

THE Manufacturer

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alloywire.com



Alloy Wire

There are few manufacturers like Alloy Wire International in the UK. A world leader in its field, a growing exporter and a company that lists customer service and continuous R & D at the top of its priorities.

“ You need a certain culture to achieve employee ownership, one of transparency, trust and togetherness... almost like a family. ”

However, there is something else that separates this specialist manufacturer of round, flat, shaped and electrical resistance wire from the rest of industry.

The company, which approaches its 70th birthday in 2016, is owned completely by its employees, with all of its 26-strong workforce shareholders in the business.

This is reflected throughout the organisation when you walk around its 20,000 sq ft site in the heart of the Black Country. Smiles are in abundance, each member of staff greets you warmly and there seems to be a genuine desire to be doing their individual jobs to the best of their ability.

It's not difficult to understand why, with each member of staff receiving BUPA membership, annual health screening and an equal profit sharing scheme that sees all employees receive exactly the same as the Directors.

"You need a certain culture to achieve employee ownership, one of transparency, trust and togetherness... almost like a family," explained Mark Venables, Managing Director.

"The idea was courtesy of our Chairman Bill Graham, who had a vision that all employees should be shareholders in the business."

He continued: "It was met with unanimous approval and the management team were delighted with the enthusiasm and level of commitment from the staff."

Employee ownership is an approach that seems to be working well for Alloy Wire. It has recently hit £8m sales for the first time in its history after securing new clients in automotive, aerospace, oil and gas and nuclear and the outlook is to take this towards £10m within three years.

"Ambitious yes, but definitely achievable," continued Mark, who took over the reins in 2011.

"The last twelve months has been all about laying the foundations for this growth. This has involved a \$700,000 investment drive that has seen the installation of three Zwick tensile and hardness testing machines, PMI material x-ray guns and a fully automated multi spindle spooling machine.

"We have also installed a 5-metre strand annealing furnace and a bespoke wire finishing line, which gives us the ability to double capacity, improve accuracy and extend capability to produce wire from 0.025mm to 21mm."

Mark went on to add: "It's not just capital we are spending money on. All our staff receive ongoing training and are encouraged to learn new skills that can add value to the business."

Established in 1946, Alloy Wire is a world leader in the manufacture of precision drawn round wire, flat wire and shaped wire in a comprehensive range of high performance and exotic Nickel alloys.

The company supplies wire from 0.025mm (.001") to 21mm (.827") and currently works with 4000 customers in 15 sectors.

Its extensive stockholding of materials, ability to provide small batch quantities and 2 to 3 week lead times has helped it establish a global reputation that sees the company's products sent to more than 45 countries across the world, including Australia, China, Germany, Italy and the United States.

Angus Hogarth, Sales Director, picked up the story: "A lot of growth is coming from clients supplying into

niche high value engineering, which is currently enjoying renewed investment.

"We are looking to build on our market share in nuclear and oil and gas, two industries which demand safety critical components that can withstand high temperatures and corrosive environments – ideal for what we supply."

He continued: "Our success has not been built on price. We combine one of the largest material selections in the sector with world class manufacturing processes, technical expertise and lead times that are often half the industry average.

"It's a successful formula that sees our wire used in anything from springs for satellites in space exploration and model railways, to electrical components and resistance wire for cutting polystyrene in the packaging industry.

2016 will mark a milestone year for Alloy Wire. 70 years in business and in the midst of a business plan that will hopefully lead to £10m of sales and an even stronger network of international agents.

It has just been audited and approved for Fit For Nuclear funding and has recently secured the OHSAS 18001 and ISO 14001 accreditations, demonstrating outstanding commitment to health and safety and environmental good practice.

Whatever happens going forward, 'People Power' will be at the heart of this drive for expansion and the management team at the company wouldn't have it any other way.

“ At Naval Ships we’re also investing in people by launching our largest ever Early Careers recruitment for over 200 apprentices, graduates and existing students for paid summer internships and industrial placements. ”

BAE Systems Maritime Naval Ships

At BAE Systems, we provide some of the world’s most advanced, technology-led defence, aerospace and security solutions and employ a skilled workforce of some 83,400 people in over 40 countries.

