2020/21

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TR Fastenings provides bespoke fastening solution to leading Tier 1 automotive company

Faltec Europe employs TR Fastenings to deliver competitive fastener supply and tooling solution

About Faltec Europe

Faltec Europe Ltd, part of the global Faltec Group, is a world-class manufacturing company and an accredited Tier 1 supplier to the automotive sector. Faltec Europe manufacture many of the interior and exterior vehicle trim products you see every day on the most popular cars on UK roads.

Faltec's European division produces over 300 car products from front bumpers to radiator grills, roof mouldings, door mouldings, door sashes, roof finishers, weather strips and lots more.

Faltec's business model is based on being robust, flexible and adaptable to meet customers' requirements within a fast-changing market and global economy. This case study is a true demonstration of that ethos.

Industry landscape

The automotive industry is a vital part of the UK economy. The industry has an £82 billion turnover (plus £20.2 billion value added). More than 30 vehicle manufacturers in the UK rely on a complex network of suppliers - a single car has around 30,000 parts. In the UK there are also around 2,600 component manufacturers supplying parts directly to OEMs.

The automotive industry has a traditional tiered supply chain (Tiers 1, 2 and 3, with Tier 1 feeding directly into OEMs), but some lower tiered component manufacturers, such as TR Fastenings (TRF), are challenging the existing market structure, taking a much larger role in innovation and Tier 1 production-line support.

Project background

Faltec Europe required a bespoke fastening for a new major programme it had recently secured with a key global OEM. The trim product to be developed was an injection moulded exterior trim part for a new vehicle due for release in November 2019.

A late design change to improve the fit of the part to the vehicle required the attachment of a strengthening support via a Peel type rivet. Peel rivets are a type of blind rivet designed to offer improved support in brittle, soft or ductile materials, applicable to the vehicle trim products in this project.

Fired using bespoke tooling, the head of the Peel rivets explode and become mushroom-shaped as they enter the moulding. This creates a large blindside bearing surface, significantly reducing the risk of the rivet sinking into or breaking the moulding.

TR Fastenings (TR) and Faltec are both active within the North East Automotive Alliance (NEAA) network. Following a successful pitch, TR Fastenings was appointed By Faltec as the company's provider.

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Approach and solution

As a global specialist in the design, engineering, manufacture and distribution of high quality industrial and Cat C fastenings, TR was able to identify the original equipment source and submit a competitive supply solution. TR is renowned for working with clients from design table to production line to achieve innovative, effective and efficient solutions. The TR product and tooling for this project offered a robust solution and would guarantee efficient production - this secured the initial business.

Not only could TR provide the specific fastener solution, but in this instance, it was also able to supply bespoke tooling compatible for the fastener. The tooling required a bespoke rivet gun that would not only automatically fire the rivets into the moulding to be joined, but also have capability to apply rivets in a fast production environment.

Project challenges

Timescales were challenging for both parties but with close co-operation qualified parts were supplied along with tooling for development and ongoing production, both being delivered on time. Not only did TRF have to supply production intent rivets in a short timescale but also the gun was ordered late due to last-minute design changes, requiring 24 hour delivery.

The late design change by the OEM required special rapid response by TR and Faltec. TR was able to take the lead on supplying fast-production intent rivets and tooling in a very short period.

Greg Lynch, Automotive Business Development Manager at TR said, “Perhaps the biggest challenge came with technical advice and training. TR had to ensure correct and safe operation of the rivet gun. Due to its bespoke nature, Faltec staff responsible for the operation had no experience in the use of this particular tool and engineering.

Greg further explained that when Faltec first tried the application they thought it had failed. However, once it had been confirmed that the rivet was in fact the correct specification, it was understood that perhaps further assistance would be required in how to use the tool and rivets in a fast production environment.

TR’s Quality Manager, Dave Fearon, visited Faltec at the production facility to help lay out the process and demonstrate how to use the Rivet tool in a safe manner. It was acknowledged that without correct use, the application could have been dangerous to operators.

As full service was of the utmost importance to TR their engineers visited Faltec several times, initially to explain how the Rivet gun would operate, but then to train staff in appropriate use and safety.

TR provided ongoing support throughout the initial trial phase and was asked to assist in technical evaluation ready for onsite production at Faltec. This project is indicative of TR’s service which goes far beyond product supply and applications.

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Project outcomes and advantages

Following success with this project, TR has been nominated to supply serial production, cementing its ongoing relationship with Faltec.

Outcomes and advantages of the project included:

- Parts and tooling were delivered on specification and on time given challenging timescales
- Due to TR's extensive capability, it was able to offer Faltec additional product tooling over and above the initial bespoke fastening RFQ
- TR provided ongoing project support ensuring onsite production timescales were met
- The successful project has resulted in ongoing work for TR for the supply of serial production for a further three years

Project reflections

"TR Fastenings want to be the first point of contact for Faltec's ongoing fastener requirements and business development, so providing a first-class service and gaining trust from Faltec Europe was of paramount importance to us. Being an active member of the NEAA has enabled good business networking opportunities with new and existing customers."

Greg Lynch, Automotive Business Development Manager

"Following late design changes on a project, Faltec Europe was faced with a challenging timeline to find a solution. We contacted TR for their input and support, which proved invaluable. TR quickly offered a product that met the design requirements and they also suggested solutions on the assembly equipment that could be used, speeding up our process development. The final result was a change delivered on time and on budget."

Wayne Turnbull, Senior Manager

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Chris Black of TR Fastenings invited to participate in new NEAA trade group

Chris Black, Director of Automotive Business Development at TR Fastenings has been invited to be the industrial lead for the new Trade Working Group set up by the North East Automotive Alliance (NEAA), the largest and fastest growing organisation of its kind in Europe.

This recently launched trade group is a key part of the NEAA's 5 year strategy to better understand and support the trade activity of its members. With over 35 years of industry experience and an active alliance member, Chris Black is well placed to share latest insights, best practices and successes achieved through his global leadership position with international specialist TR Fastenings.

Founded in 2015, the NEAA is an industry-led automotive cluster which aims to be at the forefront of the Government's strategy to progress automotive technologies within the UK. The north east produces 30% of all UK passenger vehicles, which includes 20% of all electric vehicles across Europe and 10% of all UK non-highway vehicles per year. The region has firmly established itself as the leading UK location for battery manufacturing and is now the world leader in power electronics, motors and drives. It is home to a globally competitive supply chain which consists of 31 tier 1 suppliers and a host of specialist SMEs, R&D centres and a strong support network.

Chris Black feels passionately about his involvement with the NEAA; *"Since joining the alliance five years ago, I've been actively involved attending meetings, events and providing guidance, whilst also encouraging collaboration between members. The alliance has grown significantly during this time which reflects the buoyancy in this sector and a need for a trade support mechanism for members.*

"TR has a vast global footprint which continues to expand and by sharing our experiences with fellow members, we can help to find solutions to the challenges of growing overseas such as investment, recruitment and securing new business.

"This trade group brings together ambitious companies looking to scale up, within the UK and abroad, and I am truly delighted to be working with Rohan Kohli at the NEAA to support this new initiative."

The NEAA Trade Group meetings are held quarterly with the first meeting hosted in November 2019 at the Port of Tyne in South Shields.

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TR Formac expands presence in Thailand and joins Electric Vehicle Association

TR Formac, part of Trifast plc with corporate world headquarters in East Sussex, U.K. has expanded its global presence by moving into larger premises in Prawet, Bangkok, in response to strong growth across Asia and winning new business from global OEMs. The new facility provides around 3000 sq. ft. of space enabling the company to trade more efficiently and to help further strengthen its position in the growing EV market.

Operations in Thailand are headed up by Country Manager David Ng, a knowledgeable and well connected individual who has witnessed the fast development of the automotive sector across the country. Chris Black, Global Director of Automotive Business Development, will be supporting David and the TR Formac team to increase their market share of the Automotive EV sector, sharing his experience and knowledge with the Thailand team.

David commented; "*There are huge growth opportunities in Thailand with key focuses on technology and innovation of electric vehicles. With this in mind, and to collaborate with other companies, we decided to join the Electric Vehicle Association of Thailand (EVAT) which the Thai government was instrumental in launching.*

"There are three phases involving intensive R&D to enable the production of 1.2 million units by 2036 and 690 EV smart charging stations. All types of electrified vehicles are on the agenda; battery, hybrid, plug-in and fuel cell. Moving into bigger premises facilitates our continued growth; it's a key part of our strategic business development initiative to move us forwards."

The Electric Vehicle Association of Thailand (EVAT) was set up in 2015 by individuals from the private and public sectors to promote and support industrial manufacturing, research and development, and EV usage in Thailand. There has been strong recognition within the country, specifically at government level, to strengthen knowledge and global competitiveness of Thailand as an EV manufacturer. Supported by the Ministry of Energy and the Energy Regulatory Commission, the EVAT enables members to exchange information and initiate changes towards a low-carbon transport community.

TR's manufacturing capacity in Malaysia, Singapore and Taiwan totals over 359,000 sq. ft. of factory space producing 525 million components per month. Thailand is the 13th largest automotive parts exporter and the sixth largest commercial vehicle manufacturer in the world with aims to become one of the top performers in the global automotive market.1

TR Formac is recognised throughout the industry for world-class products and services, manufacturing and distributing a huge range of industrial fasteners and associated components. PSEP (Power Steel & Electro-Plating) in Malaysia was acquired in 2011 and the Thailand office opened in 2013.

Source: 1 ASEAN (Association of Southeast Asian Nations) briefing online report 2018

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TR Fastenings – keeping it local

For over 45 years TR Fastenings' UK manufacturing plant in East Sussex has produced millions of products, including its own highly regarded Hank® brand.

The current purpose built factory which opened in 1992 houses 50 single and multi-spindle machines and produces 3 million parts each month. The multi-spindle machines can form, turn, drill, knurl and part off a steel component in as little as 1.2 seconds.

In an era where manufacturing is usually focused in the Far East, TR Fastenings is proud to have retained their manufacturing unit in the UK to maintain a competitive advantage through greater flexibility with pricing, volumes and short lead times. Additionally, sourcing raw materials locally allows faster production times to meet customer demands.

As the only producer of the genuine Hank® Rivet Bush, the site also manufactures the K-Series® nuts as well as bespoke items in aluminium, brass, stainless and steel. The diverse range of machines enables TR to produce products as small as M2 and as large as M36, which are used across a host of industry sectors.

Looking to the future, the TR Fastenings UK manufacturing plant will continue to make the product it is famous for – the Hank® Rivet Bush. As well as the design and manufacture of new products, such as the recently introduced K-Series® Thin Nuts, TR will continue to work with customers with any application requirements and manufacturing bespoke parts, when required.

Simon Lockeyear, Production Manager, who has worked for TR Fastenings for the last 37 years comments: *'The company is proud of its factory, the quality of the products we produce and the loyal and skilled workforce. In a day of dominant foreign imports, it is a breath of fresh air to have a UK producer holding its own in a very competitive market place.'*

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Getting a grip on fasteners and their coatings within the transport sector

A focus on automotive and the EV market

By Sven Brehler, Engineering Project Manager at TR Fastenings

As a full service provider with a worldwide reach from the USA to Asia and Europe to the UK, TR Fastenings works closely with automotive Tier 1 companies to respond to their needs and global developments. Supplying 10,000 different fasteners annually into the automotive sector, TR is playing a central role in shaping the future of the fastener industry within this changing space.

The global electric-vehicle (EV) industry is expanding rapidly with 60% year on year increase and sales growing to 2.1 million units in 20181. As a result, advanced technology is now a top priority for competing OEM's and the role of fasteners is significant.

Transport technology companies around the world are under pressure to innovate as a result of rising cost pressures, and trends such as lightweighting, autonomous driving and electro mobility growing apace.

Suppliers into Tier 1, such as TR Fastenings are increasingly required to come up with technical innovations for fasteners that work harder and 'smarter' that can be produced quickly and cost-effectively.

The key fastening applications within automotive include sub tier manufacturers; seating; power trains; thermal management; HVAC; high-end performance cars and the EV market - the latter being the fastest growing sector for TR Fastenings to which they supply automotive grade fasteners to OEM specification.

It's an evolving application that is leading the fastener industry to greater sophistication.

Lightweighting in fastener technology

Achieving fastener weight reduction whilst maintaining high torque demands have become an important requirement in automotive applications. Industrial drive systems such as the Mortorq® screw require up to 25% less material in the head yet still provide super high strength internal drive – an example of an innovative system providing the lowest head possible without compromising on fastener assembly performance.

One of the heaviest components in an EV is the electric battery, which runs the risk of negating the idea of carbon emission reductions if the vehicle's weight increases energy consumption. As a result, fastener companies such as TR and their supply chains are constantly looking to innovate and are inspired by other transport industries such as aerospace.

Fastenings and their coatings within the EV sector

Batteries, motors, transmissions and all their associated electronics are the leading technology areas of EV R&D and the fastenings and their coatings play an essential role.

Innovative engineering techniques are now being applied throughout the design and manufacturing process in order to meet customers fast changing needs.

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Getting a grip on fasteners and their coatings within the transport sector

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Why are fastening innovations crucial for EV battery (EVB) manufacturers?

There are a number of components which are particularly relevant for EVB assembly - fasteners with electrically isolating coatings; lightweight, non-magnetic fasteners; battery retention bolts; cable management hardware and compression limiters.

All these require fasteners to provide robust and secure settings for the costly battery. And fasteners are essential, not only in the electric vehicles themselves but also in supporting technology and applications including charging units, EV battery casings, and general infrastructure equipment.

Coatings do more than just provide protection against corrosion

An EV's battery module can be secured with inserts for plastics that are used to maintain either good connectivity where required or avoid unwanted short-circuits due to corrosion or product failure.

Fasteners for the EV batteries are designed to incorporate various coatings to suit the functionality of the joint. Examples of these include: silver plating to improve connectivity or high temperature resistant organic top coat to provide an electrical barrier.

Sven Brehler, Engineering Project Manager at TR Fastenings explains: "Component suppliers are beginning to work closely with battery module manufacturers to develop and apply functional coatings to fasteners including protection from corrosion.

These help to either maintain good electrical connectivity or retain isolation where needed to avoid unwanted electrical resistance or potential short circuits."

Battery heat

Highly conductive coatings can be applied to certain materials such as plastic fasteners or fasteners prone to corrosion so they can act as electrical conductors, being part of the electrical circuitry. Increase in electrical resistance causes generation of heat together with loss of energy.

Sven continues; "EV batteries can generate high levels of heat, so it's essential that it is distributed over the assembly to provide general cooling and avoid localized overheating. Busbars can support the distribution of heat from local hotspots to heat sinks, but only when correctly tightened to optimise heat transfer between the various elements. Using fasteners in thermally and electrically conductive coatings will aid an effective service life."

Insulation coatings are advantageous

Regarding insulation coatings, in certain cases electrical currents must be contained. Barrier coatings avoid electricity from going where it shouldn't and causing interference or a risk to safety through electrocution or fire.

Specific coatings used include PTFE (Polytetrafluoroethylene) because it is highly heat resistant with the ability to retain its properties across a temperature range, from -200°C to +260°C.

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Getting a grip on fasteners and their coatings within the transport sector

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It also has low predictable friction, which can help to create secure joints through torque control essential when assembling the battery module.

One solution does not fit all

As well as hardware in battery casings and structures, many differing conditions also need to be considered so adopting a 'one solutions fits all' approach to applying coatings would not be appropriate.

Depending on the material and the function of a particular component and the task it performs, different solutions are necessary.

Automotive quality standards

TR Fastenings supplies from its own IATF 16949 as well as from a select range of external suppliers. The International Standard for Automotive Quality Management Systems is based on ISO 9001 and applicable to organisations that manufacture components, assemblies and parts for the supply into the automotive industry.

Only manufacturers passing strict audits and reviews by TR's fully VDA 6.3 certified auditors, and able to deliver to the highest OEM quality standards are used to provide the necessary high quality products into the battery market. This helps to ensure a stable and sustainable supply chain in addition to the engineering and logistics TR can deliver.

Early engagement in design

Manufacturers and sub-contractors must work together from the start to ensure the correct Design for Manufacturing (DfM) considerations. When cost-efficiency, sourcing, materials and product lifecycle concerns are discussed early on at the design table; costly delays later on can be avoided.

As an emerging transport sector, the fasteners needed in EV charging units and their associated structures, requires manufacturers and their supply chain to have technical knowledge and experience. There are increasing pressures and opportunities involved working within intricate global supply chain networks, and manufacturers servicing the automotive, electronics and technology sectors will be best placed to work with emerging EV related businesses.

Looking to the future

The EV sector is a fascinating one to watch as it develops and gains momentum. As the requirement for robust EV charging points grows, the automotive industry continues to innovate with fasteners playing a major role in the electric vehicle revolution.

It is a rapidly accelerating market with huge potential for manufacturers and suppliers. It is therefore essential the supply chain has the infrastructure, technology and solutions in place to meet future demand for electric car use.

Source 1: https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/expanding-electric-vehicle-adoption-despite-early-growing-pains

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TR responds to unprecedented global sheet metal fastener demand

The outbreak of the Covid-19 pandemic created a surge in global demand for medical equipment, with the subsequent knock-on effect of a huge demand for sheet metal fasteners, specifically for those companies producing essential equipment, including ventilators. International specialist TR Fastenings focused on being as responsive as possible to meet this demand and is now further investing in its sheet metal range to accelerate growth of this product portfolio.

TR has been leading the sheet metal fastening industry for over 45 years, providing products to more than 5,000 global customers from 32 business locations in 18 countries. TR's ability to move with the times and adopting a fast track approach has firmly positioned the company as a market leader; an internationally respected manufacturer who is flexible enough to continually adapt its range and stay ahead of the competition.

This latest investment sees expansion of its own highly regarded Hank® Self Clinch Fasteners and the launch of a new range of K-Series® Thin Nuts. TR's own facility in the UK can manufacture as small as M2 and as large as M36 which are used across a wide range of industry sectors.

TR has a robust business model for large OEM's and SME's and competitive advantage is achieved through flexible pricing, volumes and short lead times with the capability to source raw materials locally, allowing faster production times to meet demand.

There are many application challenges within the sheet metal industries and TR can offer fastener testing capabilities across mechanical, dimensional, installation, and plating and finishes. TR supplies sheet metal products for pressing, riveting or welding during manufacturing or assembly processes.

TR's website leads the way in showcasing sheet metal fastening solutions

TR's industry leading website now further enriches the customer journey by showcasing the very latest information on sheet metal fasteners with technical, explanatory animations and visualisation tools showing how products can be installed.

The videos and enhanced online resources provide key insights including detailed product specifications such as dimensions, materials and performance guides, FAQs, spotlight pieces and customer feedback supported by global sales and marketing activity.

Steve Wallis, Sales Office Manager at TR Fastenings, said: *"The recent pace of change across the industry has been unprecedented and TR has been able to utilise years of experience to adapt to this. Customers are looking for higher quality and smarter application-based sheet metal fasteners, and selecting and installing the right fastener, within tight timeframes, is a challenge. This is where TR's global teams can add real value, from our knowledgeable customer services assisting with product suitability through to our expert quality and application engineers providing guidance from early design through to specification and manufacturing."*

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TR achieves prestigious aerospace AS9120 Certification

International fastener specialist TR Fastenings has achieved the AS9120 Certification following an extensive audit of its operations and in response to customer demand. AS9120 recognises the continuing commitment to aerospace quality and conformance and places TR amongst a select group of companies that have been recognised for practicing the highest quality standards required in this sector.

The AS9120 Certification is specific to organisations holding and distributing Aerospace related components such as fasteners and is designed to ensure that parts are handled and tracked properly while they are en route from the original manufacturer to the end customer.

