

Moulding the Future

Edition **6**

The Latest News and Information



Expansion Action

Customers new and old will be pleased to hear that Broanmain Plastics has increased its volume of machines and factory footprint. With newly acquired 110, 220, 330 and 550-tonne injection moulding machines added to our fleet, you can now order components ranging from 0.1mm in size right up to polymer parts with shot weights of up to 3kg. Plus every size in between.

If you are looking to rationalise your plastic manufacturing supplier base, minimise your risk exposure and manage real time stock logistics, switching from multiple vendors to a single local moulding partner offers greater agility. Having recently ramped up the mass manufacturing side of the business to assist customers stockpiling parts in preparation for Brexit, Broanmain's new venture into larger component manufacturing has been a natural transition.

Broanmain is now operating out of two sites. Dorking remains focused on both micro-plastics and precision components alongside mass production of injection moulded components, and compression moulded parts. The newly acquired Faygate plant manufactures bigger polymer parts, including technical housings and 75cm sq. industrial floor tiles. This means Broanmain has the machinery, space and expertise to undertake more complex, integrated projects.

In today's economic climate, shipping heavy moulded parts frequently from around the world incurs large costs and time delays. Switching to Broanmain for your larger technical mouldings not only increases agility, it helps to avoid one supplier delay or insolvency triggering a domino effect. Operations Director Jo Davis explains: *"Supply chains in the plastic industry are highly sensitive. The collateral damage if one*

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part of the chain doesn't meet your delivery deadlines can be huge."

"For some time now our customers have been wanting to procure larger parts alongside their smaller precision components. Having listened to your feedback, it's clear that OEMs seek a streamlined and responsive moulding service," adds Jo. By growing and extending our injection moulding capacity and capabilities, Broanmain is catering to this demand.

Mouldings of all sizes sourced locally

For a multi-component product, centralising production for all elements can shorten the development lifecycle. It also offers greater project visibility, helping you avoid lots of toing and froing ironing out production glitches. As well as reducing administrative and other costs, the ability to negotiate smaller, more frequent deliveries of parts can rapidly improve inventory control. Many Broanmain customers utilise a simple Kanban system.

Jo comments: *"Most technical components comprise numerous elements of different dimensions. Future functionality is dependent on each element fitting perfectly together. When one moulding company is managing the production, quality issues can easily, often instantly, be addressed. Errors can be flagged. Machine settings can be adjusted; Mould tool inserts can be modified. The more suppliers in the chain, especially when spread across different geographies, the more cumbersome these quality issues are to manage."*

Being able to run off components in smaller batches is another advantage of reshoring production of larger plastic parts to Broanmain. *"Overseas manufacturers usually require a minimum order of 5,000 units to*

guarantee the best price. In addition to the upfront financial commitment this incurs, there are shipping costs, import duties, shipping delays, taxes, VAT and storage fees to take into account," cautions Jo. "Suddenly a cheap deal seems far less attractive."



The additional site brings with it additional skilled team members and Broanmain team therefore has additional resources to throw at a project. *"We've already started to multi-skill our processing and tooling experts across both sites, ensuring calibration of systems throughout the business, which in turn means we can react and flex to your production needs," adds Jo.*

Having additional space means that Broanmain can store more materials and moulded components for customers. *"This is especially beneficial during geopolitical uncertainties and when the price of future raw materials and tariffs is uncertain and fluctuating," states Jo. Broanmain's ability to pull forward on orders for customers to ride out the Brexit uncertainty is testament to how well-prepared the company is to help mitigate the potentially damaging impact on customers.*

As part of our continual investment, Broanmain is in the process of adding a CNC milling machine to help customers that need precision milling operations for their components.



Tooling

six weeks to manufacture the tool, a week to sample the component prototype and a six-week shipping time. Since embarking on a trade mission to China 18 years ago, Broanmain has managed in excess of 200 tool design projects.

The toolmaking firm we use in China normally has several people working on different stages of the same tool. Because of this it can take as little as eight weeks to design, make and ship (by air). In contrast, it is not uncommon for one UK tradesperson to work on the same tool from start to finish, taking over a year in some instances.



Optimising tool TCO

Making a bespoke tool does imply it will be custom built to your exact specifications. While this is true, a moulder is likely to have a library of examples in their extensive tool room. Possibly similar components they've worked on. All of this background expertise can be leveraged to optimise Total Cost of Tool Ownership.

Although IP will restrict a moulder from 'borrowing' from a tool inventory, having proven technical capabilities means they won't be rewriting the tool design rules from scratch which can be especially helpful if the design requirements at the outset are a little

vague or ambiguous. It can also speed up the innovation cycle for tooling.

Another strategy to help offset the cost of the tool development process is to examine your entire product portfolio and see if the same component could be used across a 'family' range.

Being able to access the tool inserts and make changes to the master tool further down the line also helps to extend the longevity of your investment. At Broanmain we store and have a dedicated maintenance team to keep tools in good working order. As a result, each tool should run at least half a million components, although figures upwards of four million are not unusual.

