Fastenings

TR PRESS PACK PRODUCTS

TR FASTENINGS IS RECOGNISED THROUGHOUT THE INDUSTRY FOR WORLD CLASS PRODUCTS & SERVICES

WE MANUFACTURE, STOCK & DISTRIBUTE A VAST RANGE OF INDUSTRIAL FASTENERS & COMPONENTS

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TR Press Release

TR Fastenings' New Twist on Locking Nuts



2013



Following considerable research and development, TR Fastenings has refined and developed the popular and versatile Binx Nut to create a new all-metal, self-locking nut suitable for use across numerous industry sectors.

No bigger than a standard full nut, the Binx Nut's ingenious design incorporates two opposing cantilevers which lock into the mating part with inward and downward pressure, thus minimising thread wear and enabling the nut to be removed and replaced repeatedly whilst retaining torque resistance.

Available off-the-shelf in a number of different materials and sizes, TR's Binx Nuts are the first choice for design engineers, especially where vibration resistance is a priority. Furthermore, these pioneering new fasteners are unaffected by temperature fluctuations or contaminants, making them ideal for a range of applications, such as electrical and domestic appliances and locomotive.

The Binx Nut is one of a wide range of self-locking components offered by TR Fastenings, which also includes Nylon insert nuts, Tri 5 and Tri 6 nuts, Hank-loc and Wun-Loc nuts, available from stock and in a wide range of sizes, from M3 to M36, and materials such as mild steel, brass and stainless steel.

TR Press Release TR Fastenings - 40 Years of Innovation



2013



2013 will be a landmark year for TR Fastenings as it celebrates 40 years at the forefront of the fastenings distribution and manufacturing business.

From small beginnings in the market town of Uckfield, East Sussex, TR Fastenings has now grown into a £100 million business, with global distribution, manufacturing and sales networks. TR Fastenings' core business is the supply of DIN standard (German Institute for Standardisation) branded and bespoke threaded parts but the company remains a leader in introducing new innovations to the marketplace.

A Great British invention is the Binx® Nut, originally designed in the 1960s. The Binx® Nut has been refined and developed by TR Fastenings to an all-metal, self-locking nut suitable for use in various industry sectors. Dimensionally no bigger than a standard full nut, the Binx® Nut's ingenious design incorporates two opposing cantilevers which lock into the mating part with inward and downward pressure minimising thread wear and enabling the nut to be removed and replaced repeatedly whilst retaining torque resistance. Binx® Nuts are also unaffected by temperature fluctuations or contaminants. Available off the shelf in a number of different materials and sizes the Binx® Nut is the first choice for many, especially where vibration resistance is a priority.

Another of TR Fastenings' key developments is the Swage Nut, a sheet metal product developed in the late 1990s aimed at giving flexibility to those working within this industry. Dimensionally the same as a standard Self Clinch nut, however it is installed the same way as a Hank® Rivet Bush. This combination allows manufacturers to use the Swage Nut in a number of different materials, and can be easily replaced should any installation errors occur.

TR Press Release

Manufacturers benefit from changes in fastener technology



2013



Millions, if not billions of fasteners are produced and sold worldwide every day. Designed in response to the constantly evolving needs of manufacturers, these integral components to our cars, fridges, computers and telephones are the lynchpins of our modern existence, without which our 21st century lives would, literally, fall apart. Advances in product technology and design, combined with economic and even environmental factors, mean that the successful fastener manufacturer (and supplier) has to be nimble enough to adapt its range constantly to manage its customers' needs, and stay ahead of competitors.

One company that has both the experience and expertise to move with the times is TR Fastenings, the trading division of Trifast PLC, a global manufacturer and supplier of fasteners and fixings which has been at the forefront of the industry since it was founded in 1973 and which now regularly supplies over 5,000 companies with components, each with specific needs in both product and quality. In recent years one major development in manufacturing industry has been the trend for using fewer, and lighter, materials. So how has TR approached this challenge? Already a market leader with its extensive range of metal fasteners and fixings, TR has recently launched a range of plastic fasteners, which looks set to become a core product range in its portfolio.