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Working with customers and local partners, we develop, engineer, manufacture and support products and systems to deliver military capability, protect national security and people and keep critical information and infrastructure secure.

In our UK maritime sector, our Naval Ships business designs, builds and delivers complex warships and combat systems for the Royal Navy and navies around the world. Shipbuilding operations take place in Glasgow, while our engineering and Combat Systems teams are based across Glasgow, Portsmouth, New Malden, Frimley and Filton.

We’ve recently delivered warships for the Brazilian Navy and Royal Navy of Oman, as well as the UK Royal Navy, while our combat systems are in operation with more than 20 countries around the world.

As part of the Aircraft Carrier Alliance, we’re delivering the 65,000 tonne Queen Elizabeth Class aircraft carriers, which are the largest warships ever built in the UK. The future flagship of the fleet, HMS Queen Elizabeth, was launched in July 2014 and her systems are now being steadily brought to life ahead of sea trials, while the final assembly of her sister ship, HMS Prince of Wales, is now well underway at Rosyth. The vessels will have a service life of fifty years so while the first crew members for HMS Queen Elizabeth have joined the ship, the final crew members and their Commanding Officer are not yet born.

We’ve also begun construction of three River Class Batch 2 Offshore Patrol Vessels to the Royal Navy. The 90 metre OPV is based on a proven BAE Systems design which is already in service with the Brazilian Navy and Royal Thai Navy. Engineers at BAE Systems

have modified the design, ensuring it meets the requirements of the Royal Navy in support of UK interests both at home and abroad. The construction of the first ship in the class, HMS Forth, is now well underway while the first steel will be cut this year for her sister ships, HMS Medway and HMS Trent.

We’re also designing the Type 26 Global Combat Ship, which will replace the Royal Navy’s Type 23 frigates as the backbone of the fleet for generations to come. The Global Combat Ship will be a highly capable and versatile multi-mission warship capable of operating independently or as part of a task group. Its flexible design will ensure it can undertake a wide range of roles from high intensity warfare to humanitarian assistance.

Our combat systems meanwhile are vital in providing crew members with the information and capabilities they need to operate effectively, whether protecting the world’s shipping lanes or providing humanitarian relief. Across the fleet, we’re revolutionising the way combat systems are operated with the development of Shared Infrastructure, which means crew members have the capability to access all software such as navigation, communications and sonar, through a single console. This provides significant savings, including a reduction in the space and power needed for computing equipment, making it simpler for crew to operate, as well as reducing the amount of spares which are required to be carried on board and therefore significantly decreasing through-life costs.

We’re investing in new technologies and new ways of working to create a world class naval engineering business that delivers value-for-money to our customers, while also attracting and retaining the best talents. We’ve introduced ‘Visualisation Suites’

so that our engineers, customers and supply chain partners can immerse themselves in a virtual reality environment to inspect warships, such as the Royal Navy’s new River Class Offshore Patrol Vessels and future Type 26 Global Combat Ship, before they have even been built. We’ve also developed more flexible working arrangements that will benefit all employees, while improving efficiency, quality and safety. In our production environment, a new arrangement called Schedule Based Working is breaking down traditional boundaries and empowering employees to plan their work most effectively.

At Naval Ships we’re also investing in people by launching our largest ever Early Careers recruitment for over 200 apprentices, graduates and existing students for paid summer internships and industrial placements. This forms part of BAE Systems’ record recruitment campaign across the UK in 2015, which includes 782 apprentice roles.

The UK has a proud history of naval engineering and continued investment in our people, technology, facilities and processes will ensure that BAE Systems can compete with the world’s best while delivering quality products to the Royal Navy and navies around the world for generations to come.





egger.com

EGGER (UK)

We are a leading manufacturer of wood-based panels and part of the EGGER Group, a global family company with over 7,200 employees across 17 plants and 23 sales offices.

Based in the market town of Hexham, nestled in the beautiful Tynedale Valley, our UK headquarters is the largest manufacturer in Northumberland, producing approximately 630,000m³ of raw chipboard per annum. In addition, the plant also upgrades the raw chipboard to Melamine Faced Chipboard (MFC) products for the furniture market and tongue & groove flooring for the house-building market.

