

# Exquisite New Fasteners

## 新品大道

compiled by Fastener World

### Click Bond Reveals Lightweight Screw

Click Bond公司推出輕量螺絲



Nevada-based fastener supplier Click Bond is launching its new LoMas screw at this year's Farnborough Airshow. The product is an A286-grade stainless steel screw that is up to 50 percent lighter than alternatives and 17 percent lighter than titanium counterparts. LoMas Screw will initially be available in 10 to 32 thread in 15 lengths from 0.250 to 2.00

inches with a variety of coatings. The design of the LoMas Screw is hollow and features a washer that reduces parts count and decreases the risk of debris. According to Click Bond, the LoMas Screw can provide weight savings for aircraft and other weight-sensitive products.

PEM self-clinching standoffs in a variety of lengths are manufactured from steel, stainless steel, or aluminum for installation into steel or aluminum sheets or from specially heat-treated 400 Series stainless steel for clinching successfully into stainless steel sheets. Brass standoffs can even be specified for certain printed circuit board applications.

### Triangle Fastener Corp. Launches a Complete Line of Zinc Cap Head Screws



Triangle Fastener公司推出一系列鋅帶帽螺絲

Available on their high performance BLAZER Drill Screws, these fasteners are available in a large variety of lengths and diameters. They are a preferred screw for use in many warranted roof systems.

Features and benefits include:

- The ZAMAC-5 Zinc Alloy Head provides superior strength and will not generate red rust!
- The carbon steel shank is TRI-SEAL 1,000-hrs salt spray coated which increases the corrosion resistance by more than 20X compared to zinc plated screws.
- EPDM sealing washer provides exceptional sealing and weathering capabilities.
- Sizes: #12 and 1/4" diameters in BLAZER-3 and BLAZER-5 drill points and in lengths up to 4" long.

### IronRidge Introduces Universal Fastening Object

IronRidge推出通用扣件

Universal Fastening Object (UFO) is a product designed to accelerate installation of residential, commercial and ground-based solar installations. The IronRidge UFO arrives fully-assembled and fully-lubricated, and features a low-profile circular clamp that is attractive and eliminates the need to orient the clamp as it is fastened. Instead, the circular clamp spins down and lands in perfect position on module frames.



The UFO also possesses an advanced T-bolt that allows it to stand freely in the rail while modules are placed. This completely eliminates the need for one person to position clamps as another person installs modules. Instead, the UFO allows one person to do both; then, as he or she fastens the UFO, an integrated Nylok patch auto-rotates and locks the T-bolt in perfect position in the rail. Once fastened, the UFO electrically bonds with solar modules through an innovative 360° bonding washers. It is compatible with module frame heights between 30mm and 48mm, eliminating the need to stock multiple clamp sizes.

### PEM Self-Clinching Standoff Fasteners Enable Mounting, Spacing, or Stacking of Multi-Panel Assemblies

PEM壓鉚扣件讓多夾板組裝作業化為可能

PEM® self-clinching standoff fasteners from PennEngineering® enable precise and reliable mounting, spacing, or stacking of panels, boards, or components in assemblies. This family of fasteners includes a wide range of types and styles designed for permanent installation into metal sheets as thin as .025" / 0.63mm. Depending on type, PEM self-clinching standoffs can be specified with through-hole or blind threads, unthreaded, or with closed ends in an assembly. Types also include unthreaded SNAP-TOP® or KEYHOLE® versions as well as standoffs with "gripping teeth" and standoffs for broaching or surface mounting. Some types can be supplied with round and knurled fastener heads allowing closer-to-edge clinch installation, "gripping teeth" on the end of the fastener's barrel ideally suited for grounding applications, or with the capability to clinch into much thinner sheets than standard versions.



### Helix Linear Announces its New Torsional Anti-backlash Nut

Helix Linear公司推出新的扭力防鬆螺帽

Helix Linear Technologies, the leader in precision lead screw manufacturing, announced that they are expanding their lead screw nut offering by developing and offering a torsional anti-backlash nut design. The Torsional Anti-Backlash (TAB) nut design offers high axial stiffness and extremely low drag torque.

