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SMITHSTOWN LIGHT ENGINEERING

MAKING IT NEW

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SMITHSTOWN LIGHT ENGINEERING IS A CONTRACT MANUFACTURER AT THE FOREFRONT OF MANUFACTURING INNOVATION IN THE MEDICAL EQUIPMENT SPACE.

MAKING IT NEW

PROJECT MANAGED BY: DAVID GARNER

In 1974 Brian King founded Smithstown Light Engineering as a machine shop, quickly growing into the design and supply of plastic injection moulds and press tools for the electronics industry. It would later move into contract manufacturing for the medical device sector and in 2011 was taken over by his son, Gerard King. From there it has gained national, and even international recognition.

"We work with all the main medical device OEMs that have representation in Ireland, and we're now exporting to OEMs mostly in the North American markets," Gerard King tells us.

The reason that Smithstown has been able to establish and build on relationships with leading suppliers is that it has remained at the forefront of technological innovation in its sector.

"Our investment in people and the latest technologies is what keeps us to the fore," King says. "We have developed great working relationships with these companies. They trust our name and brand to deliver, which we do. We make agreements at the partner level that are seeing us grown year on year."

FIT TO PRINT

The latest example of this commitment to innovation can be seen in how Smithstown is applying the very latest in 3D printing technology to its manufacturing processes.

"We're printing in both metals and polymers," King tells us. "It's a relatively new technology, developed in the last ten years. It has not been fully adopted yet by a lot of medium-scale manufacturers like ourselves. So rather than be threatened by it, we decided to embrace the technology."

While other businesses in the sector may regard this technology as a potential competitor and replacement for the work that they do, King believes this technology can only be complementary to the business if used well.

"We see definite advantages in support of what we're doing. We don't see it replacing what we're doing and we're trying to be first off the block in supporting our customers with this technology," he says. ››

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›› **Gerard King, Director, Smithstown Light Engineering.**

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CITIZEN MACHINERY UK

Citizen Machinery UK, part of the famous Japanese watch group, supplies OEMs and subcontractors in Ireland as well as throughout Britain with Cincom sliding-head and Miyano fixed-head mill-turn centres. It is the largest supplier of these types of bar-fed lathes into the Irish and British markets. Additionally, the company is a distribution hub for sales of machines in France, Spain, Portugal, the Nordic Countries, the Middle East and Africa and works closely with group subsidiaries in Italy and Germany.

Headquartered in Bushey, Hertfordshire, where there is a Solution Centre for the preparation of customised production cells, Citizen Machinery UK also operates a Turning Centre of Excellence in Brierley Hill. This is the location for preparing high value, often automated installations complete with programs, tooling and accessories, consistent with the increasing demand for Industry 4.0-compliant manufacturing systems.

The firm's Managing Director Edward James said, "In our industry, it is often no longer enough to deliver a so-called turnkey package, which is subject to a lot of interpretation. It can mean simply the supply of a machine, a few cutters and a couple of programs.

"Customers demand more than that these days. They want a fully worked out, end-to-end solution that has been proven off-site before delivery, complete with attachments, peripherals, in-house-written software and perhaps additional automated functions such as cleaning and packaging.

"Projects are frequently demanding in terms of their scope, level of innovation, the process capability to be achieved and return on investment required."

The CMSolutions centre operating in Bushey is where the particularly complex, high-level installations are managed, from initial consultation through design, configuration, assembly and prove-out to delivery, acceptance and training. The solution can be stand-alone or integrated into a larger manufacturing plant. It may be a pre-existing package or designed specifically at either the customer's request or at Citizen Machinery UK's instigation.

In all cases there will be a sound business case for what is delivered. It will be pragmatic, process-optimised and cost-effective, not necessarily the top solution possible, which may be overly expensive and take too long to amortise.

No profile of Citizen Machinery UK can be complete without reference to LFV, the group's ground-breaking technology introduced five years ago. An acronym for low frequency vibration, it is chip breaking software built into the lathe control's operating system, as distinct from being a macro in the program. It allows what would normally be long, stringy swarf tangling around a workpiece and tool to be broken into shorter lengths, the size of which is determined within the program.