Used throughout everyday life, our products feature as cupboards and doors in kitchens; wardrobes and drawer units in bedrooms; desks and drawers in offices; furniture and wall panelling in hotels; counters and shelving in shops and structural flooring in the house-building industry.

The site employs approximately 665 employees with another 1,500 in the supply chain and was the first foreign plant investment by our EGGER Group, when it was purchased from Weyroc back in 1984, with a workforce of only 143.

Since then, we have invested more than \$400 million, which has included a biomass energy plant, state of the art chipboard line, a 13,000 native tree planting scheme, commissioning of new lamination presses and advanced impregnation lines. In 2007, we built a brand new £110 million production facility, in 2013 a £4 million engineering building and apprentice training academy was unveiled and in 2015 we will complete our £30m resin-making plant and construct additional warehousing. All of which has ensured the plant is one of the most technologically advanced chipboard plants in the world.

We are active in addressing any threats to our industry, including the concerns over global wood shortages and rising prices due to large-scale biomass electricity generating and the increasing popularity of wood-

fuelled domestic heating and small industrial systems. We have therefore been a key lobbyist with the support of local politicians to address these challenges.

This has meant we never stand still and have taken steps to secure our supply chain by investing in forest management and harvesting operations that are helping us to get closer to the grower. We have also set up three waste wood recycling depots in Leeds, Washington and Bellshill, near Glasgow, allowing timber to be reprocessed into chipboard.

We pursue a far reaching environmental policy and adhere to strict industry regulations. This starts with forest management and harvesting of timber from well-managed, sustainable forests, including replanting of felled areas. It continues with the purchasing of wood residues from saw mills, through to chipboard production, the generation of energy using environmentally friendly production techniques and finally, the continual monitoring of emissions. Our products are accredited to FSC (Forest Stewardship Council) and PEFC (Programme for the Endorsement of Forest Certification) and we are also ISO 14001 and ISO 9001 certified for our Environmental and Quality Management systems.

From the tree to the product, this closed material cycle ensures that sustainability is given the highest priority. By using recycled wood in our products the EGGER Group in total locks in 1.46 million tonnes of CO₂ per year and through our biomass plants we eliminate approximately 690,000 tons of CO emissions from fossil energy sources per year.

Our 30th anniversary at Hexham in 2014 marked the processing of more than 13 million tonnes of renewable wood fibre and the creation of over 8.5 million tonnes of EGGER chipboard. In addition, we have laminated

enough melamine faced chipboard (MFC) to build one and a half kitchens in every home in the UK, and made enough tongue and groove to floor more than two million homes. The company goes from strength to strength, with 2014 seeing a record year for sales and a 30%+ increase in turnover.

As an undisputed market leader in the kitchen, bedroom and bathroom sector, we are at the forefront of furniture design and continue to develop innovative products. The investments of new lamination presses with advanced surface technology has enabled us to develop highly realistic and deeply textured MFC panels. The latest additions provide us with the ability to create boards which have a natural feel, depth and realistic gloss levels. This creates a depth and realism previously only available with a veneer or solid timber. We continue to develop our product range and 2014 saw the introduction of 23 new decors and six textures.

As a major employer, we focus on being a strong neighbour by having good community relations, including our fund-raising activities, and also developing ties with schools, colleges and universities to champion manufacturing as a career of choice.

In spite of the size, scale and technological nature of operations at Hexham, it is our people that remain integral to our success and this commitment allows us to continue to invest in the skills our business requires. As a 24 hour a day operation, our philosophy is to have the required skills and capabilities in-house and on-site. We therefore have comprehensive training programmes in place including: apprenticeships, industrial placements, graduate schemes, European plant exchanges and over 35 in-house training courses.

We adopt a long-term sustainable growth strategy for our business and in doing so have become a market leader.

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encocam.com

Encocam

Encocam Ltd was established in 1988 by Dr Mike Ashmead with staff of three. Over the past twenty seven years, it has developed into a global business employing 160 people across 3 continents, and is a leading innovator in the automotive safety industry worldwide.

Encocam today consists of 8 divisions including automotive safety, motorcycle design, distribution and performance parts, architectural and composite panels, road safety products, bespoke engineering and the manufacture and supply of Corex Honeycomb Core. Quality standards are paramount – the business is BSI ISO9001 Quality Management, ISO 14001 Environmental Management and AS/EN 9100 Aerospace accredited.

