

COMPANY

FORMAPLEX

LOCATION

United Kingdom

SOFTWARE

Autodesk PowerMill
Autodesk PowerShape
Autodesk Consulting
Autodesk PowerInspect

“Our customers trust us to deliver and by investing in PowerMill we’ve noticed greater efficiency from our CNC machines. We can increase our capacity with confidence and are able to take full advantage of our investment in the new machinery. If we have something particularly complicated to create, the Autodesk team will offer support on request and assist with the programming. It’s a great partnership and Autodesk helps us to progress and push the boundaries of what we can do.”

Rob Carter

— Group Machining Support Manager at Formaplex

Formaplex tools up to support expansion programme

Leading UK manufacturer reduces machining times with Autodesk



CNC machining centres for metallic tooling

Technology to support advanced scheduling

Steady growth and rising customer demand led to Hampshire based Formaplex requiring quicker and more advanced manufacturing processes to meet time critical deadlines, maintain quality and improve efficiency.

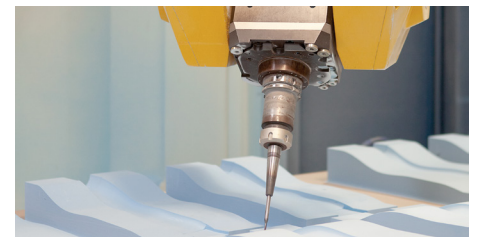
A growing business

Formaplex employs a skilled workforce of over 400 people and is a world renowned manufacturer of injection mould tooling, composite tooling, thermoplastic and composite components for automotive, F1, aerospace, defence and other leading industries. Founded in 2001, Formaplex started out as a machining company for F1 and has since experienced strong growth, evolving into a tier one supplier for global, blue chip customers. Over the years, Formaplex has extended its operations to include, 44 5-axis and 3-axis machines, with machining envelopes up to 8m x 6.2m x 2m.

Finding the right partner to support growth

The demand for Formaplex’s services has grown considerably due to its reputation for producing high quality tooling and components within extremely short lead times. Production planning is often a live exercise with bespoke, complex and last minute requests regularly being added to the schedule. As a result, Rob Carter, Group Machining Support Manager at Formaplex and the team are used to planning

work in real-time. For Formaplex to consistently deliver to its high standards, the most agile machinery, tooling and design processes were required to support increased production levels.



CNC machining of composite pattern

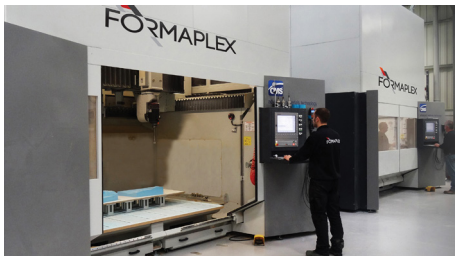
Formaplex’s engineers work with 5-axis and 3-axis machines which require the best technology for cutting precision mould tools, advanced patterns and also for manufacturing processes. After approaching its previous CAD/CAM supplier, it found that the software required to support 5-axis-machinery would be a third-party add-on rather than a fully integrated package. Formaplex researched various technology partners and quickly realised that it could find the support and shared values with Autodesk to achieve all of its objectives.

“Some of our customers see us as an emergency service. The demands are extremely high to deliver on both speed and quality and we required more advanced and agile processes to support this. We have to ‘play Tetris’ in terms of organizing jobs across different machines with the capacity hours available to us. We operate around the clock,

24/7 to ensure we meet tight delivery schedules. After investigating Autodesk's manufacturing portfolio, we agreed that it offered everything we needed to advance our machining processes," comments Rob.

Cutting down production time

Formaplex uses its 5-axis CNC machines to create complex shapes that were beyond the capabilities of its existing CAM solution. With Autodesk PowerMill, the machines can safely move around the material with ease, reducing machining times significantly.



CNC machining centres for composites



CNC machining of steel injection mould tool

The engineering team prides itself on achieving excellent levels of machine utilisation. PowerMill performs a key role here by enabling the calculation of high-quality toolpaths in super quick time, ensuring machines are kept running day and night. Increasing automation in this way has improved operational efficiency by speeding up processes and freeing up capacity.

PowerMill's automatic collision detection and avoidance functionality, also means operators can work safely and in confidence, even when machines are running overnight with offsite monitoring. Programs can be checked prior to cutting and the parts are cut at a faster rate with improved utilization during the production process.

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Design for Manufacture

Since working with Autodesk, Formaplex has incorporated Autodesk PowerShape into the design process. Rob and his team review the component and tool to ensure compatibility with their tooling capability for ease of manufacture.

PowerShape and PowerMill work hand in hand with each other and parts are created in a more efficient and fluent manner. Parts that are complex to machine can have elements modified and new surfaces and patches can be introduced to aid the machining process. The team at Formaplex are now able to design molds and patterns with PowerShape and then use PowerMill to perform the cutting, streamlining the entire manufacturing process.

"With such a large investment in 5-axis machines, we needed the right advanced software to optimise and achieve the best ROI. Having PowerShape and PowerMill all under one roof provides a seamless CAD CAM package. We're able to extend surfaces for the aid of machining and deliver faster results for our customers. If an engineer has to go back to the CAD designer to ask for changes, our production is slowed. PowerShape and PowerMill working together provides the agility and flexibility that we need for maximum efficiency."

Formaplex's commitment to precision, quality and customer satisfaction is paramount. The company recognises the value of introducing part measurements to the manufacturing process and by using Autodesk PowerInspect, combined with portable inspection arms, engineers can check the machined parts for dimensional accuracy at any time during machining. This speeds up the process by ensuring parts are fully machined to exacting standards before they are removed from production.



CNC machining centres for specialist engineering

Planning for the future

Formaplex is continuing to expand its manufacturing facilities and now operates from four sites across the south coast, covering 270,000 sq ft. More than £6 million has also been invested in a state of the art facility aimed at increasing injection moulding capacity, with additional component assembly and finishing areas and a semi-automated paint line.

"The new 120,000 sq. foot facility will help increase our capacity and support our future growth. We've invested in Autodesk as a part of this development to help us achieve higher manufacturing output for our customers. Advanced scheduling will always be a challenge, but with Autodesk and the right tools at our fingertips, we have the confidence to deliver," comments Rob.

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