Applicable to both Cincom and Miyano machines, it avoids having to remove swarf repeatedly from the machining area. Economy of production is increased, as there are no stoppages for swarf clearance, and the lathe can be left to run unattended. Additionally, LFV oscillation of the tool by tens of microns also allows coolant to penetrate the cut more efficiently, reducing heat and allowing depth of cut to be increased substantially, as well as prolonging cutter life and improving surface finish.

www.citizenmachinery.co.uk

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"The response has been very positive. We've been working with customers at the validation stage in identifying printing requirements for metal and polymers."

This search for new and advantageous technologies is a constant and ongoing project, King tells us, "We have a constant policy of reinvestment. Most of our machines are no more than five years of age. We've got to get faster, more accurate and more cost-competitive, and the only way to do that is to increase automation levels and be upfront with the latest machining technologies as they hit the market."

As well as new technologies, Smithstown Light Engineering is also not afraid to employ new techniques.

"While a lot of companies in our sector are concentrating on traditional milling and turning, which we're also good at, we take on higher risk processes that aren't as commonplace to give a very wide service offering," King says. "Heat treatment, with a wide array of grinding disciplines, and 3D printing, really that's what's separating us from the crowd ››

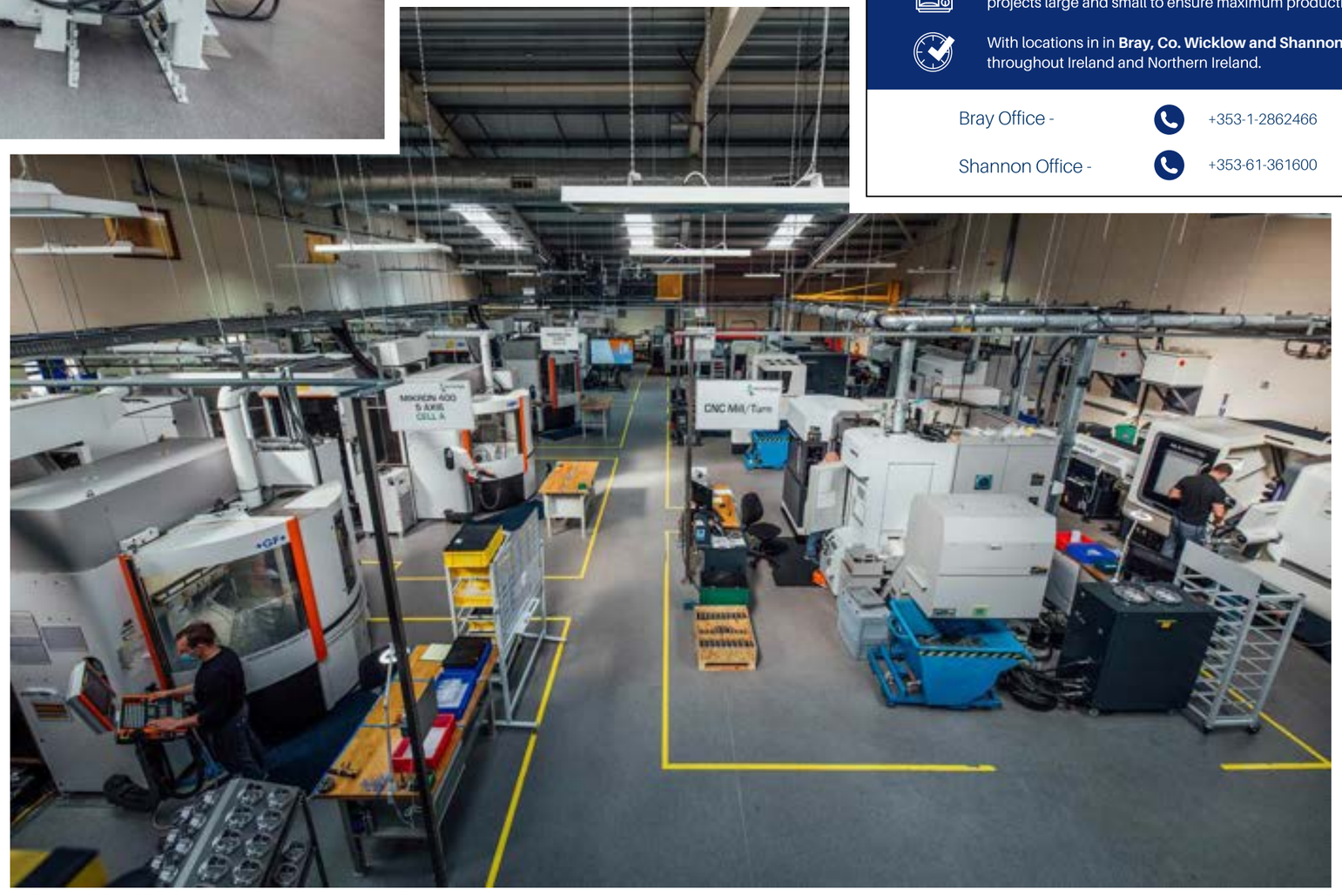
"With regards to a lot of what we do with printing, grinding and machining, we are using new, very fast linear drive type machines. We're trying to reduce the endpiece price to the customer and that's what the customer likes to see yearly cost reductions and a company that's going about providing those reductions," King says. "You have to embrace it as a mindset." ››