Cellbond, a division of Encocam, develops and manufactures globally renowned automotive safety equipment such as crash test barriers, automotive energy absorbers and crash test dummies. Cellbond works closely with international organisations such as EuroNCAP and NHTSA in order to ensure the constant evolution of crash test barriers in order to match the development of new vehicles being tested.

In 2013, Managing Director, Mike Ashmead made the decision to expand the business by manufacturing crash test dummies. Utilising existing contacts and building on an established reputation for quality and service he had the foresight to see the potential to supply dummies and dummy parts faster than those currently available on the market. An investment programme has led to the setting up of a new testing laboratory and manufacturing facility in the UK, led by a team of industry experts in the research and development fields.

Cellbond has also expanded geographically. With existing offices operating in the UK, and USA, as well as representatives in a number of other countries worldwide, Cellbond's aim is to be able to provide the best quality automotive safety products in the shortest possible times. A new trading operation was set up

in Japan in 2014 after Cellbond decided to move away from the use of an agent and deal directly with end-users. This new venture became established very quickly, taking orders from major car manufacturers which to date have grown by 33% compared to the previous year.

Corex Honeycomb produces high quality aluminium honeycomb core that can be used for a wide variety of applications, including products found throughout the Encocam portfolio. The core, which has a very high strength to weight ratio, can be tailored to the exact requirements of the customer and can be supplied in many different forms including corrosion treated, expanded, perforated or sliced. Sectors supplied by Corex Honeycomb include Aerospace, Construction, Architectural, Wind Energy, Marine, and Rail.

Bespoke Composite Panels utilise Corex Honeycomb as the key element in a variety of products including vacuum tables for Inca digital presses, building façade panels, energy absorbing vehicle panels, rail panels including flooring, doors, cabin dividers and tabletops. BCP specialise in manufacture and refurbishment and offer a complete in-house service including development, design, testing and production. Polypropylene Honeycomb and Pressload are available as alternatives to aluminium.

Traditional engineering skills are teamed with the latest technology to ensure that Stonehill Engineering can offer a full range of services. In 2014, the arrival of a Dugard 5 Axis CNC machine created a new specialism for Stonehill – the production of dummy parts for the Cellbond division. An apprenticeship scheme has seen three CNC machinists complete their training and take on full time roles. The success of the scheme

owes much to the policy of teaming a trainee with an experienced mentor and Encocam advises members of Cambridgeshire Chamber of Commerce on the benefits of development and training of staff.

Mykon takes the honeycomb core and creates panels which have been used in shop displays, restaurants, eco-homes, gardens including the Chelsea Flower Show, museums and galleries, most notably the Royal Academy of Arts. When the core is sandwiched between glass or polycarbonate the resulting panel lets light through while ensuring privacy. A wide range of effects is available including CrystalGlaze, Iris (an iridescent panel) and Airo. The Chillida Range is Mykon's latest innovative product offering. The range consists of sheets of high quality steel chemically aged to produce a stunning rusty effect. Each sheet of steel ages differently, giving the customer a completely unique product. The Chillida range can be used in many different applications including cladding, flooring and panelling.

Herald Motor Company, established in 2009 to build on Encocam's involvement and expertise in the Automotive Industry, designs, commissions, imports and, new for 2015, builds motorcycles for sale throughout the UK via a network of 45 dealers. Highly regarded by the trade press including Motorcycle News, Ride, and Back Street Heroes magazines, the Herald Classic is available as a 125 and 250cc motorcycle, or as a customised Mutt version in both capacities. Working with custom bike builder Benny Thomas of Boneshaker Choppers, the range has been extended for 2015 to include a Trials bike. Reviews in both the Sunday Times and Daily Mirror picked up on the quality of the parts – some of which were developed and tested on the racetrack by sister

division RaceTek Performance Parts. An exciting development for the team is the decision to build a new 450cc motorcycle in the UK this year following a huge response to the concept bike at Motorcycle Live.

Euro Road Safety specialises in the design and development of products including BikerMate, a motorcycle crash cushion for deployment in accident blackspots, and reflects the desire to innovate and encourage development and continuous improvement throughout the business.