It adds almost 100 additional requirements specific to aerospace suppliers beyond the general manufacturing standard ISO 9001:2015, including traceability from receipt to delivery, counterfeit parts prevention and detection, and evidence of conformity and on-time delivery. All of which are critical for meeting the most stringent requirements of supplying components into the aerospace and defence sectors.

With a proven track record in these sectors, TR's post Brexit strategy is to focus on differentiation by using its industry experience, technical expertise and proven capabilities to further expand its business within aerospace.

Kevin de Stadler, Sales Director at TR Fastenings comments: "*It was a long process but the rigorous work behind it further strengthens TR's position within this sector and guarantees the highest level of competence. It's proof that we are committed to being a major player in the supply of fastenings to the aerospace and defence industries and continuing to increase our footprint.*

"It will open up opportunities such as improved performance against competitors and expansion of our UK market. We also hold ISO 9001 and 14001, however, AS9120 sets us apart in the industry and now firmly positions us at the forefront of fastener provision in this highly regulated sector."

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30 years with TR Fastenings

2020 marks 30 years with TR Fastenings for Glenda Roberts. She recently stepped down from the Trifast plc Board, as she considers her retirement plans and will be working on special projects. She has seen the company grow from a UK business to become a global Full Service Provider.

Here editor Will Lowry, speaks to Glenda about how the Group, and the market, has developed over the last three decades, and about future opportunities.

Although Glenda is celebrating her 30th anniversary at TR Fastenings, she's actually been in the industry a little longer. Before joining TR, she had been with another fastener company for seven years. "When I first joined, TR had already positioned itself between the manufacturer and the customer. It was a smaller company with 8 sites focused very much on the UK market – and it was doing very nicely developing JIT fastener supply systems inside larger customers".

Then Glenda remembers that a standard enquiry could take two to four weeks to complete using post, telex and fax machines. "Developments such as the internet and email connected us to the world, and really helped us to take a leap forward. Mobile phones weren't commonplace when I first joined the company. Very few people had them, and everyone was nervous about using them because of the cost - how far have we come today when everyone wants instant responses?"

In 1998, TR Fastenings decided to expand outside of the UK, largely because its customers and other businesses were migrating to countries with lower manufacturing costs. "We would have lost these customers if we hadn't taken that decision," says Glenda. "I was asked to put together a global team and to follow the business initially to China and India. That success led TR to open operations in other parts of the world to support global customers."

"We carried the processes and the direct line style feed systems from the UK to the new customer locations. Not only did this help to keep the business, it was a big success story for us. We made it easy for companies setting up in these new areas to have consistency of supply, processes and services. Continuing this successful strategy, TR Fastenings opened operations in America, China and India and has continued that strategy today adding Hungary, Italy, Germany, Spain, Thailand and the Philippines in recent years. Focusing on large global companies, and our tier one suppliers, rather than going after local business, was undoubtedly the best thing we did. We worked with companies that needed the services and support that they were used to getting from the UK and Europe."

"Working with these multi nationals, and their global commodity teams, enabled us to demonstrate how well we could service them almost anywhere. Consequently, they were keen for us to work with them in other countries, and so we were able to meet their needs at their locations – whether in Europe, America, or Asia."

Wherever customers have moved geographically, TR has identified opportunities to acquire manufacturing

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30 years with TR Fastenings

Continued

businesses already established within those geographic markets.

"This was another big step in our development as adding manufacturing sites to the group meant we weren't just another distributor – we were now a full-service provider and it gave us gravitas", Glenda says. "By evolving our engineering and technical support services, we were able to work more closely with customers on applications and solutions."

"We now have eight manufacturing sites – 32 sites in total. We are also proud of the 36 master distributors who support us, especially in areas where we need geographical coverage. They are integral to our Group and have enabled us to get our proprietary branded products to customers as quickly and effectively as possible."

Application engineering and technical support

TR sees this as a key part of its success story, and this enables the company to work closely with its customers with early involvement at the design and development stage.

"A high percentage of the parts we supply are dedicated customer specials to customer drawings. But often there is a need for technical input to assist and this is where our engineering teams are involved", explains Glenda.

"Building up these relationships and supporting the different disciplines on a customer's site encompassing quality, logistics, sourcing and technical demonstrates that we understand their needs and can meet their requirements."

"Whilst working with customers has become easier, their requirements have become much more demanding over time", Glenda tells me. "They have very specific needs and wants. There's also a lot more documentation these days, with more detailed work involved. We even have in house lawyers to deal with the vagaries of the contracts that each new piece of business entails. Some companies might see this as a challenge, but thanks to our experience, knowledge and capabilities, we are more than able to meet these requests. This hopefully helps us stand out." Glenda continues, "We are no longer just supplying a humble fastening; these products do an important job and could be involved in a safety critical application. Therefore, guaranteeing quality and reliability is essential."

"A lot of contracts, especially for the automotive market, can be for five to ten years. This means we have to make sure we get everything right and are flexible enough to accommodate any changes that might happen. Customers have heightened expectations on quality with zero ppm as a requirement. However, we believe it's really about having a zero-defect philosophy – because that encompasses everything we try to do".

Handling Covid-19

The Covid-19 pandemic is unprecedented and certainly has proved one of the most challenging times in Glenda's 30 years at TR.

"Because our operations are located around the world, we felt the impact of the virus from the first outbreak in China, and we monitored this as it spread globally," says Glenda.

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30 years with TR Fastenings

Continued

"Our first concern was to make sure our staff were safe, and all of the correct health and safety protocols were in place. After this we focused on supporting our customers and our vendors." TR set up a Covid-19 task force, which included the board and key personnel, to help it manage its supply chains and customer base. "When you are an FSP there is no buffer as you are the only line of supply. "As part of our business continuity plan that originally was put in place during the SARS outbreak, we looked at all the risk factors, the numbers of weeks stock and in WIP for every customer special. Then we mapped out where our vendors were based compared to the virus epicentres. This enabled us to stand back and evaluate whether we had supply issues looming. We went into minute detail as it was no small task, but it was important to do it thoroughly. There have been challenges along the way, but customers have not been impacted and we have had great support from our vendor base."

Glenda believes the next challenge is the length of time it will take markets to get back to 'normal' post Covid-19. "The pandemic will undoubtedly impact companies – particularly those in the automotive industry, and liquidity will become a critical factor for many. The shape of recovery will also have a huge impact. Will it be a 'U' curve, a 'V' curve or a fast return to a new normal? She believes the next three months will give us a good indication of how things will develop. "TR is in a strong position financially, so we can manage the current situation. It won't slow us down or prevent us from focusing on opportunities and interesting markets for the future."

Future opportunities

"Coming out of the pandemic we see opportunities in providing even more product to the Medical industry. The move to 5G and the infrastructure requirements is another area of focus as we have worked on projects for 3G and 4G in previous years."

"But the key and potentially the largest growth area is in supporting builds in the EV sector which is the future. If Covid-19 has taught us anything it is that our health and welfare is paramount, and a cleaner environment is essential. We will have to adapt to the materials we'll be working with in the future, such as composites, and how we adapt to any new opportunities this may create. For instance, we are currently looking into silver plating for fasteners, which is not as common, but this is required along with the need for electro-static finishes in applications involving EV batteries. This is an example of how we are being pulled into new areas and providing the right products for these applications. These new opportunities are fastener rich which is good for our industry and I think we are all in for an interesting time".

Credit:
Will Lowry - Editor
Fastener + Fixing Magazine
www.fastenerandfixing.com

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Fixing the mobility future

By Ian Parker

Catastrophe theory is a branch of mathematics which looks at sudden and often unexpected change. Such events are usually both good and bad. They can be anything from a bent ruler suddenly flexing the other way to the spread of a new virus. And they're not unforeseen by everyone. Bill Gates warned of a virus pandemic five years ago. Selling prevention is always much harder than selling cures.

When a catastrophe is underway, changes can be rapid as can human responses to them. Everyone can see that the Covid-19 pandemic is firstly a health issue, but it will go on to affect much more than that. Mathematicians are not the only people trying to see where things are going. Engineers are too, including those in the fasteners and fixings business.

How will recent trends, reinforced by the pandemic, affect transport and what developments will the fasteners business have to make to support them? Will there be much less travelling and will many people eschew public transport to avoid getting close to others? Will travel and transport broaden out into mobility, with a much wider range of vehicles and their operation.

TR ponders the issues

Some 34% of TR Fastenings Ltd's business is in automotive, so the company has a great interest in where the business is going. The company is part of Trifast plc and is an international specialist in the design, engineering, manufacture and distribution of high quality industrial and Cat C fastenings principally to major global assembly industries. TR has 32 business locations within the UK, Asia, Europe and the USA including eight high volume manufacturing sites. TR's manufacturing network represents a third of the group's business.

It was founded in 1973 by Mike Timms and Mike Roberts who gained their business knowledge through previously working as managers in the fastener industry.

In 2018 TR Fastenings celebrated 45 years of "Holding the world together". Today, it has some 1,300 colleagues working in 32 divisions in 18 countries across three continents, with three Technical and Innovation Centres located in the UK, USA and Sweden. TR's first Centre opened in 2018 and is in the heart of Sweden's automotive industry, on the Lindholmen Science Park in Gothenburg which is home to many of the key players developing forward-thinking solutions for the automotive market, including Electric Vehicle (EV) technology. With major OEM firms and IT software developers and technical and engineering teams from Tier 1 manufacturers, Lindholmen is fast becoming a hub for automotive innovation in Europe.

Sven Brehler, engineering project manager at TR, spoke to Fastener and Fixing Magazine about how he sees the transition from automotive to mobility. He says:

"*We use the term mobility because there may be a lot of changes following coronavirus. For example it may hasten people towards electric, self-driving vehicles. The whole automotive sector might actually physically change away from the combustion engine and steering wheel control.*"

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Fixing the mobility future

Continued

"*We use the term mobility because there may be a lot of changes following coronavirus. For example it may hasten people towards electric, self-driving vehicles. The whole automotive sector might actually physically change away from the combustion engine and steering wheel control.*"

But will the adoption of electric propulsion make that much difference to the fasteners used in vehicles? Brehler thinks it will. He continues "Electric vehicles are designed on such a different platform - for example we can drive individual wheels or we can work though a gearbox or converters - we have many more choices than we have with a conventional car. We use the term mobility because units may become smaller, if we can get round the status symbol element of a car, particularly in the UK.

"Home deliveries from companies such as Amazon, Ocado, Tesco and Asda etc, have increased dramatically during the lockdown and if autonomous vehicle development is pushed forward, we might be able to include that in mobility as well. We don't know yet what directions such things might take."

Being ready for such changes is not easy and companies will need to watch the market closely and move quickly. TR is watching the mobility business with keen eyes as a large proportion of its sales are in that area and it's increasing. The company's automotive business has just hit 34% of sales and could go higher as this sector becomes mobility. Smaller vehicles may mean more vehicles and so more fasteners.

Even though the automotive industry is currently hard hit by the effects of coronavirus, the mobility industry will remain an important sector in the near future. There will likely be some large changes to the current automotive industry in the next decade, and the need for individualised mobility will rise. Therefore, the company expects the mobility industry to be a large part of its future business, but with more diversification into other markets, such as healthcare and automation.

Brehler continues *"The new technologies required for development and maturation of the New Energy Vehicles (NEVs) and the subsequent energy supply has seen a large influx from technologies developed in other industries, such as the mobile technology and aerospace market. Our expertise in high tech applications, electronics and electrical switch gear has allowed TR to follow and support the advances in electrical propulsion, storage, charging and infrastructure for the transport of tomorrow.*

The current standstill of production has allowed the OEM and Tier 1 suppliers to take stock of their current designs and projects still in the pipeline, the main focus being on overall reduction of cost and weight without compromising on the current designs. composites and honeycomb structures, which benefit from bonding. However, adhesives need large contact points between the materials to be able to create structural joints, favouring mechanical fasteners for lean and slender designs. Furthermore, a refocus on maintenance and repair as well as reuse and recyclability prefer the application of removable fasteners."

What effect will NEVs have on fastener demands? Interior and trim applications are expected to maintain a similar route to reduce weight whilst promoting an increased modularity to allow customer's individualism at lowest

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Fixing the mobility future

Continued

assembly costs. The greatest disruption to the original bill of materials will come from the change in propulsion and the safe storage of on-board energy.

Ensuring safe storage and delivering it to the propulsion on demand requires electronic control mechanisms which cannot be disrupted by electro-magnetic waves or affected by corrosion, contamination or moisture. This is where there will be a growth in uptake of isolating coatings and non-magnetic fasteners. Initial NEV designs used bolted-on batteries, whereas new designs are looking to integrate the battery assembly as part of the structural design of the vehicle. Battery retention bolts and compression limiters are playing a large role in the materialisation of these designs to allow transfer of forces through the structure, whilst allowing access for repair and maintenance. Well designed cable management will secure the ever growing wiring looms for delivery of energy to all parts of the vehicle and report back any key information picked up by the multiple sensors.

Quality and recycling

Reliability and quality are controlled through fastener traceability from manufacturers on the AVL (approved vendor list) which are signed up to TR's code of conduct following a thorough auditing programme.

This avoids the introduction of counterfeit or products with questionable quality to enter the supply chain. Brehler says "Early involvement of application engineers allow our customers to optimise the design by selecting the right product to suit the requirements. System testing has been a mandatory requirement within the automotive industry.

We cannot stress enough the importance of these tests as they can make a difference in case of a vehicle accident. The PPAP (production part approval process) proves that parts are manufactured to the required standards.

"The majority of fasteners have a high content of steel, which can generally be reused in the recycling process. The automotive industry has been a forerunner restricting dangerous materials, making recycling of fasteners possible without the need of firstly needing to separate them from the rest of the scrap. Our plastic fasteners are generally manufactured of similar hydrocarbons used in trim and interior applications, allowing these parts to follow the main recycling stream. When involved with new projects and applications TR's application engineers consider the removability of the fasteners as well as the installation and function during operation."

Thailand and the EVAT

In keeping with its international and forward-looking philosophy, TR Formac, part of Trifast plc, has expanded its global presence by moving into larger premises in Prawet, Bangkok, in response to strong growth across Asia and winning new business from global OEMs. The new facility provides around 3000 sq. ft. of space enabling the company to trade more efficiently and to help further strengthen its position in the growing EV market.

Operations in Thailand are headed by Country Manager David Ng, who has witnessed the fast development of the automotive sector across the country. Chris Black, Global Director of Automotive Business Development, will be supporting Mr Ng and the TR Formac team to increase

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Fixing the mobility future

Continued

their market share of the automotive EV sector, sharing his experience and knowledge with the Thailand team.

Ng says *"There are huge growth opportunities in Thailand with key focuses on technology and innovation of electric vehicles. With this in mind, and to collaborate with other companies, we decided to join the Electric Vehicle Association of Thailand (EVAT) which the Thai government was instrumental in launching.*

"There are three phases involving intensive R&D to enable the production of 1.2 million units by 2036 and 690 EV smart charging stations. All types of electrified vehicles are on the agenda - battery, hybrid, plug-in and fuel cell. Moving into bigger premises facilitates our continued growth; it's a key part of our strategic business development initiative to move us forwards."

EVAT was set up in 2015 by individuals from the private and public sectors to promote and support industrial manufacturing, research and development, and EV usage in Thailand. There has been strong recognition within the country, specifically at government level, to strengthen knowledge and global competitiveness of Thailand as an EV manufacturer. Supported by the Ministry of Energy and the Energy Regulatory Commission, the EVAT enables members to exchange information and initiate changes towards a low-carbon transport community.

TR's manufacturing capacity in Malaysia, Singapore and Taiwan totals over 359,000 sq. ft. of factory space producing 525 million components per month. Thailand is the 13th largest automotive parts exporter and the sixth largest commercial vehicle manufacturer in the world with aims to become one of the top performers in the global automotive market. PSEP (Power Steel & Electro-Plating) in Malaysia was acquired in 2011 and the Thailand office opened in 2013.

Responding to the Covid-19 pandemic will require a huge range of responses from many industries and the companies which will benefit are those which can look ahead and move quickly. Most people would probably think that the fasteners business would be not be affected at all and certainly not quickly. But the reality is very different.

Following the pandemic, transport will probably never be the same again. There will be winners and losers and in some cases it will be extreme. As Zoom is finding in the IT sector, it is an ill wind that blows no one any good. TR is watching the weather and setting its sails for maximum benefit.

Credit: Ian Parker - Freelance Journalist

Original article: Fastener + Fixing Technology - 'Fixing the mobility future' - 24.07.2020

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TR VIC continues to invest in the latest high precision fastenings machinery

International fastener specialist TR VIC spa, part of the Trifast plc group of companies, has made a substantial investment in the very latest fastening machinery in response to increasing and evolving requirements from European customers.

The high precision Carlo Salvi cold former is the newest addition to its growing portfolio of machinery, which further increases manufacturing capacity for high level applications within automotive, household appliances and electrical sectors in Europe.

High-tech cold forming capability

The advanced Carlo Salvi 1 Die 2 Blow Header provides the highest productivity in cold forming and has been specially developed and designed for the production of screw blanks as well as solid parts at high speed up to 190 parts per minute. Complementing TR's application engineering expertise, this high-tech header machine enables the technical precision and versatility required in manufacturing fasteners for evolving applications across several different industries into which TR supplies.

Investment and responding to changing markets

Since its acquisition in 2014, TR VIC has invested significantly in manufacturing equipment, including an automated packaging and labelling machine, a heat treatment line, a high quality pointing machine and laboratory equipment including a high class Keyence microscope. All of these upgrades have resulted in a sharp rise in productivity, in some cases doubling output in half the time.

The company has grown considerably by expanding its workforce, customer base, improving processes and technologies whilst also achieving quality accreditations, most recently the IATF 16949 during the Covid-19 pandemic. It has been business as usual these last few months and TR VIC is responding to the evolving market by continuing to invest in the company and in newer, faster equipment to the benefit of customers.

Karol Gregorczyk, Director of Sales and Operations at TR VIC in Italy, said: *"Machine capability is an area we are continually reviewing as part of our on-going improvement of operational efficiencies. With our on-site manufacturing we can add real value to our customers by developing bespoke products – our new machine is a boost to our already impressive manufacturing credentials.*

"We understand that investment is critical to thrive and that is why we are committed to the continued growth and development of our production capabilities and competitive position. The sectors we work in are extremely demanding requiring a combination of precision, speed and quality that only the most advanced machining techniques can deliver."

Marco Pizzi, Chief Operating Officer at Carlo Salvi commented: *"We are pleased to support TR VIC in their continued investment in cold forging machinery, supplying modern/plug-in machines. Great collaboration between Carlo Salvi and TR VIC allowed fast commissioning and the machinery being up and running within 48 hours from delivery." Installation of the latest Carlo Salvi machinery*

To view on YouTube click here

https://www.trfastenings.com/news/pr

The Nuts and Bolts of Med-Tech

by Ian Bolland

Ian Bolland spoke to Jeremy Scholefield, director of strategic business at TR Fastenings about the company's role in the medical device supply chain.

The company has been involved in the medical industry for over a quarter of a century. It has 32 locations worldwide, including seven manufacturing sites with three technical & innovation centres based in the UK, US and Sweden, whilst working with some of the most recognised brands within the industry.

Explaining when the company comes into the process, Scholefield explains: *"It's important for us to get involved very early on with our customers, whether it's at the design stage or the conceptual stage and then it's working through to supply the products to the point of use.*

"For example, when the purchasing manager has a bill of materials and requires a quotation for fastenings, we often see specifications that aren't clear, or we have to ask many questions to finalise the exact details. It's much better if we can work early on in the design stage."