Made from Helix® proprietary self-lubricating polyacetal with Teflon® micro powder, this nut is available in a full range of lead screw sizes from 1/4" (6mm) to 3/4" (20mm) diameters. This nut offers reduced components and ease of assembly.



Custom mounting configurations are also available. The design has a shortened nut length to reduce the OAL or increase stroke length for a given lead screw. Modifications can be made as required and this low torque/high axial stiffness design includes a unique machined version for applications that require a smaller nut size due to space limitations.

## U.S. Beacon Fasteners & Components Releases New High Salt Spray Thread Forming Screws

Beacon Fasteners & Components發表新高鹽噴螺紋成型螺絲

U.S. Beacon Fasteners & Components, the partner of world class VMI distributors, has recently announced the release of its new high salt spray thread forming screws made of RoHS compliant steel-zinc. The styles of this new series include Phillips pan head, 6-lobe pan head, slotted indented hex washer head, and un-slotted indented hex washer head. The diameter ranges from #4-3/8" and the length ranges from 1/4" to 1-1/2." The series of screws have been through 96 hours to white rust and 120 hours to red rust. In addition to complete in-house dimensional inspections each lot is performance tested based on 4 critical ASME specifications, including ductility test, torsional strength test, drive test, hydrogen embrittlement test.



## Alcoa Introduces High Strength 12.7mm Diameter Huck® Magna-Lok® Fastener

Alcoa推出高強度直徑12.7mm的Huck® Magna-Lok® 扣件

Alcoa has launched its new 12.7mm diameter Huck Magna-Lok structural blind fastener. The company believes this is the strongest product of its type. The large diameter 12.7mm Magna-Lok fastener has extremely high shear (44.4Kn) and tensile (31.1Kn) strengths, plus high resistance to joint failure. It offers 60% and 57% respective increases in shear and tensile strengths when compared to its predecessor, the R12 9.5mm fastener. The higher strength capability provides the user with the option of installing fewer fasteners per application, thus facilitating a reduced inventory, faster production times and potentially resulting in more lightweight products.

In addition to its high strength, the new product has all of the features of the standard Magna-Lok blind fastener, including a wide grip range to accommodate large variations in joint thickness, and 360° internal locking technology, which enables the pin to be mechanically locked to the sleeve. Its expansion during installation also provides excellent joint tightness and high-quality resistance to liquid penetration. The new fastener has been approved by the widely recognised Deutsches Institut für Bautechnik (DIBt).



## PVC Trim-Board Screw Blends in for Clean Finish, Less Effort

Simpson Strong-Tie的PVC飾板螺絲讓組裝更簡潔有力

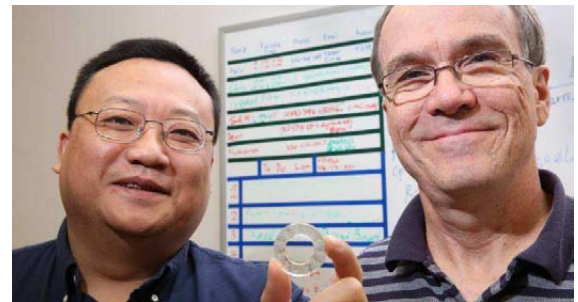
Simpson Strong-Tie, the industry leader in engineered structural connectors and building solutions, now offers a special-purpose PVC Trim-Board screw engineered for easy, low-torque installations of exterior PVC trim and fascia onto wood. The fastener's triple-thread design, box-shaped cutter head and flat underhead allow easier installations with higher pull-through resistance and clean, flush finishes.



## New Washer can Accurately Measure a Bolt's Clamping Force

創新墊片可準確測量螺栓夾持力

That's a benefit for numerous industries where the clamping force of bolts is critical, including construction, auto assembly, nuclear power, racing, aviation and space. "Any performance application will have a need for this," says Dr. Gang Wang, assistant professor of mechanical and aerospace engineering who is testing the new washer system with Dr. David (Andy) Hissam, who works at NASA's Marshall Space Flight Center (MSFC).



