

Innovation Alley

compiled by Fastener World

Erwin Halder KG Releases New Clamping Nuts - self-locking

The self-locking clamping nut can be mounted easily with a face pin wrench on all waves. During assembly, it clamped so much that it does not dissolve even with an opposite axis rotation. It is used, for example, in grinding machines for fixing grinding wheels.



TR Launches the EPW, a Self-extruding High Strength Screw for Thin Sheet Metal

The EPW screw is a self-extruding, high strength thread-form fastener which creates its own female thread in punched sheet metal, thereby dramatically reducing assembly times and costs. The screw works by being aligned to the pilot hole in the sheet metal, where it then forms the extruded collar, combining the forming of the thread and the creation of a strong extruded profile, before finally tightening and clamping into the metal.

The screw is designed to function best in thin sheet materials, typically Steel (0.4-1mm thick) and Aluminium (0.4-1.5mm thick). They are available in a variety of surface coatings from standard Zinc plating to Zinc Nickel and organic Zinc flake for higher corrosion resistance. The screw is suitable for use in a variety of applications for home appliances, automotive, electronics, technology, energy, medical, telecoms and general industry sectors.



Market Launch of the BECK LignoLoc® F60 System

On 1 December 2018, the BECK Fastener Group from Austria will make the market launch of the further development of the award-winning LignoLoc® wood nail system. The new F60 system offers larger dimensions, better pull-out and shear values and more possibilities for ecological timber construction.

One year after the market launch of LignoLoc®, the first collated wooden nail, BECK presents the further development of the innovation product. The system consists of the F60 LignoLoc® pneumatic nailer and beech wood nails with a length of 45 to 90 mm in diameters of 4.7 and 5.3 mm.

Especially the ecological wooden house construction benefits from the new dimensions due to new metal-free fastening options, for example for prefabrication of the laminated timber ceilings or in the production of solid wood wall systems.

German Schaeffertec Could Now Offer 12 and 16 mm LOXX® Screw with a 4.8 mm Thread Diameter

Schaeffer has added two new screws to its product range. The new self-tapping LOXX® screws (12 and 16mm) have a thread diameter of 4.8 mm, and are available in nickel and chrome plated.

For comparison: The regular LOXX® screws have a thread diameter of 4.2 mm.



If you want to replace an old press button system, you do not have to be worried about the LOXX® screw being too slim for the preexisting drill hole. Use the new LOXX® screw! Thanks to the thicker thread filling material becomes redundant. The screw won't come loose.

Floating Clamps with a Compact Design by Halder

Every single day workers have to deal with spatial constraints caused by the machine, the component, and even the fixture while clamping workpieces. This handicap can quickly turn into a challenge when the task is to clamp complex components. The floating clamps made by Erwin Halder KG are uniquely suited to handle additional clamping points and clamp components that are extra thin and particularly sensitive to bending. The new compact design of these products makes them a superb choice for work in limited space.



Simpson Strong-Tie® Quik Stik™ Fastening Tool Reduces Worker Fatigue and Increases Productivity

Simpson Strong-Tie, the leader in engineered structural connectors and building solutions, has introduced the Quik Stik rafter and truss fastening system, a new solution for overhead fastening designed to reduce the risk of construction work-related injuries while boosting jobsite efficiencies, with speedier and more accurate fastening of rafter and truss assemblies.

With a reach exceeding 43", the Quik Stik installation tool can eliminate the need for ladders and replace heavy pneumatic power nailers and compressor lines and the jobsite hazards and injuries they pose. Simply attach the Quik Stik to any corded or cordless drill or impact driver, load a Strong-Drive® SDWC Truss screw into the Quik Stik head, and drive the screw quickly, accurately, and easily.

Features and benefits of the Quik Stik fastening system include the following:

- Fast installation with the ability to drive screws overhead from a standing position without the need for ladders
- Enhanced job safety via rafter or truss fastening from inside the structure
- Operational simplicity to enable less experienced users to work more quickly and efficiently
- Built-in angle guidelines and a detachable bubble level to help ensure proper screw installation angles
- Designed for use with any drill motor or impact driver



SI® Inserts For Plastic Assemblies Provide Reusable Metal Threads Enabling Easy Disassembly and Re-Attachment Whenever Required

SI® inserts from PennEngineering® permanently install in plastic assemblies to provide durable and reusable metal threads for mating hardware and allow for repeated disassembly and re-attachment whenever required. By promoting quick and easy access to an assembly, SI inserts offer highly practical joining solutions in contrast to fixed and unyielding methods, such as adhesives or rivets.

Repeated reuse will not damage the strong metal threads or compromise attachment integrity. Types include brass inserts and lead-free stainless steel and aluminum versions.

Applications include consumer electronics (wearables, smart phones, and handheld devices) and plastic equipment or components for the medical, automotive, aerospace, transportation, and recreational industries, among many others.

All SI inserts install permanently in plastic, offer unique features, and can be classified generally by installation method. Depending on series, inserts can either be ultrasonically pressed and/or heat staked, molded-in during the injection molding process, or cold pressed into a pre-molded or drilled hole.

SI inserts can be specified in unified or metric thread sizes and in a variety of designs and lengths – including SI microPEM® inserts with threads as small as M1.