Click here to read the full story on Med-Tech Innovation News

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Tightening the fastener choice for sheet metal

Sven Brehler, Engineering Project Manager, TR Fastenings

There are as many joining methods as there are sheet metal applications. Selecting the best fastener for an application might not be the best fastener for assembly or disassembly. In most cases fasteners are selected based on a range of factors including physical performance, designers experience with a technology, used installation methods within the manufacturing environment, available sizes and lengths as well as piece price and overall cost.

The most recognizable method of joining two parts together would be with bolt and nut connections. Bolt-nut connections are generally used for detachable mounting of components and sheet metal parts. A nut is retained based on creating sufficient friction within the thread and between the interfaces of the fastener and sheet metal. The preload is created by stretching the bolt during tightening up. A relatively longer bolt can stretch more than a short bolt and is therefore better capable in retaining a nut by friction alone. Because of this, standard nuts and bolts are not always the best solution for joining sheet metal.

There are multiple methods to improving the retention of nuts onto bolts, such as the application of polymeric patches on the screw, which fills the cavities between the two mating threads. Similarly, a nylon ring attached to the nut will provide a light interference between the thread and the polymer. Other options can be mechanical deformation of the nut or thread to increase pressure within the thread. The retention does not address the function of the joint. Most bolted joints are designed to be friction-grip joints: the preload in the bolt presses the sheet metal components together with such a magnitude that the friction between the components is enough to withstand forces along the sheet metal. If the forces along the metal sheets exceed the friction forces, the joint will slip, and the bolted joint will be subjected to shear forces. Henceforth the joint becoming practically a shear joint.

Accurate tightening and creating of pre-load functions better with longer than with shorter bolts and is therefore more suited in heavy laden dynamic applications with components with greater thickness.

Lockbolts

Can be a permanent solution if joints are not subject to maintenance. A metal ring is squeezed around a pin with helical or annular grooves, thereby providing a continuous pre-load.

The fasteners do however need access from both sides. Single sided access can improve assembly efficiency or even might be a requirement due to difficulty to reach both sides of the application.

Blind rivets

Have been specifically designed to allow single sided access. Most designs are based on applying tension to an integrated or reusable mandrel, which increases the body diameter on the blind side by splitting, bulbing or expansion. Compared to nut and bolt joints, blind rivets provide a lower pre-load.Therefore, blind rivets are mainly used as shear joints.

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Tightening the fastener choice for sheet metal

Continued

Some blind rivets have the additional benefit of being hole filling, increasing joint integrity.

Blind rivet nuts and studs

Can be used as a hybrid solution, whereby the rivet part either fits in a single-layer component or joins multiple layers together. The addition of a metric thread, either as stud or nut, enables further metal sheets or components to be joined with respectively a nut or screw.

The concept of blind rivets can be found in the use of solid rivets, where one side of the fastener is deformed using an anvil or die when the fastener has been placed in the hole. Solid rivets do therefore need access from both sides and through-holes in the sheet metal.

Self-piercing rivets are a variant on this subject, where a cup shaped, hardened rivet is pushed into the metal. The hardened rivet deforms the layers of sheet metal and forms an interference joint. Generally, a die is used on the blind side to create a mating profi le. In certain materials, such as aluminum, it is possible to set the fasteners without the use of a blind side die. The benefit of this method is the possibility to automate assembly without the need of preparing the joints with holes to fit the fasteners.

Developing products for a ‘circular economy’ finds its fundamentals in developing products with an extended economic life span and are then suitable for re-use, repurpose or recycling at minimum cost and maximum efficiency and retention of value.

This does place again emphasis on the use of reversible threaded fasteners, allowing reuse of parts during repair and maintenance and easy recovery of individual parts when the application is dismantled.

As was earlier established the use of bolts and nuts have the benefit of being removable, but require access from both sides, unless either part has a pre-fitted nut or male threaded part. Cage nuts and captive screws are well-known examples. The nuts can be clipped into square holes and are often used to compensate for some misalignment in joints.

One option is to attach the male threaded part to one of the components. This can be done either by welding or clinching. Weld studs can be manually or fully automatically placed and have an aesthetic benefit of being (nearly) invisible from the blind side, because no part will protrude. A downside is that parts have to be welded before coating or painting and generally the stud and component material have to be similar to allow welding. If double sided access is possible before assembly, studs could be fitted to the component by clinching. Self-clinching studs do require a prepunched hole, but the stud to be of a dissimilar material to the component material. All parts can also be pre-painted or coated. Instead of fitting a male fastener part to the component, it is possible to pre-fit a nut. This can also be done using self-clinching products such as the K-Series® nut. Alternatively, self-piercing nuts or weld nuts are an option. Eventually, it might be possible to remove the nut completely and fit a screw directly into the sheet material. With a preference for isometric threads, it can be possible to cut punch or laser a hole or deep drawn a collar, which can then be tapped with a thread.

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Tightening the fastener choice for sheet metal

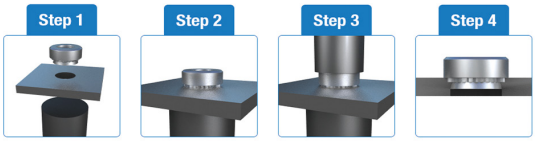
Continued

Doing this requires additional operations during the manufacturing of the individual components adding to cost.

The use of thread forming or cutting screws removes the need of creating a screw thread in the counter parts, reducing number of operations, part numbers and overall cost. Some methods require a pilot hole, where other types of screws can be installed directly into the sheet metal without the need of a hole. Self-drilling screws are equipped with a drill bit shaped point which creates a hole into which the thread is formed. Even though not requiring a hole for installation is attractive, formation of swarf limits the use in mass production environments.

Flow drilling and flow forming screws are also equipped with a special tip, but instead of drilling, it is designed to melt the material locally to allow the sheet material to fl ow and a mating thread to be formed by the screw. The joint will be resilient against vibrational loosening due to intimate mating of the threads. Flow drilling screws do require robotic installation and high installation speeds, whereas flow forming, such as the TR EPW screws can be installed manually.

Equipping parts with pilot holes or pre-extruded holes, thread forming screws can be used. These can either be fi tted with a thread forming tip or have a trilobular design, which aids thread rolling. These types of fasteners are used extensively in automotive and other high-volume assembly lines. The benefit of this type of screws is the adherence to a metric thread form, allowing the fastener to be replaced by a standard metric screw in case of repair and maintenance.



TR Clinch Nut Installation:

Program Requirements

An important point to consider when selecting a fastener are the features and benefits versus the limitations of the various systems. It is also useful to consider what assembly methods are already used on the assembly and production lines to be able to utilize existing tools and equipment without the need for capital investment.

Key points to consider with any joint:

Materials and thickness to be joined – is it possible to standardize?

Strength of the connection and type of joint – torque tightening or shear joint?

Corrosion resistance – do materials suit together or is there chance of galvanic corrosion?

Accessibility – can the joint be reached from both sides or would single sided access be required or benefi cial?

Automation – are the fasteners to be installed automatically to cope with high volumes?

Takt time – not every fastener installs at the same speed.

Poka-yoke – ensure that the correct fastener is used in the correct joint. **Credit: Institute of Sheet Metal Engineering**

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TR Viterie Italia Centrale successfully passes IATF 16949 audit

Stefano Pisoni, Managing Director (pictured left), TR VIC commented;

"I am pleased to report that Bureau Veritas audited TR VIC in April 2021, in accordance with the requirements of IATF 16949. The Bureau Veritas auditor certified that the Quality Management System of TR VIC has been found to be in accordance with the requirements of IATF 16949.

This was an intense 4-day audit, which involved detailed checks in all departments. The final report, issued by the auditor, declared only 2 minor non conformities. I am extremely proud of the way the whole team in TR VIC have performed, especially when we are already exceptionally busy meeting customers increased demands."

Andrew Nuttall, European Managing Director (pictured right), expressed his gratitude;

"Knowing how very busy the manufacturing location is and that all employees are working incredibly hard, so to accommodate a 4-day audit was a big ask. But as usual they did not fail the task, and in fact exceeded our expectations."

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Collaboration a top priority as Trade Group strategy unveiled

The North East Automotive Alliance (NEAA) has signalled its continued commitment to driving collaboration within the region's automotive sector, with the unveiling of its Trade Group strategy for 2021.

Established in 2019, as a result of the NEAA advisory board's five-year strategy review, the Trade Group supports member needs in relation to trade activity through networking, collaboration and shared best practice.

Its 2021 strategy has been formulated using updated intelligence received from a member survey that revealed 100% of respondents benefitted from group initiatives and 94% gained value from networking with likeminded individuals.

The updated strategy includes sharing best practice, support with the latest industry challenges in relation to trade and identifying, facilitating, and understanding funding opportunities for overseas trade missions. With only 58% of members having a strategy for international expansion, the group also plans to support companies with developing a new trade strategy.

Within the 2021 plans, the group will look to showcase the positive impact it has provided members to date, with a view to attracting new companies who can add further value.

A notable example of success is the member collaboration between GT Group and global logistics specialist, ThinkPrime. The latter came to the aid of GT Group, helping to expedite the release of urgently needed goods held up at Heathrow by HM customs. As a result of its knowledge and experience of HM Customs' operating procedures, ThinkPrime helped to quickly unlock the delay and ensure the goods reached GT Group.

Chris Black, global sales director of automotive business development at TR Fastenings and chair of the Trade Group, said:

"The group brings together member companies to help one another when it comes to trade and export. TR Fastenings has proudly been part of the group since its formation in 2019. We have shared experience, knowledge, and best practice with members to assist them with growth and international expansion plans. TR Fastenings has, itself, greatly benefited from collaborating with fellow NEAA members on a number of trade related subjects.

We are now in a position where we can showcase the benefits of being part of the group and 2021 is really about highlighting these, as well as getting companies ready to maximise future trade missions and face-to-face events."

Rohan Kohli, project manager at the NEAA, said: *"The Trade Group has gone from strength-to-strength in terms of member participation and we are now starting to see the real impact from our activity. Continuing to strengthen engagement and momentum going forward, is a key priority. We have been very proactive in supporting members over the past year with regards to current challenges and the changing landscape.*

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Collaboration a top priority as Trade Group strategy unveiled

Continued

The strategy for 2021 is to document and showcase the significant impact the group has made, continue to share experiences and support members in growing their export business in key regions.

We encourage organisations who are exporting, or those with export intentions, to get in touch to discuss the benefits the group can offer. If there is one thing the past year has shown us, it's that we can achieve more by working together."

The NEAA was established to support the economic growth and competitiveness of the automotive sector in the North East by providing a single unified voice to key stakeholder groups. It also promotes the value created by the region's automotive industry.

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Plastics – Sustainability and the Environment

Over the last century plastics have impacted all industry sectors by providing innovative solutions to the world's evolving needs. In more recent years, major material improvements have seen a global surge in demand for plastic in rapidly advancing industries such as healthcare. Today's most ground breaking medical applications are dependent on plastics; from MRI and X-ray machines to prosthetic limbs, artificial joints, heart valves and the smallest of tubing, modern healthcare would not be possible without the use of plastic materials.

By Kevin Rogers, Director of Plastics and Rubber Commodity at TR Fastenings. Originally written for Med-Tech Innovation News

With net zero targets in place and environmental sustainability now an important priority for medical plastics and device manufacturers and their supply chain, the industry is now moving in an entirely new direction, that of a sustainable and eco-friendly plastic product. In this article we explore how plastic meets the sustainability agenda.

Let's start with the facts

- In 2019, global plastics production reached 370 million tonnes, with 57.9 million tonnes produced in Europe generating a turnover of more than 350 billion euros in the European plastics industry
- 60% of plastic products and parts have a use phase of between 1 to 50 years plus and this lapse of time determines when they will potentially become waste
- Only 5% of worldwide oil supply is used to manufacture plastic, producing around 5% of the polluting hydrocarbons

(Sources: Plastics Europe Market Research Group and Association of Plastic Manufacturers 2020).

Now for the Science part

Plastics are polymers, long chains of molecules made from repeating links called monomers, often produced from chemicals like petroleum. Operating temperatures can vary by hundreds of degrees Celsius and its molecular structure can be engineered to present different characteristics—to be flexible or hard, transparent or opaque. They are recyclable, durable, strong, lightweight, water resistant and relatively easy and inexpensive to manufacture.

Most modern plastics are made from fossil fuels like natural gas or petroleum; but as new technology emerges, plastics are also being produced from renewable materials like corn or cotton, recycled oils, secondary plastics, responsibly sourced biomass and even CO2. There are thousands of patented plastics spanning countless sectors, all with unique attributes that make them fit for purpose.

Plastics fall into two primary groups:

Thermosets strengthen when heated, but they cannot be melted or re-moulded once set, such as melamine, vinyl, silicone and acrylic.

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Plastics – Sustainability and the Environment

Continued

Thermoplastics, as used by TR Fastenings, can be re-heated, re-moulded and re-used repeatedly, such as polyethylene (PE), polypropylene (PP) and polyvinyl-chloride (PVC). These are not single use throw away items, they are generally in place for many years, and when finally discarded, can be re-cycled.

Versatility and recyclability of Plastic

The variety and complexity of modern injection moulding means multiple 'metal' parts can be replaced by a single plastic component; beneficial in reducing costs but more importantly retaining necessary strength and integrity, increasing efficiency and lowering emissions.

During the process of moulding, some thermoplastic material is always left over and can usually be recovered from factory components like sprues, gates, flash and runners. While the plastic has already been used once, it can be used again by blending it with virgin resin and this is known as "regrind".

At this point, it's important to understand that not all plastic products are the same and not all have the same service life. Some are a product in itself (e.g. bottle) and some are parts of an end-user product (e.g. an electronic device, a face visor or mechanical ventilator).

According to a recent report by the Ellen Macarthur Foundation, plastic usage has increased twenty-fold in the past 50 years and is expected to double again in the next 20 years. The New Plastics Economy is gathering momentum and with this opportunities to create an effective after-use value chain.

Response to COVID-19

COVID-19 triggered a dramatic upturn in demand for TR's fasteners and components that were essential for medical devices needed on the front-line, typically used in ventilators, medical beds and furniture, ultrasound machines, imaging equipment and defibrillators amongst others.

Plastic components such as cable management, PCB fasteners and various other clips have also been in demand and from TR's point of view these products can often be reused or recycled.

Part of a sustainable future

The strength of TR's partnerships with companies on an engineering level enables the team to not only keep up to date with advancing technologies but to react quickly to customers changing requirements, with sustainability a key factor with all products supplied. The rise in demand for plastic fasteners across a multitude of sectors has seen TR's range expand dramatically with new products recently launched including the premium HUMMEL cable glands range used in medical applications.

The medical plastics industry is complex and fast evolving with growing opportunities to advance sustainability from design inception through to product end-of-life. The transition to a low-carbon circular economy - where products are designed smartly with their whole life cycle in mind - is certainly on its way, with plastics continuing to shape our lives.

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Women in the Fastener Industry - Glenda Roberts, TR Fastenings

Glenda Roberts, Global Projects & Marketing Director at TR Fastenings, talks staying connected through hybrid working practices, company plans for expansion and her love for the industry with Torque Magazine...

Credit: Torque Magazine

How did you get into Fastenings?

By default, if I am honest! I was Regional Sales Manager with several American owned companies selling fast moving consumables e.g. food and beverage products to the HQs of supermarkets and pharmacies.

This was in the 1980's before computerization, and stock management and replenishment planning to ensure that the product was in the right place, in volume and on time was a very manual process. I could see that with new technologies emerging the need for large sales forces would become a thing of the past. I put my CV out with agencies and the rest as they say is history and that is how I joined a Fastener Distribution Company.

My career Highlights and Milestones

I joined TR as Sales Director for one of the Manufacturing facilities and progressed to Sales Director for the UK and Ireland.Over time as TR developed sites around the world, I became the Group Sales and Marketing Director and formed a Global Strategic Team to manage major OEM's and their subcontractors. This proved to be a successful strategy and I joined the Trifast plc Main Board in 2011. Currently my role is on the Operational Executive Board and I have responsibility for Global Projects and Marketing.

What are the biggest changes that you have seen in the Industry?

Without doubt it is the Modern workplace that we have today with all of the tools that we have at our fingertips. We have 32 sites in 16 countries and as a global company connectivity is key.

This was never more evident than during this Pandemic where we were able to communicate with our workforce, customers, and suppliers through video conferencing tools such as Microsoft Teams and Zoom. Having data and statistics instantly, as well as search engines to assist with research and varying information, has transformed the way we all work. Adopting "hybrid" working practices encompassing the ability in certain roles to work from anywhere and still be effective, has also changed the perspective that we need to be in an office to be productive. That could not have happened even 5 years ago.

Other changes in my 31 years with TR is that we have a far more balanced gender workforce as this industry had been notoriously male dominated.

Seven of our locations have female General Managers who have progressed through the company from differing disciplines including Quality, Project Management, Finance and Sales.

What do you think needs to be done to encourage more women joining the Fastener Industry

I don't believe that we need to do anything. The world will always need fasteners, so it has longevity and our teams

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Women in the Fastener Industry - Glenda Roberts, TR Fastenings

Continued

interact globally, so it is an exciting company to be in.

I have travelled on company business to four continents, and so have a number of colleagues which gives you many interesting experiences that people rarely get in their usual job roles. It is a fascinating industry as our fastenings go into an amazing range of products from Domestic Appliances to 5G infrastructures to Electric vehicles. We are members of WIFI who promote roles for women in the Industry. I have loved being in this Industry.

The effect Covid has had on TR and the consequences

As the Pandemic moved around the world, we saw the impact that it had quite quickly in our Asia operations. As the virus moved into Europe, the UK and then North America we saw the scale of the reduced requirements from the OEM's. So yes, we were impacted, and we felt the financial pain that everyone else did. We had a strong balance sheet which carried us through, and we saw recovery as soon as August of last year.

All of our locations, including the manufacturing sites thankfully remained open as we were classed as an "Essential Supplier" by many of our customers. This included companies in the medical sector where we worked to support them particularly with parts for their ventilator productions. We are seeing that there is pent-up demand in the marketplace for everything from washing machines, vacuum cleaners, power tools and now of course from the burgeoning electric vehicle and battery developments. We are already quite heavily involved and have received some good business awards. The challenge now, which is a good one, is in managing the volume increases that have ramped up in the last 5 months.

From a people perspective within the company despite remote hybrid working we somehow have been more connected than ever. It has consolidated the team spirit. However, as a company we are conscious that lockdowns and working from home can also bring other stresses. We have been proactively working with anyone that needed help and providing support as for some it has been a lonely existence and they miss the office environment. We all just want to get back to whatever the new normal will look like in the future as soon as possible.

We have a 5-year plan in place to expand

Despite the Covid situation we have invested in new machinery in Asia, Italy and in the UK to build up our inhouse capability and increase the capacity.

We are focused on new products to add to our existing extensive range, some of which are meeting the needs of the latest industry requirements in EV and BEV. We are actively seeking acquisitions of companies with a similar culture to TR to increase our manufacturing portfolio and our production capacity. At this moment in time we are recruiting in a number of our regions to further strengthen the teams, and also to bring in new skills. A good example which helped earlier this year would be where we have recruited specialists in customs processes due to Brexit which helped us through this difficult learning curve. Basically, there is never a dull moment

https://www.trfastenings.com/news/pr

Appointment of a new Managing Director in TR VIC

Stefano Pisoni has joined international fastener specialist TR VIC spa, part of the Trifast plc group of companies, as the new Managing Director. An inspirational leader with a proven track record in several industry sectors, Stefano has many years of experience working in senior management roles for a number of influential corporations, including Italian automotive giants Magneti Marelli spa and Pirelli Steelcord. His previous roles and his in-depth knowledge of international business markets combine to make him a natural choice to lead TR VIC into the future.