Both torque control method and turn control method are only approximations of the true preload exerted because friction plays a major role in the readings obtained. "When you use a torque wrench, you are measuring torque, not the preload. You can be off the bolt's specified preload by plus or minus 35 percent by using a torque wrench as an indicator because of the amount of friction involved, which is very difficult to quantify," says Dr. Hissam. "Two things we are after are accuracy and to keep the costs down," says Dr. Wang. "We want to test so that we can be sure that when a technician tightens a bolt he gets that specific value he is looking for every time."

Because a piezoelectric load cell is ceramic and fragile, the tests will also provide information about optimizing washer design to avoid breaking the sensing elements. "We are also looking at what type of material we should use to surround the piezo material that will protect it best," he says. "That way we can be sure the piezo element will provide an accurate reading and not break." If the elements can be preserved, the washer could be used many times.

## APM Hexseal Introduces Heavy Duty Line of Sealing Washers

APM Hexseal公司推出高負載密封墊片

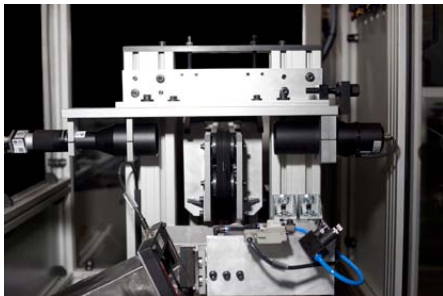
APM HEXSEAL has announced the expansion of their SEELOCS® self-sealing, high-pressure washer line to include a complete range of HEAVY DUTY sizes. Doda added that "the washer outside diameters will be from 12.7mm to 25.4mm, with maximum thru-hole sizes from 6.35mm to 15.87mm". Doda also states that, "The HEAVY DUTY line will allow smaller thread sizes to effectively seal larger through holes, without collapsing the washers. We have invested significant research and development

time to find the optimum steel thickness to give up to twice the torque withstand of the standard line and yet still give an aesthetically pleasing appearance."

The SEELOCS® washer platform is built on a uniquely profiled and ribbed silicone rubber section that is molded onto a cup-shaped 300 series stainless steel base, creating a high-pressure seal to 100psi. SEELOCS are rated for IP66/68 (Type 4X & Type 6) enclosure protection, and are resistant to salt water, acids, weather, sunlight, ozone and a myriad of harsh and hostile conditions. They can easily handle temperatures from -106C to +260C.

### Lazpiur at The Forefront in the Design of Machines to Inspect Fastening Hardware

西班牙Lazpiur 公司成功開發出新的緊固件檢測系統



Lazpiur has designed the new BEGItech CLT machine. It relies on a powerful software package with calculation capacity to verify 800 parts per minute. The innovative feature of this machine is that the inspection is performed while the part is in the air. This system provides obvious benefits compared to other systems such as the glass ramp. This design removes any interference between the vision system and the measured object doing away with eventual dirt, wear or glass breakage and other issues affecting the measuring function. The part is carried on a belt and then ejected while the vision system snaps the part on the fly, which ensures fastener full and efficient inspection.

The BEGItech CLT machine is optimum for parts such as shafts, and studs... and meets a market demand in sectors like screw making and bar turning. The accuracy of this system is 0.005mm. Lazpiur has launched two versions of the BEGItech CLT machine. The first one is designed for small parts up to 20mm long; and the second version can handle larger parts with a scope of up to 50mm long.

### Farnell element14 – Rivet Bushes Offer Multiple Serrated Spigot Solutions for Range of Applications (TR-Fastenings M2-RMSTTC110)

英國電子零件經銷商Farnell element14供應TR-Fastenings公司的鉚釘襯套，搭載鋸齒套管且用途廣泛

The Hexagon Hank rivet bush utilises the hexagon feature which when installed provides an anchor against torsional load. It is designed to be 'peened' over the sheet metal to provide a strong and reusable thread assembly. The Round Hank bush features a serrated spigot providing a durable and effective alternative to the Hexagon pattern. When installed, the serrations provide discreet anchorage against torsional resistance and pull out loads.

The Round Hank-Sert rivet bush features a design with the serrations on the contact face for use in applications requiring maximum torsional resistance. The Round Tank bush features a blind tapped hole and plain spigot designed for application in liquid or gas environments. Both of them are designed to be 'peened' over the sheet metal to provide a strong and reusable thread assembly. Applications demanding impervious joints will require additional suitable sealing technologies.