and it's important that we continue in that direction. New technologies will always be investigated to see if they can give us that edge."

It is a quality borne out of the company's origins in injection mould manufacture.

"We came out of injection mould and press tool manufacturing, so there's a very high skill set in the design of these precision tools," King says. "We're working with exotic materials at a micron level, and those skills have been transferred into these precise medical device services that we offer. We are working on implants and delivery devices for neurovascular medication. We go against the grain, where other manufacturing companies aren't comfortable in providing services in those areas, we see that we can leverage value."

For King, this investment is not just about shiny new technology for its own sake, but about what benefits can be passed on to the customer.



This is even more crucial because between labour, energy and component costs, manufacturing has been a challenging sector lately, however, the medical devices sector, in particular, comes with certain advantages.

"Medical devices are a good sector to be in but they're increasingly taking a more automotive type approach in their sourcing. It's putting a lot of cost pressure on the supplier base of which we're a part," King says. "To that end, we've also opened a facility in Poland for specific machining tasks such as 5-axis machining and mill-turning. This facility is in support of our two Shannon facilities, to try and spread the cost pressure across multiple jurisdictions. Companies of our size will need to start looking at attractive lower-cost destinations for specific tasks that give an overall reduced package cost to customers."

FINDING CRAFTSMANSHIP

While new technologies can be a valuable tool, King is the first to acknowledge that you also need skilled staff to operate that technology, and this can be a challenge.

"Skilled labour within Europe is a problem. Attracting and retaining people to machining is a challenge," King admits. "It's not insurmountable but a challenge. Then we have rising energy and labour costs, all of these inputs make it a challenge to stay competitive in this part of the world."

King is willing to look wherever necessary to find people with the skills and attributes Smithstown Light Engineering needs.

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"We're looking in multiple regions across the EU and non-EU for our skilled labour. We constantly have a pipeline of people under assessment for positions within the business," he says.

That talent is drawn to Smithstown Light Engineering thanks to the appealing culture the company has nurtured over the years.

"The culture of our business is a big selling point. We have a lot of people who have been here for over 30 years. It's quite a progressive environment but not a very authoritarian environment, we have a very flat structure," King explains. "I still know the names of all the people in the business, which is becoming more difficult, but that sense of being a slightly smaller business is attractive."

As well as being a pleasant working environment, Smithstown Light Engineering offers new recruits an engaging array of challenges.

"We offer the chance to work with the latest technologies in machining and a wide diversity in what we do. If you work with us, you could be doing anything from laser cutting, milling, or 3D printing on any given day," King says. "We use a broad range of technologies within the business."

With a pipeline of new talent, new technology and new projects, the future is looking bright for the company.

"We're on a very large growth trajectory. We doubled in size over the last three years", King says. "There are a lot of projects in the pipeline, so we have the potential to double turnover again over the next three to five years. We are primed for that. We've made capital investments, purchased an additional ten acres of land next to our facility, everything is in place to facilitate that growth."

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