Encocam today consists of 8 divisions including automotive safety, motorcycle design, distribution and performance parts, architectural and composite panels, road safety products, bespoke engineering and the manufacture and supply of Corex Honeycomb Core. Quality standards are paramount





mclaren.com

McLaren Automotive

McLaren Automotive was founded in 2009 and delivered its first car to a customer in late 2011. It has already proved itself as one of the world's most innovative car makers.

The company has grown its product portfolio rapidly, introducing nine cars so far. It now offers a range of driver-focused, high-performance road cars, from the out-of-this-world Ultimate Series hypercar, the P1™, through the Super Series 650 & 675LT super sports cars, to the newly introduced 570s Sport Series sports cars, the entry point to the brand. The whole range perfectly encapsulates its racing pedigree and ethos. It is not only the cars that are the stars. McLaren Automotive designed and built its own manufacturing facility at its Woking headquarters in England, a production centre that is truly unlike any other car factory.

McLaren Automotive was founded to produce cars as technically innovative as those of the McLaren Formula 1™ racing team. All of them have been engineered to offer supreme driver focus and technical innovation, along with superb levels of refinement, reliability and quality. The company can also make the unique claim that every road car it has ever produced has a carbon fibre chassis, the same lightweight and extremely strong material that forms the core structure of every Formula 1™ racing car. More than 5000 of McLaren's Super Series models have now been delivered to customers, and production of the limited-edition McLaren P1™ hypercar – which uses both a twin-turbocharged V8 engine and electrical hybrid assisting it to deliver a total output of 903bhp – will soon come to an end. It will be followed by the ultra-exclusive and track-only 986bhp McLaren P1™ GTR, while the launch of the new Sports Series in 2015 will more than double the number of vehicles produced each year.

The McLaren Production Centre (MPC) in Woking is every bit as clever and innovative as any of the company's products. It was created with the unique purpose of combining hand-built construction techniques with the precision, accuracy and

craftsmanship of motorsport engineering. It fuses the world of Formula 1™ with the systematic standardisation of high-volume automotive manufacturing. The MPC facility sits adjacent to the McLaren Technical Centre (MTC), home to McLaren Automotive's engineering team, and both buildings were designed by Lord Foster's architectural design team.

Like the MTC, the MPC was designed from first principles to have a minimal environmental impact, despite its 32,000 square metres of space. The building's semi-sunken construction means it has a maximum height above ground level of just six metres, which also reduces heating and ventilation costs. There are two levels, with a logistics floor beneath the production area for storing components and parts. This allows the assembly floor to have far more space and light than a typical car factory, effects reinforced by the white ceilings, fully tiled light grey floors and white panelled walls. The layout of the assembly hall has been carefully designed to deliver efficient workflow. At the same time the open-plan format makes it easy to see what's going on throughout the whole facility.

All McLaren cars are built by hand, with vehicles being delivered to the next operation by its technicians as different tasks are performed. One of the first things that strike visitors is how quiet it is – there are no robots or clanking conveyors so conversation can be carried out at normal levels. Computer modelling was used extensively during the building's design phase to make assembly as efficient as possible. This has ensured the best working conditions for the 200 highly skilled assembly technicians. Parts are delivered to the assembly hall from the logistics level as required to minimise clutter.

One of the biggest challenges was to locate the paint facility within MPC, despite the need to operate within a sealed environment. The answer was to create a room in the assembly hall itself, with glass walls to let in light and to make it easy to see the cars passing through. Highly skilled paint technicians spray every McLaren by hand, which gives great flexibility and maneuverability around the subtly complex shapes and form of the cars.

Ensuring quality remains critically important, with the hand-built assembly not reducing the requirement for the accuracy. This supports one of McLaren Automotive's cornerstone philosophies – no compromise. That's why every car made in the MPC is measured using a Coordinate Measuring Machine with two automated ruby-tipped probes that gently touch each car up to 470 times to ensure it is within McLaren's demanding tolerances. Measuring with an accuracy of 50 microns (a typical human hair is 30 microns thick), it's a process that takes around 40 minutes for each car, and is yet further proof of the precision that underlies everything McLaren Automotive does.

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