Japanese Sanko Techno Develops EZI Anchor Bolts with Support for Visual Confirmation

Sanko Techno developed an anchor bolt for hung objects that comes with a mechanism for visual confirmation. The new anchor bolt has launched sales in mid October. As you fasten the anchor bolt with an impact wrench, a black check ring appears out of the washer portion to let you know the fastening is completed. Therefore there is no need to use a torque wrench for torque check. Then, as you drive in the hanger bolt, the red dot on the nut portion of the anchor bolt extends out to let you know the drive depth is correct. This way you can prevent insufficient drive depth of the hanger bolt.



Japanese Maruemu Works Develops Titanium Processing Technology, Rolling out Titanium Screws

Maruemu Works Co., Ltd. developed a new technology that can process a new type of titanium material. The company rolled out a brand named "professional titanium screw" in September 2018. The new material adopted by this screw possesses the features of pure titanium and the strength parallel to alloy titanium.

Product features:

- Lightweight (specific gravity: 4.51) at only 60% weight of a stainless steel screw
- Ni-free and Co-free, non-toxic
- Highly corrosion resistant
- Non-magnetic
- Little thermal conductivity and small thermal expansion rate
- Colorable through anodizing.



Japanese Nitto Seiko Develops AKROSE Technology Capable of Joining Different Kinds of Metals

In recent years, the automotive industry in particular has seen an increasing demand for weight reduction and higher intensity. Multi-materials are gaining attention for their ability to combine metals of different characteristics and other materials. There are 3 types of junction processing, including mechanical joining (screw fastening, riveting, pressing), chemical joining (adhesive), metallurgical joining (welding, friction joining) with their respective strengths and drawbacks. Nitto Seiko developed AKROSE Technology (Patent No. 6383385) to secure the joining of different types of metals. The products made from this technology were launched for sale starting November 1, 2018. The target is to manufacture 1 million pieces by 2020 and supply to the automotive, battery, household appliances, electronics and infrastructure industries.



Strengths

(1) Joining multiple types of materials

Able to join any materials used for cold forging, such as iron, stainless steel, aluminum and copper. Able to join multiple types of metal materials exerting various material characteristics (strength, conductivity, thermal conductivity, etc.)

(2) Capable of complex shapes

Utilizing cold forging, the company can create diversified and complex joining by controlling material shapes. Furthermore, products utilizing this technology can increase added value through secondary processing.

(3) Improved tightness and conductivity

(4) Improved torque resistance on the joining portion



Japanese Tohnichi Rolls out WIFI-enabled Torque Wrench

CEM3-WF wireless torque wrench developed by Tohnichi can communicate under 2.4/5GHz IEEE802.11 wireless network with a wide communication range up to 50 meters. It supports 8 fastening modes and has a torque range of 2~850 Nm. It launched sales starting October 21, 2018. With wireless connection, large factories can use multiple torque wrenches and manage real-time fastening data.



Japanese SoftBank Introduces Drone Technology Applicable to Construction Bolt Loosening Inspection

SoftBank will introduce a drone-inspection technology in spring 2019 suited for infrastructure such as bridges and power plants. By combining images taken by the drone and location data, the drone can automatically inspect rust, crack and bolt loosening. "There are more and more facilities that have stood for over 50 years since they were erected, so it is necessary to have efficient maintenance management." Japan faces problems with labor shortage as a result of the ageing population and the maintenance of large infrastructure is often dangerous; therefore the use of drones can significantly increase inspection efficiency.



Japanese Nihon Flash Develops Stud Welding Robot

Hand welding requires the operator to weld on the correct position using consistent pressure and therefore requires a high level of technical know-how. In light of that, Nihon Flash developed "Robo Stud" stud welding robot. Use the touch panel to set the welding position and the robot will automatically weld studs to the metal plate.

Ordinary stud welding robots use air cylinders to create motion but are subject to the influence of temperature and humidity and therefore cannot provide consistent pressure. "Robo Stud" uses motors to create motion and is not subject to environmental influence. It welds at a precision of plus and minus 0.2mm range and is suitable for studs of 3-10 mm diameters. It can be used in sheet metal engineering in the electronics, automotive, household appliances and other industries.

Japanese Nitto Seiko Introduces NX500T3 Bolt Fastening Device

Embedded with torque sensor, Nitto Seiko's NX series bolt fastening device has been widely used by the automotive industry since its rollout to fasten safety critical components. The company's past models could reach only as much as 20N•m torque, but now the company has developed NX500T3 with a torque range suitable for M8 bolts which are often used on engines and transmissions.

Product features:

- (1) The device uses the latest motor, torque sensor and newly-developed reducer. Torque range is expanded to 10~45N•m, increasing fastening precision.
- (2) Fastening channel configurations are now increased from 16 sets to 32 sets, making a single device capable of diverse fastening operations and suitable for low-volume and high-diversity production.
- (3) Added Ethernet port for data preservation and retraceability. The device can also determine whether a fastening operation is up to par by analyzing fastening waveform. ■



Japanese SIT Develops Anti-Loosening Petal Fasteners

SIT (Kyushu, Southern Japan) developed Petal Fastener used to prevent bolts and nuts from loosening. When mounted to a bolt, Petal Fastener creates contraction at the threaded portion. Additionally, the triangle springs are pressure-joined to the nut portion of Petal Fastener to prevent bolt loosening.

Petal Fastener is mainly used in electric towers, high way sound-proof panels, etc. It is suitable for bolts of 4-42mm diameters and does not require tools to mount. Its weight starts at only 3 grams and therefore suitable for use with large buildings.

