Industries to carry out the machining of the full suite of plugs for the Juno race car body fairings and auxiliary components. The project included countless hours of machining across dozens of plugs, utilising base materials such as MDF, tooling board and epoxy-based spray putty to create the finished plugs suitable for production. Haeberlin Composites used these plugs to fabricate the high accuracy moulds for carbon fibre components which go on the race car.



CUSTOMER: University of Auckland
 Formula SAE team
PROJECT: Formula SAE
MATERIALS: PET Foam & Fibre Glass

As an official sponsor of the University of Auckland Formula SAE team and the ongoing support to the next generation of NZ engineers, Jackson Industries performed the machining of the racing car monocoque and nose cone along with several other peripheral components. A base sub structure of PET foam was machined, then laminated with fibre glass and machined a second time to obtain the plug and mould structure to allow the FSAE team to create moulds and produce the parts critical to be able to compete in the annual international FSAE competition.

“Without their generosity, we would never [have been] able to manufacture our chassis and various aerodynamic components.”

Finn, FSAE team member, University of Auckland

“We wouldn’t [have been] able to build our car to the same level of quality without them.”

Matt, FSAE team member, University of Auckland



OUR WORK

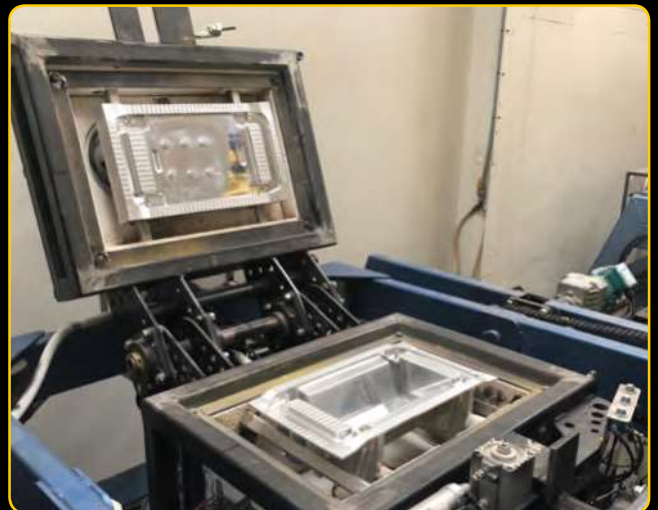


CUSTOMER: Wilson Precast
PROJECT: Point Resolution Bridge
MATERIALS: Caro-C & Polyurethane Rubber

Jackson Industries had to step up to the plate in order to meet the tooling scale required for this project. Providing unprecedented large scale CNC machining services, the largest New Zealand manufactured flexible formliner to date was produced. Incorporating the artist's intricate design into the formed face of the precast bridge sections was a key challenge for the project; this aspect of the construction was done in collaboration with Wilson Precast. The polyurethane rubber liner was created from a negative master mould machined from our proprietary tooling board, Caro-C, using a 3D CAD model of the artwork and our large format CNC routers. The result of the hard work put into the project was the production of the iconic and award-winning foot bridge situated on Tamaki Drive in central Auckland.

CUSTOMER: Jackson Industries
PROJECT: Rotational Moulding
MATERIALS: Aluminium

For our highest selling product of LIFEGUARD®, LG4 and LG6 models, following in-house research and development and a project build of custom rotational moulding machinery, an aluminium billet was machined using our high speed vertical machining centre to create the necessary split mould to use within our bespoke rotational moulding machinery. This development has enabled Jackson Industries to bring the production of this product enclosure entirely within the company and allows us to completely control the manufacturing process from start to finish. The effective combination of teamwork, onsite and technically advanced machinery greatly improves production speed, quality and consistency of our LIFEGUARD® range and offers the ability to customise to our clients' specific needs and requirements.



COMPANY OVERVIEW

Founded by Jim Jackson in 1977, Auckland's Jackson Industries is a multi-faceted company providing diverse engineering expertise – from electrical equipment, through precision CNC machining and tooling, to composite structures and the development of bespoke polymers.

Innovation and development are the common themes running through the company's DNA.

Family owned-and-operated, the company's origins lie in electrical equipment – with an

emphasis on safety and quality. The company has grown to become Australasia's leading supplier of industrial power applications and portable power solutions, and is particularly well-known for its LIFEGUARD® power distribution systems. Developing and manufacturing the LIFEGUARD® product has created and nurtured niche engineering skills – an evolutionary process which has seen the establishment of specialist divisions within Jackson Industries.



Electrical

Manufacturing standard & customisable industrial quality power applications, portable power solutions and lighting systems for wherever safe power distribution is required.



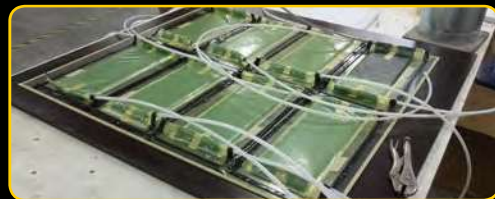
Hire & Service

Hiring electrical distribution equipment to reticulate power around event and building sites. We also offer electrical services by skilled and qualified trades people to support the electrical safety requirements of our LIFEGUARD® range.



Composites

Development and utilisation of custom GRP, carbon and aramid fibre component manufacture, and automated roto-moulding services.



Polymers

Providing capabilities in resin formulation and blending for custom applications. Developing specialist compounds to meet unusual composite engineering needs, such as our Caro-C tooling board.



Architectural Formworks

Utilising Jackson's reusable formliner products for small and large pre-cast concrete applications, we are able to create detailed moulds which are used extensively in architectural projects.





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