Where a fastener is needed to be versatile, light and yet strong, plastic is often the optimal solution. A case in point is the automotive sector, where the latest trend is for lightweighting - a lighter car uses less fuel, is more economic and more environmentally friendly. TR Fastenings recently supplied plastic fasteners to the UK car manufacturer Ariel Motors for their latest Atom sports car, to help take weight out of the structure to enhance its world-famous performance. *"The Atom is designed with an open structure based on frames,"* explains Kevin Roger, TR Fastenings' plastic products sales manager. *"Therefore the use of plastic cable ties is a neat and subtle way of hiding the wiring harness throughout the body of the car. However, where a part was needed near the engine, a stainless steel tie was need, which we could also provide."*

"The Atom is just one example of how we are currently approaching our clients and asking to see their processes to see if we can improve them and provide some production benefit. Also, plastic fasteners have the advantage of being multi-functional. Why use a nut, bolt and a washer, when you could use a two-piece plastic rivet that takes less time to apply? That is where the innovation is." Innovation is all in a day's work for Steve Wallis, TR's Sheet Metal Specialist at TR Fastenings., who keeps an eye on the fastener needs of his customers. "The key is communication", explains Wallis. "We regularly undertake market research and invest considerable time and resources in the development of new products as a result. In addition, our Application Engineers regularly works alongside product designer and developers to provide technical assistance on materials and product development – a bespoke service for those who request it."

TR's range of Hank Rivet Bushes, Hank Self Clinch, Blind Rivets, Euro Rivet Bushes, Swage Nuts, Weld Nuts and K-Series products all offer threads in a variety of materials where the sheet is too thin to be tapped by conventional methods. As a result, TR Fastenings has positioned itself as a market leader in the sheet metal fastener sector with its own-range of fasteners, which come in a range of shapes and sizes and materials. As metals became lighter and thinner during the 1990s, the company introduced its TR Hank Clinch Fastening range which now comprises 750 different components including studs, stand offs, nuts and panel fasteners and is used in numerous industry sectors, including medical equipment, marine, automotive, white goods, telecommunications, electronics and general engineering.

TR Press Release Manufacturers benefit from changes in fastener technology



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The range is ever-expanding too. TR recently introduced a new M8 size hardened stainless steel self-clinch stud in November 2012, which has a potential use in a number of industries that use stainless steel sheets, but also require a certain amount of corrosion resistance is required.

"This size was not available on the market and we could see evidence of demand, so it made commercial sense to produce it," comments Wallis.

TR also launched two other new sheet metal products in 2012, in response to customers' needs, the Euro Rivet Bush and the K-Series nut.

TR has been manufacturing the genuine Hank Rivet Bush for 30 years and the new Euro Rivet Bush offers an alternative to the Kerb-Konus and PSM Rivet Bush ranges, principle aimed at the European market. Easily installed, extensive in-house testing using the very best engineering equipment shows this product outperforms similar products offered by TR's competitors.

TR Fastenings' also introduced the K-Series nut, which offers a permanent female thread that can be installed without the need for specialist tooling. Once fixed, the product offers a permanent thread with a high prevailing torque and pullout resistance.

K-Series nuts are manufactured in a case hardened carbon steel, plated and tested to ISO898, though stainless steel can be supplied to order. Sizes range from M2.5-M16, with three different spigot lengths, the body of the product is hexagon with a serrated spigot.

"The great thing about the K-series nut that sets it apart is that it is quite small in the hole size required and the diameter of the body," explains Wallis. "It is much smaller when compared to self clinch nuts and rivet bushes. So this gives it the other added advantage of where space is a premium, such as in the telecommunication or electronics industry."

The Binx Nuts range is another exclusive fastening to TR's product portfolio. Originally designed in the 1960s. the Binx Nut has been refined and developed by TR Fastenings to an all-metal, self-locking nut suitable for use in various industry sectors. Dimensionally no bigger than a standard full nut, the Binx Nut's ingenious design incorporates two opposing cantilevers which lock into the mating part with inward and downward pressure minimising thread wear and enabling the nut to be removed and replaced repeatedly whilst retaining torque resistance. Binx Nuts are also unaffected by temperature fluctuations or contaminants. Available off the shelf in a number of different materials and sizes the Binx Nut is the first choice for many, especially where vibration resistance is a priority. The product is ideal for the high engineering industry sectors.

Meanwhile, further investment in product development for the thermoset and thermoplastic industries has enabled TR Fastenings to expand its screws for plastics range with the introduction of the Plas-Fix 45 screw this year. This product has a 45-degree angle and Tri-lobular thread form, which makes it ideal for harder plastics, offering superior screw performance with low torque drive and high pull out strengths.

Advances in technology which lead to better design, improved productivity and new market opportunities for the product manufacturer are equally beneficial for the fastener manufacturer, which in turn can pass on those benefits to its customers. A great benefit to us all.



TR Press Release

TR Fastenings to Manufacture Phillips Drive

Systems



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As part of an ongoing programme to increase the number of services and products available to its customers, TR Fastenings has come to an agreement with Phillips Screw Company whereby it will manufacture, under licence, Phillips' complete range of industrial drive systems.

TR Fastenings already owns the Pozidriv trademark for the UK, Pozi in the EU, and also both the MAThread and Torx licences. Geoff Budd, Managing Director at TR Fastenings, comments: "Our engineering and manufacturing capabilities have made us an industry leader, so it is a natural progression to manufacture the famous 'Phillips Drive Systems'."