Stefano worked as both a Quality Manager and a Technical Director at Black & Decker Italia, and during that time he spearheaded a number of important initiatives. These included the development and introduction of several brand new products as well as the restyling of many more. Under Stefano's guidance, the Italian operation became the first Black & Decker section in the world to adopt a JIT – KANBAN inventory control system.

His successes at Black & Decker led on to a General Manager role at Sirci spa, a leading Italian manufacturer of plastics and plastics systems with more than 100 employees. Improved quality and supply chain systems helped the company to increase both domestic turnover and export sales. Stefano went on to work for Sirci Grestinex spa as General Manager and then, in 2011, he was named Managing Director of GDS srl, a large organisation with more than 350 workers and three offshoot companies.

Stefano joins TR VIC after several years working as a specialist consultant and, latterly, as a Plant Manager and BU Director for Proma spa, a market leader in the production of various components aimed at the automotive sector. Like TR VIC, Proma plays a crucial role in this field, and has a strong presence in a number of countries around the world.

His appointment underlines TR's on-going commitment to expand its European operations, especially in the wake of continuing demand increases across the region. TR VIC is a hugely important part of the company's infrastructure, and the arrival of Stefano will dovetail with a major focus on increasing capacity to reflect growth in vital markets. The Italian operation has recently passed an important 4-day audit as part of its IATF 16949 assessment.

Helping Stefano to achieve targets along with his Co-Director Francesco Cricco, will be a talented team of five senior individuals, consisting of managers in Procurement, Quality Assurance, Operations, Production Engineering and Application Engineering. Along with European Managing Director Andrew Nuttall, Stefano and his team will be looking to use upcoming investment to expand the company's initiatives in the energy, tech and infrastructure markets.

In the wake of the Covid-19 pandemic, one of Stefano's more pressing responsibilities will be to guide the company's adjustment to new working conditions and practices. Supporting staff members during this difficult time will be vital, as will ensuring safe working

https://www.trfastenings.com/news/pr

Appointment of a new Managing Director in TR VIC

Continued

environments and responding appropriately to the need for more flexible working. TR VIC has more than 120 employees, so this flexibility will be a must-have.

Andrew Nuttall, European Managing Director at TR Fastenings says:

"During his career, Stefano has displayed a strong focus on innovation, product development and opportunities to increase market share, and we look forward to heralding a new era for TR VIC both regionally and within the global operation."

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New investment in lathe technology at TR's Hank® manufacturing plant

TR Fastenings, part of the Trifast plc group of companies, has maintained a strong presence in East Sussex for many years, and the latest arrival at its Hank® manufacturing facility in Uckfield represents an important investment in its UK operations. Despite the challenges that Covid-19 has presented, demand for TR's products continues to increase and the purchase of a high performance CNC Sliding Head machine reflects this.

Sliding head technology

The SR-32JII Type A unit is a high performance sliding head lathe supplied by Star Micronics GB. Its utilisation will enable TR to get products to market faster and with more efficiency, a vital requirement during the economy's post-Covid recovery. With pent up demand, the machine will work alongside the 50 existing units, enabling TR to meet the needs of customers.

Amongst its many benefits, the SR-32JII Type A offers greater accuracy, higher rigidity and, crucially, opportunities to expand productivity levels. Increased spindle power and more flexible tooling options will also help TR to add to the number of products already manufactured at the plant.

The strength of UK manufacturing

In the wake of Brexit and the Covid-19 pandemic, there has been a greater emphasis on UK manufacturing, and TR Fastenings is delighted to have worked alongside Derby-based Star Micronics GB in the commission of this new machine. This is TR's commitment and undertaking to increase its British production capabilities. Star Micronics has been pleased to support the installation, saying "*thank you to TR for placing your trust in our products".*

Specialists from Star Micronics were on-site to commission the machine and to oversee relevant training for TR users. The SR-32JII Type A weighs more than four tonnes, and the installation and implementation process took four days.

The European Managing Director of TR Fastenings, Andrew Nuttall, is already looking forward to the benefits that this investment will bring, saying "*this purchase underpins our commitment to the future of our British manufacturing, and it represents our continuing faith in our East Sussex facility".*

Click here to watch our YouTube video.

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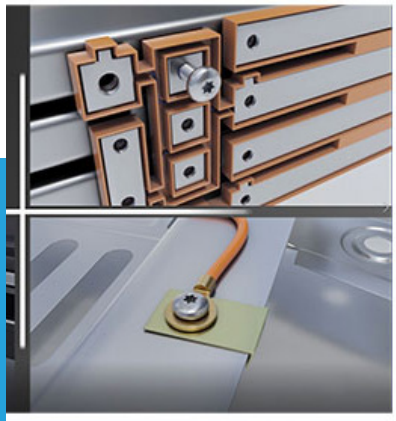
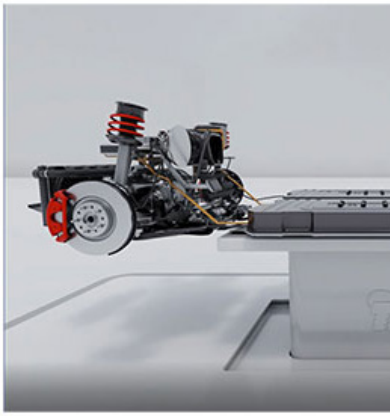
The changing requirements of Fastenings in the evolving Electric Vehicle market





By Sven Brehler, Director of Engineering, TR Fastenings

The rapid acceleration of growth in the Electric Vehicles and associated products such as batteries and charging units has required a different approach. No longer does it take time to go to market as with conventional vehicle production. Instead "fast to market" is the byword as new and existing companies enter the market with the mindset that we are far more used to seeing in the Electronics and IT sectors. In conjunction with this comes technical challenges as new products are developed requiring different solutions that meet the stringent requirements particularly in the battery casings.

Where are fasteners used within the Electric Vehicle?

TR's Electric Vehicle animation details the areas within the vehicle where the fasteners are specified.

Meeting the EV Battery challenge

As you can see from our animation showing where fastenings are used, the new designs of the interior of the car are also changing.

The latest "Skateboard" platform is the basis for many new electric vehicles, including people movers, delivery vehicles and buses. This new manufacturing concept cuts down on complexity and can be common across different vehicles and scaled easily.

The modular, self-contained Skateboard designs can form the basis of multiple vehicles with minimum requirement for re-design. Much focus is placed on the load bearing structure, which integrates the battery pack and drive train. Interchangeability of various modules within this design allow the Skateboard and therefore new vehicle models to stay at the cutting edge of battery and drive train innovation.

The interior of the vehicles is changing dramatically too, particularly within the cockpit. We are seeing many new concept designs which all require fresh thinking in terms of fastener applications. Fasteners are now also being used as a visual design feature, which you will see in new models with the manufacturers name stamped in the head. These need to be aesthetically pleasing, and the finish quality is critical for longevity. The increase of in-car technology e.g. IT connections with 5G and large IP console screens, and concept seating are challenging the conventional fixings, especially into composites.

Correct fastener design and selection is key to the success of the modularity and design life of the Skateboard platforms, by strategically selecting serviceable fasteners where modules or elements will require maintenance or potential updating in future. Designing in reversible joining – bolt and nuts – does allow for a more economical - potentially automated - retrieval of undamaged individual components. The right selection of fasteners will also help meet eco-design criteria. This retains the maximum value at the end of a vehicles life and plays a part in the preparation of extended producer responsibility regulations, where they have to consider final responsibility for disposal of their manufactured products.

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The changing requirements of Fastenings in the evolving Electric Vehicle market

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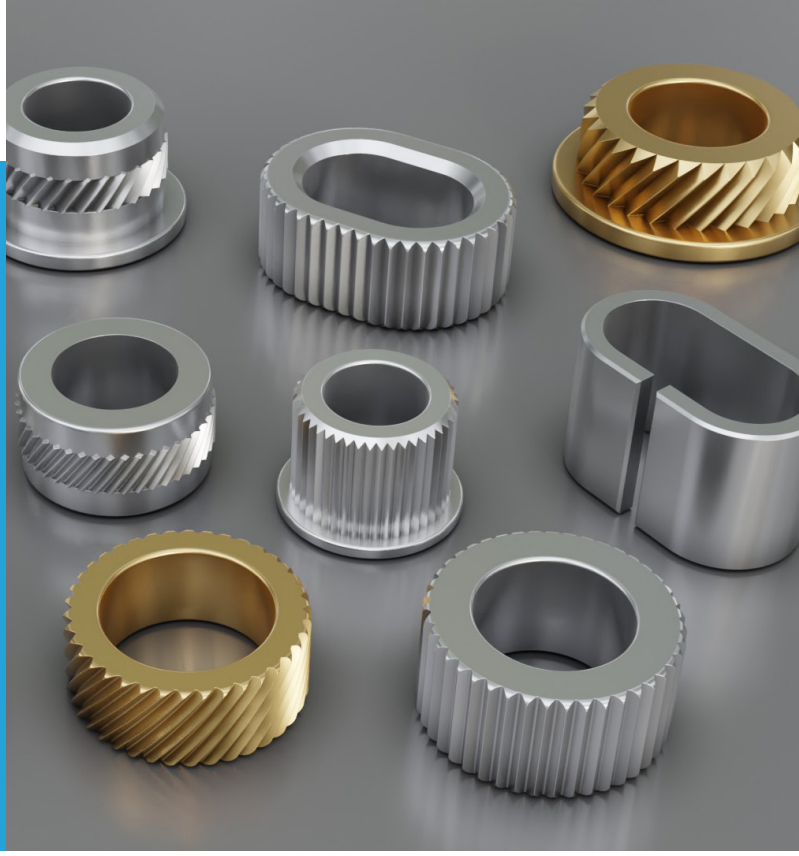

Where appropriate, non-serviceable joints, such as moulded inserts and self clinching products can be designed in. TR's engineering expertise has supported several companies to optimise design, considering the ease of manufacturing, product cost and where possible considering lightweighting saving the use of mixed materials.

One of the best illustrations of this has been the increasing use of composites in assemblies. Therefore, the need for product such as Compression Limiters which are designed to take the fastener load and provides a structural through hole without a risk of delamination, creep or stress cracking. Generally, these are produced in steel, stainless steel, brass and aluminium and designed and manufactured to exact specifications. There may also be a need for electromagnetic shielding requiring electrically conductive fasteners.

The demands of the Circular Economy and meeting the recyclability of product is a strong consideration in any new design. At the end of the economic life of either the vehicle or mobile battery, there is the option to re-use or repurpose. The importance of the highest number of components capable of being recycled is a key factor and fastenings are no exception. Ease of disassembly for battery pack removal is an additional factor. Most of these challenges can be overcome or their effects reduced, with the right engineering choices. TR can provide support and delivery of suitable products.

Rationalisation and standardisation of fixing methods and drive systems, such as hex lobular fasteners, which have a similar torque capacity during assembly and disassembly can support automation. TR engineers can also share their experience in fastener positioning for easy access or help to select suitable materials or coatings to avoid fastener damage through galvanic corrosion.

Often connectors, charging pins and busbar components are not considered as fastener products but they are part of a holistic product off ering as their mating components. It is important that the entire assembly is viewed in the round to enable a better understanding of requirements. We have the capability to deliver thermal and electrically conductive products in copper, aluminium, brass. These can be tin, or silver plated - and if required, compliant with technical cleanliness requirements.

We can also challenge designs, originally machined, to be partially or completely cold formed, increasing cost effectiveness and carbon footprint of the product. At the end of the economic life of either the vehicle or mobile battery, there is the option to re-use or repurpose. Unfortunately, not all battery technologies lend themselves for repurposing due to poor cycling performance. In other cases, the limitations are due to few available disassembly facilities or lack of batteries themselves to consider repurposing on a commercial scale.

So, the consideration of assembly of new materials and their recyclability make for new challenges in this fast paced growth opportunity.

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TR Fastenings' Sven Brehler to judge Electronics Industry Awards 2021

The 2021 Electronics Industry Awards is an important and influential event, and this year we're delighted to announce that Sven Brehler, Director of Engineering at TR Fastenings, will be one of the judges. The awards celebrate and reward outstanding talent within the industry, and are understandably seen as a prestigious opportunity to showcase people and projects that are shaping the future of the sector.

The event is organised by Datateam Business Media in association with several high priority industry organisations, including Components in Electronics magazine, Electronics World magazine, Electronics magazine and the Electronic Components Supply Network. Now in its fourth year and rightly regarded as a key occasion in the industry's calendar, the awards ceremony will be taking place at London's Tower Hotel on October 21st, 2021.

There are three main awards sections to be decided. One is for businesses, which will be decided by public vote, while product and individual awards will be decided by a team of industry experts, including Sven Brehler. One individual is set be a winner, while nine products will also be commemorated. Many of the most celebrated electronics companies have been previous winners in the Electronics Industry Awards.

TR has been supplying to global customers in this sector for over 40 years. Sven's technical involvement in this and other sectors, such as Electric Vehicle and battery development, makes him an ideal candidate.

TR Fastenings, a Trifast plc company, are specialists in the design, manufacture and supply of a diverse range of fastenings across the light vehicle, heavy vehicle, health & home, energy, tech & infrastructure and general industrial sectors. Sven was pleased to be invited as a judge and will enjoy this involvement. He will use his knowledge and experience of global manufacturing to ensure that he assists in selecting the best company to receive the award.

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The acquisition of Falcon Fastening Solutions Inc enhances Trifast plc (TR) North America footprint

TR continues to expand its presence in strategic areas globally to support the localised service required by many of its OEM customers. Mark Belton, Trifast's CEO comments:

"The Carolinas region is a strategically important area for us where a number of our global OEM's have facilities. The culture, values and work ethic at Falcon in many ways reflect those of TR. We believe that the combination of Falcon and Trifast's locations, experience, knowledge base and skill sets will open up significant opportunities."

Now branded as TR Falcon, the company will continue to be managed by their President Giovanni Cespedes, a well-known figure in the fastenings industry who has worked for the business since 2008. Based in Charlotte and Kentucky, TR Falcon was founded in 1979 and has remained as a family business during that time.

Trifast's customer proposition is built around experienced design and application engineers, supported by its own manufacturing locations which combine to provide innovative and responsive fastener solutions to customers' application problems. This is supported by Trifast's reliable distribution and supply operations around the world which flex to fit customers' needs across a broad range of industrial fastenings and C-class components.

Trifast and Falcon have much in common in their approach. Providing a high level of customer service coupled with logistics support is an important part of both companies offering. Following the acquisition, TR Falcon will have the benefit of access to the TR group's 7 manufacturing sites, and the additional support of technical and engineering teams to assist them in their growth plans. Giovanni sees this as "a fantastic opportunity for Falcon's employees, customers and suppliers" which will build on the existing business and thanked his Team for their hard work and loyalty over the years. Being part of a global company will create new avenues for sharing, collaboration, and growth.

This acquisition is complimentary to TR's existing North American operations in Houston, with TR Falcon adding their expertise in the areas of Energy, Health and Home and General Industrial to Houston's capabilities in the Automotive sector.

Additional investment and further acquisitions are a key part of Trifast's future expansion plans in North America. TR are continuing their search for other strategic acquisitions both for distribution and to add local capacity to TR's fastener manufacturing portfolio.

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Customer service excellence

As well as offering a full range of sheet metal fastenings, with flexible manufacturing capabilities, TR has made significant investment in the level of support it offers to enhance its customer service. We deliver comprehensive support to our customers across every requirement, from concept design through to technical engineering consultancy, manufacturing, supply management and global logistics.

TR is incredibly proud of its track record in delivering outstanding customer care, which is reflected in the testimonials we regularly receive from many of our longstanding customers.

"I have been trading with TR Fastenings for the last 20 years as a buyer for a sheet metal company and have dealt with many sales staff at TR in that time. I have found all of them to be very professional with excellent product knowledge and very articulate and friendly.

"My job involves talking to people every day and it is a pleasure to deal with TR Fastenings. There is always a cheerful helpful voice at the end of the phone which is not the case with some suppliers I have to deal with.

"Thank you TR for your continued support, competitive pricing, punctual deliveries and excellent staff. I will continue purchasing from you and recommending you to other companies." **Chris Sandford – Buyer – Lund Brothers Ltd.**

"The TR team is friendly, knowledgeable and always willing to help." **Greg Gisborne, Havant Sheet Metal Ltd**

What sets us apart?

TR is a trusted Full Service Provider (FSP) offering engineering design and manufacturing expertise to a wide range of industry sectors. TR works with companies from early design stage right through to specification, manufacturing, quality control and logistics.

Throughout the customer journey we always aim to exceed expectations, offering a service that is both friendly and knowledgeable, based on expert engineering advice. Our response time is second to none.

At its heart, TR aims to offer every single customer a seamless professional sales service from the initial enquiry and assisting with product suitability through to order and after-sales support. It is why many of our customers have been relying on TR for their sheet metal fastening needs for decades. We think our customer retention levels are testimony to our success.

Our industry knowledge

Fastening solutions are helping to shape the future in a number of key sectors, including electronics and technology, telecoms, HVAC, domestic appliances and sheet metal industries.

Our teams of customer service and sales operatives have a broad knowledge of industry sectors and have a reputation for building strong relationships with customers.

Article published June 2020

https://www.trfastenings.com/news/in-the-spotlight

Customer service excellence

Continued

Our teams of customer service and sales operatives have a broad knowledge of industry sectors and have a reputation for building strong relationships with customers.

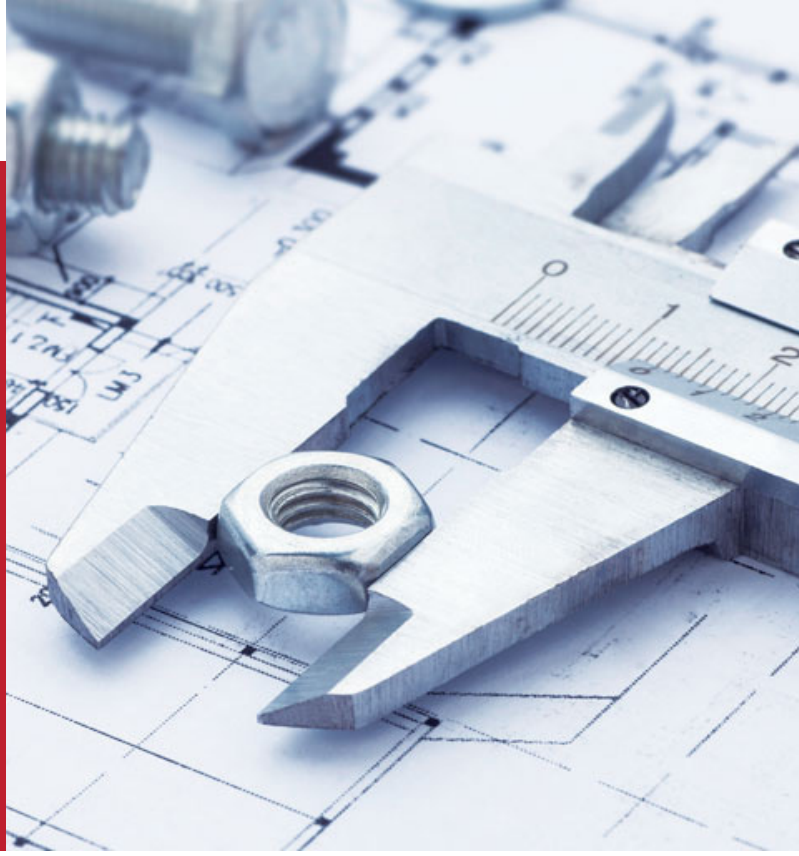
TR's account managers will learn everything they need to know about your company in order to deliver an effective service, be it in recognising historic requirements and new developments, or keeping up to date with challenges in specific industries. Our staff are very adept at signposting to other TR departments for engineering expertise when required and have a genuine understanding and empathy with customer requirements.