### Italian Regg Inspection Has Developed High Speed & Precision 3-Die Rolling Machine

義大利Regg Inspection公司開發出高速高精三模新機種

Regg Inspection's rolling machine division (Regg Rolling) has developed the "3R-70" high speed and high precision thread/profile rolling machine (strength: 40kN), and shipped it to a renowned heat exchanger maker based in Australia. The machine can process copper, aluminum, bi-metal (e.g., metal plus aluminum), etc. Additionally, Regg Rolling is currently developing the new "3R-40" 3-die rolling machine (strength: 40kN) for making thin threads. The development of "3R-40" is expected to be completed at the end of July.



Three Dies Rolling machines

### Zwick Roell Offers Innovative Testing System for Threaded Fasteners

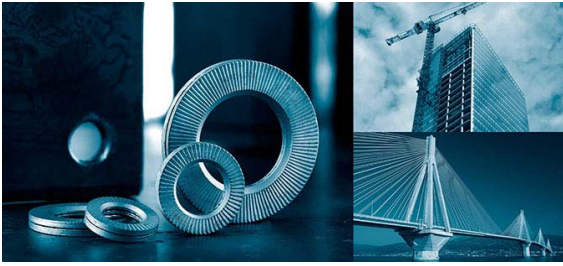
德國Zwick Roell供應螺紋扣件用創新測試系統

Available from Zwick is a flexible testing system for tensile tests up to Fmax 600 kN. Threaded fasteners are subject to strict safety requirements as defined in ISO 898-1 and ISO 3506-1. Key requirements for the testing system include secure clamping of the fastener, the ability to accommodate different thread sizes and measurement of strain under tensile loading. Zwick has supplied a standardized solution to one of Korea's biggest manufacturers of threaded fasteners.

The testing system for tensile tests up to Fmax 600 kN is equipped with special specimen grips (also Fmax 600 kN) for threaded fasteners. Head inserts and threaded inserts for fasteners from M4 to M36 enable fast, secure insertion of the fasteners into the testing machine. As well as tests to determine the maximum breaking force (ISO 898-1), strain can be measured during the tensile test (ISO 3506-1) using a special extensometer. For this the extensometer measuring-transducer is attached to the ends of the fastener. The specimen grips are designed to allow precise, straightforward attachment of the extensometer.

## Nord-Lock Releases a New Range of Washers for the Steel Construction Industry

瑞典Nord-Lock發表新鋼建築產業用華司系列產品



HV and HR sets are frequently used in steel construction applications throughout Europe. The systems consist of bolts, pre-lubricated nuts and washers. The radius under the bolt head is a particular characteristic of these sets. It is larger than for normal standard bolts in order to decrease the notch effect.

Based on the leading Nord-Lock wedge-locking technology, the Nord-Lock Group has now developed the Nord-Lock Steel Construction (SC) washers specially designed for use in structural steel parts and to fit HV sets and HR sets (bolts and nuts in accordance to the European standard EN 14399-4 and EN 14399-3). The purpose of SC-washers is to replace standard chamfered washers according to EN 14399-6 in order to add safety to high-strength structural preloaded assemblies encountered in steel construction, when exposed to dynamic loads or vibration. Nord-Lock wedge-locking technology secures the bolt with tension instead of friction preventing the bolt from rotating loose. Nord-Lock SC-washers are CE-marked for use with HV bolts. Safe usage with high-strength bolts has been confirmed by the General Building Supervisory Approval No. Z-14.4-629 and by the European Technical Approval 13/0246 issued by DIBT.

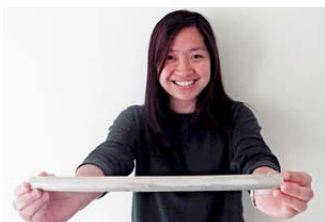
## Toyohashi University of Technology (Japan) Develops Cheaper and Stronger Magnesium Alloy Expected for Use in Screws

豐橋技術大學教授開發出價格較便宜的高強度鎂合金，可望用於螺絲

Magnesium alloy is highly anticipated for application in lightweight structural material. Professors of Toyohashi University of Technology has developed a new technology to enhance magnesium alloy and allow it to maintain strength without mixing with an expensive rare metal called Yttrium, while cutting the price down to one fifth. This new magnesium alloy is expected for use in small drones, cars, screws, and phones.