For 80 years, the Phillips Screw Company (www.phillips-screw.com) has designed fasteners that serve as a quality benchmark for the world's fasteners. From the original cross recess to today's enhanced drives, Phillips has been a consistent leader in innovation. Today, the company continues to improve and evolve high-performance drive systems for fastener applications in aerospace, automotive and electronics. One of its most recent innovations is the Mortorq Super Spiral Drive Recess, which provides customers with the ability to reduce head height and save weight; timely when the automotive industry is particularly keen to take weight out of vehicles and improve fuel economy.

For further details about Phillips industrial drive systems from TR Fastenings, please visit www. trfastenings.com.

TR Press Release TR Launches New Plastic Fasteners Range



2013



Since its initial launch less than a year ago, TR Fastenings' ever-growing plastics portfolio is now one of the most extensive on the market, with new products being added throughout 2013 in response to customer demand.

- NEW Aluminium and Plastic Coated Aluminium Self Adhesive Clips, together with a very extensive range of Polyurethane Bumpers. These fasteners are perfect for medical equipment, computer hardware, audio equipment, and any application requiring a non-slip surface or where sound and vibration damping is required.
- NEW Cable Ties: TR Fastenings' extensive range of standard cable ties has been supplemented with additional items such as Releasable, Push Mount, Screw Mount and specialised Automotive Application Cable Ties.
- NEW Nylon Fasteners: In 2013 TR Fastenings' will be consolidating its largest range ever of standard nylon fasteners to include nylon screws, bolts, washers, spacers, nuts and clips.
- NEW Management Products: TR Fastenings is doubling its range of Cable Management products, to include an extended range of screw mount and self adhesive cable clips, cable tie mounts, cable glands and gland nuts, strain relief bushings, hole plugs and bushings, plus grommets

Combining functionality and reliability without compromising on quality, TR Fastenings' plastic fasteners feature extensive benefits which can streamline production processes. Not only can one plastic fastener be used for a variety of purposes, but they have other qualities, including ease of use, being formed from a lightweight material, strength at low and high temperature, resistance to impact, abrasion, organic solvents and gasoline, retention of shape and stiffness at high temperature. Also, importantly, TR's plastic range meets with the necessary industry standards and sizes, all products satisfy the RoHS compliance legislation, are ISO 14001/2004 compliant and are available in flame-retardant versions. The moulded nylon range for PCBs addresses a multitude of application needs, but is especially beneficial to the electronics and telecoms industry, finding use in ATM machines, PCs, laptops and mobile phones, as well as lighting. In such applications, with their closely grouped electrical components, plastic fasteners offer the ideal solution as they are a non-conductive material.

Fastenings

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Steve Wallis explains to FAST why the self-clinch product is such a superstar among fasteners and what its future may hold.

From domestic appliances and medical equipment to automotive, marine and telecommunications applications, the self-clinch is one of the most versatile, effective and widely used fasteners in the business. A global front-runner in the design, manufacture and supply of these essential components is TR Fastenings, a world player in the fastener and fixings industry which works closely with manufacturers and distributors to ensure its self-clinch range stays at the cutting edge of fastener technology.

The invention of the first self-clinch fastener in the United States back in the 1940s marked a major milestone in the history of sheet metal joining. Significant developments in manufacturing design and technology during World War Two had led to the increased use of sheet metal that was too thin to be tapped by conventional methods.

The self-clinch fastener solved the problem by providing load-carrying threads that would withstand hard tugs and torque loads. These neat little fasteners could be installed permanently in thin ductile metal sheets by pressing them into a properly sized hole and squeezing them, either during fabrication or final assembly. This process forces displaced sheet material to cold flow into an annular recess in the shank or pilot of the fastener, locking it in place. A serrated clinching ring, knurl, ribs, or hex head prevents the fastener from rotating in the metal when technicians apply tightening torque to the mating hardware, job done.

The advantages of self-clinch fasteners were immediately seized upon by design engineers and, seventy years on, with huge advances in manufacturing processes and self-clinch fastener technology continuing apace, the self-clinch market is at an all-time high. British firm TR Fastenings, the trading arm of Trifast PLC, first introduced its own brand of TR Hank self-clinch fasteners in the early 1990s. Originally offering just clinch nuts, stand-offs and studs, the TR Hank self-clinch range now comprises over 750 individual items, including numerous variations on studs, stand offs, nuts and panel fasteners, which are used in a number of industry sectors, including medical equipment, marine, automotive, white goods, telecommunications, electronics and general engineering. The range generates an annual turnover of approximately £10 million and is the company's biggest seller of its branded product range.