We are dedicated to helping our customers in overcoming application challenges. As well as a knowledgeable sales team, we have a bank of helpful and explanatory animations detailing product information and specific considerations.

Click here to learn more about the TR Fastenings sheet metal fastener range and how they are used within different industries.

https://www.trfastenings.com/news/in-the-spotlight

Engineering and technical back-up



There are many application challenges within the sheet metal industries. Selecting and installing the correct fasteners is one of them. Faced with increasing environmental responsibilities and unprecedented technological change, manufacturers and contractors are challenging for higher quality and smarter, application-based sheet metal fastening solutions.

Our research and technical capabilities encompass specific engineering disciplines evolved to support all sheet metal application solutions. TR offers fastener testing capabilities across a range of categories, including mechanical, dimensional, installation, and plating and finishes.

Application advice and guidance from our on-site engineers

TR's depth of engineering knowledge and technical back-up is relied upon by our customers who are seeking assistance in the selection of products best suited to particular contracts or applications. Our global technical team can offer application advice and guidance and has the expertise to assist with solutions if there is an application issue that needs resolving.

In today's competitive manufacturing environment, controlling cost and maintaining a high level of quality is a vital component of success. We offer complete confidence to our customers through our quality accreditation, which includes PPAP level 3. Here is what our existing customers say about our level of quality and expertise:

"In general it is great to work with all of the TR teams as they are always customer orientated and willing to help out. The knowledge, especially from TR's Quality Department, is great because with this they can define and detect troubles and problems.

"For specific projects, TR and HA-CO are always looking for improvements, we are now also developing a special stand-off." **Manuel Grimm, Ha-Co, Austria**

Fast response and flexible product solutions

Adapting to change in the current technologically fast-paced environment is essential. TR's global technical team is able to respond to requirements for smaller, lighter and more flexible product solutions, assist in troubleshooting and in the specifications for bespoke orders.

Where competitors' products have failed, TR's engineering team is quick to respond and in some cases this has included on-site visits to resolve application malfunction. With quality application engineers based at most TR sites, we can travel to deal with customers on a personal level if required.

Our customers, as you can see from the testimonials below, are delighted with the technical support TR offers.

"I am very happy with the way that TR Fastenings' Quality Department is providing me with solutions and answers to my concerns and questions.

Article published June 2020

https://www.trfastenings.com/news/in-the-spotlight

Engineering and technical back-up

Continued

The department is very skilful and their knowledge is helping us to provide our customers with the information that they require for technical problems." **Bram van Maurik, Batenburg, Holland**

"We are also very satisfied with your Quality Department. Problems are dealt with quickly and solutions are found." **Michaela Kyriakidou, Dueko, Germany**

Communication, flexibility, engineering expertise and problem solving are fundamental to the service we bring to our customers. We have a robust, organised network of engineers across the globe troubleshooting application problems and helping customers with their fastening solution challenges.

Click here **to learn more about the design, engineering and quality expertise at TR Fastenings.**

https://www.trfastenings.com/news/in-the-spotlight

Stock variety, variance and availability

TR Fastenings is a leading global specialist in the design, engineering, manufacture and distribution of high quality sheet metal fastenings. Operating from 32 business locations within the UK, Asia, Europe and the USA, TR's network spans two continents and includes eight high-volume manufacturing sites delivering high quality, cost-effective sheet metal fasteners.

Supplying fasteners into c.75 countries and more than 5,000 companies, TR is a Full Service Provider working with customers from early engineering and design stage, right through to specification, manufacturing, quality and logistics.

Flexibility in service and stock availability

As a major supplier to the automotive, electronics and domestic appliance sectors, TR has a robust business model for large OEM's and SME's. We hold stock of a huge range of sheet metal fastenings and related products. As a result, TR is able to deal with a variety of different applications, including where high volumes are a requirement.

TR offers real flexibility in service, in product ranges and is able to effectively and efficiently accommodate customer needs. Our customer service and sales teams are on hand to help with any problems that sit outside of the normal stock and supply issues.

"TR always provides a fast and efficient service and helpful advice on new requirements." **IC – Operations Director - OKW Enclosures Ltd.**

Our extensive stock availability ensures customers benefit from reduced costs of stockholding and storage as only a few days' stock needs to be held on the production line. Production can focus on its core function, as standard parts are always available at the point of use.

Our automated optical sorting facilities and specialist packing capabilities mean that TR can supply quality products reliably.

Inspection costs are also reduced as quality approved parts can be shipped direct to the production line.

Logistical support

TR understands that a global approach requires specific solutions in terms of communication, culture and security. Our three-tier approach, which includes local, national and international teams, is able to address all of these challenges in order to provide customers with the quality fastening solutions and economic advantages that they require.

We offer flexible dispatch times to meet with our customers' needs. The large stocks and general availability of our products mean we can respond quickly when competitor's products malfunction or when production priorities change.

Providing a range of delivery services and flexible response times, we offer next day delivery, timed if required, self-scan if certain criteria are met, or DLF (Direct Line Feed).

Article published July 2020

https://www.trfastenings.com/news/in-the-spotlight

Stock variety, variance and availability

Continued

Importantly, our global delivery operations ensure customers' needs are consistently met.

"TR Fastenings have been a supplier to Potters for over 25 years, and as the Purchasing Manager I personally have dealt with them for over 20 years. I have always found their service to be second to none, which is why they are our main supplier of sheet metal fastenings. team both internal and external are reliable, extremely helpful, knowledgeable, friendly and very easy to deal with.

I would recommend TR to anyone looking to buy sheet metal fastenings, as the product range meets my needs and is of an exceptional quality. The sales team both internal and external are reliable, extremely helpful, knowledgeable, friendly and very easy to deal with." **Lea Bullen, Operations Manager, L. Potter & Sons Ltd.**

https://www.trfastenings.com/news/in-the-spotlight

EV batteries are the future but we must drive improvements now

As the new 70-plate cars roll off garage forecourts across the UK, 2020 is predicted to be another record-breaking year for electric vehicles in this country.

A report by Statista published in May forecast that electric vehicles will make up more than 10% of new UK vehicle registrations this year – up from just 3.2% of vehicles in 2016.

It is vital now that all of us involved in the EV industry work collaboratively to help the sector grow in a sustainable way.

As electric vehicles become more popular, the number of EV batteries coming to the end of their usefulness on the road will soar. But whereas traditional lead-based car batteries are commonly recycled in the UK – so much so that the majority of a new lead-based battery is recycled material – that is not the case for EV batteries.

Last year a joint study published by researchers from the University of Birmingham, the University of Newcastle and the University of Leicester concluded that the rise in popularity of EVs had not been matched by a solution to the problem of recycling the end of life waste of their components.

The researchers argued that there was an opportunity for the UK to be at the forefront of a new sector in the recycling industry to meet that challenge – potentially not only handling UK EV waste but also profiting by importing and recycling EV waste from abroad. In Japan, Nissan opened a factory for the refurbishment of used EV batteries for repurposing in electric cars as well as vehicles requiring less power, such as forklifts and golf buggies, and in street lights. Likewise, Toyota has linked units to solar panels to provide power to shops in Japan.

The Faraday Institution - the UK's independent institute for electrochemical energy storage research - has suggested that recycled material could be a key input for the eight Gigafactories it forecasts the UK will need by 2040 to meet domestic demand for lithium ion batteries.

Securing the raw materials these factories will need, could be a mammoth task in the face of a global rise in demand, and the fact the mines producing the minerals needed aren't exactly on our doorstep. Lithium and manganese production is dominated by Chile, Australia and China, but the majority of cobalt comes from less stable countries, in particular the Democratic Republic of Congo. Concerns have already been raised by some experts that mining output of some of these minerals will not be able to keep pace with the growth in demand for electric vehicles.

While the Financial Times reported recently (6/9/20) that a number of companies are investing in Cornish mines in the hope of sourcing low-cost lithium domestically, a secure supply from recycled sources of the minerals needed for EV battery production in the UK would provide assurance that output could continue no matter the political situation in other countries.

Work is already underway on joint projects organised by the Faraday Institute and involving scientists and industry to increase the efficiency of batteries and make them more environmentally friendly.

https://www.trfastenings.com/news/in-the-spotlight

EV batteries are the future but we must drive improvements now

Continued

The aim of the ReLiB project (Reuse & Recycling of Lithium Ion Batteries run by The Faraday Institution) is to secure the recycling of close to 100% of the materials in lithium ion batteries in the automotive sector, by identifying and removing the technological, economic and legal obstacles to it. It includes developing new methods of isolating the minerals used so they can be recycled, identifying second life uses for the components, reviewing the regulations on battery recycling to ensure they are fit for purpose - and of course encouraging the development of new businesses to actually carry out the recycling process.

All of us involved in the EV industry have a role to play in improving the sustainability of the market. Some parts of a lithium ion battery are already reusable as are the fasteners and components within EV battery housings, busbar assemblies and electrical connectors within the battery, as well as in the charging sockets and facilities. The fasteners and components include silver plated copper or brass connector pins, brass inserts, stainless steel bolts, steel self-drilling screws, aluminium connections and compression limiters. At the end of the battery's functional life, these should be easily removable for separation and recycled for use in other products, whilst allowing easy recovery of the spent battery cells.

But if we are to move to batteries that are near 100% recyclable, we need to do more.

Those designing the next generation of EV batteries must consider at the start of the process - rather than as an afterthought, or not at all - how units will be disposed of. How can we make the product as efficient and effective as possible, but still ensure its constituent parts can be quickly and easily separated for recycling when it runs out of juice?

Putting Design for Manufacture at the heart of the system is key. Designers working with suppliers from the outset can reduce the number of components in their product and increase their efficiency. At TR Fastenings, for example, our specialist teams work closely with our customers from the very early stage of the design process, with our engineers able to develop, test and put into production innovative solutions to problems.

If we are to keep the cost of replacing and recycling units down, we need to develop greater standardisation of batteries so that a one size fits all system can be created for end of life disposal of all of the constituent parts.

In addition, unless there is a sustained focus on tackling the end of life situation for the current generation of batteries, the green benefits of the technology are at risk of being undermined.

Find out more about TR Fastenings' role in the Electric Vehicle industry here.

Article published September 2020

https://www.trfastenings.com/news/in-the-spotlight

TR launches new security fastener to protect medical equipment from criminals

A new range of security fasteners has been launched to prevent offenders from stealing or tampering with equipment in hospitals and other medical centres.

The innovative 5-Lobe pin from TR Fastenings is the first complete range of security fasteners made from corrosion-resistant A4-70 stainless steel - the preferred material for all applications across the health and medical sector because of its non-reactive qualities. The fastener's five-sectioned screw head means that it can only be undone by someone with specialist tools, preventing its removal by an opportunist criminal.

A report by the think tank Parliament Street [page 4] last year revealed that suspected thefts of electrical equipment from NHS sites had increased by 33% over a three-year period. Among the items taken were cameras, computers, laptops and monitors. The losses caused not only disruption to care and extra cost to the NHS but also concerns that patient data security could be compromised.

Meanwhile, in March this year it was revealed that staff had to take urgent action after vandals were able to damage the main oxygen supply for Rotherham Hospital [source: Rotherham Advertiser 10/3/20].

TR Fastenings components are used in medical equipment, ventilators, defibrillators, furniture including hospital beds, lighting and electrical points and signage.

Fastenings for medical equipment are made with corrosion-resistant A4-70 stainless steel. The durability of the high grade material means that components need to be replaced less often and that equipment is easier to clean and maintain.

Paul Standing, Products Manager at TR Fastenings, said:

"It's vital that medical staff have the confidence that when they need a piece of equipment it is where it should be.

Our new 5-lobe pin fasteners provide a strong line of defence to prevent opportunist thieves and vandals from stealing or interfering with equipment that could be the difference between life and death for patients."

The 5-Lobe pin is rated as a level 2 enhanced security product and can be supplied with button or countersunk heads in either machine screws or self tapping screws. A4-70 stainless steel is a high tensile strength stainless steel with excellent corrosion resistance making it perfect for both internal and external applications.

It is used in the manufacture of medical surgical instruments and in the pharmaceutical industry where cleanliness is absolutely key - the addition of molybdenum to its composition provides the A4 grade with a greater level of corrosion resistance making it suitable for use in salt water environments, or certain chemical solutions."

Click here for more information about the 5-Lobe pin security fastener

For more information on how TR Fastenings can support the medical industry click here

https://www.trfastenings.com/news/in-the-spotlight

TR launches new security fastener to prevent businesses becoming victims of crime

A new range of security fasteners has been launched to help businesses to cut the cost of being a victim of crime from their overheads.

The innovative 5-Lobe pin from TR Fastenings is the first complete range of security fasteners made from corrosion-resistant A4-70 stainless steel - the perfect product for outdoor use, in particular in marine, health and medical sectors because of its non-reactive qualities. The fastener's five-sectioned screw head means that it can only be undone by someone with specialist tools, preventing its removal by an opportunist criminal.

A report by the Federation of Small Businesses (FSB) in October 2019 suggested that there are 3.8 million traditional crimes against businesses in the UK each year, the vast majority of them robberies, burglaries, thefts and acts of vandalism – an average of more than seven every minute, with each costing businesses an average of £3,340.

In July thieves dismantled and stole a 10m-long building in Hull, while in September a mobile sheep yard and sheep weighing equipment were stolen in North Yorkshire [sources: BBC 20/7/20 & Farming UK 10/9/20].

The Federation of Small Businesses report added that more than one in five business victims said they didn't report their case, with many saying they were either too busy or were not even going to make an insurance claim.

Public sector organisations are also targeted. The think tank Parliament Street has estimated [page 4] that suspected thefts of electrical equipment from NHS sites has increased by 33% over a three-year period.

TR Fastenings components are commonly used in furniture including hospital beds, lighting and electrical points, signage, medical equipment, ventilators and defibrillators.

Fastenings made with corrosion-resistant A4-70 stainless steel do not degrade if they come into contact with salt water and other chemicals that have an impact on other forms of steel. The durability of the high grade material means that components need to be replaced less often.

Paul Standing, Products Manager at TR Fastenings, said: *"Opportunist thieves and vandals are always on the look out for an easy target so it's vital that businesses have the right level of security to defend themselves and their property. Our new 5-lobe pin fasteners provide a low-cost, long-lasting line of defence against intruders that could cut the amount of money businesses lose in thefts, damages, disruption and increased insurance premiums because of crime."*

The 5-Lobe pin is rated as a level 2 enhanced security product and can be supplied with button or countersunk heads in either machine screws or self tapping screws.

A4-70 stainless steel is a high tensile strength stainless steel with excellent corrosion resistance making it perfect for both internal and external applications. It is used in the manufacture of medical surgical instruments and in the pharmaceutical industry where cleanliness is absolutely key - the addition of molybdenum to its composition provides the A4 grade with a greater level of corrosion resistance. Its composition means it is also perfect for use in marine environments.

Click here for more information

https://www.trfastenings.com/news/in-the-spotlight

Container shortages impact fastener supply chain

A shortage of shipping containers at major global export ports is now seriously impacting fastener availability in the UK and Ireland, the British & Irish Association of Fastener Distributors warns. The crisis is also forcing up container freight costs three-fold and exacerbating other cost drivers to fuel sharp product inflation.

Container shortages are currently the biggest disrupter according to specialist supply chain media The Loadstar1 on 1st December. That's an assessment echoed by BIAFD importer members, who say they now have major backlogs at factories, which cannot be shipped to the UK and Ireland due to the lack of containers.

The CAx, an index of container availability2, is now at record low levels. A reading below 0.5 indicates a deficit of containers. For week 49 the reading for Shanghai Port was just 0.03 – compared with 0.53 ten weeks previously, and 0.66 in Week 6 2020. The indices for other global – and also European ports - show plunging container availability over recent weeks.

The container shortages are an indirect consequence of the Coronavirus pandemic. Emerging early from the pandemic, Chinese factories recovered production and recommenced exports to global markets. More recently, export shipments increased ahead of the Chinese National Day holiday in October, further ratcheting during the peak season run-up to Christmas.

Containers are collected from port and road or rail freighted to companies. However, return times to ports in all import markets have significantly increased, due to coronavirus-related shortages of vehicles and drivers.

Container shortages have also been exacerbated by the volumes of personal protection equipment being imported. In November, the UK's main container port at Felixstowe was said to be storing some 11,000 containers of PPE ordered by the British Government. Many of these containers have now been moved to inland storage points but the containers are unlikely to be released for many months and potentially longer.

With finances hit hard by the collapse of global trade, resulting from the pandemic, shipping lines radically tightened capacity on most routes. Lack of capacity and low backhaul profitability has meant containers returning to export markets far more slowly. More lucrative transpacific routes to American markets have also taken priority for both container ships and containers over European routes.

While container manufacturers are reported to have stepped up production, output lags well behind demand, and the knowledge that the container market will eventually rebalance is a disincentive to further ramping up output.

All the indications are that it will be several months before equilibrium is restored. With backlogs rapidly growing at exporters and an early Chinese New Year putting further pressure on capacity, it looks improbable the situation will return to any level of normality until the end of quarter one 2021. UK and Irish importers have faced additional challenges, due to persistent delays at Felixstowe Port,

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Container shortages impact fastener supply chain

Continued

which have knocked onto other UK ports. Some carriers have applied substantial port congestion surcharges, further adding to importers' costs.

More problematically, some shipping lines are by-passing UK ports to avoid delays, dropping containers at Northern European ports - which typically adds a further two weeks to lead times, placing further pressure on availability.

In addition to creating availability challenges, all of these factors are driving major increases in freight costs for importers. BIAFD importers report container freight costs tripling, without factoring in port surcharges or costs of rerouted shipments. This means an effective on-cost to products often well in excess of ten percent.

Other inflationary pressures on fastener costs were already becoming evident. Asian steel prices have increased sharply in the last month, with further increases predicted, as supply tightness is compounded by a serious accident in a major Korean steel plant. European steel lead times have also extended sharply, for some wire grades tripling to more than twenty weeks, and steel producers are expected to introduce substantial cost increases early in 2021.

References

1. The Load Star - 'Container shortages the biggest disrupter: where are all the empty boxes?' - 01.12.2020

2. CAx

Original articles published by The British & Irish Association of Fastener Distributors (BIAFD)

The British & Irish Association of Fastener Distributors represents the interests of more than 85 United Kingdom and Ireland fastener importers, wholesalers and distributors.

www.biafd.org

https://www.trfastenings.com/news/in-the-spotlight

Update 26.01.2021: Container crisis wasn't just for Christmas

The global crisis in freight container availability, and consequence massive escalation in sea freight costs, made mainstream headlines in December – as parents worried there would be no Barbie dolls or Peppa Pig toys in stock for Christmas. A month on, the decorations are down, but the fastener supply chain continues to struggle with the severe impacts on product availability and costs, with little outlook for rapid improvement.

At the beginning of December, the BIAFD warned that the shortage of shipping containers at major global export ports was seriously impacting fastener availability in the UK and Ireland, forcing up container freight costs three-fold.

The situation in January is significantly worse. The problem is global, and not directly related to the UK leaving the EU. That said, issues at Felixstowe Port, which knocked onto other UK ports, have exacerbated an already critical situation. The escalation of Covid-19 infections in the UK now also means shipping lines continue to avoid British ports, preferring to off-load in Northern European, adding a further two weeks before goods are received in the UK.