The professors put a common magnesium alloy bar into a die and press work it, so that the super-micro needle-shape structure overlaps and increases strength. In trial manufacture, the adopted maximal tensile strength was as high as  $50\text{kg/mm}^2$  and the resulting strength was 20% more than that of alloy mixed with rare metal. The university will team up with Kawamoto Heavy

Industries and deliver rods of 2 cm diameters. They will also develop rods of 5 cm diameters. The price is around JPY 50,000, only one fifth of alloy mixed with rare metal. The future target price is to reach as low as one tenth of the original.



## KVT-Fastening Releases New PEM Studs with X-Press Thread

瑞士KVT-Fastening發表全新有X-Press螺紋之PEM螺柱

KVT-Fastening has taken up the new PEM FHX studs with X-Press thread in its portfolio. These are especially suitable for speedy, permanent installation in thin-walled metal sheet from 1 mm thick, such as in the automotive industry and vehicle construction. The installation procedure with high retention force once installed can be carried out either with standard insertion tools or with automatic Pemsrter presses. Plastic fastening elements such as nuts, cable ties, eyes for panelling etc. can be snapped into place on the coarse X-Press thread of the flush-fitting stud and just as easily removed if required. This means that fitting times are minimised.

The studs are made of toughened steel and are supplied as standard with a galvanised steel coating. Alternatively, oiled and rust-inhibiting versions are also available. The studs are available in 5- and 6-mm metric threads and in lengths of between 10 and 25 mm. They are suitable for use in metal sheet of up to HRB 80 hardness on the Rockwell "B" scale and up to HB 150 on the Brinell scale.

## Shutdown Fasteners Specials Belgium Releases New LOKRITE Backup Wrenches for Highly Increased Safety

比利時Shutdown扣件公司發表全新LOKRITE扣件防轉裝置



The Belgium-based leading supplier for ASTM-stud bolts and nuts in metric and imperial sizes as well as specials and DIN/ISO/NEN-bolts and nuts, Shutdown Fasteners Specials Belgium has recently released a brand new product, LOKRITE Backup Wrench.

These Lokrite backup wrenches are magnetic and much lighter in weight. With the backup wrenches of the Lockrite Safety Backup Systems, users are assured of a safe way to prevent rotation of locknuts or safety nuts. These wrenches have a slim design that fits on most places with a minimum of space and are easy to install and operate with which allows users to work swiftly. They are also available in several dimensions and are very solid but simple in design.

## Japanese HIOS Develops Cap Screw & Hollow Set Screw with Patented Inter Torque Recess Head

HIOS公司開發搭載專利「InterTorque」槽的帶帽螺絲和空心固定螺絲

Hios Inc. has developed a cap screw (called InterCap) and hollow set screw (InterGrip) that come with the "InterTorque" hexalobular recess head. It is a common problem that a flat hexagonal screwdriver bit may spin at idle. Hios' hexalobular recess comes with the "Super Point" design that can smoothly lead the bit into the recess and prevent the bit from wobbling. Furthermore, the hexalobular shape transmits torque well and ensures a good fastening result, eliminating the problem that a common bit gets stuck with a hexagon socket head screw.

## Japanese Saima Rolls out Anti-theft "Candy Nut"

日本Saima公司推出防盜「糖果螺帽」

Saima Corporation rolled out "Candy Nut" in June under the "TRF Anti-theft screw" series. The nut is machined into a beautiful spherical shape, underneath which the hexagonal portion can be turned with a specialized tool to fasten or remove the nut. The design of this hexagonal portion makes it impossible to be moved with an ordinary spanner or wrench. Plus, the large spherical body shields the whole structure to make itself less noticeable.