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Product Innovation

Even in the company's 40th anniversary year, TR is not content to rest on its laurels. The company invests heavily in product development and market research and the range continues to expand. The latest products from the TR stable include concealed head studs and standoffs, ideal for applications where a totally smooth and hidden finish is required, and aluminium nuts and studs, for applications such as the telecommunications industry where light-weighting is becoming ever more important.

Where stainless steel sheets need to be joined, then TR's range of hardened stainless steel, nuts, studs and standoffs fits the bill, while its new low displacement studs can be inserted as close as 2.8mm to the edge of sheet metal, making them ideal for small technical applications, where space may be tight.

Over the past few decades the number of manufacturers and distributors globally has increased greatly, but caveat emptor: quality cannot be guaranteed from everyone and is of paramount importance as these fasteners are often used in industries where a certain amount of corrosion resistance is required. All TR Fastenings' products conform to industry standards and are RoHS compliant.

The variety of styles available also offers a number of installation methods with varying performance levels, allowing users to easily find the product to suit their individual application. With its network of UK and global manufacturing and distribution facilities, the company has a proven track record of supplying quality products at competitive prices, all with the quality assurance customers' demand. Once a partnership has been established, TR can provide assistance and advice throughout the manufacturing process.

Taking the Test

A self-clinch fastener's reliability depends on many factors, beginning with a properly sized hole, the thickness and hardness of the host panel, proper installation, and the application. TR Fastenings has comprehensive testing facilities in each of its manufacturing locations, where its trained technicians perform testing and provide complete analysis on tensile strength, compression, in-sheet performance, hardness, thermal cycling, image analysis, corrosion and plating issues.

Traditionally, three tests determine reliability:

- Torque-out test: Determines a fastener's ability to resist rotation within the panel. This test is often made on the fastener's head with values usually exceeding the ultimate torsional strength of the mating screw or nut.
- Pushout test: Indicates a fastener's axial resistance to being pulled out of the sheet. It should be roughly 5 to 10% of the force used to install the fastener.
- Pull-through test: Pinpoints a fastener's resistance to being pulled through the metal sheet when applying a clamping torque.



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Among the processes performed by sheet-metal fabricators, the efficient installation of fasteners can traditionally be one of the most challenging.

The work typically can be labour-intensive, often requiring time-consuming tooling changeovers to install different types of fasteners. The growth in applications for self-clinching fasteners over the years has helped to mitigate concerns by reducing the amount of required hardware (such as loose washers, lock washers and nuts) and requiring only a single mating piece to complete final component attachment.

Roger Griffiths, commercial manager of CTL Metalwork, one of the UK's foremost suppliers of precision sheet metalwork, is a regular customer of TR Fastenings and uses self-clinch fasteners to produce front panels, chassis and covers for the pro audio industry. Griffiths commented: "Using self-clinch fasteners saves us both time and money – they are simple and quick to install which lowers production costs, and benefits both us and our customers."



Going Greener

By developing and adopting more energy-efficient technologies, manufacturing industries can boost their productivity and competitiveness while improving energy sustainability and reducing environmental damage. Advances in automated fastener-installation press technology have contributed significantly toward resolving traditional equipment-related issues and promoting both green and cost-effective operations.

TR Fastenings recommend Haeger, the world leader in the development of innovative fastener insertion technology solutions. Haeger machines allow the insertion of up to four different fasteners in a single handling of a part. The technology offers the single most significant boost to hardware insertion productivity since the introduction of automatic tooling systems.

Haeger has recently introduced two new machines to its range, including the Haeger 516 Plus Fastener Insertion System - an extremely accurate fastener insertion system that enables the operator to apply full tonnage at any point in the stroke. This allows the use of any tooling length and thus the ability to fit nearly any shaped work piece in the machine. The Haeger 516 is also set to be a popular machine thanks to its low energy usage, patented operator safety system, fully hydraulic system, and integrated tooling storage points.



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Also recently introduced is the new Haeger 824 WindowTouch 4e and OneTouch 4e fastener insertion systems.

The Haeger 824 models offer more reliable fastener feeding and more workpiece accessibility than ever available before.

"Environmental benefits go hand-in-hand with the economic benefits of these two new models," explained Andrew Meachen, service manager at Shear-form, the UK distributor of Haeger.

Looking to the future, TR Fastenings is committed to further developments in its self-clinch range, in response to customer demand and in particular the giant manufacturing capabilities in Russia and the Far East. Combined with its environmental and economic benefits as well as its versatility, the self-clinch fastener is set to stay a firm favourite.

Steve Wallis is product sales development manager at TR Fastenings. He has been involved in the fastenings business for 27 years, 20 of those at TR Fastenings and is currently responsible for the sales of some of TR's branded product range including self-clinch, Hank rivet bushes and K Nuts. His responsibilities include the introduction of new product ranges and sales development.



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