The latest picture from BIAFD importing members show Asia-North Europe container freight costs have continued to rapidly escalate: pushing them five times – in some instances even more - higher than mid 2020. For a container of some standard fasteners with a low value per weight, that could easily mean the freight cost now equating to a third of the value of the consignment. As a result, some BIAFD members have reluctantly decided they simply cannot afford to bring in product, even though current inventory is rapidly eroding to support increased demand from construction and manufacturing. Most fastener importers, however, are competing against high value consumer goods for scarce containers and being forced to pay massive premiums. Insult is added to injury, when they are then presented with additional charges of several hundred dollars, to ensure a container is collected in time to be loaded for its sailing.

There are signs of limited improvement in container availability in key Asian exporting ports, as shipping lines actively reposition empty containers and container manufacturers work all out to supply new boxes. However, container availability remains substantially in deficit with little immediate prospect of major improvement, and now the Chinese New Year is rapidly approaching. The most important Chinese holiday period, this year in mid-February, always means a surge of export activity ahead of factory closures, increasing pressure on extremely limited container capacity, followed by several weeks of catch up, once factory, haulage and port operations return to work. As early as the second week in January, BIAFD importers were being told by freight agents that there was no possibility of their containers being shipped before the Chinese New Year.

Governments around the world may be losing patience with the apparently out of control shipping rates and

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Update 26.01.2021: Container crisis wasn't just for Christmas

Continued

and supplementary charges. However, threats of capping shipping costs or competition authority investigations are currently doing little more than shaving the very tip of the iceberg.

BIAFD currently sees little probability of significant improvement, either in availability or freight costs, until well into the second quarter 2021. Its members' highest priority is to maintain the best possible availability for critical manufacturing and construction supply chains. That inevitably means fastener costs will increase significantly, as at least some element of the massive hikes in freight costs are unavoidably passed on, alongside the impact of major increases in steel and stainless steel raw material costs.

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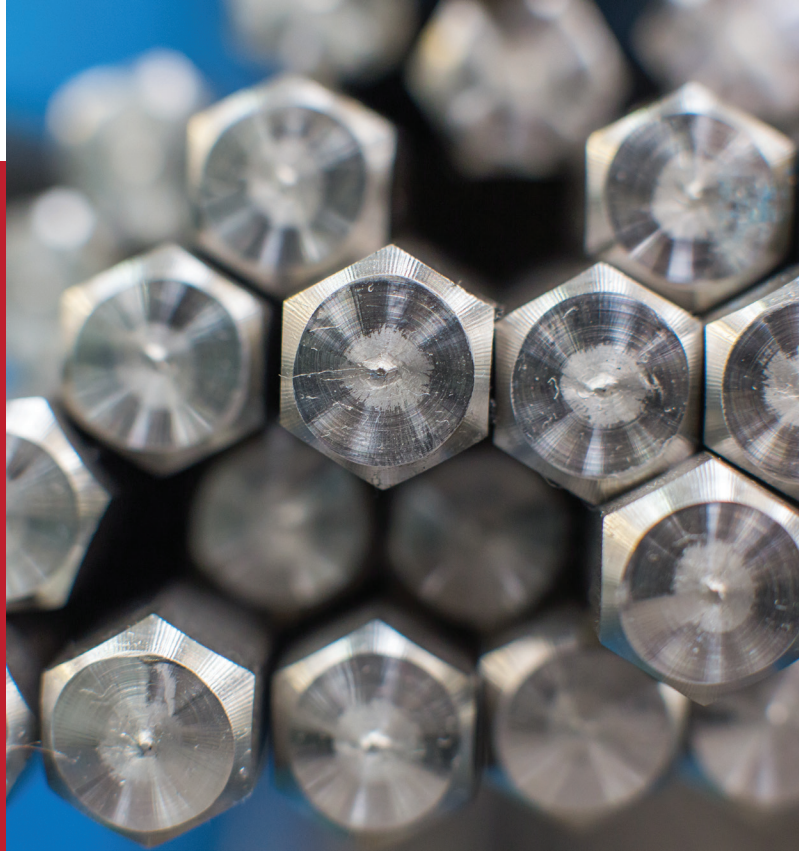
No let-up in freight and steel cost pressures



"It's every bit as bad as it was". Grimly taciturn but typifying responses to the BIAFD's latest check with members on fastener cost and availability pressures, emanating from the ongoing sea freight crisis and escalating metals costs.

The common theme running through global Purchasing Managers Index reports for February was the sledgehammer impact on manufacturing of rising costs driven by supply- chain disruption and raw material shortages. As a vital supply-chain to UK and Irish manufacturing and construction industries, members of the British & Irish Association of Fastener Distributors confirm these pressures are at unprecedented levels - and that they show no signs of easing in the foreseeable future.

Any hope of improvement in sea-container freight rates and availability, once the Chinese New Year holidays were behind us, has rapidly been dashed, according to BIAFD members. As February closed, the hope was the holiday respite in Asian shipments might allow recovery of containers to key export ports. However, there is no evidence of improvement on the ground. Cargo is piling up in Asian ports and any capacity gains will be rapidly eroded as global demand continues to surge. One thing is sure, there is no let-up in container freight rates, which BIAFD members continue to report as five to six times higher than a year ago. Importers are facing 'all up' costs of up to £6000 for a 20DC container shipped from Asia to the UK.

Depending on the product involved that can equate to as much as a third of the value of the box contents. If anything, rates look set to harden as shipping lines apply $500 seasonal surcharges early and seek to recover increasing fuel costs.

With replacement inventory urgently needed to meet buoyant demand across many sectors, plus freight industry warnings of little better than 50/50 chances of containers sailing on schedule, importers are having to 'bite the bullet' and pay exorbitant rates to try to ensure earliest possible arrival. While Mainland China is at centre of shipment unreliability and escalating costs, BIAFD members report Taiwan being little better and arranging bookings from Vietnam 'extremely difficult'.

The outlook? With a massive backlog of all types of sea-going cargo, continued major congestion in global ports, and surging demand as economies recover from Covid-19, freight agents are warning importers not to expect any improvements until at least June and most likely well into Quarter Three.

BIAFD members have always invested heavily in inventory to smooth out the impact of the inevitable headwinds that beset long-range importing. However, these are not headwinds: overworked as the expression often is, 'perfect storm' really is an apt description right now.

There are unavoidable realities for fastener consumers in all sectors. Shortages are now appearing for particular, in some cases high demand, sizes of nuts, bolts or screws.

The levels of freight cost inflation simply cannot be

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No let-up in freight and steel cost pressures

Continued

absorbed and is now having to be passed on as substantial cost increases, with more inevitably to follow.

The inflationary pressure from freight is further compounded by radical cost increases in steel and other key fastener manufacturing materials, including nickel, a major value element in stainless-steel fasteners. Carbon steel wire costs have escalated by more than twenty percent, with increases of ten percent or more already notified for Quarter Two. The picture is not unique to fasteners, as any steel buyer knows right now. Capacity is constrained and steel inputs, such as iron ore, are holding at historically high cost levels. Nickel market prices have escalated by more than forty percent year on year - driving sharp cost increases in wire for stainless steel fastener manufacturers. Equally concerning, wire lead-times are continuing to extend, with factories reporting real difficulty in sourcing all the material they need.

Whatever and whenever the eventual improvement in container availability, freight rates and material costs, it is clear they will not subside to anywhere near the levels enjoyed in previous years. Fastener importers and distributors have no choice to commit to the current extraordinary cost levels if they are to stand any chance of fulfilling their core role of providing supply continuity for industry and construction. With lead times upwards - in some cases beyond 30 weeks - those commitments are set to impact fastener costs in the UK and Irish fastener markets, indeed fastener markets throughout Europe, for the rest of 2021.

Article published **March 2021**

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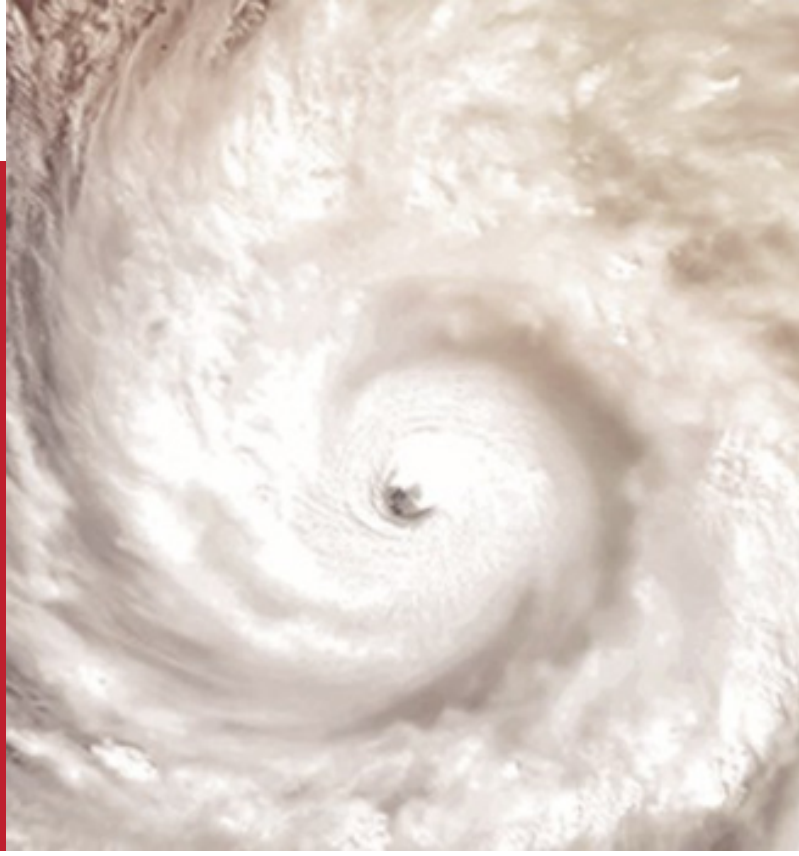
Fastener sector facing the Perfect Storm



The dictionary definition of the Perfect Storm is 'a rare combination of individual circumstances that together produce a potentially catastrophic outcome'. The expression crops up daily across the fastener industry right now, so at Fastener + Fixing Magazine we thought we ought to explore whether it's justified.

Credit: Will Lowry – Editor - Fastener + Fixing Magazine
www.fastenerandfixing.com

The context, of course, is the coronavirus pandemic and all that is now ensuing from it. On the upside, as most economies recover from Covid-19 restrictions, demand across most industries is at minimum growing and, in many cases, surging to near record levels. Long may that prevail and those economies, still severely blighted by the virus, begin to climb the recovery curve.

Where it all starts unravelling is the supply side, for virtually every manufacturing sector, including fasteners. Where to start? Steelmaking raw materials; availability and cost of any grade of steel, and many other metals? Global container freight availability and cost? Workforce availability? Constrictive trade measures?

Global steel capacity has simply not kept pace with the upsurge in demand. With the exception of China, steel capacity was definitely slow to return online from widespread shutdowns when Covid-19 first struck. While there have been questions about whether the steel industry hung back in order to push up prices, there are unquestionably structural reasons for the lag. Shutting down a blast furnace is complex enough, restarting takes far more time and effort.

It's also a prerequisite that demand will be sufficient to sustain a 24/7 production process. Actually, world crude steel output in Q1 2021 increased to 487Mt, some 10% higher than the same period 2020, and Q1 2020 output was virtually unchanged year-on-year1 – so there has been real output growth. However, that growth is imbalanced. Asian output has increased 13% in Q1 2021 and that primarily means China. European Union output increased 3.7% year-on-year, but North American output declined by more than 5%. Global demand, though, continues to outstrip supply, with consequent rampant price escalation. More damaging in many respects are lead times that initially more than quadrupled and now extend well beyond that, if indeed availability exists at all.

As steel production ramps up, the costs of input materials are also surging to record highs. As this is written, iron ore costs have surpassed 2011 record levels and are nudging US$200/tonne. Coking coal costs have similarly escalated, as have those for scrap.

Many fastener factories across the world are simply declining to accept orders at any price, even from regular, major customers, because they are unable to secure wire. Where orders are being accepted, quoted production lead times in Asia are typically eight to ten months, although we've heard some instances of more than a year.

Another increasingly reported factor, is shortages of production personnel. In some countries that is a consequence of continued coronavirus outbreaks and/or restrictions, with India almost certainly the worst hit.

Article published **March 2021**

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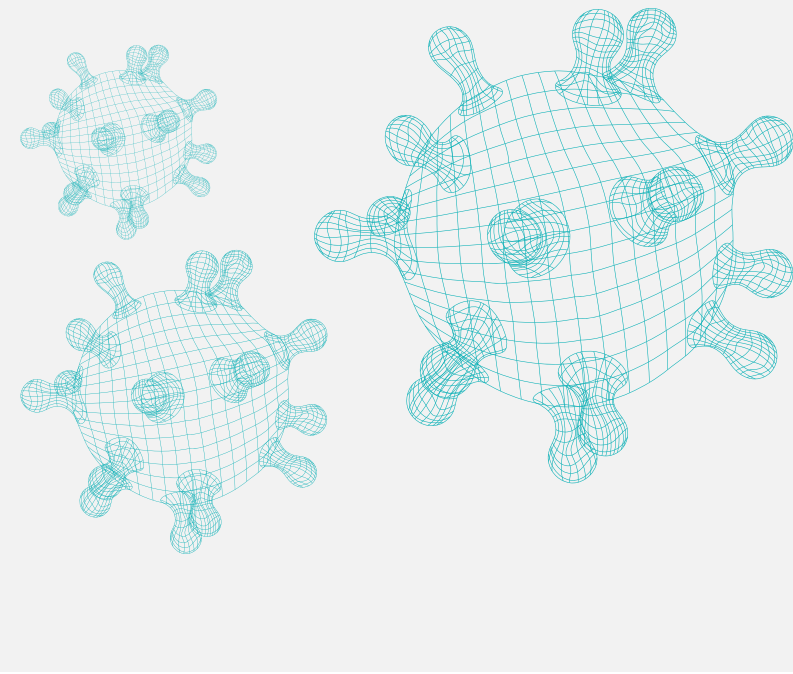
Fastener sector facing the Perfect Storm



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However, even in countries with blessedly low infection levels, for example Taiwan, factories cannot hire enough labour, skilled or otherwise, to meet increased demand. Talking of Taiwan, anyone following news of the global shortages of semi-conductors, will also know that country is suffering unprecedented drought conditions currently, impacting the whole spectrum of manufacturing.

Two consequences are inevitable. Fastener manufacturers and distributors simply cannot absorb the current extraordinary levels of inflation – not if they are to survive as a business – and have to pass on substantial and multiple cost increases. Isolated shortages of some fastener types in the distribution supply chain are now becoming widespread. One wholesaler recently received more than forty containers of screws – more than two-thirds was absorbed by back orders and there is no way of anticipating when further stocks will be received.

Then, of course, there is the global freight industry, which has already gone through six months of radical container shortages. China's rapid recovery from the pandemic initiated that crisis, exacerbated by the Christmas peak season demand. Then, the coronavirus impacted container handling, particularly in North America, slowing the return of the boxes to ports of origin. By the beginning of 2021 freight costs had multiplied several-fold – in some cases six times higher than a year earlier. By early March there were faint glimmers of improvement in container availability and some softening of freight rates.

That was until 23rd March, when a 400m long container vessel lodged across the Suez Canal for six days. This might not seem that long, but it could take up to nine months before the global container freight industry fully normalises as a result. The ultra large container vessels that now ply most routes, whilst slower steaming to conserve fuel, may only make four complete 'loops' a year. So, a six day delay, compounded by the inevitable port congestion that follows it, knocks everything out of kilter. Ships and boxes are now all out of position.

At the beginning of the year there were protests that the shipping industry was constraining capacity to boost rate levels. Maybe so. However, latest reports indicate that less than 1% of the entire global container fleet is now idle. New, even bigger vessels are being ordered – but will not come into service until 2023. So serious is the ship availability, that lines are reported to be transferring smaller coastal container vessels to deep sea routes, good reason – if the Ever Given was not enough – to ensure your container is insured.

So, freight costs are ratcheting upwards and show every sign of exceeding February's peaks. Once again, it's availability that counts - and there isn't any. Certainly, on Asia to Northern Europe routes, importers are being told there is no shipping space until well into June. Sailings have simply been blanked because ships are out of position.

New containers, costing double because of steel, have been brought into service. However, port congestion and slow box return continues to be a major issue.The worry now is that the peak season is not that far off; consumers in the US have received a financial boost from President

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Fastener sector facing the Perfect Storm

Continued

Biden's recovery plan; and there are pent up consumer savings in most economies itching to be spent.

Did we mention regulatory impacts? President Trump applied US 'Section 301' tariffs on imports of fasteners alongside other products from China. Although the WTO subsequently ruled these tariffs contrary to world trade rules, incoming President Joe Biden has so far chosen to maintain them. All trade remedies distort the market – that is their purpose, although all too often the distortion has unintended consequences. These tariffs resulted in major volumes of US fastener orders being diverted from China to other Asian sources, including Vietnam and Taiwan.

In December 2020, the European Commission initiated anti-dumping proceedings on imports of fasteners from China. It's not for this magazine to prejudge the outcome of the Commission's investigation – the 'predisclosure' of its provisional measures will be published in June. However, the very existence of the investigation means importers, all too aware of the previous fastener tariff levels of 85%, have not dared place orders on Chinese factories, which might arrive after the July date on which provisional measures are scheduled to be applied. Conversely, Chinese factories are refusing to accept orders, for fear they would be cancelled when/if anti-dumping measures are applied.

With US importers having absorbed capacity elsewhere in Asia, and steel availability critical, options for European importers are severely limited. The trouble is coronavirus travel restrictions make it near impossible to carry out physical audits of new suppliers to assess quality and manufacturing capability.

Place orders in Europe, then. Not so easy. European fastener production capacity is reportedly overloaded, with virtually no additional raw material to be obtained. Steel safeguarding measures, placing quota limits on imports of wire and bar, also limit flexibility to source wire from outside the EU. We're hearing that lead times from European fastener plants, assuming they are prepared to accept the order at all, are between five and six months.

Two thoughts to conclude. Firstly, whatever the legitimacy for anti-dumping measures on Chinese fasteners, the timing could not have been worse and the consequences, if significant tariffs were to be applied similar to those in 2008, will seriously impact European fastener consumption industries. The other thought is simply to reflect on how important fasteners really are. Not just to those within the industry who, perversely perhaps, love these miniature pieces of engineering, but to all those consuming industries, which – dare we say – regularly undervalue and take them for granted. Fasteners rarely account for more than one percent of the value of a finished product or structure. However, if they are not there, that product or structure simply cannot be completed. The reality for any fastener consumer right now is that continuity of supply overrides cost and that having to accept higher prices is infinitely better business than halting production.

So, Perfect Storm? Media is often accused of being prone to exaggeration. In this case, we suspect, if anything we'll be accused of understating the reality.

Source WorldSteel Association www.worldsteel.org

https://www.trfastenings.com/news/community

TR Fastenings Inc putt their skills to the test in a tee-rific charity golf match

TR Fastenings Inc was invited by Yanfeng Global Automotive Interiors to take part in the 21st Annual Plymouth Community United Way 'Tee Off For A Friend Golf Classic and Dinner' on the 15th August 2019, held at Fox Hills Golf & Banquet Center.

The TR team were playing alongside the Yanfeng team:

- Kellie Smolenski, Commodity Manager (Metals)
- Kyle Riendl, Direct Buyer (Metals)
- Rachel Maxheimer, Metals Buyer
- Kris Warren, Senior Buyer (Metals)

The TR team consisted of:

- Jeremy Scholefield, Director of Strategic Business Electronic Sector
- Brad Allen, Business Development Manager
- Joe Haymes, Strategic Sales Manager
- Jose Vera, Business Development Manager

Plymouth Community United Way

The organisation works to address the basic human needs of the residents of Plymouth, Canton and Western Wayne. Advancing the common good is less about helping one person at a time and more about changing systems to better serve us all.