## Japanese Yamazaki Active Develops Titanium & Inconel "Active X Anti-loosening Fastener"

Yamazaki Active公司開發出鈦與鎳鉻合金版的「Active X 防鬆扣件」



Yamazaki Active Co., Ltd has developed the Inconel 718 and 64 Titanium (Ti-6Al-4V) version of "Active X" anti-loosening bolt

and nut. "Active X" targets the aerospace components industry. Its skirt-shape internal space design makes itself able to transform flexibly and absorb vibration or impact. Compared to other existing anti-loosening bolt, nut, and washer, it has better anti-loosening performance, durability, and is more economical. It can be applied to railroad, bridge, construction, civil engineering, automobile, plane, and construction machinery industries where vibration is often a problem.



## Japanese Daimaru Develops New Screws

大丸鉚螺公司開發出橢圓頭密封螺絲

### Oval Seal Screw Features:

- Anti-leakage, High Efficiency: The screw includes an internal seal ring to prevent leakage
- Seal ring and screw combined make speedy operation
- Highly water-proof: Pass 20MPa x 1 water-proof test
- Head does not retain dust: The near-oval head does not retain dust or stain
- Safety: The near-oval head does not cause injury during collision with soft objects
- Requires specific tool to operate and therefore prevents theft

### Reverse Serrated S Type Pan Head Screw Features:

- Each single unit has electric conductivity
- Peeling the coat off by just fastening the screw. No need for masking the screw (cost-saving)
- Minimally removes (electroplated) coating
- Reusable as long as the serration remains undeformed

## Japanese Yamanaka Eng Rolls out Sensor-embedded Bolt

Yamanaka Eng公司推出內裝感測器的螺栓

The company is a forging die maker. Its "PiezoBolt" contains a sensor that can measure loads and be used for monitoring forging process. The sensor can detect pressure. Install it to the circumference of dies on servo press machines or roll forming machines, and it will monitor loads. Through monitoring, one will know that deteriorated lubrication couples with the increase of KO load. PiezoBolt can be used to prevent galling as well.

## Japanese iiFAS Rolls out Iron Chromate Plated Snap Nut Washer

iiFAS公司推出鐵製鉻酸鹽電鍍的快扣式螺帽墊片

The product was released in March. It has an insert-type nut that can horizontally snap onto a bolt. Previously the company has released SUS304 anti-loosening insert-type washer. This time the company adds the iron chromated plated version. Here is how to use the product: (1) Insert two washers onto a bolt (2) Use tools like a plier to close the snap nut (3) Finish fastening with a spanner.



## Japanese KURE Engineering Starts Selling "Freeze Lube" Used for Rusty Stripped Fasteners

吳工業公司開始販售凍結滲透潤滑劑「Freeze Lube」

KURE Engineering Ltd's lubricant "Freeze Lube" can remove rusty stripped screws without the need of damaging the screws. By spraying the lubricant, the rusty and stuck bolt or nut will freeze to minus 33 degrees and contract to create gaps which are immediately infiltrated by the lubricant for easy loosening.



## Japanese Sanko Techno Rolls Out C/SC Type "All Anchor"

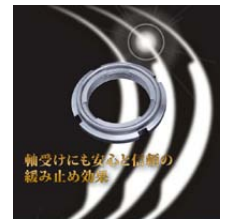
Sanko Techno公司推出C型與SC型All Anchor系列錨柱

Sanko Techno Co., Ltd. released in this January the C-680/SC-680 Type (with longer length) ALL ANCHOR Series that can fasten thicker objects. ALL ANCHOR is a cast-in anchor and a representative product of the company. The former sizes of this series can only fasten objects as thick as 20mm at most, whereas the newly released C and CS type can push the limit up to 40mm.

## Osaka Forming Starts Selling Lock Nut Used for Bearing

Osaka Forming公司開賣軸承專用的固定螺帽

Osaka Forming Co Ltd's E-Lock series has excellent anti-loosening capability. Now the series is added with lock nut used for bearing. The nut no longer requires key processing on the shaft nor shake-proof washer, therefore reducing the cost for shaft fastening. Another feature of the nut is its capability to bear intense vibration.



In terms of the nut's structure, the previous 270-degree wing is changed into three 90-degree wings which reduce torque during fastening. Moreover, each 90-degree wings connects with the bolt's threads and is 270 degrees away from another wing. As such, the stress and counterforce generated from spring effect strongly press against the bolt's threads, generating friction torque and preventing loosening or revolving.