Being the legal owner of the IP for your tool and component can also help differentiate your end product from your competitors and save money long term.

Of course, there are many different factors to consider when comparing the differences between buying 'off the peg' plastic components and developing a bespoke tool to mould your own. In most instances, the decision rests on budget.

However, there is a transitional point for many parts where investing in tooling will not only speed up turnaround time, but also drive the price down. Speaking with a specialist moulder will quickly help to determine if the incremental cost savings stack up against the business case.

If your business is using components which could be suitable to be made bespoke please do not hesitate to contact one of our engineering team who will be happy to discuss the options, capabilities and possibilities with you.

Build or buy? Calculating the tooling tipping point in plastics manufacturing

Original Equipment Manufacturers (OEMs) that buy components off the shelf can, in time, discover that they are paying over the odds for parts. As production volumes increase, switching to a custom made tool rather than using parts designed for the mass market can offer a relatively quick return on investment.

During the early foundation years when developing a product, there's naturally an element of uncertainty. For low volume orders, buying a standard component, for example an electronic casing, may initially make good business sense. It's without doubt cheaper initially as there's no development process or guess work. However, these components are designed for the wider market. And even though technical knowhow is often pooled, buying standard parts can mean there is often a compromise, in that the parts may contain features that you don't need.

Another downside is you are a single customer amongst many. This means you may not be able to source customised features or add personalised branding if it's important to your Intellectual Property. Additionally, if the vendor drops out of the market, or encounters a supply issue, you may struggle to find a critical replacement.

Here, 3D printing can be advantageous. Although the material, time and resourcing costs are likely to be much higher, printing parts from a digital file may be more economical in the short term, especially

during the prototype development phase. It may also be beneficial when creating complex customised parts.

Scaling up production

Injection moulding comes into its own when production levels really start to scale up and there's repeatability involved. The exact tipping point will depend on the original unit cost, the price paid for a high spec, quality tool, and the new costs per unit. Typically, for an electronic case, payback would be between 4000 and 5000 units.

When production levels start to really ramp up, this can be the ideal time to consider contracting out your moulding work to an expert that can help to evaluate the different tooling options and payback. When you reach this point, do look for a reputable contract moulder that has extensive tool making credentials and understands the moulding parameters and how different additives will perform within the mould.

Given the decline of toolmaking in the UK, there are few firms that possess all of these in-house capabilities. Broanmain, for example, manages the toolmaking process on behalf of end customers from start to finish. If design assistance is required, this is outsourced to a trusted design partner, Jedco. The tool is then made by a reputable workshop in China, helping to keep the cost and lead times down. Throughout the process, Broanmain's in-house engineers scrutinise the design and review all of the fully hardened samples.

Typically, the company gives an estimated timeframe of between 15 to 17 weeks from initial design to receipt of the finished tool. Broanmain allows for between one and four weeks to finalise the tool design, four to

Staff

Directing your enquires to the right expert.

In order to ensure your enquiries to Broanmain are answered most efficiently, please can you update your contact records:



Despatch and delivery enquiries should be directed to monikasiakala@broanmain.co.uk



Accounts questions need to go to accounts@broanmain.co.uk where **Tina** will be able to help out



New Enquiries, Production and Engineering matters are dealt with by our Production Manager, **Thomas**, who can be contacted at thomascatinat@broanmain.co.uk



Please send **quality concerns** to quality@broanmain.co.uk where they will be picked up and handled by either Paulina or Andy



Our **SHEQ Manager, Andy Armstrong**, handles items relating to Safety, Health Environment and Quality systems – please use andyarmstrong@broanmain.co.uk to reach him for any Quality related concern



Tooling work is handled by **Kamil Stec** at kamilstec@broanmain.co.uk



Jo Davis is our **Operations Director**, and has responsibility for the day to day running of the business – jodavis@broanmain.co.uk



Wilf Davis is our **Managing Director** – wilfdavis@broanmain.co.uk



Purchase orders and Kanban call offs should be sent to orders@broanmain.co.uk – where they will be handled by one of the orders team.

Company News

Kamil Stec has stepped in to take over the running of our tool room and is currently working on a plan to expand that side of the business. A CNC mill has been ordered, with a 5-year investment and growth plan being put into place.



We are pleased to welcome Andrew Budd and Anthony Ceffa to our mould shop team. Andrew joins us with a background in compression moulding and has been able to make vast improvements in some of the processes in that department. However, his main role is to work in our injection moulding department at the Dorking site to support Alexandre Ceffa with tool changes and settings. He has already attended the Sumitomo Demag training academy to undertake the troubleshooting course there. Anthony worked for Broanmain for a short time in 2018, but has returned as our production engineer. He is tasked with ensuring new tools are seamlessly put into production and with supporting Alexandre with improving current processes.

The team operating from Faygate have a wide range of knowledge and experience.

Dave Brown is the setter, Alan Batchouski is the tool maker and Phil Ford is looking after the H&S side of things and they are working alongside Jasso and Derek our two operators at that site. These team members are working flexibly and also spend time work at the Dorking site.