Plymouth Community United Way's work is focused on the building blocks for a good life:

- Basic Needs - Supporting food pantries, providing emergency assistance
- Health & Stability - Connecting families to resources to enable greater independence
- Education - Helping children and youth achieve their potential
- PCUW's goal is to create long-lasting changes by addressing the underlying causes of these problems. Living united means being a part of the change. It takes everyone in the community working together to create a brighter future.

Joe Haymes, Strategic Sales Manager at TR Fastenings comments:

"The TR team had a great day and would like to thank Yanfeng for giving us the opportunity to help raise funds for a very worthy cause."

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TR Kuhlmann take part in a MINT Chess event

On Saturday 30th November staff from TR Kuhlmann held a chess event, that was organised with local registered association Mint-Technikum (Mathematics, Computer Studies, Natural Sciences, Technology), who have created a meeting centre for children and young adults to awaken an interest in science and technology from an early age.

The centre offers both children and young adults the chance to experiment, design and build. This enables them to share their interests and ideas and to work together and collaborate on development and research projects, through this they are challenged through a wide variety of tasks.

There are "MINT experts" who are available to assist the young researchers to implement their own designs, this means that interest and innovation is generated and introduced early. Until now there has not been an available facility in the region, where young people can experience, partake and design technology outside of school.

Peter Henning, Managing Director at TR Kuhlmann Comments:

"Everyone had a brilliant day, thank you to all who took part!

The children who participated were extremely motivated and produced their own chessboard a few weeks prior to the event and we helped them to finalize their creations on the day. It was great to see such a variety in each design and we even had chess pieces made from fasteners!"

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TR partnering with local college as Enterprise Advisers

Helen Toole, Group HR Director and Luke Murphy, UK HR Manager based at TR's headquarters in Uckfield, have partnered with the local college and will work with them to provide support as Enterprise Advisers.

Enterprise Advisers are being partnered with local schools and colleges to become part of an influential nationwide structure of outstanding business volunteers, who can present knowledge of their sector and how it fits in to a local and far reaching business community.

Launched in 2015 by Skills East Sussex, the East Sussex Enterprise Adviser Network is funded by the Careers & Enterprise Company and East Sussex County Council, meaning this is a component of an increasing nationwide network.

In the UK, there are over 1,300 schools and colleges being supported with arrangements in place to grow this figure. Organisers are hopeful as partnerships increase and evolve that this will mean business and school linked activities will improve, resulting in long-term goals being met.

Striving to accomplish East Sussex County Council's Employability and Skills strategy, businesses from priority growth areas e.g. construction, creative & digital, engineering and lots more, are being matched with secondary, further education and sixth form colleges to rekindle their business and education links.

As Enterprise Advisers, Luke and Helen will help to develop an employment engagement strategy, in which they are able to help Uckfield College to engage their students with local businesses and aim to have a long lasting worthwhile impact to be able to support locally whilst making a difference.

By helping Uckfield College evolve with an Enterprise and Employer Engagement plan, consisting of activities and advice that publicises career paths and employability skills, they will recognise their preferred fields and be able to support other advisers involved in the network, to share ideas and best practice. Once this is completed, it is evaluated by county councils and schools.

Luke Murphy Comments:

"It is so great to be able to be part of this network, to know that the work me and Helen will be providing will be able to have a positive impact on young adults, by creating long term careers advice and guidance."

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TR Fastenings all 'fired up' for National Apprenticeship Week 3rd to 9th February 2020

Apprenticeships
National Apprenticeship Week
3 to 9 February 2020

TR Fastenings is proud of the apprenticeship programmes it has offered over the last 9 years, from warehouse, to quality, sales, admin, marketing and HR to finance and IT, apprentices are introduced to all aspects of our business and operations, across our global locations.

We believe that an apprenticeship provides an excellent foundation on which to build a solid career and we have seen the incredible achievements of our apprentices who gain hands-on experience and go on to develop rewarding careers within our company.

At TR Fastenings, an apprenticeship comes with over 45 years of our knowledge and commitment to training and developing our people. It's our on-going commitment to develop their technical and professional skills which continues to be an important priority for us. Our apprentices work on real products and projects that shape the future of our industry.

In support of National Apprenticeship Week 3rd to 9th February and throughout 2020, TR Fastenings will be raising the profile of its apprentices and showcasing how they are making an impact in the business. We will be celebrating the diverse range of talent we have in the company and the value they bring to us.

Click here to view more information on our apprenticeship schemes.

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TR Fastenings Inc encourages STEM careers by sponsoring local High School's Robotics Club

TR Fastenings Inc, the TR Fastenings (TR) North American business, sponsors the Obra D. Tompkins High School's Robotics Club, better known in the FIRST Robotics Competitions (FRC) as the Steel Talons.

Established in 2015 and based at the Robert R. Shaw Center, Katy ISD's STEAM center, the Tompkins Robotics students are driven to represent the school's values; Integrity, Fairness, Discipline, Modesty and Respect, whilst gaining valuable knowledge about building robots; TR will be providing fasteners for the robots that are created by over a hundred aspiring young students.

A new FIRST Robotics Competition season begins early January, in which the team have around eight weeks to plan their design as well as construct a new robot, that fits the requirements provided for that year. Their busiest season is January and February, then followed by the weeks that lead up to a district competition in March and April.

Building their first robot in January 2015 at a mentor's house, they shortly moved into the newly built Robert Shaw Center (RSC) in March that year. The following January, they built their second robot as a team at the centre, however, building a new robot every year and showcasing the team's great creations by competing in multiple events, comes at a price!

During the 2018 season they beat a personal best and won the most awards in the team's history; their winnings included the State championship, UIL Robotics State Championship and three Spirit Awards!

Retaining success in 2019, they also conquered another new team milestone and were given the opportunity to compete at the FIRST Championship, Houston in the Roebling Division for the first time in club history. Furthermore, winning the top team award in two competitions; the Channelview District competition, District Chairman's Award and the Regional Chairman's Award at the FRC District Championship held in Austin. Also receiving first place in the District Engineering Inspiration Award at the Del Rio District Competition.

Lori Cohee, Tompkins Robotics Mentor comments:

"Thank you for your generous support. We take pride in providing the opportunity to excel and we can't wait to see the great ideas that are created by our aspiring students put into practice. By doing so, we are allowing them to expand their STEM skills knowledge and abilities, allowing them to prepare for the future in STEM when they leave college.

Each fall we enrol new team members, as well as opening membership applications at the New Falcon Camp, in which all students complete the online membership form and pay the activity fee that covers a teamwork t-shirt, competition t-shirt and a small part of the competition fees or the build season costs. We have had to limit team size, due to the space restrictions at the RSC and manageability to around 120 students. Throughout the academic year we hold STEM nights, mainly at feeder elementary schools to Tompkins High School, howvever, we will also visit non-feeder elementary schools to assist in their STEM nights, this is if another high school robotics team is not available."

Click here to watch the Steel Talons FRC 5427's YouTube video, this showcases the robots and the innovative work produced within the community. You can also follow the team on Twitter for the latest team news.

Article published **March 2020**

https://www.trfastenings.com/news/community

Local community coming together in support of Covid vaccination roll-out

TR Fastenings would like to share a heartfelt thank you to all the staff at The Meads Medical Centre, in Bell Farm Road, Uckfield, as well as the other local GP surgeries involved in the project, for their incredible work and dedication in managing a safe and speedy roll-out of the crucial Covid-immunisation programme, which began 15th December 2020.

The Centre is a vaccination hub and has kept patients and the local community updated regularly with latest vaccination news. TR Uckfield is proud to be part of this close-knit community and offering an overflow car park on vaccination days is the least TR could do, with around 50 volunteers from the local area also helping with car park marshalling!

Charlotte Luck, Practice Manager at The Meads Medical Centre commented:

"We are generally vaccinating between 500 to 1000 people per day and all of us at the Meads are extremely grateful for the amazing response from the community in supporting this critical Covid vaccination programme".

https://www.trfastenings.com/news/community

Staff at TR's West Midlands location donate to multiple charities

TR Fastenings continues to show support to those in need. Each year TR's West Midlands location donate to a local charity instead of sending Christmas cards to one another, this is organised by Jayne Rogers, Contract Sales Co-ordinator, based at TR in the Midlands. This year the team decided to split the donations between two chosen charities, the Black Country Foodbank and The Salvation Army.

An impressive total of £370.00 was raised and TR donated £175 to The Salvation Army and £195 to the local Black Country Foodbank, who issue food vouchers to local organisations that encounter people in hardship. Also offered at the distribution point is the opportunity to chat with the project team whilst their food package is prepared.

The team at Black Country Foodbank comments:

"Thank you so much to TR for their recent donation to the Black Country Foodbank, you collected and donated 75 kgs of food and 50 kgs of non-food items, this truly is an amazing amount, enough to provide 150 meals and 50 toiletry packs; enabling us to bring hope into the lives of many. Once again, many thanks for your support."

Click here to view the certificate from the team at Black Country Foodbank.

We also heard from The Salvation Army who commented:

"We received your donation of £175.00 to our Christmas Appeal and we wanted to say a really warm and deeply sincere 'Thank you' for your kindness and generosity. Your wonderful donation will bring comfort in many ways to many people."

https://www.trfastenings.com/news/community

Sven Brehler, Director of Engineering at TR Fastenings, is selected to judge prestigious Formula Student competition

Formula Student, Europe's most established educational engineering competition, returns to the home of British motorsport, Silverstone, from 21st – 25th July 2021.

TR Fastenings is proud to announce that Sven Brehler, Director of Engineering, has been selected as one of the competition judges.

Organised by the Institution of Mechanical Engineers (IMeche), this year's competition sees more than 140 teams from around the world come together to take part in a live event that encompasses two classes, with the focus on the design, build and running of a single-seater car.

Class 1 is the construction of a moving vehicle, designed to compete in dynamic events, while Concept Class involves bringing ideas together in preparation for Class 1. The competition aims to encourage more young people to take up a career in engineering, and is viewed by the motorsport industry as the benchmark for excellence. Celebrating its 23rd anniversary this year (2021), organisers are working closely with Silverstone and Motorsport UK to ensure the event complies with current Covid-19 safety guidelines.

Students are judged across six categories within the two classes in the event. IMeche actively encourages engineering professionals from all sectors of the industry to apply to be part of a judging team. Sven, TR Fastenings' Director of Engineering specialising in automotive, applied to be a judge within the Cost and Manufacturing section (Class 1) and was selected, his Design for Manufacture (DfM) knowledge standing him in good stead.

"I'm delighted to be involved this year" says Sven. *"Being part of the judging panel is an excellent opportunity to support the best next-generation engineers. This is a prestigious motorsport engineering contest and with an impressive line-up of judges I've no doubt we'll be sharing expertise and insights with one another too! It'll be a fantastic experience given the tough times we've all had and I'm looking forward to being part of it."*

Expectation of judges

The requirement for four judges per category ensures a wide range of expertise across each specialism. A solid background in mechanical, electrical and civil engineering is deemed essential for judging the Cost and Manufacturing category, to which Sven brings his expertise. Those with backgrounds in cost and process, procurement, managing supply chains and tool and machinist experts were also encouraged to apply, as were project managers and accountants.

This is not the first time TR Fastenings has been involved with Formula Student. In 2017, Patrik Ringdahl, a mechanical engineer now based in TR Fastenings' Stockholm office, was part of the Formula Student programme, and joined TR Fastenings following his introduction to the business via the project.

"I gained huge benefits from being part of the scheme," Patrik says. *"It's fantastic that Sven is part of the judging panel for the 2021 competition and that TR continues to*

https://www.trfastenings.com/news/community

Sven Brehler, Director of Engineering at TR Fastenings, is selected to judge prestigious Formula Student competition

Continued

support such an important scheme designed to champion young engineering talent."

Real-world experience

The competition gives entrants a unique perspective of how university life differs to the world of work and helps provide a smooth transition from one to the other. It provides practical real-world engineering experience combined with softer skills, such as project planning, learning to work as a team and understanding business objectives.

The TR Fastenings community

TR Fastenings has a proven track record in supporting the STEM community, and regularly gets involved with local, national and global projects to encourage the next generation of engineers.

It supported National Apprenticeship Week in the UK in February 2020, and has offered apprenticeship programmes since 2011. TR has also been part of the Sussex Enterprise Advisor initiative, with senior HR staff supporting local colleges as business volunteers, advising students on career choices and how to develop a skill set that will impress employers.

https://www.trfastenings.com/news/community

‘Tee-rific’ support from TR Fastenings Ireland

Dara Horgan, Operations Manager and Chuck Crowley, Business Development Manager, from TR’s Cork location, attended the annual Ballygarvan Camogie Club, Golf Classic at Raffeen Creek Golf Club, for the 4th year running.

The Ballygarvan Camogie Club was re-formed in 1988 and has a strong and proud history of developing its players from a young age. Coaches, mentors, volunteers, parents and players put in a lot of hard work and dedication which has resulted in outstanding achievements for the club.

Martin Hourihan, Club President of Ballygarvan Camogie Club comments:

“We would like to thank TR Fastenings for attending this year and their continued support. We look forward to seeing them again next year!”

Chuck Crowley, Business Development Manager at TR Fastenings comments:

“We had a great time supporting the annual Ballygarvan Camogie Club, Golf Classic, this is our 4th year in doing so and we look forward to attending again in the future!”

(Pictured: Richard Kirby of Atlas Box and Crating with Dara and Chuck from TR Fastenings Cork)

https://www.trfastenings.com/news/exhibitions

TR's Chris Black to speak at NEAA's first Automotive Export Week

Chris Black of TR Fastenings is to demonstrate how a UK company with global presence can generate growth around the world at the first North East Automotive Alliance (NEAA) Automotive Export Week 14th to 18th September 2020.

The NEAA is working with Supply Chain North East and the Department for International Trade (DIT) to ensure the virtual event invites businesses at every stage of the process to explore key automotive markets, learn about all aspects of export, seek support from market specialists and trade champions, build contacts and meet potential customers.

Chris, the Global Sales Director for Automotive Business Development at TR, is the industrial lead for the NEAA's trade working group, which was launched as a key part of the NEAA's 5-year strategy to better understand and support the trade activity of its members.

He will explain to NEAA members how TR has developed its automotive customer base in many countries on three continents around the world and how it is continuing to invest and expand in North America, Europe and Asia.

Chris, who has more than 30 years' experience in the fastener industry, said: *"As a full service provider to the automotive industry, TR is adept at reducing the cost of engineering projects through our teams working hand in hand with our customers to develop the right solution for them, from design through to production.*

"We're continuing to invest in our manufacturing sites and innovation centres to support our automotive customers' needs, in particular to partner with the growing number of niche and start-up electric vehicle manufacturers.

"Our experience of developing first class supply chains and providing cost benefits to customers can act as an example to other businesses and help them tackle the challenge of growing overseas."

Automotive Export Week will feature more than 40 events including country briefings, interactive panel discussions and workshops. In addition, the week will provide a platform for delegates to market their products and services to enable business matchmaking, collaboration and one-to-one networking.

Over the past 30 years the North East has established itself as a centre of excellence for automotive manufacturing. It is the second largest automotive region in the UK and accounts for 30% of UK passenger vehicles, 20% of Europe's electric passenger vehicles, 10% of all UK non-highway vehicles and produces 350,000 engines per year. More recently, it has established itself as a leading location for electrification with strengths in battery manufacturing, power electronics, motors and drives.

Paul Butler, CEO, North East Automotive Alliance, said: *"Automotive Export Week creates the ideal opportunity for businesses to expand their sector knowledge and raise their company profile with a view to boosting sales overseas and speaking directly to specialist trade advisors."*

Lawrence Davies MBE, automotive sector team, DIT, said*:* *"This event will bring together automotive country specialists from within the Department for International Trade and other supporting organisations and companies from across the North East and the UK. Companies at all stages of export will benefit from this amazing opportunity."*

https://www.trfastenings.com/news/exhibitions

TR Fastenings Sven Brehler is to speak at Battery Tech Expo's Virtual Event

TR Fastenings - Design for Manufacture - Optimising Fastener Function and Assembly by Sven Brehler

View and listen to Sven Brehlers full presentation from Battery Tech Expo.

For further information please contact svenb@trfastenings.com

On 8th October 2020, Sven Brehler, Group Engineering Project Manager at TR Fastenings will be presenting at the first Battery Tech Expo virtual event. Focusing on 'Design for Manufacture – optimising fastener function and assembly', Sven will share insight into the benefits of early design involvement and consideration of fasteners used within Electric Vehicle Battery (EVB) assembly.

This annual event usually held at world famous Silverstone will explore the future developments of electric battery technology. This year has an impressive line-up of guest speakers who will be discussing the latest breakthroughs.

Sven is a Chartered Engineer with more than 20 years' experience in mechanical engineering. He has gained a working knowledge over recent years through working with major Tier 1's in the automotive industry. Based in the UK and with experience of working in China, the USA and South Korea, his skill is in identifying products and materials early on in the design process, which have helped him support start-ups and OEMs.

https://www.trfastenings.com/news/exhibitions

TR Fastenings to showcase its electric vehicle fasteners at Battery Tech Expo

Stands 30 and 31, The Wing, Silverstone NN12 8TN, 12th October 2021, 09:00 - 16:30

TR Fastenings Ltd (TR), a global specialist in the design, engineering, manufacture and distribution of industrial fastenings, is exhibiting at Battery Tech Expo at Silverstone on 12th October.

The annual event will explore the future of battery technology including battery storage, battery systems and electric vehicle (EV) batteries.

TR delivers its extensive product range to OEMs and Tier1 suppliers developing transformative technology such as longer lasting batteries, lightweight solutions and connected devices.

The role of fasteners in EV is significant: not only are they needed for the vehicles themselves, but charging units, EV battery (EVB) casings and general infrastructure equipment all require high quality fastenings to provide robust and secure settings for this valuable technology. TR's product range includes everything from battery retention bolts and non-magnetic fasteners to cable management hardware and compression limiters.

Sven Brehler, Global Director of Engineering, says: *"The demand for EVs has increased dramatically in recent years, and the technology that allows this expansion has developed equally rapidly. We at TR Fastenings are ideally placed to supply the extensive range of fasteners to the industry, and to support the growth of our customers.*

"This is an exciting and fast-moving sector, and the resulting impact on global supply chains in the automotive and electronic industries has been huge in terms of demand and opportunity.

"We're looking forward to meeting professionals from across the advanced battery technology industry to share our knowledge and showcase our product range, particularly so after the two previous postponements."

Sven will be joined at Battery Tech Expo by a number of colleagues, representing TR's continuing commitment to this high-profile event. They include John Pountney (UK Automotive Sales Manager), Bernard Malone (Business Development Manager) and Danny Gamble (UK Automotive Quality Manager).

https://www.trfastenings.com/news/awards

TR Holland receives 100% delivery commendation sixth year in a row

TR Fastenings has once again received recognition for its 100% delivery record from Signify (formerly Philips Lighting) for the sixth year running.

A 0% failure rate over a 12 month period is an impressive achievement as TR supplies over 400 lines of C-class products to Signify in Eindhoven, Holland, including screws, nuts, clips and plastic components. TR Holland has supplied into Philips since 2008, providing technical expertise for bespoke parts and establishing a strong and collaborative relationship over the years.

This year, due to the global COVID-19 crisis, the judging and award certification took place over Skype. Signify recognised the high performance of Hans Nijhof, Laurens Wekking and Jeanette ter Riet from the TR site in Oldenzaal, who continue to provide excellence in delivery services to customers.

Ron Vlutters, Managing Director of TR Holland, said:

"Our on-going commitment to provide exceptional services across our entire business remains as strong as ever. It has been a challenging time with priority given to the health and safety of our employees but we have adapted and reacted quickly to ensure delivery and services levels to our customers remains high. We are delighted that our hard work and dedication have been recognised for another year and I am very proud of the team."

https://www.trfastenings.com/news/awards

TR Fastenings hit a hat trick at North America automotive supplier awards

International fastenings specialist, TR Fastenings (TR) has been recognised as a 'Distinguished Supplier' by Yanfeng Automotive Interiors for the third year running.

Yanfeng Automotive Interiors (YFAI), the world's largest supplier of automotive interiors, recognised 19 of its suppliers during the 'North America Supplier Performance Awards Ceremony' on 6 February, held at the company's Michigan Tech Center.

Jose Vera and Brad Allen, Business Development Managers at TR USA said:

"It is a huge honour to receive this recognition for 'Flawless Execution'. These Awards celebrate suppliers' outstanding track record in quality, cost, logistics, development, technology, and service and to be acknowledged in this way is testament to TR's commitment to providing our customers with consistently high-quality products. We are very proud of the strong relationship we have with YFAI, which is built on our teams' exceptional industry knowledge, manufacturing excellence, and outstanding customer service."

Jim Bos, Vice President, Global Procurement, for Yanfeng Automotive Interiors said:

"Each year, this event is an opportunity for us to recognise our suppliers for their commitment to excellence. Their dedication enables our team to provide our customers with the high-quality products they've come to know from YFAI."

TR has previously been granted Distinguished Supplier status by YFAI (in 2019), following its award for Supplier Excellence in 2018.

TR's USA team is supported by the company's manufacturing colleagues in Taiwan.

https://www.trfastenings.com/news/awards

TR Holland recognised for their delivery performance after a challenging year

TR Fastenings is celebrating another success following recognition for its 100% delivery record from world leading lighting company Signify. This accolade represents TR's ability to maintain their service record despite a challenging year in 2020 due to the pandemic.

We are proud to have achieved a zero-defect rate during this 12-month period, managing over 400 lines of fastenings and Cat C products. TR Holland has supplied Signify (formerly Phillips Lighting) since 2008 and provides technical and logistical support.

This is the seventh year in a row that TR Holland has been given this award and during this unusual year, judging and the awards took place over Skype. The team supporting Signify include Hans Nijhof, Laurens Wekking and Jeanette ter Riet who continue to work hard to maintain this level of service for all customers at the TR Oldenzaalsite.

Andrew Nuttall, European Managing Director of TR Fastenings, said: *"2020/21 has seen the pandemic disrupt global markets, supply chains and logistics, and this recognition highlights our delivery capabilities in an uncertain trading environment. It provides great encouragement for our teams, not only in Holland but across all our global sites."*

Ron Vlutters, Managing Director of TR Holland, said:

"During these last 12 months we have continued to drive forward – adapting to constant changes. There are great things happening at TR, the team are as focused as ever, and this Signify Award acknowledges the contribution that my team are making, and we are proud to once again receive this reward."

Article published **April 2021**

https://www.trfastenings.com/news/awards

TR Houston wins Distinguished Supplier Award at Yanfeng 2021 Supplier Expectations Day event

TR Fastenings Inc has been recognised as a 'Distinguished Supplier' by Yanfeng Automotive Interiors for the fourth year running.

Yanfeng, a leading global automotive supplier, virtually hosted its annual Supplier Awards during its Supplier Expectations Day event, recognizing 38 suppliers from North America (17 suppliers) and Europe (21 suppliers) with awards in various categories.

Glenda Roberts, TR Fastenings Inc Director commented;

"We attended the virtual event and once again we found it very interesting and informative. It gives us clear direction on Yanfeng's vision for the future so that we can align our strategy. We were delighted to receive this prestigious award and we will ensure that our colleagues involved in supporting Yanfeng are made fully aware as they made this happen."

"It's important for us to recognize our top suppliers and their teams for their dedication over the past year. For us, they are important partners, who play a decisive role in our success to deliver and exceed our customers' expectations. There's no denying the challenges our industry continues to face but taking this time to show our appreciation is more critical now than ever after the year we've gone through together." said James Bos, Vice President Global Procurement at Yanfeng.

TR was previously granted Distinguished Supplier status by YFAI (in 2019 and 2020), following its award for Supplier Excellence in 2018.

https://www.trfastenings.com/news/products

An increase in fastener demand to support the medical equipment manufacturing sector during the Covid-19 pandemic

For over 25 years, TR Fastenings has been working with leading healthcare organisations and their subcontractors as a total solution provider of fasteners and cat c products. TR has geared up its capacity to support the medical technology industry during this critical time.

By Jeremy Scholefield, Director of Strategic Business, TR Fastenings Ltd

The current landscape

The outbreak of Covid-19, a major worldwide public health emergency, created an unprecedented demand for medical products, a situation never before experienced on this scale at any time in living memory. In response to the outbreak, the world turned to medical companies for vital help, which has galvanised the industry into action and to work in uncharted territories.

To meet the urgent global demand and to alleviate shortages, many manufacturers from outside of healthcare are now reconfiguring their business to develop and produce medical equipment and supplies.

It has been a high growth market for many years and according to the Evaluate MedTech Report produced in 2018, the global medical technology industry is expected to grow at 5.6% per year to reach worldwide sales of US$595 billion by 20241. Covid-19 will most likely have significant influence on this forecast in the coming months. As the pandemic unfolded, the governments and public health services of England, Scotland, Wales and Northern Ireland established several NHS Covid-19 critical care field hospitals in various locations across the UK. These temporary hospitals, named NHS Nightingale after nursing pioneer Florence Nightingale, were set up to cope with the anticipated overflow from existing hospitals. We have also seen similar actions being replicated globally.

Medical devices are playing a crucial role in the fight against Covid-19. The critical products requiring fasteners and components are:

- Respiratory support and monitoring equipment such as ventilators, which help to treat hospitalised patients.
- Personal Protective Equipment (PPE) such as face masks and protective visors.
- Diagnostic tests which identify those infected and further limit the spread of the virus.

TR Fastenings responded to the UK Government's urgent request to support the immediate needs of established medical equipment manufacturers and new companies diversifying into this sector. With technical expertise, real time inventory availability, a wide range of fasteners and an intricate global supply chain already in place, TR has been able to accelerate time to market.

The role fasteners play in medical devices

Although fasteners are typically the smallest components in medical devices, they play an important role in the assembly, functionality and structural integrity of the device. Working directly with a knowledgeable fastener

https://www.trfastenings.com/news/products

An increase in fastener demand to support the medical equipment manufacturing sector during the Covid-19 pandemic

Continued

manufacturer early on in the design stage mitigates the possibility of a costly redesign after the product has been launched.

The challenges of working in a changing world

TR's fast-track approach to delivering a high volume of products, often within hours, supported the sudden acceleration of customers' needs. TR worked through weekends and bank holidays to respond quickly and engage with various medical companies around the world.

The main products TR supplies are sheet metal fasteners, high grade stainless steel fastenings, plastic and rubber products plus specially manufactured parts to be used in a range of medical equipment. This includes ventilators, medical beds & furniture, ultrasound machines, medical imaging equipment, defibrillators, incubators, medical computer stands, volumetric pumps & infusion devices, vacuum extractors and many other vital pieces of medical equipment.

New medical hardware products introduced

TR has introduced two new products to its range – the L-bow Handle and a Face Visor Kit:

L-bow Handle

The L-bow Handle can be retrofitted to an existing compatible door handle and allows the door to be opened "hands free" with your forearm, reducing the risk of direct contact with viruses and bacteria on the door handle. The door opener is made from plastic with stainless steel components and works on various door types with both horizontal and vertical handles from 19mm up to 22mm diameter. Available from stock in black and to order on any other RAL colour (minimum 1000 pcs).

Face Visor Kit

The Face Visor Kit contains two Polypropylene clips and a 330mm elastic strap which is quick and easy to fit.

A secure, lockable and adjustable method of attaching a strap to a face visor. The kit can be manufactured in various colours. Simple finger pressure closure and release mechanism. The standard 19mm elastic strap can also be provided in a 15mm width, and 1mm increments up to 19mm.

Application Engineering has proved to be key

In addition to choosing a high quality fastener manufacturer and distributor with a diverse product range, it is also important to work with a company that offers application engineering expertise. TR engineers are fully engaged in the design and make critical recommendations for the interface between the fastener and the medical device.

Due to Covid-19 lockdown restraints, TR engineers have fully utilised the Modern Workplace by using various methods of online virtual communication to ensure the customer receives the highest level of service and technical support.

https://www.trfastenings.com/news/products

An increase in fastener demand to support the medical equipment manufacturing sector during the Covid-19 pandemic

Continued

The future

As the medical landscape changes, preparing for the future has never been so important. TR Fastenings is ready to meet the challenge.

Source: Market size extrapolated from EvaluateMedTech Report, World Preview 2018, Outlook to 2024 https://www.evaluate.com/thought-leadership/medtech/evaluatemedtech-world-preview-2018-outlook-2024

https://www.trfastenings.com/news/products

TR Fastenings grows and invests in sheet metal portfolio

TR Fastenings, the global specialist in the design, engineering, manufacture and distribution of high quality industrial fasteners, has made a substantial investment in its range of fasteners for sheet metal. This strategic move is in direct response to a growth in enquiries in this extensive product line, across multiple sectors.

TR has been at the forefront of sheet metal fastening solutions for over 45 years, stocking in excess of 100,000 sheet metal products and supplying to more than 5000 companies worldwide.

This large-scale investment sees expansion of its own branded Hank® Self Clinch Fasteners, a new range of K-Series® Thin Nuts, access to a full suite of brand new resources on its already extensive website and improvements to all its sales and marketing brochures, in a move designed to provide customers with greater information and clarity.

TR's Hank® brand is highly regarded throughout the global sheet metal industries and has become synonymous with sheet metal fasteners. The brand is part of a wide-ranging product portfolio and for customers looking to press, rivet or weld during manufacturing or assembly processes; TR can supply products for a whole host of industry requirements across a wide range of applications.

To support this product focus, TR's website now provides a series of educational and informative videos to help clients better understand which of their innovative products are best suited to their exact requirements. These helpful and explanatory animations – which also include product information and key considerations about each product – will reassure customers they are buying the correctly specified item. The videos form part of a wider revamp of the sheet metal industry section of the website, including in-depth product specification and FAQs.

Steve Wallis, Sales Office Manager at TR Fastenings, said:

"We are particularly proud of our latest technical animations which highlight the features and benefits of the products in a way that is easy to understand. We hope it will make the decision making process smoother for customers and with our in-house quality and application engineers, and knowledgeable sales teams, we can provide a bespoke and full service for sheet metal requirements. We are confident that TR can offer a sheet metal fastening to suit just about any application."

https://www.trfastenings.com/news/products

TR announces two new appointments to its Plastics and Rubber team

International fastener specialist TR Fastenings announces two new senior UK appointments; Kevin Rogers moves into the new position of Director of Plastics and Rubber - Sourcing and Category Management, and Andrew Fletcher is named as the Director of Plastics and Rubber – Commercial and Technical.

Kevin and Andrew will both play key strategic roles in spearheading the continued expansion of this commodity within the TR Group.

Kevin Rogers, Director of Plastics and Rubber - Sourcing and Category Management

Kevin Rogers joined TR's Global Strategic Team in 2012, and has been instrumental in growing this product range by developing the vendors that today support the huge increase in sales.

With his new focus primarily on sourcing and category management, Kevin will be fully utilising three decades of experience to find opportunities to further expand upon an already comprehensive portfolio.

Andrew Fletcher, Director of Plastics and Rubber – Commercial and Technical

Andrew Fletcher is a well-known expert in this Commodity.

Previously the Managing Director and Technical Director of Optimas Solutions - previously known as Anixter Components, Andrew's technical expertise lies in New Product Introduction (NPI), and managing the entire process from initial inception through to final product launch.

Dan Jack, Global Sales and Commercial Director, Trifast plc commented;

"We warmly welcome Andrew to the Team, he is a formidable asset to have on board with his deep knowledge and industry connections. Over recent years, we've developed our team and increased our knowledge to ensure we are not only keeping up to date with changing technologies but are staying ahead of the curve, and both Kevin and Andrew will be central to our on-going commitment in this area."

"We're proud that TR's core brand remains competitive in the market; the strength of our partnerships with companies on an engineering level enables us to react quickly to customers changing requirements. With our talented design engineers and in-house support team working closely with customers, we are hugely optimistic about the future."

https://www.trfastenings.com/news/products

TR launches HUMMEL cable glands to enhance their Plastics & Rubber Hardware range

TR Fastenings announces further product expansion with the launch of a new premium range of HUMMEL cable glands, an important addition to its growing plastic & rubber hardware portfolio. This latest move confirms TR's commitment to increase their product offering to existing and new customers nationally and globally.

HUMMEL cable glands are made of the highest quality plastic, brass and stainless steel and hold all the relevant approvals for international use. This range spans across numerous industry sectors with specific products to suit their needs.

Designed with safety in mind

Cable glands perform a number of essential roles in cable management. Designed to attach and seal the end of an electric cable, cable glands provide earthing, grounding, insulation and strain relief when connected to plugs, terminals, enclosures or electrical equipment.

They are often used outdoors or in harsh and hazardous environments where they need to contain electrical sparks or repel external contaminants such as dirt, dust, water and moisture. In addition, they prevent cables twisting, tearing and pulling to ensure continual performance and a secure connection.

Adherence to strict specification

HUMMEL's range offers a wide choice of high specification plastic and metal materials and mounting thread types.

All products adhere to the strictest national and international specifications, for full information on all please visit the TR website.

Highest IP Rating

With the international Ingress Protection (IP) rating system in place, the IP rates the glands depending on their design and efficiency for different applications.

The HSK-K plastic range and HSK-M metal range meet the toughest requirements of industrial indoor and outdoor environments and provide the highest levels of IP ratings – IP68 and IP69K, compared to other competitors' product. This is mainly due to advanced seal design. The higher rated IP69K enables products to be used in conditions where equipment must be carefully sanitised such as in medical and food processing applications.

Dr. Bertram Melzig-Thiel, Vice President Product Line Cable Glands at HUMMEL commented:

"We are pleased to be able to expand our cooperation and we are sure that we will enrich TR Fastenings' high-quality product range with our premium cable glands."

Andrew Fletcher, Director of Plastics and Rubber (Commercial and Technical) at TR commented;

"TR is proud to offer this latest innovative range to customers, and working with a world-class manufacturer in the connector field such as Hummel, strengthens our commitment to growing this range.

"This isn't a one solution fits all scenario as we've seen the cable glands market change considerably over the years, with continuous product developments to meet industry demands. We do more than just deliver products, we provide solutions and we're well poised to react quickly to this evolving market whilst remaining competitive."

Article published **February 2021**

https://www.trfastenings.com/news/products

Cable Glands for harsh environmental conditions

TR Fastenings have recently partnered with the world-renowned manufacturer of connection technology and electromechanical components, HUMMEL AG to launch a range of cable gland products designed to meet a variety of demanding environmental applications.

Article originally written for MEPCA

TR Fastenings have recently partnered with the world-renowned manufacturer of connection technology and electromechanical components, HUMMEL AG to launch a range of cable gland products designed to meet a variety of demanding environmental applications.

An example of such an application is in the use of industrial level sensing equipment. Sensors for level measurement are exposed to specific and often very demanding process and environmental conditions. They must resist liquids or dust and will often come into contact with product residues such as cement, lime or flour. It is imperative these sensors must function consistently and reliably. A failure can have extremely serious consequences.

An essential feature of a cable gland is the protective seal. This includes protection against powerful water jets (protection class IP 66) or watertightness when submerged (IP 68/10 bar). A particularly important aspect for applications in the process industry is the ability to thoroughly clean down systems, components and parts. HUMMEL cable glands also offer protection against water ingress during high-pressure and steam jet cleaning (IP 69K).

The ability of the HUMMEL glands to offer this high level of ingress protection is achieved through several unique design features of the cable seal and clamping splines. A flexible overlapping feature on the clamping splines prevent the elastomer seal from being dislodged during cable installation. A circumferential form feature on the seal sits precisely in a mating groove on the gland body, thus increasing the ingress protection.

Level sensors are used worldwide in the building materials and cement industries, in metal extraction, offshore in the oil and gas industry and in the recycling industry. It is often best practice to use cable glands that also provide the best possible fire behaviour and are classified with the fire protection class V0 in accordance with UL 94. In addition, there are other important mechanical performance aspects such as vibration protection and impact resistance. For outdoor applications, UV resistance must also be considered.

The range of HUMMEL HSK-K and HSK-M cable glands now available on the TR website, are specifically designed to meet these exacting requirements.

Another very important topic is explosion protection where the equipment is to operate safely in hazardous areas and must carry relevant Ex approvals. In certain industries, such as chemicals, oil and gas, Ex approval is vital. Global suppliers of sensor solutions are required to comply with the standards for Europe (ATEX), America (FM, CSA) and Asia (IEC). HUMMEL AG products meet these standards and offer explosion protection for the types: Ex e – increased safety, Ex d – flameproof enclosure, Ex t – Dust explosion protection.

https://www.trfastenings.com/news/products

Cable Glands for harsh environmental conditions

Continued

TR Fastenings also offer a comprehensive range of HUMMEL Ex cable glands, designed for use on electrical equipment in hazardous areas in accordance with EN 60079-0, EN 60079-1 and EN 60079-7.

Dr. Bertram Melzig-Thiel Vice President Product Line Cable Glands at HUMMEL commented:

"We are pleased to be able to expand our cooperation and we are sure that we will enrich TR Fastenings' high-quality product range with our premium cable glands."

Andrew Fletcher, Director of Plastics and Rubber (Commercial and Technical) at TR commented:

"TR is proud to offer this latest innovative range to customers and working with a world-class manufacturer in the connector field such as HUMMEL, strengthens our commitment to growing this range.

"This isn't a one solution fits all scenario as we've seen the cable glands market change considerably over the years, with continuous product developments to meet industry demands. We do more than just deliver products; we provide solutions and we're well poised to react quickly to this evolving market whilst remaining competitive."

For more information on the HUMMEL Cable gland products click here.

https://www.trfastenings.com/news/products

New Range Introduction: O-Rings and Bonded Seals enhance existing product offering

TR Fastenings has a comprehensive product range, now including an extensive selection of O-Rings and Bonded Seals, echoing their commitment to the ongoing investment in components that their customers need.

The self-centralising Bonded Seals, manufactured from a combination of zinc-plated mild steel for the washer and nitrile for the seal, are available in a wide range of both metric and British Standard Pipe (BSP) sizes. They can be used in high pressure systems to provide leakproof seals for a variety of substances, including air, water and oil.

Similarly, TR's O-Rings are available in various specifications and can be ordered in specific sizes or in multi-size kits. Manufactured from either nitrile or fluorocarbon elastomer (FKM), they are available in more than 5,000 options, including all the major size requirements in BS, Metric, Imperial, and American Imperial. Relevant approval-related grades, such as WRAS, FDA and DVGW are also available.

O-Rings from TR can also be purchased in multi-size kits, which are ideal for engineers who need a supply for fast and effective repairs and replacements. O-Ring cord is available for repairs to non-standard applications as well as for making gaskets.

TR Fastenings design, manufacture and distribute industrial and Cat C components to more than 5,000 companies around the world, operating in business sectors including light vehicle, heavy vehicle, health & home, energy, tech & infrastructure and general industrial. The company, which has 34 locations including 7 high volume manufacturing sites and 3 Technical and Innovation Centres, maintains a strong presence in the UK, Europe, the USA and Asia. We are continually listening to our customers' requirements which enable us to offer an increasingly extensive and diverse product range.

Article published **September 2021**